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# Economic&PoliticalWEEKLY

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- Party Continues to be Bigger Than Xi

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The practices of better-functioning ICCs are instructive in understanding how they fill the gaps in creating and sustaining forms of substantive justice for those experiencing sexual harassment in higher education institutions. page 43

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Amartya Sen's evocative title, *Home in the World,* conveys that a multitude of identities for an individual would limit violence and foreground the concept of the world itself as one's abode. page 26

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## The Changing Contours of Proletarianisation

10 The social proletariat and the economically marginalised communities are deliberately drawn into a process of lumpenisation sans proletarianisation. *— K S Chalam*

## Assessing Justice N V Ramana's Term as CJI

14 This article analyses the track record of Justice N V Ramana as the Chief Justice of India on several metrics. *— Faizan Mustafa, Pranav Verma*

## Punjab's Education Budget (1980–2022)

18 Punjab's education budget, over the last 42 years (1980–2022), was less than the recommended norms and requirements and, hence, inadequate. *— Jaswinder Singh Brar*

## The Farm Panel

23 This article builds an argument upholding the significance of the minimum support price and increasing the representation of farmers in the 29-member committee notified by the government. *— Sukhpal Singh*

## A Gentle Correction of Tagore by Amartya Sen

26 An analysis based on civilisations fails to acknowledge humans as equals and potential agents of change, by default. *— Sunilkumar Karintha*

## On the Dynamics of Time-varying Fiscal Multipliers

30 The dynamic transmission and the effectiveness of the Indian public expenditure shock are examined in this article. *— Paras Sachdeva, Wasim Ahmad & N R Bhanumurthy*

## Effectiveness of SHWW Act, 2013

43 This article points out some best practices of higher education institutions to show that despite continuing challenges, internal complaints committees have tried to not only secure justice for survivors of sexual harassment but also created broader support systems for them. *— Rowena Robinson, Monica Sakhrani*

## Non-banking Financial Companies in India

49 The non-banking financial companies play a critical part in credit intermediation in India. Against the backdrop of the recent liquidity crisis, the financial health of selected 15 large NBFCs and the capital requirement regulations towards the sector are examined. *— Anup Kumar Bhandari, Nithin Pradeep*

## Challenges of Persons with Severity of Disabilities

58 The paper maps the present status of employment opportunities for persons with severity of disability with an emphasis on their factors of labour force participation and the likelihood of employment in public or private enterprises. It employs the two latest comparable databases of the National Sample Survey on disability. *— Minaketan Behera, Pratap C Mohanty & Kamal K Sharma*

## Extreme Weather Events and Vegetable Inflation

65 Extreme weather events like cyclones, heavy rainfall/floods, thunderstorms, hailstorms, and droughts often damage standing crops, causing supply shortages and spikes in vegetable prices in India. This paper analyses the impact of such extreme weather events on the prices of three key vegetables, that is, tomatoes, onions, and potatoes in India. *— Vimal Kishore, Himani Shekhar*

## Income Convergence among the Districts of West Bengal

75 The study of the inter-district convergence of per capita incomes in any state or country is crucial to the policy agenda. This paper examines inter-district convergence of per capita income in West Bengal using the neoclassical growth and panel unit root models. *— Ramesh Chandra Das, Bankim Ghosh & Utpal Das*

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## From Desperation to Destitution to Despair

The sixth anniversary of demonetisation occurs on 8 November 2022, and it is evident that the economically marginalised citizens of the country are yet to recover from its after-effects. Combined with the March 2020 "policy" response of a nationwide lockdown, the impacts are intergenerational and long term, resulting in a downward spiral—from desperation to destitution to despair. Migrant workers became visibilised in the most agonising manner—their heart-wrenching journeys will continue to haunt the nation's collective conscience. Migration is not necessarily a one-way linear process as perceived within the broader paradigm of labour and livelihoods, workers going back to the rural roots and keeping the urban–rural continuum alive in numerous ways. Central are issues of sectoral, regional, horizontal, and vertical movements of workers and their earnings, the nature and level of dependence on remittances, the extent of permanent temporariness and permanent movement. An already structurally distressed agriculture is overburdened by not merely inappropriate policies but also declining financial allocations, including a drastic fall in the creation of rural employment.

The cumulative impacts of the two "policies" appear to function in tandem—collapse of employment and livelihood opportunities, permanently and negatively altered labour structures, unpaid wage dues, anarchy in skill status and hierarchy, indebtedness, homelessness twice over—the list is endless.

Probably, the single most distressing fallout of demonetisation, reinforced by the pandemic policy response, has been the drastic decline in basic nutritional levels, and that in a situation when 76% of the rural households could not already afford minimum nutrition—eating one meal a day, less frequent meals, thinner pulses, rice gruel, etc. And for those who turned almost totally destitute, succour was provided by the *langars* of the gurdwaras, by non-governmental organisations and other sensitive organisations post demonetisation, especially during the first wave of the pandemic. The consequence is one which has a long-term impact on not only the capacity to work but also the capacity to come out of poverty.

The informal financial sector appears to have been strengthened due to the collective impacts of both policies. The poor have been compelled to sell whatever assets they owned—land, livestock, sewing machines, household items, utensils, and mobile phones. An intriguing new collateral has emerged—that of the Aadhaar card and also of the ration card. Several *kirana* store owners insist on retaining primarily the Aadhaar card as a collateral for borrowings in kind, especially in the form of foodgrains. Desperation levels have been so high that the assetless, particularly, have no option whatsoever but to agree to surrender their most valued identity possessions. This is one of the most brutal forms of blackmail that has emerged, and one which can be viciously misused, particularly in the case of migrants and those belonging to the non-majority communities.

What needs to be urgently recognised and visibilised is the massive and increasingly irreversible violation of human and gender rights. The roots of violence need to be perceived within the macro-patriarchal construct of the state, patriarchal structures as well as the dominant growth paradigm combining and colluding to ensure that women and their rights are subsumed and subordinated. New sites of sexual violence have emerged, all located in the labour–capital structures as a fallout of people-blind policies—privatisation of public transport, utter neglect of the rural sector, labour codes, farm acts, and monetisation of the nation's assets. Sexual exploitation is being increasingly incorporated not only into employment contracts but also mobility patterns, all of them reflecting the institutionalisation of gender-based violence, which is becoming normalised, actualised, and internalised.

The consequences of the policies that eschew economic rationality, ethics and equity cannot be more graphically explained than in the words of Ayesha:

> The sarkar does not want the working class anymore. Withdraw whatever little welfare is available today, digitalise it so that we cannot comprehend the technicalities, and by next year the roads will be full of the dead bodies of emaciated workers. And for women there will be no need to even wait for those 12 months—single women are half-destitute already. All we face is devastation, destruction, despair and destitution. We are the real NRI–Not Required Indians.

**Ritu Dewan**
MUMBAI

## Neo-bondage, Not Sharecropping

The article "Labour Partnership, Sharecropping, and Tribal Migration: Unravelling the *Bhagiya* System in North Gujarat" by Tara Nair (*EPW*, 26 June 2021) fills a key gap in the studies of agrarian labour in India. There are very few existing studies of this mode of labour engagement that has expanded rapidly not only all over Gujarat but is also showing signs of expansion in other states.

The *bhagiya* system has evolved as a highly innovative form of labour extraction by the enterprising peasant classes of Gujarat. The innovation lies as much in changing the mode of payment for agricultural labour from daily wages to a share in the crop as much in calling it sharecropping. This serves the key purpose of avoiding the labour laws, most important being minimum wages. The author, in spite of her rigorous description of the system, seems to have fallen into this trap and refers to the system as a distinct form of sharecropping in her conclusions.

The bhagiya system of Gujarat is an alternative mode of labour deployment where the daily wages have been substituted by a share in the harvested crops to the detriment of the worker class. Table 3 in the article that gives cost calculations for the cotton crop clearly illustrates this. Whereas labour costs account for 37% of the total costs and 50% of the operational costs, the share of the bhagiya stands at 20%. In fact, contrary to the assertion made in the report that the share remains constant, it does vary by crop. Cash crops like potato have a one-eighth or one-ninth share. And irrespective of the share promised, farmers make sure that the share received by the bhagiya corresponds to the labour input. This is corroborated by the conflicts that emerge. Two-thirds of the respondents have reported conflicts, frequently at the time of the settlement. Bhagiyas realise this fully well. The article reports that given a choice, 90% of the respondents would prefer to work for daily wages.

The system of advances is a key component of the bhagiya system that serves as a great attraction for the tribal households to work as bhagiyas. However, in locating the reason for taking advance to the peculiar cultural practices and rituals of the tribal population, the author seems to be falling into the familiar trope of blaming the victim. Bride price and extravagant expenditure on marriage are not peculiar tribal practices. These are practised by wide sections of non-tribal society as well. The system of advances has to be looked upon from the perspective of the employer too. It serves as the critical means of tying the bhagiya worker to the land for the duration of the season.

A key issue to decide when analysing the bhagiya system is whether the bhagiya is a sharecropper or agricultural worker. This is critical from the point of view of legal jurisprudence as well as considering the large number of disputes that arise. The author provides comprehensive definitions of both sharecropping and attached farm hand as given by the National Sample Survey Office in the concluding sections. A perusal of the two definitions and the description of wage sharecropping arrangement provided in the previous sections of the article makes it clear that the bhagiya worker is more akin to the permanent farmhand rather than the sharecropper.

The bhagiya system needs to be looked upon as an evolution of the traditional system of farm bondage and not of sharecropping arrangements. The author has taken note of the traditional bondage system in Gujarat, the *saathi* system, but this gets confined to the endnotes. It needs to be analysed in the context of the shift by the local agricultural labour class from farm work and the availability of a large mass of footloose tribal labour in Gujarat. The emergence of the system has to be looked upon as an example of "neo-bondage" as described by Jan Breman. It is described as "neo" because the relationship between the bosses and workers is less personalised, of shorter duration, more contractual, and monetised. Classifying the system as a distinct form of sharecropping causes immense harm to the working class and serves the interests of the farm owners, even if inadvertently.

**Sudhir Kumar Katiyar**
UDAIPUR

## Corrigendum

In the paper titled "Women's Participation in Protests against the Three Farm Laws in India: Perspectives from the Ground" (*EPW*, 22 October 2022), the acknowledgement should have read as "The authors are thankful to Inderjit Singh for sharing his views on the issue and providing critical feedback." Endnote 26 should have read as "Jodhka (2021) has similar observations on this aspect." References should have listed the following: "Jodhka, Surinder (2021): "Why Are the Farmers of Punjab Protesting?" *Journal of Peasant Studies*, Vol 48, No 7, pp 1356–70."

The error has been corrected on the *EPW* website.

## *EPW* Engage

The following series and articles were published in the past week in the *EPW* Engage section (www.epw.in/engage).

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NOVEMBER 5, 2022

# The Competition Commission Takes on Google

*Regulating big-tech companies and ensuring a level playing field is no easy task.*

The emergence and growth of the big-tech companies like Google (Alphabet), Facebook (Meta), Apple and Amazon have polarised opinions the world over. While one side celebrates their innovative products and services, the other criticises them for lack of transparency and anticompetitive behaviour. These fears are especially understandable in countries like India where big-tech companies have made huge inroads; even its capacity to regulate them does not match with the advanced economies. Moreover, finding the right policy path and regulating big tech in a rapidly evolving landscape is no easy task.

It is in this context that the two orders passed by the Competition Commission of India (CCI) against the anticompetitive practices of Google in October this year gain significance. While the first order imposed a penalty of ₹1,338 crore for violation of competitive practices in multiple markets in the android mobile phone ecosystem, the second one imposed a penalty of ₹936 crore on Google for abusing its dominant position for selling products through Play Store, its digital distribution service.

Google has considerable influence in the Indian and global digital ecosystem as most mobile phone manufacturers use their Android operating system. Google simultaneously licenses out to mobile phone manufacturers various other proprietary mobile applications like Play Store, Google Search, Google Chrome, YouTube and so on. These transactions are enforced through multiple agreements like the mobile application distribution agreement (MADA), anti-fragmentation agreement (AFA), Android compatibility commitment agreement (ACCA), and the revenue sharing agreement (RSA).

MADA ensures that many Google applications are pre-installed on most mobile Android devices, which give the company substantial market access and a decisive edge over competitors. Similarly, the AFA/ACCA, which prohibit mobile phone manufacturing companies from offering applications based on Android substitutes, ensure that competing search services remain hobbled. The RSA reinforces these biases by ensuring exclusivity for Google Search services. These measures not only foreclose the market to Google's competitors but also eliminate user choices. Thus, Google Search engine can garner larger advertisement revenues and continuously fine-tune technologies to improve operations and sustain its dominance.

The CCI, which investigated these issues, concluded that the MADA, which made mandatory the pre-installation of the entire Google mobile suite, was unfair on mobile manufacturers and denied market access to competing apps. It noted that Google's dominant position in the app store market also contravened provisions of the Competition Act, 2002. Hence, the CCI issued cease-and-desist orders asking Google to stop anticompetitive practices and not force original equipment manufacturers (OEMs) to pre-install its apps or to decide their placement. Similarly, it also mandated that Play Store licensing should not be used to force the OEMs to pre-install Google apps and that it should ensure interoperability of apps and facilitate app developers to easily port their apps to Android forks and promote competition in the digital ecosystem. The CCI also imposed a provisional fine of ₹1,338 crore on Google.

In its second order, issued a few days later, the CCI imposed a second penalty of ₹936 crore on Google for abusing its dominant position to influence Play Store policies and demanded that it be changed immediately. Google had made it compulsory to use the Google Play Billing System (GPBS) for receiving payments for products sold on Play Store. Apps could be listed in Play Store only if they use GPBS, which meant that rival apps using unified payment interface (UPI) was placed in a disadvantaged position. The CCI also demanded that Google should not discriminate against apps using Indian UPI in preference to its own Google Pay. This is because the Google mandate, which demands the use of GPBS, limits technical development and innovations, and it also goes against the law. The CCI also imposed a 7% provisional penalty on Google turnover for the violation of the Competition Act which amounted to ₹936 crore.

These regulatory interventions of the CCI are broadly in line with those imposed by the European Union on Google a few years back. This will help bring in an even better level playing field and increase competition between apps, besides reducing costs, which could give a big boost to the Android ecosystem. However, though it is amply clear that Google was leveraging its market dominance in licensable mobile operating systems and app stores to secure dominance in downstream markets, it is not very easy to find clear solutions. This is because the regulatory challenges in the digital economy are very different from those in the usual markets. Normally, the impact of network power and the monopoly of most incumbents in digital markets make it more concentrated than other markets. However, the size of the market share, which is used to measure competition in other markets, is no indicator of market power in digital markets. This is because the incumbents are continuously threatened by potential challengers whose innovative products and services can easily neutralise the network advantage of incumbents and other challenges that confront new entrants. So this dynamic competition in digital markets makes the market power of participants a purely temporary phenomenon.

Hence, it is essential that regulators confront these realities and ensure that their interventions, to provide a level playing field to the competition, do not stymie the entry of new technologies and innovative products. So far, the CCI seems to have done a fair job in tackling the anticompetitive practices of Google. But it needs to push the envelope and further level the playing field without failing the incumbents, which is a tough task with no clear-cut paths.

# Party Continues to be Bigger Than Xi

*The extension of Xi Jinping's term indicates that the CPC has chosen "strong continuity" rather than change.*

***Atul Bhardwaj writes:***

The 20th national congress of the Communist Party of China (CPC) concluded in the last week of October. Chinese President Xi Jinping was re-elected as the general secretary of the CPC.

If the non-Chinese English media reports and commentaries are to be believed, then Xi and his loyalists in the newly formed politburo have replaced the CPC as the dominant ruling party in China. According to them, Xi has centralised power, driven by personal aggrandisement, and circumvented the checks and balances to dwarf the party to emerge even taller than Mao Zedong in Chinese history.

However, basing our analysis of the recently concluded CPC congress on Xi's greed for power fails to answer the question as to why the collective leadership has suddenly collapsed. Why is the 102-year-old party bent on jeopardising its future, placing all the eggs in one basket?

What is Xi's source of power? He is not a mass leader in the mould of Mao nor is he singularly responsible for China's current economic prosperity. He is certainly not a people-pleaser as he has unhesitatingly taken on the corrupt leaders within the party and the government, irrespective of their popularity or past performance. He has not endeared himself to big business by insisting on reducing their influence and charting a leftward course to reduce inequality. As far as international support is concerned, Xi has very little.

Furthermore, the party is not dependent on Xi's charisma to legitimise its rule over the Chinese population. Despite these negatives, Xi has still managed to get an elongated tenure at the top. His unprecedented rise has to be seen in the context of CPC's current assessment of the international dynamics.

The CPC is certainly not devoid of factional fights and disagreements. The party's history is replete with examples of internal tiffs and battles. However, over the years, the party has displayed consummate skills to manage internal dissensions and adapt itself in accordance with the imperatives imposed by the dictates of international politics. The ease with which it changed tack in the post-Mao era informs us that it is an adaptive party that is more pragmatic than ideological.

The CPC's management of the country's unprecedented rise over the past three decades and its ability to "cross the river by feeling the stones" clearly point to the fact that the collective leadership of the party is not bereft of intelligence and focus. Xi is being chosen to be the core of the party at this juncture because the party has gone in favour of "strong continuity" rather than change, and security over development tops its agenda. Xi has not usurped power. It has been bestowed on him by the party with a purpose to project a united front in difficult times.

The Ukraine crisis has proved that war between great powers may not be distant. The talk of use of nuclear bombs is back in the international security discourse. The CPC congress has taken stock of the deteriorating international situation where the United States (US) is not averse to provoking China in order to achieve its strategic objective of defeating its peer competitor.

The Chinese leadership would like to avoid war and continue to enjoy the dividend of peace to gather more economic clout. However, the US, aware of the steep decline in its power, is in no mood to grant China any more time to grow fatter.

Washington will keep Beijing's legitimacy to rule China. Therefore, the big obstacle that the CPC intends to clear in its journey towards "the great rejuvenation of the Chinese nation" is the security challenges that it is likely to encounter in the coming years, especially with the US going increasingly assertive in making Taiwan an international hotspot. The CPC's challenge is to prevent the US from using Taiwan to draw China into a long-drawn-out conflict.

The US–China decoupling on the technological front is CPC's other major concern. The party intends to pull the economy out of the middle-income trap by 2035 in order to maintain its sway over the masses by giving them more prosperity. The dilemma before the CPC is whether to compromise and play second fiddle to the US as it has been doing since the 1970s or to set itself as an independent power centre. Beijing has been doing both but the luxury of riding in two boats is no longer available. The US is using all tactics in its playbook to make China capitulate and not advance the reach and range of its technology and currency in a manner that threatens the US hegemony.

This party congress has sent a strong signal that Beijing will continue to maintain an offensive posture to defend its territorial integrity, internal cohesion and tech sovereignty. Beijing is now set to create its own sphere of influence to balance American power and ensure that it does not have to play a subservient role in the age of ultra globalisation, driven by next-generation technology centred in the US.

If indeed Xi has become more powerful than the party, for the West it is time to celebrate. However, the story is that the one-party rule in China has not been replaced by the one-man rule. The party retains the strength and the ability to strike back.

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# Words Matter in Power Politics

The focus on the semantic function that words perform in the public political sphere has become urgent, especially when certain morally offensive and ethically objectionable words find an expression in the language of some political leaders and activists. The maltreatment that is assigned to words necessarily seeks to separate them from ideas. Words are the summary of ideas that are either negative or positive in character. For example, communally crafted words signify socio-religious obscurantism. They mark a rather murderous intolerance towards diversity and plurality. Conversely, words such as “inequality” signify the desire for equality or the word “injustice” alerts us about the need for justice.

The words, in their negative impulse for intolerance, hatred, and animosity, do not stand for a positive character. For example, communal and casteist slurs do not stand for positive ideas. On the contrary, words such as generosity and compassion have a remedial thrust in them. It is, indeed, a moral challenge to select the words that signify positive ideas, such as tolerance of the other, and even the oppositional other.

In the current political atmosphere, one does hear words that have a remedial thrust in them. They carry an almost ascetic value that seeks to not only elevate one’s expression but purify political language as such. But such an ascetic value of the words is being undermined by words that are acidic. Words become acidic when they are morally corrosive for the ones who are marked or targeted by them, thus morally corrupting the entire political sphere.

As the current political climate suggests, some of the political leaders feel unrestrained in using morally unacceptable words. Such leaders believe that the intense use of foul, abusive, and shrill words is good enough to defeat their opponents. Obviously, argumentative language does not make any sense for such people. What one finds is the reciprocal use of the same set of indecent words. Hence, the performance of the foul mouth is aimed at making decent words have a low standing, or such a performance is intended to rhetorically stymie the opposition leaders in the public sphere.

The leaders from the ruling party do not take a moral initiative to either chastise or condemn such party members who are given the freedom to repeatedly use such words. In fact, such leaders find it both profitable and comfortable to outsource this “semantic dirt” to others. It is profitable in the sense that it seeks to morally crush the opponents and make them the subjects of public ridicule. The leaders of such parties do not feel the need to agonise over the ethical consequences of the words and actions of certain foul-mouthed members. The expressed words may not have an association with ideas but may have been uttered with the intention to defame the opponents without, however, being affected by the corrosive logic of it.

The growing political need of those who outsource such words to others as well as some of the leaders’ obsession of using foul language themselves in order to settle scores with their opponents has made the contemporary political atmosphere hostile to the enlightening use of language in politics. Language becomes a source of political enlightenment when ideas of respect, dignity, and equality are promoted among the public through one’s speeches and writings.

However, one notices instead a vicarious enjoyment generated by the foul play of offensive words in the public sphere, thanks to some of the television channels that, arguably, have created the necessary condition not for expanding the space for decency by exercising self-restraint but for promoting the use of such a foul play of words that ensures their television rating points. Outsourcing, rejoicing, and fomenting of an abusive language—all this happens at the moral cost of those who lend their mouth to these three aspects of the contemporary political discourse. It is but imperative to fix the responsibility on those who outsource such a use of language, and those who make themselves available to such an outsourcing. Similarly, responsibility has to be placed on the section of the common lot who rejoice, rather than restrain, from lending their ears to such words.

It is needless to mention that words in language do not become offensive on their own. They become offensive after a specific meaning is attached to them. Those who are committed to harness a decent democracy must feel accountable that citizens should not be subjected to the force of humiliation that is likely to be caused by words that are filled with a derogatory meaning. Because it is the intended meaning that decides the character of words or their normative texture and scale.

Gopal Guru

FROM 50 YEARS AGO

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## Organising Indian Educational Statistics for Action

*C Arnold Anderson*

A foreign scholar would be presumptuous to offer sweeping recommendations for policy in any sphere of life, especially for one so central to a culture as is education. On the other hand, those of us who have specialised in comparing the educational systems of the world have formed some judgments that may not be wholly prejudices. These judgments may be particularly acceptable when, as in the present instance, comment is focused narrowly upon questions of how to improve the informational base for national policies in education.

India is particularly fortunate in its inherited capability to collect and to publish voluminous statistical information about a wide range of the basic elements in national life. Though data about education became elaborate and mature rather recently, Indian publications provide compilations that can be matched in scope and variety in few other societies … Year by year we accumulate more of these clusters of information about schools for each Indian state and for its main subpopulations categorised by age, rural versus urban residence, etc. Elaborate tabulations are available also for more than 300 districts. As colleagues tell me is the case for some other sectors of India life, not all of this hoard of intelligence has been presented so as to be most useful in choosing policy or even for understanding the main determinants of the structure and functioning of India’s educational system.

# The Changing Contours of Proletarianisation

K S CHALAM

The social proletariat and the economically marginalised communities are deliberately drawn into a process of lumpenisation sans proletarianisation. The capitalist state and Hindutva combine methods and techniques to entail dropouts from the process of proletarianisation. This is to refrain them from class consciousness during the post-reform period to make the left and democratic forces alienated from these groups.

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The alleged suicide of Pallakonda Raju in 2021 on the railway tracks in Warangal district, who had raped and killed a six-year-old girl in Hyderabad, is not the first such incident in recent memory to have happened in Telangana (*New Indian Express* 2021). In 2019, four individuals were shot dead by the police for the heinous crime of rape and murder of a veterinarian doctor (Janyala and Ananthakrishnan 2022). This is still remembered in this part of the country and is a new phenomenon that has not been articulated and reflected upon by the left and democratic activists and intellectuals. This is not a sporadic incident that mostly happens in the urban areas but is omnipresent everywhere, threatening the very existence of a civilised society and the formation of a radical proletarianisation process as envisaged by Karl Marx and Friedrich Engels. Instead, what one sees is that proletarianisation is being dissolved and permeated into lumpenisation.

The concept of lumpenisation was first flagged by Marx, deriving the word from the German word "lumpen," meaning ragged, consisting of groups such as criminals, vagrants, and the unemployed who are an underclass without any consciousness of their downtrodden existence. In this article, this concept is revisited in the context of the growing number of such groups signified through events, incidents, and their numbers that threaten social formation in a capitalist society like India. The problem with some of our intellectual traditions is that most of the activists continue with received theories—either imported or given by some so-called "analysts"—who may not have the experience of encountering such situations or those who live in isolation and merely read "classics" of political economy ad nauseam. There used to be some kind of an impact of totalitarianism that inhibited our attempts to understand country-specific issues and deviations from the mainstream developments of capitalist societies. Now, things have changed and it is time that there should be some serious reflection on what is happening in India in the recent years when imperialism and religious fundamentalism got united to exploit the gullible and the unorganised groups of vulnerable people. It is in this context that we may reflect upon the changing contours of class formation in India.

## Theories of Class

Activists and analysts often repeat what Marx had said about class. Unfortunately, he has used only around 39 lines to elaborate upon classes and the manuscript breaks off at page 885 of the third volume of *Das Kapital*. But that was not a limitation for those who read his other writings and understood the method of the "capitalist mode of production" to articulate the type of classes that emerge in different stages of its social formation. Interestingly, no one has seriously worked on class formations in India. Around 1950, D D Kosambi did some work in this direction; however, it was very elementary and did not capture the dynamics of Hindu society. The same was almost repeated in several writings of scholars in the last decades of the 20th century who tried to conceptualise classes with concepts like wage labour, proletarianisation, agrarian struggles, etc.

Some have reduced the category of class to only cover income groups. Economists have conducted studies on the mode of production, rural proletarianisation, etc, to arrive at some conclusions. For instance, studies by K P Kannan, Utsa Patnaik, and several others are not related to the post-reform period and did not cover the whole society. Kannan's (1988) study titled *Of Rural Proletarian Struggle: Mobilization and Organization of Rural Workers in South-west India* was reviewed by late Gail Omvedt (1988) in *EPW* and is instructive for understanding the limitations of such studies and the struggles that some scholars have built based on its conclusions. Omvedt had noted that Kannan has failed to establish the development of proletarianisation from simple wage labour to the capitalist factory production in Kerala. Further, he failed to see the petty exploitation of commodity production seeing only wage labour as the source of exploitation, thus ignoring the self-employed, beedi workers, toddy tappers, etc. Further, Omvedt had also highlighted the autonomous struggles of Dalits, women, peasants, and others as part of a social mobilisation against capitalist exploitation. It is my experience in this part of the country that the traditional leadership imbibed in the classics of political economy are not in a position to appreciate the need for a change in thinking and often repeat what is contained in the texts (much like Vedic interpretation) and perhaps need a relook at it within the Marxist parameters.

## The Phenomenon of Lumpenisation

It is under the given circumstances that we are trying to focus our attention on the emerging dangerous phenomenon called lumpenisation in urban areas that is slowly spreading towards rural and tribal areas while the left and democratic struggles are limited to mostly urban zones. In fact, Marxist scholars like Giovanni Arrighi, Nicos Poulantzas and, Cédric Durand, to name a few, have tried to grapple with the impact of fictitious capital or finance capital and how it has total control over the world economy and society. It is now a fact that close to 26 families, including some Indian ones, own half of the world's wealth. Naturally, they have their own ways of doing business and intellectuals have provided much more serious and theoretical expositions of their financial systems and methods of expansion and sustenance. Some intellectuals have also inundated the academic world with their hogwash of the efficiency of the capitalist system. It may be the failure of the insiders of the opposition camp to understand the nature of capitalism, new methods of exploitation, and institutional arrangements that create structures to help expand corporate capitalism. This cannot be wrapped under the ills of corporate capitalism. We may reflect here on the rapid expansion of capitalist, or rather, an imperialist consumer culture with information and communications technology and other commodities like consumer electronics pushed into every nook and corner of the society in India and the institutional support provided by religious fundamentalist forces. The role played by these developments in the fast-changing process of lumpenisation must be studied and reflected upon.

Cédric Durand's (2017) study titled *Fictitious Capital: How Finance Capital Is Appropriating Our Future* and Arrighi's (2010) study titled *The Long Twentieth Century: Money, Power and the Origin of Our Times*, both published by Verso, have noted that financial profits are now concentrated in the hands of a small finance elite. In India, they are limited to a few Bania families and their relationship with political parties that fund, promote, and encourage religious fundamentalism is well known. In fact, Poulantzas (1978) and O E Wright (1979) have written extensively on class formations and the political economic structures in the 20th century elaborating on how new classes are emerging in the corporate capitalist system. It is now common sense to note that when capital and other factors—including the organic composition of capital—undergo a change, the classes that depend upon the capital also undergo a metamorphosis. If someone says, "I do not recognise it and I have never come across such categories in my readings," then how do we evaluate this position?

The concept of lumpenisation—that is fast expanding in urban areas like Hyderabad, Mumbai, Chennai, Delhi, Lucknow, Bengaluru, and even some small towns—needs to be understood. Why is it being deliberately produced and what explains the alienation of the democratic and left forces from these groups? In fact, Frantz Fanon's *The Wretched of the Earth* (1961) had noted the revolutionary significance of this group, provided they are organised. Now, the developed capitalist state understands the need for the lumpen proletariat to sustain their exploitation, suppress class consciousness and to divert the attention from the workings of the capitalist system. One can find, in every city and even in some rural areas, how the young are attached to smartphones and the informational content being poured in by the corporate media through it. The easy money that is generated through share markets, monetisation, and transfer of public properties to a few individuals produce enormous wealth in the hands of the few to provide leverage to "bribe" (to use a wrong word perhaps) the gullible public and make them forget about their immediate future. The creation of the underclass is a product, if not the creation, of corporate capitalism. The trishul-yielding rugged lumpens are interlinked to the sophisticated elites of corporate capitalism. These processes are unfolding as the left and democratic forces are still wondering whether it is only a temporary phenomenon that will disappear, sooner or later, once the ruling party changes.

It can be argued that something akin to lumpenisation has been built into the structure of Hindu society. One of the simple mechanisms of lumpenisation seems to be the creation of groups and labelling them with different epithets. In the course of time, many of the erstwhile civilised groups and those who were living away from the mainstream have slowly integrated and have effectively become a "social reserve army." This unique social structure needs to be further studied as to how it helped the formation of different socio-economic groups and helped sustain exploitation of different kinds in India. Let us confine ourselves here to how modernisation and colonial plunder with the capitalist mode of production has created groups like wage labourers, workers, and others in the factory system in urban areas, while handicrafts and traditional occupations along with agriculture kept the majority of the rural folk in the villages. The advent of a democratic spirit and trade unionism with the dawn of the Marxist ideology of organising the left has helped the exploited to organise on secular lines. In the beginning, it was mainly concentrated in the urban areas but rural agrarian struggles further strengthened the formation of the proletariat. In fact, a fruitful study of class formation and the kind of classes that have emerged in the post-liberalisation period is the need of the hour.

## New Developments

It was considered that when the economy was released from state control and was yielding results on neo-liberal lines, the new economic policies were introduced diffusing not only the working classes but even the rural masses. The left and democratic forces were weakened and with the emergence of information communications technology, labour and labourers were divided. The factory system was almost dismantled and private industrialisation was promoted with state support to further reduce the intensity of proletarianisation. The new industrial and labour policies have further fragmented the labour force and their bargaining capacity with the introduction of contract labour, outsourcing, and other such techniques of organising production without parallel opportunities for labour to get organised. The process of proletarianisation needs a "class in itself" and a "class for itself." Neither is happening now as there are no class struggles.

Capitalist imperialism and religious fundamentalism are interlinked as the policymakers of these two groups are represented by the same social class. They have proven to be highly intelligent not only in dividing the labour force but also in carving a section of the reserve army of unemployed, members of traditional occupations who lost their jobs and the urban vagabonds to form a vibrant group of lumpens to provide strength to sustain fundamentalism in India. It is perhaps in the beginning of the 1990s that the process of diverting the attention of the angry and torrid generation to pursuits that are not only unproductive but counterproductive to the health of our society started. The education system was manipulated to divert the attention of the youth from studying society to concentrate on engineering and technical courses so that their attention could be diverted from social issues. Private players have started importing consumer electronics and have expanded the mobile market much faster than the advanced countries to make the youth addicted to various forms of cheap entertainment so that they get satisfied with what they can afford with the trickling of the subsidies paid to the families and additional income earned/doled by participating in religious functions, political gatherings, etc. These activities are not spontaneous as some people wanted us to believe; rather, they are deliberately promoted by corporate capitalism as they know the market techniques of spending money on advertisements to attract consumers.

There are several dichotomies, if not contradictions, in the functioning of civil society and the left activists. We hardly come across any functionary today in the villages or rural areas where the forces of lumpenisation have already spread. We have come to know that there were a few individuals in the villages who knew about the farm laws while there were sporadic activities in the media where, except the cadres, others evinced little interest. The media, both social and mainstream, hype a select few individuals within activist groups (with few exceptions) who are then seen with self-aggrandisement, which is a trap to wean activists away from real involvement and commitment. Some critiques even allege that such activities in urban areas are remunerative and have become a career for some individuals who are then touted as community leaders. They can go to any extent to retain their position within the groups or party to use tactics to discourage individuals to join a genuine movement to expand the base of the proletariat. They are, in a different sense, responsible for the lumpenisation of the underclass. It is alleged that the kind of phenomenon that we have just described is partly responsible for the debacle of the left political forces in West Bengal and at other places. It is reported that in such disparaging conditions, the committed ones often drop out from active politics as such. Marta Harnecker (2007), in her book *Rebuilding the Left*, provides many crucial lessons for us in India to ponder over.

## Conclusions

We always come across the cynic who reminds us that these things have been there in all societies and name Lenin, Mao, and several great leaders who have encountered such hurdles and come up with innovative programmes to suit their conditions. It is time that the democratic and left activists understand the urgency of realising the danger of lumpenisation that diverts the very foundation of the left movement, that is, the creation of the proletariat as a revolutionary force.

It is in this context that activist scholars like Prabhat Patnaik (2014: 41) observe that politics must intervene more purposefully as "identity resistance politics," and move beyond mere identity politics. Left politics must intervene more purposefully in organising the resistance of Dalits, Muslims, Adivasis, women, etc, against socio-economic oppression and exploitation, while also ensuring that if relief is provided to a particular identity group at the expense of another, then the latter too is organised to resist such a passing of the burden. The difference between class politics and "identity resistance politics," in other words, lies not in their having different points of political intervention, but in the fact that the former carries its intervention even on issues of "identity-group resistance" beyond the "identity group" itself. Put differently, the negligence to intervene on issues of caste or gender oppression is a failure of class politics itself, and not a symptom of class politics. Further, the Hindutva outreach—irrespective of caste, class and region—with the religious and/or nationalist slogans needs to be dispelled not by annoyance and indifference but by creatively developing alternative cultures that are deep-rooted in our rural folk culture and urban settlements. In addition to the standard agenda or rhetoric of fighting the imperialist and capitalist forces, it is necessary to speak to the people about their everyday problems such as violence against hapless girls, alcoholism, media addiction of the young, and other such issues that have alienated the common people. Some of the programmes of the present left and democratic activists are not comprehensible both in language and content. Most of the programmes are addressed only in the mainstream urban areas, leaving the slums, rural areas, Dalit *bastis*, Adivasi settlements, etc. As a result, the real proletariat is encouraged to drop out of social struggles without any hope and courage to face the danger of exploitation. Lumpenisation has a route through Hindutva and is implemented subtly with media, education, youth programmes, skill development, yoga, personality development, and definitely not through a programme of gainful employment. Here lies the weakness of the left and democratic forces to collectively work for the emancipation of the proletariat by resolving their contradictions and help restore their real position to liberate themselves from false consciousness and identities, that is, to make them conscious of their "social being."


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# Assessing Justice N V Ramana's Term as CJI

FAIZAN MUSTAFA, PRANAV VERMA

This article analyses the track record of Justice N V Ramana as the Chief Justice of India on the metrics of judicial appointments, progress on major constitutional challenges, and transparency in the exercise of the CJI's prerogative as the master of roster. The article argues that on these metrics, there was only marginal improvement over the track record of his immediate predecessors.

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Justice N V Ramana took over the reins of the Supreme Court at a time when it was being seen as increasingly transforming itself into an executive court. These included stalemates within the collegium over judicial appointments, the opaque manner of the exercise of the chief justice's prerogative as the master of roster; and keeping pending constitutional matters in which the political executive had vital stakes. It is, then, worthwhile to examine where Justice Ramana has left the Court on these parameters, after completing his term as the Chief Justice of India (CJI).

## Judicial Appointments

On the front of judicial appointments, Justice Ramana's tenure certainly marked an improvement over that of his predecessor—Justice S A Bobde—who demitted office without making a single recommendation on an appointment to the Supreme Court. By contrast, the Justice Ramana-led collegium made a total of 11 recommendations for appointments to the Supreme Court, out of which nine were made in one go (Vishwanath 2022a). This is second only to former CJI Ranjan Gogoi during whose tenure a total of 14 judges were appointed to the Supreme Court (*Economic Times* 2018). In fact, the duration of the tenure of Justice Ramana and Justice Gogoi did not significantly differ. Prior to their tenures, the highest number of appointments ever made during a CJI's tenure was only seven—a number reached twice each during the tenures of Justice S H Kapadia and Justice Altamas Kabir. At the bottom of the appointments track record would be the tenures of Justice H L Dattu (owing to the deadlock over the National Judicial Appointments Commission [NJAC]) and Justice Bobde, during which no appointments were made at all to the Supreme Court (Vishwanath 2021). From this standpoint, Justice Ramana's tenure saw the Supreme Court get a record number of judges second only to the tenure of Justice Gogoi and that too just by a margin of three (Kanu 2022) (Table 1).

As far as clearing the collegium recommendations for Supreme Court appointments is concerned, there was very little to no conflict between the union government and the collegium under the tenure of Justice Ramana as the CJI. However, the quantitative improvement evident in Table 1 may not necessarily be an evidence of the strengthened independence of the Supreme Court. One of the main criticisms of the Justice Ramana-led collegium was its failure to recommend the name of Justice Akil Kureshi for the Supreme Court, for, as some commentators have pointed out, his past orders had been unfavourable to the political executive.[1] In fact, the reported reason that Justice Ramana's predecessor was unable to recommend a single name for the appointment to the Supreme Court was that within the collegium, Justice Nariman had insisted on first recommending Justice Kureshi's name before any other name could be forwarded. However, soon after Justice Nariman's retirement, the Justice Ramana-led collegium made its recommendations, excluding Justice Kureshi from the list (Venkatesan 2021).

**Table 1: Appointments to the Supreme Court under the Last 12 CJIs**

| Tenure | Chief Justice of India | Judges Appointed |
|---|---|---|
| 14 January 2007–11 May 2010 | Justice K G Balakrishnan | 4 |
| 12 May 2010–28 September 2012 | Justice S H Kapadia | 7 |
| 29 September 2012–18 July 2012 | Justice Altamas Kabir | 7 |
| 19 July 2013–26 April 2014 | Justice P Sathasivam | 4 |
| 27 April 2014–27 September 2014 | Justice R M Lodha | 6 |
| 28 September 2014–2 December 2015 | Justice H L Dattu | Nil |
| 3 December 2015–3 January 2017 | Justice T S Thakur | 5 |
| 4 January 2017–27 August 2017 | Justice J S Kehar | 5 |
| 28 August 2017–2 October 2018 | Justice Dipak Misra | 4 |
| 3 October 2018–17 November 2019 | Justice Ranjan Gogoi | 14 |
| 18 November 2019–23 April 2021 | Justice S A Bobde | Nil |
| 24 April 2021–26 August 2022 | Justice N V Ramana | 11 |

Justice Kureshi's appointment was overlooked despite him being the second senior-most judge in the all-India combined list of high court judges (Sinha 2021). Likewise, seniority was also overlooked when the Justice Ramana-led collegium recommended the appointments of Justice Sudhanshu Dhulia and Justice J B Pardiwala. Justice Dhulia was ranked 30th in the all-India seniority of high court judges and was appointed superseding 29 judges, and Justice Pardiwala was ranked 49th in seniority but was appointed superseding 48 judges (Mahapatra 2022). However, this was certainly not the first time that the collegium under a CJI overlooked seniority while recommending appointments to the Supreme Court (F P Staff 2019). For instance, under the tenure of Justice Gogoi as the CJI, Justice Sanjiv Khanna was appointed when he was ranked 33rd in the all-India seniority, and similarly, Justice Dinesh Maheshwari was appointed despite being ranked 21st in the all-India seniority. In fact, the recommendation to elevate Justice Khanna and Justice Maheshwari was made after revoking the earlier recommendation to elevate Justice Pradeep Nandrajog (the then chief justice of the Rajasthan High Court) and Justice Rajendra Menon (the then chief justice of the Delhi High Court), instead (Singh 2019).

It was not just the collegium that deemed it proper to supersede senior high court judges, but the government too did not object to the same. However, in the case of Justice K M Joseph, the government lowered his seniority by delaying his confirmation. It cited the "time-tested principle of seniority" to justify this move, as Justice Joseph was ranked 39th in the all-India seniority of high court judges (PTI 2018). It would, therefore, not be entirely incorrect to argue that there seems to be no principled basis behind deviating from the convention of seniority while elevating high court judges to the Supreme Court—the convention having been followed and breached in almost equal measure in recent times.

Moreover, throughout the tenure of Justice Ramana, the union government continued with its past practice of cherry-picking names from the collegium recommendations or sitting on some while accepting others. For instance, the union government had sat on the names of senior advocates Anish Dayal and Amir Sharma while clearing the rest of the recommendations for the appointments to the Delhi High Court, affecting their seniority when their names were cleared later after an unexplained delay (Singh 2022). Likewise, for the Madras High Court, the government sat on four of the six names recommended by the collegium, clearing only two in one go (Vishwanath 2022b). Another notable example here is of senior advocate Saurabh Kirpal—vocal about his gender identification—whose name was recommended by the collegium in November 2021, but till date continues to await a response from the union government (Singh 2022). These instances led Justice (retd) Madan Lokur to describe the Supreme Court collegium as "nothing more than a post office with a fancy pin code" (Lokur 2022). Nonetheless, Justice Ramana defended the collegium's appointment practices in a public speech, claiming that it "cannot get more democratic than this" (Mandhani 2022).

The union government's practice of cherry-picking names from the collegium's recommendations, however, is not unique to Justice Ramana's tenure. The most prominent example is that of renowned senior advocate Gopal Subramaniam whose name was recommended by the collegium headed by the then CJI Justice R M Lodha. Even though the collegium had recommended four names in one go, the government segregated Subramaniam's name alone, turned it down, and confirmed the other three names. Had the collegium unanimously reiterated Subramaniam's name, the government would have been bound to appoint him—and he would have gone to serve as the CJI—but Subramanium withdrew his name from consideration owing to the controversy surrounding his recommendation (Venkatesan 2014a, 2014b; Rautray 2014).

## Procedural Silences

This practice of cherry-picking collegium recommendations enables the union government to exercise an unofficial "pocket veto" of sorts—not provided for in the memorandum of procedure (MoP)—which as of now simply states that the union minister for law and justice "will put up the recommendations to the Prime Minister who would advise the President in the matter of appointment."[2] Ideally, therefore, all the names in a recommendation should be acted upon together through either confirmation or rejection. Even though this is not specifically provided for in the MoP as it currently stands, any other interpretation would endorse the government's exercise of the pocket-veto, enabling it to cherry-pick names by sitting on some and acting on the rest.

In fact, after the NJAC decision, the Supreme Court had asked the government to revise the MoP so as to improve the working of the collegium system. However, more than six years have passed, and the MoP awaits to be streamlined (Sharma 2021). This uncertainty has, in the meanwhile, enabled the government to continue cherry-picking from the collegium recommendations and sit on names. One would have hoped for a stronger nudge from Justice Ramana for the finalisation of the MoP, with fixed timelines for the government to respond. However, the process of finalisation of the MoP seems to have no end in sight.

It would be unfair to not acknowledge that the Justice Ramana-led collegium also withstood executive pressure on several occasions by reiterating its recommendations sent back by the union government; under the current MoP, the government is bound by the collegium's unanimous reiteration of its recommendations. For instance, the collegium reiterated its recommendation to appoint 12 judges across the high courts of Allahabad, Rajasthan, Calcutta, Jammu and Kashmir, and Karnataka (PTI 2021). Likewise, the collegium reiterated its recommendation to elevate five advocates as judges to the Allahabad High Court (Vishwanath 2022c), and also reiterated eight names for appointments across the high courts of Patna, Calcutta, Bombay, and Jharkhand (PTI 2022a).

## On Constitutional Matters

Although Justice Ramana's term saw a more proactive—even if not a necessarily more independent—collegium, little difference was seen on the front of progress in deciding pending constitutional matters, particularly the ones in which the political executive continues to have high stakes involved. On this measure, Justice Ramana's tenure as CJI, and his role as the master of roster, was not much different from that of his predecessor. For instance, the challenge to the electoral bonds scheme has been long pending, and despite a verbal assurance in the Court by Justice Ramana that the matter would be taken up, the same awaits adjudication (Ananthakrishnan 2022). Likewise, the challenge to the deoperationalisation of Article 370—which now seems to be fait accompli—awaits adjudication. The fate of the challenge to the Citizenship (Amendment) Act (CAA), 2019 is also similar. These challenges had arisen before Justice Ramana entered office and remain pending without significant developments more than a year since, when he demitted office.

In fact, the sittings of the constitution benches in general froze over Justice Ramana's term. Not only did the existing constitutionally significant matters remain pending, hardly any new constitution benches were set up, despite no dearth of issues requiring authoritative interpretations of the Constitution; take the recent Sabarimala review petition, for instance, in addition to the above-mentioned matters like the CAA, Article 370, and electoral bonds. After his retirement, Justice Ramana himself acknowledged that he could not pay attention to the issues of listing and posting of matters and unprecedently apologised for the same (PTI 2022b).

On the other hand, there were significant movements on matters such as Pegasus, where the Justice Ramana-led bench set up an expert committee, which submitted its report in August, stating that there was "no conclusive proof" on the presence of the malware in the devices examined, and also that the union of India failed to cooperate with the committee's proceedings (Bhatia 2022). Further, in a landmark ruling on sedition, the Justice Ramana-led bench directed that all pending proceedings under Section 124A in the Indian Penal Code be kept in abeyance and expressed its "hope" that no new proceedings would be initiated till the union government reviews the provision (Prakash 2022). The Lakhimpur Kheri incident was another instance where Justice Ramana took a proactive stance to ensure a fair investigation, given the political clout of the accused (Dave 2021).

## A Success in Publicity

It would appear, therefore, that while Justice Ramana's tenure made some improvements in the areas of judicial appointments, and the hearing of important cases, his track record cannot be considered to have been significantly better than that of his predecessors. At the end of the day, while the collegium increased its activity and success rate in getting the union government to accept its recommendations, it did not necessarily emerge out as significantly independent than before when it came to appointing judges perceived as "inconvenient" by the political executive. Likewise, major constitutional disputes remained pending, which were perceived as politically sensitive by the executive. Given this marginal improvement, the publicity around the new-found judicial independence of the Court, which ensued even before Justice Ramana demitted office, seems a bit inexplicable. This can perhaps be explained as attempts to improve the public perception on judicial independence through speeches in various public forums. However, as the instances laid out above would show, the track record is more chequered.

The Supreme Court certainly stands on a better footing than what it did at the time Justice Ramana took over, but the promise of leading it back on the path of independence in appointments and case listings remains to be fulfilled to its true potential.

### NOTES

1 It is, however, one thing for the collegium to make a recommendation and for the political executive to reject it—a decision the union government is entitled to reach—but quite another for the collegium to not make a recommendation in the first place, anticipating resistance from the executive. This would imply that the union government's views are accounted for not just after a recommendation is sent (as is the ideal procedure) but now also at the stage of deciding whom to recommend in the first place. It can hardly be said that this marks an improvement on the metric of judicial independence. See https://theleaflet.in/why-justice-kureshis-omission-from-collegium-list-raises-questions, viewed on 1 September 2022.

2 "Memorandum of Procedure of Appointment of Supreme Court Judges," Department of Justice, India, https://doj.gov.in/memorandum-of-procedure-of-appointment-of-supreme-court-judges/, viewed on 5 September 2022.

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# Punjab's Education Budget (1980–2022)

## A Reality Check

JASWINDER SINGH BRAR

Punjab's education budget, over the last 42 years (1980–2022), was less than the recommended norms and requirements and, hence, inadequate. It also experienced slower growth in per capita and real terms, and negligible share of spending on capital account, with critical imbalances and rigidities. The fundamental approach towards resource allocation to education sector, across the tenures of both of the political parties—the Congress and Shiromani Akali Dal—did not show any significant difference. The article closely examines the education budget over four decades and highlights some of its implications.

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The Indian Constitution, since its inception, very aptly specifies the role of the state in education. The establishment of First Education Commission (1964–66), placing education in the Concurrent List 1976, subsequent education policies (1986 and 1992 revised version), planning policies, United Progressive Alliance (UPA) Common Minimum Programme 2004, were measures for the enhanced supply of public resources to attain constitutionally mandated educational objectives (De and Tanuka 2008). The Kothari Commission (1966) recommendation of transferring public resources at least equivalent of 6% of the national income through public budgets continues to be the accepted ideal for public provisioning of budgetary resources for education build-up in the country (Tilak 2006). At the time of the launch of New Education Policy (1986), it was decided to achieve the target of this 6% ideal by the end of Eighth Five Year Plan (1992–97) (Brar 2008: 334). The said norm has been upheld by the National Education Policy 2020 as well. The policy categorically mentioned that there is no better investment towards a society's future than that of the high-quality education of our young people (MHRD 2020: 60).

All the states and union government provide public resources, in varying quantum and budgetary proportions, to education through annual budgets. Furthermore, of all types of budgetary allocations, it is the monetary provisions made for the education sector, which attracts wider media headlines. This has been so, given the huge resource requirement of the sector as such and also from the society's rising concern for the education of their children. So, throughout the last decade and more, particularly during the run-up to the recently held assembly election (2022) in Punjab, the budgetary spending on education by the Punjab government has come to stay as a matter of deep political and social contestation. It needs to be understood that resource allocations, being the net outcome of a lengthy budgetary process based upon techno-economic calculations, in practice involve critical rationing of financial resources among intensely competing government departments.

Strangely enough, hardly any day passes, when the education sector of Punjab goes without some sort of prejudiced media coverage, be it resource crunch, staff shortages, infrastructural deficiencies, administrative callousness, lop-sided ecosystem, compromised learning outcomes, etc. Education sector, worldwide, competes for and also maintains organic relationship with all other physical goods producing sectors for sharing scarce public resources. That is, it uses material resources of other sectors and in return supplies educated and trained humanpower. Therefore, education budget happens to be the key financial vertical to understand and unravel the policy priorities. The education budget, functionally speaking, involves statutorily devised concrete monetary allocations. Thereafter, they are put under the administrative control of education department for spending under appropriate budget heads. Therefore, the prevalent dispensation related to public funding of education warrant, among other things, placing the actual budgetary allocations in a comprehensive and easy-to-interpret framework. Against such backdrop, the levels and trends in allocations have been examined for a period of three decades (from 1992–93 to 2021–22) at two levels: first, with time framework consisting of the completion of five year tenures by successive governments; and second, in terms of triennium-based allocations in order to minutely capture the empirical regularities and trends.

### Allocations by Successive Governments

The overall public spending on education, like other social and economic sectors, consists of two technically classified components—revenue account and capital account. The sum total of the said two components constitutes the total amount of budgetary spending incurred by the state government on education. The two components carry specific purpose, meaning and implications in terms of utilisation of financial resources. The revenue account, also called recurring/committed expenditure, refers to that part of spending, which has to be incurred every year in order to run the system. It primarily consists of salaries, wages, administrative expenses, scholarships, repair and maintenance, consumables, stationery, etc. The capital account, also called non-recurring expenditure, consists of that expenditure which is made on construction of new buildings, libraries, laboratories, apparatus, etc, which stand for the physical infrastructure side of education sector or creation of new capacities.

The data presented in Table 1 is clear enough to dismiss all the ambiguities and misgivings related to the availability of public fund for the education sector of the state. It firmly points towards the persistent under-financing of public education. It also brings to fore the prevalence of disquieting tendencies and structural rigidities in budgetary allocations. The education budget of the state has been viewed over the long horizon of 42 financial years, that is from 1980–81 to 2021–22, for which consistent data was available. It covers two decades each of previous and current century, carrying special context and meaning in the politico-administrative set-up of the state.

Politically, the first half of the period can be classified as that of turmoil, whereas the next two decades of relative stability. The first period actually witnessed non-completion of tenures by elected governments, imposition of governor rules and militancy-related disruptions. However, the second period, in complete contrast, witnessed completion of terms by all the six democratically elected governments (three Congress and three Shiromani Akali Dal) with much stability, overall peace and normal order of things. The data establishes that, on an average basis, the state system managed to provide relatively higher proportion of budgetary resources to education sector (both in terms of overall budget and state income) during the first period (period of turmoil) as compared to the second period (that is, the period of stable governments). To exemplify, the share of education budget in overall state budgetary expenditure was 13.66% during the first period and 11.39% during the second period. Similarly, in terms of state income, the corresponding shares of education budgets were 2.96% and 2.36%.

In the overall time span (1980–2022), the respective shares were equal to 11.43% and 2.37%. Further, during the 30-year period of stable governments, only in 1997–2002, the state allocated the maximum to education sector, with 14.35% of its budget and 3.32% of its income. During the period of last four governments (that is, from 2002 to 2022), the education sector experienced considerable squeeze of resources as the share of education budget in state income hovered between 2.07% and 2.39%. The average size of education budget during the Congress government (2017–22) was equivalent to ₹11,078.63 crore as against ₹7,572.31 crore during the preceding five years of SAD government (2012–17). The comparison of three terms of Congress government (1992–97, 2002–07, and 2017–22) with that of three terms of SAD government (1997–02, 2007–12, and 2012–17) establishes that the latter (SAD) allocated, on average, higher proportion of state budget to education than the former: 12.23% and 10.69%, respectively.

In practice, education budget turned out to be the case of revenue account budget (comprising 99%) as the share of capital account remained negligible throughout. The lower component of capital account has practically reduced the education budget to that of "salary budget," a term frequently expressed for denial of resources to the sector, that it is the higher level of salaries which consume education budget, whereas the reality is otherwise. It needs to be understood that the roots of negligible spending on capital account lie in the extremely precarious budgetary position of state government. The state budget, in a nutshell, has been the story of rising deficits, mounting debts, under-resourced mobilisation and persistent resource crunch for about last two decades. That is why the proportionate share of state budget to state income has recorded wider fluctuations to the extent ranging from 24.39% to 17.66%, resulting in a haphazard process of sectoral allocation.

Budgetary allocations reflect sectoral prioritisation which become sufficiently clear when growth rates over different subperiods of a time series and amongst associated variables are compared. Results of such an exercise are reported in Table 3 (p 20), which contain 16 values of the various growth rates

**Table 1: Education Budget, State Budget and State Income of Punjab, 1980–2022**

| S N | Average of Respective Period | Education Budget of Punjab (₹ Crore) | Per Cent Share of Education Budget in State Budget | Per Cent Share of Education Budget in State Income (NSDP) |
|---|---|---|---|---|
| A | Period of turmoil (1980–92) | 301.40 | 13.66 | 2.96 |
| B | Stable governments (1992–2022) | 4,449.54 | 11.39 | 2.36 |
| 1 | 1992–97 (Congress) | 803.72 | 12.83 | 2.60 |
| 2 | 1997–02 (SAD) | 1,786.21 | 14.35 | 3.32 |
| 3 | 2002–07 (Congress) | 2,136.31 | 09.81 | 2.39 |
| 4 | 2007–12 (SAD) | 3,754.11 | 11.70 | 2.07 |
| 5 | 2012–17 (SAD) | 7,572.31 | 12.08 | 2.34 |
| 6 | 2017–22 (Congress) | 11,078.63 | 10.75 | 2.35 |
| B1 | Congress (three terms) (1, 3, 6) | 4,672.89 | 10.69 | 2.37 |
| B2 | SAD (three terms) (2, 4, 5) | 4,370.88 | 12.23 | 2.35 |
| C | Overall period (1980–2022) | 3,316.03 | 11.43 | 2.37 |

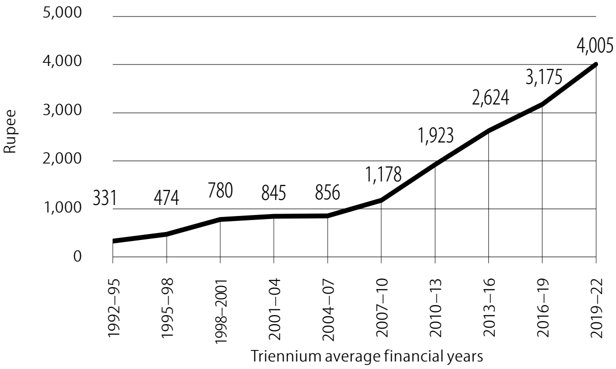
Budget here stands for expenditure on both revenue and capital account.
Sources: 1 Budget Documents of Punjab, Chandigarh (various issues).
2 Statistical Abstract of Punjab, ESO, Chandigarh (various issues).

**Table 2: Education Budget, State Budget and State Income of Punjab, 1992–2022**

| S N | Average of Respective Period | Education Budget | | Per Cent Share of State Budget in NSDP |
|---|---|---|---|---|
| | | Revenue Account (%) | Capital Account (%) | |
| 1 | 1992–97 (Congress) | 98.67 | 1.33 | 20.31 |
| 2 | 1997–2002 (SAD) | 99.57 | 0.43 | 23.16 |
| 3 | 2002–07 (Congress) | 99.76 | 0.24 | 24.39 |
| 4 | 2007–12 (SAD) | 96.77 | 3.23 | 17.66 |
| 5 | 2012–17 (SAD) | 97.60 | 2.40 | 19.39 |
| 6 | 2017–22 (Congress) | 99.03 | 0.97 | 21.87 |
| | Stable governments (1992–2022) | 98.40 | 1.60 | 20.72 |

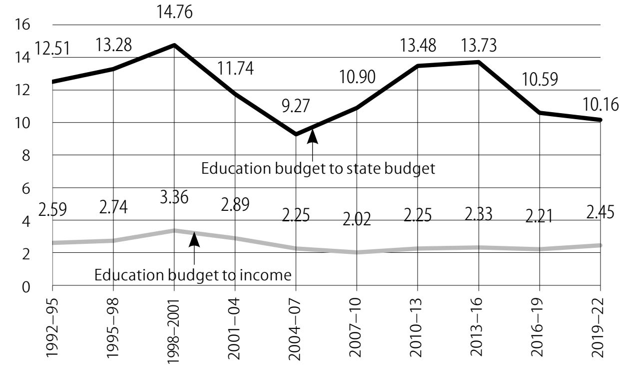
Source: Same as Table 1.

**Figure 1: Per Capita Education Expenditure in Punjab (Current Prices), 1992–93 to 2021–22**




Source: Based on data of Table 4.

**Figure 2: Share of Education Budget in State Budget and State Income of Punjab, 1992 to 2022**
(%, Triennium Average)




Source: Based on data of Table 4.

(real prices) calculated for three decadal long sub-periods (1992–93 to 2001–02; 2002–03 to 2011–12; 2012–13 to 2021–22) and overall period (1992–93 to 2021–22) and for four budgetary variables. Incidentally, every decadal sub-period consists of one Congress and one SAD government. For overall period (1992–93 to 2021–22), education budget has recorded comparatively lower growth (4.57%) than that of the state budget (5.33%) and state income (5.58%). However, among all three sub-periods, it was in the first (1992–93 to 2001–02) that the education budget has recorded the highest growth (8.68%) among all of three sub-periods, higher from state budget and state income. The education budget witnessed just 3.22% growth during the overall period with noticeable variations (between 6.84% and 2.05%).

## Triennial Pattern of Allocations

Statistical wisdom allows us to depict annual levels of a long-term economic times series of crucial variables, by taking triennial averages. This in actuality compresses the wider yearly fluctuations so as to make it a stable data progression. The process further gains utility when multiple data series are to be compared and contrasted, so as to study their mutual growths and pathways. Such an exercise of budgetary allocations is reported in Table 4, which clubbed the 30 years overall data period into 10 trienniums of education budget, state budget, and state income. To further comprehend the resource allocation behaviour, the relevant data have been analysed on per capita basis. It clearly establishes that the education budget of the state has witnessed an increase when successive triennium averages have been compared (also see Figure 1). The same happened to be the behaviour of state budget and state income. But, what is noteworthy about education budget is that during the period of six years consisting of two trienniums, namely 2001–04 and 2004–07, the per capita additions were quite on the lower side equivalent to just ₹65.14 and ₹10.74, respectively. This constituted 3.40% and 0.53% of the triennium additions of respective period state budget. If we go one step further, during the said trienniums, the additions to state budget were higher than that of the preceding years but were not transferred to education sector in reasonable proportions. Similarly, during the last two trienniums, namely. 2016–19 and 2019–22, the proportionate shares of education budget were 5.07% and 8.79%, respectively. The inter-triennium comparisons of averages establish that the proportionate share in state budget was the highest (14.76%) during 1998–2001 (TA) and lowest (9.27%) during 2004–07

**Table 3: Comparative Growth Rate of Education Budget, State Budget and State Income of Punjab**
(Per Cent, Per Annum) (Real Prices)

| S N | Period (Decadal) | Political Party Government by Order | Education Budget (Real Prices) | State Budget (Real Prices) | State Income (Real Prices) | Per Capita Education Budget (Real Prices) |
|---|---|---|---|---|---|---|
| I | 1992–93 to 2001–02 | Congress and SAD | 8.68 | 7.64 | 4.69 | 6.84 |
| II | 2002–03 to 2011–12 | Congress and SAD | 3.35 | 1.22 | 6.51 | 2.05 |
| III | 2012–13 to 2021–22 | SAD and Congress | 4.01 | 8.73 | 3.60 | 3.09 |
| | 1992–93 to 2021–22 | Three SAD and three Congress | 4.57 | 5.33 | 5.58 | 3.22 |

Average annual trend growth rates are calculated by using semi-log linear regression. Current prices values were converted into real prices by using NSDP deflator for the country available on World Bank website by adjusting base years to 1992–93, 2002–03, and 2012–13, respectively.
Source: Same as Table 1.

**Table 4: Education Budget, State Budget, State Income of Punjab, 1992 to 2022**
(Triennium Average) (Figure in Rupee) (Current Prices)

| Year (TA) 1 | Education Budget (₹) (Per Capita) 2 | Education Budget (₹) (Per Capita) Addition (+) 2.1 | State Budget (₹) (Per Capita) 3 | State Budget (₹) (Per Capita) Addition (+) 3.1 | Per Cent Share of Education Budget Additions to State Budget Additions 4=2.1/3.1 | State Income (NSDP) (₹) (Per Capita) 5 | Education Budget to State Budget (%) 6 | Education Budget to State Income (%) 7 |
|---|---|---|---|---|---|---|---|---|
| 1992–95 | 331.36 | – | 2,648.86 | – | – | 12,777.71 | 12.51 | 2.59 |
| 1995–98 | 473.66 | +142.30 | 3,565.96 | +917.10 | 15.52 | 17,283.06 | 13.28 | 2.74 |
| 1998–2001 | 780.31 | +306.65 | 5,286.36 | +1,720.40 | 17.82 | 23,199.11 | 14.76 | 3.36 |
| 2001–04 | 845.45 | +65.14 | 7,201.57 | +1,915.21 | 3.40 | 29,212.93 | 11.74 | 2.89 |
| 2004–07 | 856.19 | +10.74 | 9,234.95 | +2,033.38 | 0.53 | 37,982.01 | 09.27 | 2.25 |
| 2007–10 | 1,177.93 | +321.74 | 10,804.85 | +1,569.90 | 20.49 | 58,222.87 | 10.90 | 2.02 |
| 2010–13 | 1,922.54 | +744.61 | 14,257.67 | +3,452.82 | 21.57 | 85,406.93 | 13.48 | 2.25 |
| 2013–16 | 2,623.71 | +701.17 | 19,115.10 | +4,857.43 | 14.43 | 1,12,572.09 | 13.73 | 2.33 |
| 2016–19 | 3,175.25 | +551.54 | 29,988.27 | +10,873.17 | 5.07 | 1,43,691.79 | 10.59 | 2.21 |
| 2019–22 | 4,004.84 | +829.59 | 39,429.39 | +9,441.12 | 8.79 | 1,63,263.88 | 10.16 | 2.45 |

Source: Same as Table 1.

(TA). The respective shares were 3.36% and 2.02% during 1998–2001 (TA) and 2007–10 (TA). Overall, the education sector got the highest proportion of both state budget and state income during 1998–2001 (TA) (Figure 2, p 20).

## Conclusions

The way successive governments across the political spectrum have dealt with education funding in the state points towards a deep collusion of forces impinging upon the allocation of public resources to the education sector. The restoration of democratic process has not generated any robust "peace-cum-democratic dividend," which was naturally expected from the saving of resources not only from the law and order front but also from changes in the dynamics of governance, new economic dispensation, and recognition of human resources as the key growth drivers. The state, however, is not meeting the educational spending targets set at various levels. In fact, it seems that some fundamental distortions have made their way in the budgetary spending which relegated overall social sector to the category of "residual sector." In the process, the sector has lost resource equilibrium and general effectiveness under the cumulative impact of perpetual resource crunch.

The period during which education budget experienced some visible hike in resources, happens to be the period of two to three years following the pay scale revisions of 1996 and 2006, which took place during 1998 and 2009, respectively. The present study makes it very clear that budgetary allocations to education sector did not uphold any government (political party) specific behaviour or patterns or orientations. In fact, it is difficult to come out with any basic or even rudimentary difference in the overall approach and policy programme of the principal political parties of the state. Budgetary allocations to education sector have acquired its own dynamics with deep-rooted structural embeddedness. Here, it would be worthwhile to mention that during the earlier phase, when a network of education infrastructure was created, at all levels and types of education, like the rest of the country, the state had shouldered the largest responsibility. It is reflected through the liberal transfer of public resources for the growth and expansion of education. For example, at the time of reorganisation of the state, the share of education budget in overall state budget during 1967–68 was equal to 22.05% during 1970–71 (22.14%) and 1980–81 (25.18%) (Brar 2008).

That special phase and the state approach to educational progress, gradually starts diminishing under the cumulative pressure of new economic and educational dispensation of neo-liberal policy shift. The period witnessed the massive proliferation of private service suppliers in the field of education. The state instead of visibly withdrawing from the education sector, which entails huge sociopolitical costs, has been running educational institutions at all levels but with lower priority and interest. The once well-functioning grants-in-aid policy for about 400 schools and 150 colleges (out of about 200 total colleges) was shattered by some reactionary measures like frequent cut in overall aid, irregular release of grants, lack of recruitments in aided posts, providing basic salary during probation, keeping aided posts confined to traditional subjects, non-extension of special leave for such posts, denying pensions and other retirement benefits, and keeping the regular posts in the government colleges vacant. Consequently, out of the overall sanctioned cadre strength of 1,873, as many as 1,292 were vacant at present (Singh 2021).

Informalisation of the sector, in the form of non-regular faculty recruitments in the government colleges make them dysfunctional in many ways. The story is not different in government elementary and secondary schools, industrial training, engineering, polytechnic institutions and in professional education. The perennial resource crunch, deficiency of human and material infrastructure, unhealthy experimentation and a host of daily issues accompanied by gross administrative neglect have dented the worth of public education providers in the perception of common public. Financial affordability has emerged as the key determinant of choice of parents in the selection of educational institutions. The net result has been the massive enrollment and shift of students towards private providers. In 2020–21, the proportionate share of students enrolled in private schools (51%) was more than that of government schools (49%). Around 57% students got admission in private schools during 2019–20 and 2020–21 (Radhakrishnan 2022). Private education has come to acquire the dominant position in provisioning and delivery. This will, in all likelihood, further reduce the pressure on the state for delivery of better-quality public education, with enhanced supply of public resources. The limited budgetary allocations will continuously hold back the educational effectiveness at the level of individual stand-alone institutions. The opening up of faculty-starved government colleges and universities with extremely weak infrastructure in order to hoodwink the electorate has been clogging the education system.

Whereas the need of hour lies in the strengthening of the existing institutions with the goal to convert them into centres of excellence. The low-quality based expansionism in the name of massification remains the principal reason for the rising unemployability of degree and diploma passouts. Hence, allowing any extension of status quo will harm the educational interests of the weaker and marginalised sections of society more. That will germinate and accentuate the modern forms of inequalities which essentially ensues from unequal access to quality education. The state has to ensure through concrete actions, instead of rhetoric, the building of a strong education system.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# The Farm Panel

## Concerns on Its Nature and Mandate

SUKHPAL SINGH

This article builds an argument upholding the significance of the minimum support price, increasing the representation of farmers in the 29-member committee notified by the government, the representation of agrarian states, the livestock sector, and a time-bound functioning of the committee for a meaningful interaction and fruitful outcome.

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The one-and-half-year-long historic protest waged by the farmers under the leadership of Samyukta Kisan Morcha (SKM) forced the union government to repeal the three controversial farm laws by passing the Farm Laws Repeal Bill on 29 November 2021. Along with the repeal of the laws, the protesting farmers were also demanding the legal guarantee of procurement of crops at minimum support price (MSP) for the entire country. Eight months later, on 12 July 2022, the Ministry of Agriculture and Farmers' Welfare (MoAFW), Government of India (GoI) notified a 29-member committee with the stated objective of promoting zero-budget natural farming, bringing crop diversification, and making the MSP more effective and transparent. However, as soon as this decision was made public, the farmer organisations and Punjab government started opposing it. Let us try to unravel what is amiss this time.

The committee is not only opposed due to its structure and nature but its mandate too, which is more serious. Apart from the chairperson and the member secretary, the committee has 27 other members, including one member from NITI Aayog, two economists, nine farmers (six from the government and three representatives of SKM), two from the cooperatives/groups and one from the Commission for Agricultural Costs and Prices. Further, three members are from the Agricultural Universities/Institutes of Hyderabad, Jammu, and Jabalpur. In addition, five secretaries of agriculture-related departments of the GoI and the representatives of four state governments, namely Karnataka, Andhra Pradesh, Sikkim, and Odisha, are included in the committee. So far as the nature of this committee is concerned, it was believed that it would be constituted with adequate representation of farmers with the prime objective of legalising the MSP for farm produce. Unfortunately, the government has diluted this objective, and a large number of government representatives are included in the committee along with six pro-government farmer members. According to the farmer organisations, only three members from the farmers is gross under-representation. It is also quite clear that almost all the members included in this committee were directly in favour of the new economic policies or the three farm laws. The chairperson of the committee, Sanjay Agarwal, had been advocating the three farm laws and almost all other members have been propagating the merits of farm reforms before they were repealed by the assertion and struggle of farmers. Some members of the committee have been also opposing the prevailing MSP and procurement system. Similarly, some were in favour of disbanding agricultural produce market committee (APMC) markets along with a strong support for contract and corporate farming. All this seems to add to the narrative of still favouring the three farm laws by the government. Due to this, the farmers have refused to include their members in this committee.

The most shocking is the deliberate exclusion of the agriculturally advanced states like Punjab and Haryana from the committee. Basically, these are the green revolution regions, which have implications for the new panel due to heavy production for the market. Moreover, these were the two main states that heavily participated in the protest against the three farm laws. It needs deliberation by all concerned as to how it is just or fair to exclude those from the panel who were demanding this committee to be set up. In such a situation, leaving aside the legal guarantee of MSP, it is proposed that the prevailing "open-ended procurement system" be replaced with the "target procurement system." Similarly, overall subsidies and chemical fertiliser subsidy are sought to be reduced through direct benefit transfers (DBT) in the name of promoting natural farming. These acts would put Punjab, Haryana, and other agrarian states at a great disadvantage. One might wonder whether the central government is apprehensive of the representation of these states regarding their concerns lest they become a hurdle in initiating the so-called farm reforms. But surely if the current MSP regime is shattered, the economy of these states would be devastated. Naturally, therefore, the Punjab government has opposed this committee and demanded to reconstruct it primarily on MSP with better representation of the farmers and the Punjab state.

### Relevance of Previous Committees

The seriousness in the intent of this new committee is questionable too because all previous governments have ignored the reports of such committees and commissions. The recommendations of the national farmers' commission known as the Swaminathan report (GoI 2006) that MSP should be fixed at comprehensive cost (C2) plus 50% as the margin have not been implemented by any government even though it is being raised as a major demand by the farmers. The recommendations of the Ramesh Chand Committee report (GoI 2015a) regarding the fixation of MSP have also been ignored by the government. Likewise, many other farm reports of the states and the central committees have suffered the same fate since the governments did not pay any attention to them. On the contrary, the government neither formed any committee nor discussed with farmers while formulating and passing the three farm laws in the country. The report of the committee constituted by the Supreme Court regarding these farm laws has not yet been officially made public. These committees and their reports become meaningful only when the intention of the government is coherent.

### Significance of Guaranteed MSP

The MSP and public procurement service (PPS) are indispensable for farmers' livelihood, rural income enhancement, national food security, and agricultural growth. But unfortunately, the MSP and PPS are not effective for all the farmers and crops as only 6% of the value of agricultural produce across the country is procured at MSP. The rest face stiff price competition and receive meagre remuneration (GoI 2015b). India's agriculture is massively affected by the policies of agreement on agriculture (AoA) of the World Trade Organization (WTO), which prohibits subsidising agriculture. India, along with other countries, was directed to limit its agricultural subsidies to the de minimis (10%) of the total value of production of agriculture by 2004. But the peace clause initiated during the WTO (2013) meeting in Bali (Indonesia), set to expire in 2017, protects the developing countries from disciplinary action by the WTO members if the subsidy ceiling is breached for national food security. In this context, the GoI is reducing its farm subsidies for complying with the restrictions imposed by the WTO. As a result, the real income of Indian farmers is declining.

As a ramification of this, the agrarian distress is intensifying and is visible through the mounting farm debt, depeasantisation, and suicides (Singh et al 2022). Our economy has been passing through the phase of deep agrarian crisis and is yet to see any signs of hope or reassurance from the government. Farmers are in heavy debt. Everyday, 2,400 farmers leave farming and 28 commit suicide in our country, as inferred from the statistics alone. It is evident that farming is supported by heavy subsidies worldwide. So India's agriculture sector cannot survive without state support; MSP is a small but important step in this direction.

Agarwal, the then agriculture secretary, had said in his letter (dated 9 December 2021) to the SKM that the objective of the committee would be to determine that the MSP should be ensured to the farmers. The letter also stated that the prevailing public procurement at MSP will be kept in place. There seems to be a retreat from this as the agriculture minister, Narendra Singh Tomar, has stated, after notification of the aforementioned farm committee, that the central government has not given any assurance to the farmers regarding the formation of any committee to provide legal guarantee of MSP. In such a case, there are bleak expectations regarding the MSP from this panel.

## Some Steps for Consideration

Agriculture is the way of life and means of livelihood and employment for a large proportion of the population in India. There is currently a massive food shortage in the world. As our buffer stock has been continuously declining, more production is required for national food security. At this critical juncture, special attention needs to be given to farming and farmers. For the last five decades, the MSP of crops has been fixed and announced, but now it is high time to make a legal guarantee of the purchase of crops from the entire country. In the first round, one or two crops from each state can be procured during the rabi and kharif seasons. Later, the number of crops procured can be increased keeping in mind the storage capacity, crop diversification, and the requirements of the country. But with the central government having reduced the share of agriculture in the total budget and the amount for the purchase of crops in its budget 2022–23, the immediate future seems to hold little promise. Put simply, the procurement of crops at MSP would be both inadequate and ineffective.

While the purpose of forming the present committee should have been to provide a legal guarantee for the procurement of farm produce at MSP, we find that the emphasis of the committee is more on zero-budget natural farming and crop diversification. It is highly possible that the repealed farm laws are sought to be implemented indirectly through crop diversification and zero-budget farming. We know that natural farming production is more beneficial for agribusiness companies as the corporates make huge profits by selling this output to the rich class. But the poor suffer because of reduced productivity and production. The food crisis created by organic farming in Sri Lanka is not hidden from anyone. Today, there is an important need to develop the agricultural sector with a large public investment along with providing legal guarantees for the purchase of crops instead of benefiting the corporate sector.

In this sense, it is necessary to make this panel more effective so that the desired results can be achieved. The first and foremost issue is the participation of SKM. It is important to increase the representation of the farmers in the committee; otherwise the issue of the farmers' representation will lapse into the usual technical difficulties. Since SKM played a significant role in demanding the formation of this committee, the government needs to consider membership of the committee representing equal participation of government and farmer members. Second, there is a need for special representation from the surplus-producing states, like Punjab and Haryana, so that they are able to raise their concerns regarding peasantry in the context of natural farming, crop diversification, and MSP. Third, the committee needs representation from the sectors of livestock and horticultural crops. These products have been significantly contributing to the gross domestic product of the country but have been facing volatility in prices. Fourth, the mandate of the committee overlooks some key concerns, especially the need to focus mainly on MSP and assured procurement for the entire farm produce, which may be phase-wise, area-wise, and crop-wise. Last but not the least, the committee has no time-bound nature. There is a dire need to fix the time limit of the committee so that the desired outcome can be achieved within a specific time period.


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# *Home in the World*

## A Gentle Correction of Tagore by Amartya Sen

SUNILKUMAR KARINTHA

What are the implications when one takes the individual as the basic unit of analysis? Specifically, how does such an analysis relate to notions such as caste and race? If human beings are assumed to be equal in value by virtue of the very fact that they are humans, then it is the individual that must be taken as the unit of analysis, and not blanket concepts such as civilisations or religions. An analysis based on civilisations, for example, fails to acknowledge humans as equals and potential agents of change, by default.

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This article tries to demonstrate that the obvious correspondence between the titles of Rabindranath Tagore's novel *Home and the World* (1916) and Amartya Sen's *Home in the World: A Memoir* (2021) is not accidental. Although written in two different historical contexts, both Tagore and Sen address larger concerns of humanity such as identity, violence, justice and so on. While it is true that Sen developed his views partially by engaging with Tagore's own concerns on matters such as freedom and the importance of reasoning, the conclusions he draws are diametrically opposite to that of the poet. To demonstrate how Sen's views vary from and often contradict those of Tagore, concepts and categories that recur in their works have been used in this article. As an aside, it also briefly dwells on the differing ways in which they approach names and naming. In essence, the article is a comparative study of the views of these two towering figures on vitally important and interrelated topics such as freedom, justice, equality and peace, in the context of Sen's recently published memoir.

### Factual, Not Emotional

Sen's memoir, *Home in the World*, presents itself as a factual, rather than emotional, account of the formative experiences and incidents in his life. Perhaps to set the stage for this, those aspects of his experience that could be disputed by others, or possibly hurt them, have been for the most part omitted in the book. The one exception is his friendship—friendship which is the essence of any relationship for Sen—with his maternal grandparents. But for this, intimate moments that are expected in a memoir are for the most part absent. Even this close familial relationship is shown as "academically unfolding," which is typical of most of the close relationships he describes, revolving as they do around matters of shared interest, often scholarly in nature. At the same time, not much that is important to Sen in his professional career finds a mention here, since the memoir ends by the time the author reaches the age of 30, at the cusp of the great academic adventures that have since made him a world figure.

This stress on the "factual" over the "emotional" is also evident in some of the chapter titles, which read in the following vein: "The Rivers of Bengal," "The Urbanity of Calcutta," "Conversation and Politics," "Where Is Europe"? "What to Make of Marx"? And so on. Of course, one could always argue that these are but factual details of themes that are emotionally significant to the author. All the same, they emphasise his chief purpose, clarity of thought—a hallmark of Sen's writing.

### A Precocious Reader

The memoir showcases the trajectory of his ideas (many of which were developed to form his well-known books), tracing them to his childhood experiences and reading, especially that of Indian classics. For example, the implications of an individual encompassing multiple identities is a notion that he recalls being first struck by in his reading of the Sanskrit drama, *Mrichaghatika*. He says,

> The perception that human identity does not demand a singular confinement came to me quite powerfully from the ancient classics. (Sen 2021: 100)

It is a theme he elaborated in great detail in *Identity and Violence: The Illusion of Destiny,* a work which investigates the links between identity and the craze for planned violence in modern societies. There he had persuasively argued that recognising and embracing multiple identities can help individuals and societies navigate conflicts arising out of the predominance of a singular identity, which he sees as the root cause of organised violence today.

As recounted in the book, another important theme that preoccupied him early on is the nature of justice. It was his early reading of a Buddhist treatise called the *Sutta Nipāta* that he says eventually made him aware of the limitations of the "social-contract" view of justice (an institutional arrangement that ensures justice through reciprocity, advocated by the likes of philosophers Thomas Hobbes, Immanuel Kant, and John Rawls), as opposed to the "inequality-reducing" view of justice (advocated by the likes of Adam Smith, Mary Wollstonecraft and Karl Marx, which holds any arrangement that reduces existing inequality also ensures justice). As Sen recalls,

> (The) Buddha illustrates this line of reasoning by pointing to a mother's duty to do for an infant what it cannot do for itself. This provides a compelling reason for the mother to help the infant—it is not because she expects the infant to do something for her in return, as in social contract. (Sen 2021: 97)

Likewise, he recounts how his reading of the difficult text *Ashtadhyayi* by the grammarian Panini taught him "the basic demands of the intellectual discipline."

Reading this part of the book, we feel that most of Sen's later works were mature responses to the problems posed to him in younger days by people and circumstances around, and not just in the case of his landmark *Poverty and Famine: An Essay on Entitlement and Deprivation* (1981), which was famously inspired by his personal experience of the Bengal famine in 1944.

### Tagore and Sen

Tagore looms large in Sen's personal life, quite literally from the time of his birth. Apart from giving Sen his name, Tagore was a daily presence in the Sen family, both physically and through the impact of his cultural and social contributions. He writes,

> My dedicated pursuit of Tagore's thought thus began just after his death and has given me a life time of rewarding engagement. In particular, his overarching emphasis on freedom and reasoning made me think seriously about those issues, which became increasingly important to me as I grew older. (Sen 2021: 36)

Sen's grandfather was a close friend and ally of the poet, and for some time after Tagore's death, even helped run Visva-Bharati, the university he had founded.

It is against this backdrop, and the contemporary context of a purported "clash of civilisations" and the wave of violence arising from identity-based politics and nationalism across the globe, that Sen's choice of title for his memoir—*Home in the World*—acquires significance. Briefly put, it may be seen as a correction of Tagore's nationalistic and civilisational thought, but with a gentle hand.

This aspect of Tagore's world view is most forcefully articulated in his essays on nationalism and in the novel *Home and the World*, published in 1916. Couched as it is on ideals like individual freedom, human solidarity and peace, Tagore's approach essentially represents humanity as being divided between an almost monolithic "West" and "the East." Such a binary clearly does not gel with Sen's "criteria of description," which takes into account the many varied dimensions of individual life. Sen writes:

> Civilisational or religious partitioning of the world population yields a "solitarist" approach to human identity, which sees human beings as members of exactly one group (in this case defined by civilisation or religion, in contrast with earlier reliance on nationalities and classes). A solitarist approach can be a good way of misunderstanding nearly everyone in the world. (Sen 2007: xii)

Tagore's views on civilisation and nationalism, especially as depicted in the novel, *Home and the World*, which deals with these subjects in the context of colonialism and imperialism, would clearly qualify as "solitarist" in Sen's view. The very title itself divides life between the "home" and the "world" with an avowed preference for the home.

If one were to venture to defend the poet—after all, fiction can be completely open-ended—by saying that the idea of "home" and "the world" is blurred in the novel, the uncomfortable fact remains that Tagore retains this binary throughout his conception of the world and even extending to his practical efforts. For instance, in his naming of the academic institution he founded as Visva-Bharati ("light to the world")—a compound word that conceives of India (Bharati) as the light that the world (Viswa) requires, to realise a permanent peace all around (hence *Santiniketan*, the abode of peace, as the locality around the campus was renamed by Tagore in 1901). In Tagore's *Home and the World*, Bimala, one of the main characters, even provides a definition of the word *Bharati* ("goddess of words"). All this hints that Tagore might have romanticised India as the centre of wisdom that the world needed. Irrespective of the factual aspect of this conception—that is, whether this is how Tagore literally thought about India in relation to the world—the paternalism behind these names must have been obvious to Sen from early on. By giving his memoir the title he has, it is clear that Sen has emphatically—if politely—rejected such a division.

Here, it is important to situate Tagore's championing of the spiritual supremacy of India's ancient philosophical and cultural legacy, in the contemporary discourse of the day. The below passage from S Radhakrishnan's *Philosophy of Rabindranath Tagore* (which Tagore had read and approved of) illustrates how such ideas comparing the merits of a colonial Western culture vis-à-vis the long tradition of thought and philosophy in the Indian subcontinent were pervasive at the time. Radhakrishnan (1919) writes:

> In him (Tagore) the voice of India speaks not only to Indians but to the world at large. To the British Empire he has a special charge which he does not hide. The world in its present crisis appeals to him and he has a mission to it.

Sunderland, in the course of a contribution to *The Christian Register,* well observes:

> No land in the world has ever produced profounder thinkers of all the problems of religion and life than the India of the past. The India of today has no wiser, kinder or greater teacher than Mr Tagore, none more eager to receive from us whatever of value we have to give, or better able to impart to us the best wisdom of his own historic land.

Tagore interprets this ancient wisdom of India to the world, and as transfigured by his poetry and music, as revised and brought up to date by his brilliant mind and culture, it has the power to satisfy the hunger of the spirit (Radhakrishnan 1919: 175).

## Beyond Binaries

The chief limitation of an outlook that partitions the world into civilisations is not that it compartmentalises humanity into boxes (an obvious point), but that it prevents one from seeing the lives of individuals in their entirety. A division of this type nullifies in its description the possibilities present in those very human beings shoved into those boxes to grow beyond the identities they have been thrust upon and the fullness of life and capabilities they could potentially realise. For example, in such a view, a Western man represents an incorrigible competitor and predator, while his Eastern counterpart is cast as an embodiment of cooperation and introspection. The supposedly innate nature of a culture therefore imposes limits to the possibilities of development in individuals living by confining them to civilisational limits.

Such a manner of categorisation could lead to further complications if extended to other spheres of social life. For example, Tagore succumbs to the belief that the origin and prevalence of caste distinctions in India was an attempt by Indian society to solve the problem of racial differences. He writes:

> In spite of our great difficulty, however, India has done something. She had tried to make an adjustment of races, to acknowledge the real differences between them where these exist, and yet seek for some unity.

By racial, Tagore means people with different attributes in skin colour, ethnicity, and so on. For him, this historical process of the evolution of social amity made the question of India's political unity a hard and unfinished task even in the modern period.

Addressing an American audience in one of his speeches, he elaborated:

> This problem of race unity which we have been trying to solve for so many years has likewise to be faced by you here in America. Many people in this country ask me what is happening to the caste distinctions in India. But when this question is asked of me, it is usually done with a superior air. And I feel tempted to put the same question to our American critics with a slight modification: "What have you done with the Red Indian and the Negro?" For you have not got over your attitude of caste towards them. You have used violent methods to keep aloof from other races, but until you have solved the question, here in America, you have no right to question India. (Tagore 2021: 61)

Alongside this problematic stance, Tagore also believed that the political unity of nation states in Europe was a direct outcome of their racial unity. He writes,

> We have to remember that in Europe, where peoples had their racial unity from the beginning, and where natural resources were insufficient for the inhabitants, the civilisation has naturally taken on the character of political and commercial aggressiveness. (Tagore 2021: 60)

However, relying on such a deterministic approach is tantamount to saying that existing inequalities—whether in India or America—are tolerable. It fails to recognise the human potential to transcend colour and ethnicity by individual and collective deliberation and action. Likewise, such a view of India's political unity has created pitfalls in Tagore's political thought not only by equating caste with race, but in giving allowances to existing caste inequalities by positing that the caste system had originally resolved the matter of accommodating these differences without bloodshed. For Sen, who has championed the notions of human capability, inequality-reducing aspect of justice and individual agency throughout his work, such implications of Tagore's thought must be anathema.

Sen's evocative title, *Home in the World*, conveys to us a sense that a multitude of identities for an individual would not only limit violence in general but has, at its heart, the concept of the world itself as ones abode so that boundaries—of civilisation, religion, caste, and so on—fade away and peace (*santi*) prevails, much as Tagore himself declaims elsewhere, since in such a world everyone is "at home."

## A Wider Approach

As much as it would bewilder non-economists, it was the conception of life as encompassing both physical and mental dimensions that Sen, along with his friend and classmate Mahbub ul Haq, introduced into conventional economics through his formulation of the welfare measurement index called the Human Development Index (HDI). The HDI measures economic welfare through three important aspects that would help policymakers understand the state of both the body and mind of individuals: longevity of life, education and income. Here, longevity of life fairly represents the physical aspect of life—education, mental abilities; and income—the possibilities for one to enhance these two aspects of life through effort. As a measure for the quality of life and human welfare, the HDI is way superior to the conventional gross domestic product-(GDP) based measurement, which takes average annual income as the basis for measuring economic welfare of an individual. This ability of HDI to capture the dimensions of human life more fully is the reason that economists have today been compelled to abandon GDP-based measurements for the most part. Given this context, the idea of a world enlightened by the wisdom of a single country or civilisation—India—much like confining "home" to a particular place, must appear as grossly insufficient, if not parochial, to Sen.

Seeing the individual as a composite unit of mind and body is not merely confined to Sen's professional life either. For example, when the Nobel Prize Museum requested him to present them with two valuable possessions as souvenirs, he chose to give them his copy of *Leelavati*, the Sanskrit mathematical treatise he used in his childhood, and the bicycle which he had owned for almost 50 years in his adulthood. The intellectually enabling aspect of the mathematical text—he has mentioned elsewhere the sheer joy with which he read the book—and the physically enabling aspect of bicycle, which he said had helped him to do a lot of fieldwork and social service as a student in Santiniketan and later, come across clearly in this instance. Throughout his career, the basic approach to the development of human societies pursued by Sen is building human capabilities (what he refers to as "doings" and "beings" of individuals) rather than enabling a greater capacity for them to purchase goods or services as conceived by most economists before Sen pioneered the capability approach in the discipline.

## A Poetic Retort

It was primarily for novelty that Tagore named his close associate Kshitimohan Sen's grandchild "Amartya" or the immortal one. Sen himself has persuaded people many a time to name institutions and methods in a meaningful way so that the entirety of a phenomenon is not missed; for example, his choice of the name WIDER (World Institute for Development Economics Research) for a research institution he founded under the aegis of the United Nations.

Clearly, names and naming are as important to Sen as they were to Tagore, and by titling his memoir *Home in the World*, he is nudging the reader to recognise the impossibility of dividing the world into "home" and "the world" so long as one truly wishes to be a part of the larger world. It may be seen as an effort to correct a persistent strand of thought that considers India to be a country unlike any other, with a unique destiny to lead the world spiritually; a strand which, in however mild a form, found an exponent in Tagore. By choosing such a title for his first and only autobiographical work, Sen seems to suggest that the game of nomenclature started by Tagore, who named him "Amartya," has come full circle.

It is Sen's way of saying that any attempt to lead and thereby elevate oneself from the larger world—even in the realm of spirituality and peace—could contain seeds of competition that ultimately lead to friction and violence. From Sen's perspective, human beings need to be seen as "agents of change," a conception which prefigures the need to take human beings themselves as the unit of analysis, and not civilisation or any such blanket concept that clouds and limits the potentiality of humans everywhere.

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# On the Dynamics of Time-varying Fiscal Multipliers

Paras Sachdeva, Wasim Ahmad, N R Bhanumurthy

The dynamic transmission and the effectiveness of the Indian public expenditure shock are analysed. The article uses a time-varying parameter vector autoregressive model with stochastic volatility to compute the time-varying Indian public expenditure multiplier and employ Bayesian regression consequently to examine its determinants.

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Over the years, fiscal management has reignited the debate on the role of fiscal policy during turbulent periods. Conventionally, fiscal policy has been identified as an appropriate tool to smoothen the macroeconomic volatility during turbulent times. The post-2008 global financial crisis (GFC) started the debate on the effectiveness of fiscal policy—whether it is procyclical or countercyclical. The recent COVID-19 pandemic also received a similar attention as the pandemic forced larger fiscal support to mitigate the slowdown in economic activities as well as provide social security benefits. In the fiscal policy domain, the effectiveness of fiscal policy is measured through fiscal multipliers and has been one of the central areas of research in macroeconomics, especially when the macro–fiscal balance issue is discussed.

A large strand of literature has documented fiscal multipliers as countercyclical, that is, higher during economic downturns as compared to during the expansions. Indeed, the literature suggests that the size of fiscal multipliers is not linear but is rather non-linear (Tagkalakis 2008; Auerbach et al 2011; Auerbach et al 2012; Crichton 2015; Berge et al 2021). Such non-linear characteristics of the business cycle have added a burgeoning dimension to the fiscal multiplier literature. The non-linear setting allows for calculating and analysing the fiscal multiplier during recession and expansion periods. In this regard, Auerbach and Gorodnichenko (2012) used the non-linear set-up and applied the smooth transition vector autoregressive (STVAR) framework to compute the fiscal multipliers during different business-cycle phases of the United States (US) economy, especially to understand the impact of fiscal stimulus during the post-2008 period.

Following this, Berg (2015) and Glocker et al (2019) attempted similar non-linear models (time-varying parameter vector autoregressive [TVP-VAR] model and its extensions) to the United Kingdom (UK) and German data sets to compute time-varying fiscal multipliers, which are consecutively regressed on output gap to capture their cyclicality. Further literature suggests that along with the cyclical fluctuations, the effectiveness of fiscal policy has also been found to be conditioned on fiscal stability, monetary policy design, and credit conditions (Kirchner et al 2010; Ilzetzki et al 2013; Hory 2016; Koh 2017; Borsi 2018; McManus 2021).

Unlike the literature on advanced countries, the studies on fiscal multipliers in emerging market economies such as India is quite limited and largely part of the post-2008 literature (Yadav et al 2012; Bose and Bhanumurthy 2013; Jain et al 2013; Arora 2017; Goyal et al 2018). Further, despite the vast literature regarding fiscal multipliers being non-linear and contingent on economic factors, the studies in the Indian context are confined to their linear estimation. Given that the large number of studies in the literature have observed non-linearities in fiscal multipliers, forcing linearity on estimations could attract potential bias in their values. This article fills the research gap by exploring the dynamics involved in the transmission and effectiveness of fiscal shocks through fiscal multipliers in the case of India.

In the Indian context, the fiscal management framework has evolved gradually. It was formalised after the successful implementation of the Fiscal Responsibility and Budgetary Management (FRBM) Act in the early 2000s, which governed the policymakers in addressing the excessive deficits and debt by 2007 both at national as well as at sub-national levels. However, post 2008, policymakers following macroeconomic literature got oriented towards countercyclical fiscal policy that led to the breaching of FRBM limits in order to mitigate the adverse effects of the GFC. The expansionary fiscal policy stance during the post-GFC period led to the widening of deficits and debt in 2012. With large deficits and debt, the government shifted its focus to fiscal prudence as a major objective along with economic growth till 2019. The onslaught of the COVID-19 crisis again led to an economic slowdown and demanded countercyclical policies to revive the economy. Since the fiscal policy design has dynamically evolved, the transmission and effectiveness of fiscal policy shocks can be expected to be non-linear and time-varying. Towards this direction, this article examines the time variation in transmission and effectiveness of fiscal policy shocks.

The studies of Kirchner et al (2010), Berg (2015) and Glocker (2019) have utilised the framework of the TVP-VAR model with stochastic volatility to capture the time variation in transmission and effectiveness of total government expenditure shocks. In this article, we also specify a similar econometric set-up in two steps. The first step computes the time varying total expenditure multiplier in the TVP-VAR framework. The econometric specification of the TVP-VAR model with stochastic volatility is appropriate for analysing the dynamic transmission of public expenditure shocks as it allows the time variation in reduced VAR coefficients and variance-covariance matrix. The time-varying variance helps in capturing the changing size of public expenditure shocks. The time-varying coefficients and covariance terms explain the changing relation between public expenditure and other economic variables. The Bayesian regression is employed in the second step to examine the impact of cyclical fluctuations, monetary policy stance, fiscal stability, and credit levels in the economy on total expenditure multipliers.

## Data and Methodology

The variable gross domestic product (GDP) at constant prices, wholesale price index (WPI), call-money rate, government debt, credit-GDP, and government total expenditure are used in an econometric estimation. The quarterly data set of these variables between 1997 Q1–2019 Q4 is taken from the Reserve Bank of India's (RBI) *Handbook of Statistics on Indian Economy* and Comptroller and Auditor General (CAG) of India reports. The total government expenditure is deflated using WPI. GDP and government expenditures are deseasonalised with the census method and are then taken in the logarithmic forms.

The TVP-VAR model with stochastic volatility employed for computing the government expenditure multiplier advances the structural VAR model by allowing time variation in coefficients and variance-covariance matrix. The econometric specification of the model, as described in Primiceri (2005), is as follows

$$Y_t = \alpha_{0,t} + \alpha_{1,t} Y_{t-1} + \alpha_{2,t} Y_{t-2} + \dots \dots + \alpha_{p,t} Y_{t-p} + \varepsilon_t \qquad \dots(1)$$
$$\varepsilon_t \sim N(0, \Omega_t)$$

Here, $Y_t$ is the vector of endogenous variables (total government expenditure, GDP, inflation, call-money rate). The coefficient and variance-covariance parameters follow a random walk without drift. Bayesian methods with Gibbs sampling are used to estimate the model parameters. The model is estimated with lag length based on information criteria from the linear VAR model. The model is structurally identified with Blanchard and Perotti (2002) identification scheme.

The time-varying impulse responses computed time-varying coefficient and covariance parameters in the TVP-VAR framework are transformed to derive total expenditure multiplier using $\left(\frac{\sum_{i=1}^{n} Y_{ht}}{\sum_{i=1}^{n} G_{ht}}\right) \times \left(\frac{Y}{G}\right)_t$. The terms $Y_{ht}$ and $G_{ht}$ in the formula stands for the GDP and government spending responses, respectively, to an impulse in the latter during period $t$ at $h$ quarter. $\left(\frac{Y}{G}\right)_t$ represents the average GDP and government expenditure ratio between 1997 Q2 and $t$. In the subsequent step, government expenditure multipliers are linearly regressed on the output gap,[1] debt–GDP ratio, bank rate, and money supply. The regression parameters are estimated using Bayesian methods and Gibbs sampling as well.

## Results

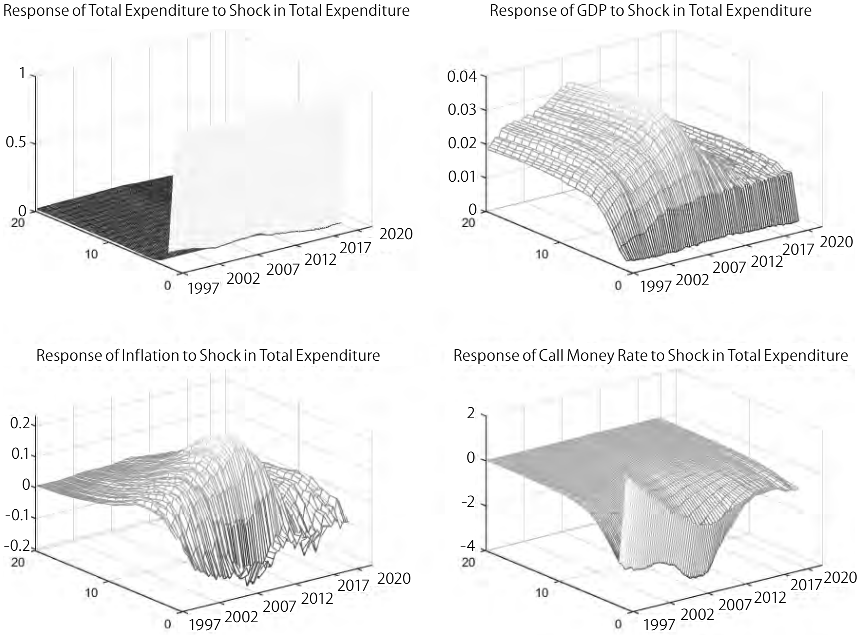
The time-varying impulse responses computed in the TVP-VAR framework are reported in Figure 1 (p 32). They enable us to examine the time variation in the transmission of total expenditure shocks to other economic variables. The government expenditure responds positively to its shock until the third quarter and converges to zero. The impulse in government total expenditure boosts aggregate demand. The net effect of impulse in government expenditure on inflation depends on the magnitude of the opposing forces of demand and supply. The inflation responds negatively to the total expenditure shock in the initial quarters. However, the negative response turns positive post-fifth quarter and settles to zero after the 10th quarter. The inverted U shape is observed in response to inflation and the government expenditure shock. It peaks around 2012 and falls after that.

Given the negative response of inflation, the interest rate accommodates the total expenditure shock. However, the negative response of interest rate to total expenditure shock has significantly fallen post GFC. GDP responds positively to the total expenditure shock. In line with the interest rate response, the GDP positive response has also slackened post GFC.

The time-varying positive response of GDP to the total expenditure shock has been transformed into a time-varying total expenditure multiplier, as reported in Figure 2 (p 32). The total expenditure cumulative multiplier computed in the 20th quarter rises from 1.7 in 1997 and peaks at 2.5 during GFC. However, after the peak, the multiplier value declined. It falls to around 1.8 in 2017 and resurges to 2.1 in the last quarter of 2019.

This time variation in the government expenditure multiplier is explained by cyclical fluctuations, fiscal stability, monetary policy stance, and economic credit levels. These variables are proxied by output-gap, debt–GDP ratio, T-bill rate, and credit–GDP ratio. The regression results concerning these factors' impact on public expenditure multipliers has been reported in Table 1 (p 32). We find higher values of debt–GDP ratio and T-bill rate downsizing the government expenditure multipliers. At the same time, higher values of the credit–GDP ratio have been found to amplify the effectiveness of government expenditure stimulus in the

**Figure 1: Time-varying Responses of Government Expenditure Shocks**




Source: Authors' own calculation.

**Figure 2: Time-varying Public Expenditure Multiplier Values**


Source: Authors' own calculation.

economy. In addition to this, we find the government expenditure multiplier to be countercyclical. The countercyclicality is reflected in the negative impact of the output gap on the government expenditure multiplier. The macroeconomic explanation behind these results is as follows (Table 1).

During cyclical downturns, resources are underutilised; therefore, government expenditure shock in this phase boosts aggregate demand and enhances economic activity. On the contrary, in expansion regimes, resources are overutilised; therefore, fiscal stimulus via expenditure shock crowds out private investment and has lower accelerating effects on the GDP.

The fiscal instability in the economy leads to ineffective fiscal management. It also evokes fiscal sustainability concerns that limit stimulus packages' external

**Table 1: Bayesian Regression with Dependent Variable as Public Expenditure Multipliers at 20th Quarter**

| Coefficient | Value |
|---|---|
| Intercept | 6.1146*** (1.000) |
| Output gap | -0.3609** (0.050) |
| T-bill rate | -0.0655*** (0.007) |
| Debt–GDP ratio | -0.9849*** (0.008) |
| Credit–GDP ratio | 0.0050** (0.950) |
| Trend | -0.0124*** (0.001) |

The value in brackets shows the probability of regression coefficients being positive. If the probability value is greater than 0.9, 0.95 and 0.99, then the regression coefficient is positive and significant at 10%, 5% and 1% levels. If the probability value is less than 0.1, 0.05 and 0.01, then the regression coefficient is negative and significant at 10%, 5% and 1% levels. *, **, *** indicates significance at 90%, 95% and 99% levels.
Source: Authors' own calculation.

financing possibilities. Fiscal boosts constrained by domestic finance crowd out private investment and downsize the multiplier values. Moreover, sustainability concerns wither the demand for government bonds, which lowers their prices and surges interest on them. The rise in the interest rate on government bonds increases the overall borrowing cost in the economy, consequently crowding out private investment and dampening the effects of fiscal boosts on the economy.

The focus of the central bank towards inflation management and economic growth significantly influences the effectiveness of fiscal stimulus packages in the economy. The positive public expenditure shock boosts the aggregate demand and pushes up inflation in the economy. With the hawkish stance, the central bank targets the surge in inflation by raising the policy rates and curtailing liquidity, which successively crowds out private investment and dampens the public expenditure multipliers. Whereas with the dovish stance, the central bank stays neutral on inflation and cuts the policy rate with fiscal stimulus to further intensify demand and growth in the economy.

The higher values of the credit–GDP ratio suggest increased borrowing of credit-constrained consumers, which could possibly crowd in private investment and consumption, succeeding fiscal stimulus and resulting in higher fiscal multiplier values.

One limitation of this empirical exercise is that it does not differentiate between government's consumption and capital expenditure. As suggested by the FRBM Act as well as by other studies (for instance, Bose and Bhanumurthy [2013], Jain and Kumar [2013]), the size of the multipliers could differ depending on the quality of expenditure. Some studies also suggest that the size of multipliers differ from national governments to various subnational governments. But the novelty of this article is to suggest that the fiscal multipliers are asymmetric depending on the phase of the business cycle.

## Concluding Remarks

We have found the transmission of government expenditure shocks and their multipliers to be significantly time-varying. The debt–GDP ratio and T-bill rate negatively impact the government expenditure multiplier values. On the contrary, higher credit in the economy uplift the multiplier values. Furthermore, the government expenditure multiplier has been found to be countercyclical (that is, higher in recession than expansion).

### NOTE

1 The output gap is calculated by de-trending the GDP using HP filter.

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# Fishing Commons and Survival in Capitalist Mumbai

MANISHA RAO

BOOK REVIEWS

**Set Adrift: Capitalist Transformations and Community Politics along Mumbai's Shore** by Gayatri Nair, *New Delhi: Oxford University Press, 2021; pp 202, ₹1,295 (hardbound).*

*Set Adrift: Capitalist Transformations and Community Politics along Mumbai's Shore* by Gayatri Nair, an outcome of her PhD research work among the Koli fishing community of Mumbai, is a study of their struggles for a livelihood in an ever-changing world transformed by capital. The book gives a detailed analysis of the transformations within the community over the years with changes brought in by education and the changing nature of work, identity politics and mobilisations among the Kolis for a recognition of their work and their place in Mumbai's development. As the author underlines, the book foregrounds the local-level transformations within and between the Koli community that lives off fishing and hence the sea commons and its relations with the city as it is transformed by global capitalist changes.

The book consists of six chapters (excluding the introduction and conclusion) that set out the main themes of the book. The author starts off by outlining the theoretical premise of the book with a detailed analysis of urban transformation of Mumbai with the accumulation of capital. Further, the book traces the transformation of the city from a quiet fishing village to a bustling port city under colonial rule, to a site of manufacturing with the textile mills and presently transformed to a financial hub. The author uses David Harvey's concept of accumulation by dispossession to understand the predicament of the Koli fisherfolk in the face of this transformation of their city. The interlinkages between capitalism, migration and urbanisation and the resulting nativist politics in Mumbai are also highlighted.

## Whose Commons?

The author then adopts the commons perspective in order to analyse the connections between space, capitalism and its impact on the fishing and hence sea commons. She highlights the different regimes of use, access and ownership of the fishing commons that include spaces such as the sea, coastal lands as well as the way in which markets are accessed. The politics of space is understood through the commons. The transformation of fisheries with changing technology and influx of large capital attracted new participants. A livelihood that was earlier restricted to the traditional fishing community is now transformed by mechanisation and new regulations that disrupt the customary practices. The state begins to play an authoritative role in the fishing commons with the introduction of capital. The certainity of profits led to the influx of migrants into the trade but on unequal terms that emphasised the inequalities of class and gender. The issue of ecological sustainability arose with overfishing and was taken up by the fishing community as a ground for mobilisations. The seas were viewed as a commons that were increasingly being enclosed by a few. This leads to the question of who can participate in this moral economy.

The author then skilfully interweaves the history of Koli identity with that of the locale of Mumbai by looking at the close interaction between life and livelihood. The transformation of fisheries with the introduction of capital and mechanisation and state policies has affected fishing itself. The influx of migrants has led to changes in labour practices and social relations in the fisheries. While the men of the community converted themselves into new capitalists, or opted out by educating themselves and looking for jobs in the city, it is the women's work in the fisheries that was affected and unaddressed by the state. This led to women being at the forefront of the protests against migrant entry and the alliance between Koli women and the Shiv Sena in Mumbai.

This leads to the question of women's work participation in the fisheries as well as in their protests against its transformation and their sidelining, which is reinforced by state-sponsored training that is imparted to the fishing community members. With the capitalist transformation of fisheries and the entry of new technology oriented to the export market, women's work has been affected. The loss of markets and the declining fish catch adversely affects women working on a small scale. This is compounded by the entry of migrant labour into the fish-processing work dominated by women. All these problems led to the emergence of women's collective organisations. The lack of education among Koli women of the earlier generation is one of the important reasons for their lack of occupational mobility (though this trend seems to be changing as more Koli women are opting in for education). Like other worker movements, the author argues that due to the lack of mobility and entry of migrant labour that is perceived as threatening to their livelihood and community identity, the fisherwomen have responded in xenophobic terms.

In the agitation against migrant workers to safeguard their traditional livelihoods and establish their control over the narrow spaces of the market, the Koli fisherwomen adopted a nativist ideology in alliance with the Shiv Sena and Maharashtra Navnirman Sena. The author uses Edna Bonacich's split labour market argument as the reason for the antagonism between the migrant fish workers and the Koli fisherwomen. The violent agitations eventually crumbled with cases filed against Koli women, though hostility towards the migrants continues. The changing market development policies of the state also made them realise that their earlier control of the market spaces would require recognition from the state. It is then that organisations such as the Maharashtra Machimar Masevikreta Sangh (Maharashtra Fish Vendors Organisation) were formed to deal with the development projects and licences as well as cooperatives to claim compensations given by the state. However, most of the cooperatives were dominated by men, and women's participation in it was minimal. The women's trade union and cooperatives were organised along gender and ethnicity, leaving out the migrant fish worker as the "other" in the demand for an act to protect the rights of traditional fish workers.

## Competing Dispossessions

Using Harvey's concept of accumulation by dispossession, the author analyses the competing dispossessions experienced by the fishers at the macro level as well as in their everyday lives. Examining the trajectory of the fisher movement as a new social movement, the author argues that the demand for granting exclusive fishing rights to the traditional Koli fishing community is built on the political reconfiguration of the 1990s and the alliance between the small- and large-scale fishers. The fishers come together on the basis of the idea of ecological sustainability and approached the state for protection against large capital and the migrant. The author examines the changing nature of the state since the liberalisation and points to the dual role played by the state in terms of abetment of capital and, at the same time, providing for the needs of the displaced. The identity-based movements are a result of the globalised world that emphasised the politics of locality. At the same time, the rise of ecological consciousness among the fisher community has blunted the class differences. In this regard, the knowledge and skills of the traditional fishing community were considered best suited to access and maintain the commons and required the demand for exclusive rights for the fisher community. Hence, the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA), 2006 that granted rights to the traditional resource-dependent community was invoked. However, the binary model adopted in the FRA between a traditional resource-dependent community on the one hand and the state and market on the other was similarly reflected in the draft of the Traditional Coastal and Marine Fisherfolk (Protection of Rights) Act, 2009. It assumed that the traditional community would continue customary practices and not adopt new technologies. Affirming the identities and practices of the community, the movement appealed to the state; a state that was simultaneously encouraging capitalist accumulation while attempting to rehabilitate the dispossessed fishing community. The author argues that both the national and the regional groups, while focusing on gender inequalities in the community, have not adequately addressed the class question, and hence are unable to address the needs of all the dispossessed.

The author has attempted to address the interrelated questions of the right over the city, the fishing commons and the Koli fishing community in the context of capitalist transformation and the rise of exclusivist politics. A way forward is to rethink and build solidarities with other marginal sections of the society.

The author has used interviews collected from fieldwork among the Koli fisher community to support her arguments. Interviews with migrant workers in the fishing business are missing and is acknowledged right at the beginning as part of the problems with fieldwork. The author has done a detailed analysis of the fishing community politics along Mumbai's coastline and tried to look at it through a class and gender lens. She has also tried to look at the way the Koli community has organised itself to challenge the threats posed by the capitalist transformation of the fisheries as well as the various projects in and around the city that affect the community. However, the Koli fishers of Mumbai (unlike the agriculturists) were in a better position to focus public attention on their plight due to capitalist transformation with the help of the media. In putting forward the idea of fishing as a commons, the author has tried to develop a novel way of analysing fishing. However, this is an aspect that is not very well highlighted in the book in terms of the commoning practices of the community.

On the whole, the book weaves well the story of the travails of the Koli fishing community in Mumbai. It analyses the way in which fishing, practised as a caste-based livelihood of the Kolis, is altered by investors from outside the community, the influx of migrants into the trade, and the accompanying ecological degradation. The resulting loss of revenue, jobs, fish catch led to strong agitations by the Koli community demanding recognition of their rights to the fishing commons as traditional artisanal fishers. This was taken up by the nativist politics of the region. Interviews carried out among the Koli community are peppered throughout the book to portray the precarious lives they lead in a city whose environment is transformed by capital.

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# The Liberation of Bangladesh
## Identifying the Eye of the Storm

DEBJANI SENGUPTA

**The Vortex: The True Story of History's Deadliest Storm and the Liberation of Bangladesh** by Scott Carney and Jason Miklian, *India: HarperCollins Publishers, 2022; pp xxii + 498, ₹599.*

In 2022, Bangladesh celebrates 50 years of its birth as a nation, once again drawing the world's attention to the tumultuous story of its genesis. This journey began in 1947, with the birth of two other nations: Pakistan and India. Even before 1947, when the Indian subcontinent was partitioned by the departing British, the dreams of a free Pakistan had been a nascent but significant aspect of Indian nationalism. From the 1940s onwards, Muslim intellectuals had pondered on the lineaments of "Pakistan" that would encompass the rising social and political aspirations of a new middle class. This aspiration was a way to define modernity in a society perceived to be suppressed by Hindu intellectual traditions and hesitant to embrace Western education.

The contours of Muslim identity formation that enunciated a Pakistan-centric political, social, and religious autonomy were expressed in a literary and linguistic renaissance through journals and newspapers in both Urdu and Bangla. However, the partition created a geographically anomalous Pakistan: the two halves, the East and the West, were separated by thousand miles of Indian territory.

There were other ambiguities too. Although both followed Islam, Eastern Bengal, before it became East Pakistan, had close cultural ties with West Bengal through language, literature, and economic productions. The region had looked at Kolkata rather than at Lahore or Karachi for education, employment, and cultural affinities, bonding through the shared traditions of the Bengali language, food, and attire. The conception of Pakistan was the Muslim elite's attempt to create a subcontinental Muslim culture and community shaped mainly through a repositioning of Urdu as a language that would bind the masses. However, inadvertently, this alienated the Bengali Muslims in the Eastern part who saw themselves as inheritors of an Islam that had been regionally refashioned through centuries-old cultural practices of a Bengali-speaking people with strong ties to the soil and the myriad mystic traditions of worship and faith.

In 1949, Hussain Suhrawardy, Ataur Rahman, Maulana Bhashani, Shamsul Haq, and Sheikh Mujibur Rahman founded a new political party, the Awami Muslim League that would represent the aspirations of East Pakistan's Bengali-speaking people, perceived to be different from an Urdu-speaking West Pakistan. In 1970, Pakistan held its first general elections in which the Awami League won 167 of the 169 National Assembly seats. General Yahya Khan suspended the convening of the National Assembly. Mujibur Rahman was arrested in Dhaka between 24 March and 25 March 1971 and taken to Rawalpindi, while the Pakistani Army began Operation Searchlight to eliminate opposition to its rule.

A large number of Dhaka University students and teachers as well as the people on the streets were massacred ruthlessly. The *Muktijuddho,* as the war of liberation is called in Bangladesh, was unprecedented in the violence that the Pakistani Army unleashed upon the populace. Up against the might of the Pakistani state, initially the Bangla guerrilla fighters had to struggle to gain military ground. Hundreds of women were abducted and raped (who were later given an officially sanctioned term in independent Bangladesh as *birangana* or the courageous one) and villages and towns were pillaged and ransacked. Soon India became involved in the war under various geopolitical considerations. Therefore, the forms and substance of the liberation war were already in place before cyclone Bhola made its landfall.

### The Liberation and the Cyclone

The connection between the Liberation of Bangladesh and the cyclone Bhola that hit East Pakistan in November 1970 resulting in unprecedented devastation is the central preoccupation of *The Vortex: The True Story of History's Deadliest Storm and the Liberation of Bangladesh.* It is a correlation that has been made in the past, looking at the 1971 war as a construct of geopolitical and environmental causes (Raza 2020). The birth of Bangladesh, vulnerable to natural calamities and with an extraordinary history of ethnolinguistic nationalism, had undermined the sectarian and communal ideologies of the partition of 1947. It is therefore a history that needs to be told, again and again. This book does that in a way that would appeal to a wide variety of audience, through the dramatic presentation of some of its most intriguing personalities. It assembles this history, piece by piece, through oral interviews, archival materials, and other literary sources through dramatised presentations of a few characters.

The authors posit that their book is an example of "narrative nonfiction" (p xiii) that traces a connection between the fallout of the cyclone Bhola and the gathering resentment against the West Pakistani rule among the Bengali Muslims of East Pakistan: the insufficient warning and inadequate relief efforts on the part of the East Pakistani government, the mounting number of dead and the widespread homelessness that exacerbated the worsening political ties between the two halves of West and East Pakistan. This assumption is, to a certain extent, one dimensional because it underplays other geopolitical and cultural causes that have influenced the events of 1971. Each of the three sections of the book, titled "The Vortex," "Operation Searchlight," and "The Reckoning" are put together through narrations of real life characters who experienced those turbulent months of 1970–71, dramatising certain historical moments like the landfall of the cyclone or the March massacre in Dhaka:

> while all details herein are true and research based, the act of putting disparate pieces together in a way that puts the reader in the historical moment required us to make judgements about motivations and states of mind that are not preserved in the historical record. (pp xiii–xiv)

As such, the reader is asked to take many giant leaps of imaginations into the psychological perspectives of people whose thoughts and actions may not have been recorded in the archives. Historical characters like Nixon, Bhutto, and Mujibur Rahman as well as some Bangladeshi figures are presented with a certain dramatic flair. However, the total absence of any noteworthy Bengali literary/cultural figure or of biranganas who witnessed and suffered these events is inexplicable. The book at times reads like a racy novel rather than as a non-fictional account of well-documented events. The second narrative impulse of the book is climatic.

> A country that contributed almost nothing to the climate crisis will have to bear its most significant fallout, boxed in on all sides by neighbours who would rather see it drown. Make no mistake: This is a book about climate change.

The authors' contention that gigantic cyclones like Bhola may seem to be once in a lifetime phenomenon, but

> climate change is accelerating their frequency into annual events. They crash into fragile political systems just as surely as they do coastlines. (p 405)

The issues at stake here are then both climatic conditions that beget giant cyclones and their repercussions in societies "at high risk of armed conflicts." Unfortunately, this study neither brings the climatic degradation nor the liberation war into a meaningful conversation with each other. The geographical and historical genealogies of the storm and the war, seen through reimagined presentation of characters, at best remain fragmentary at the level of individual narrations.

## History and Ecology

The stumbling blocks of reading this book are few but worth noting. The narrativisations of the thoughts and motivations of characters, from a young footballer Hafizuddin Ahmed to the American educational activist in Dhaka, Candy Rohde, interspersed with historical figures like Zulfikar Ali Bhutto and Yahya Khan, fail to capture the complexities and motivations of the liberation war and remain disparate. In section "Operation Searchlight," the horrors of the massacre by the Pakistani Army are factually correct but because the entire episode is narrated through the consciousness of different characters it has the appeal of immediacy but lacks historical coherence. The narrations remain ultimately inchoate. If these dramatic reconstructions had been interspersed along with archival or textual citations or documentary reportages (some of it is in the Notes), it would have given the chapters more depth by extending or modulating the tempo and the content. In the third section "The Reckoning," we read:

> Eventually the drumbeat of headlines out of India [about the war] became too horrific for even American politicians to ignore. Fresh off his legislative defeat, Edward Kennedy took a fact-finding trip to Calcutta. He trudged through the monsoon rains and watched children die at his feet. He called it a genocide. (p 315)

Again, this account fails to give archival details in the main body of the text. A photograph or a newspaper reportage, embedded within the narration, would have added perspective to this event, especially the growing concern worldwide about the extent of human suffering in the war. Last but not the least, the rich literary and oral traditions of the Bengali language that have had a widespread appeal among Bangladesh's people sometimes leave out other minorities who do not share either the religion or the language with the majority. This results in fragile structures of contesting communities within the modern nation state of Bangladesh that are given no representational space in this book. That is a major drawback in the contours of the historical terrain this book seeks to map.

The idea that global warming and cyclones are deadly for societies at high risk of conflicts also needs to be qualified. Climatic depredations render all societies at risk, whether they belong to the global South or elsewhere. The implicit idea that natural disasters and war are the pattern to a continuing political and climatic instability seen in poorer nations, has somehow come to occupy centre stage in our contemporary understanding of environmental disasters:

> Climate conflict connections contain so many meteorological and political variables that casual chains are never clear enough to make casual predictions. The question of, for example, whether Bangladesh would have been independent country today if Great Bhola Cyclone hadn't hit would certainly help us order the world and focus on fixing what harms us most. (p 409)

The very perception that the independence of Bangladesh is the outcome not of her people's linguistic and national aspirations for freedom but of a chance occurrence of a cyclone, denies agency to the citizens of a country that the global North has usually considered impoverished and in need of international aid. To be fair, the authors immediately reiterate that the Bhola cyclone

> didn't directly liberate Bangladesh, it only flicked the first domino over. It's the placement of the other dominoes—and the reasons why they are there—that determine if a storm leads to war. (p 411)

The connection between a storm and a war depends on many other factors, rooted in local conditions and contexts. The intersection of national history and the collective trauma of natural disasters is not the prerogative of a "poor" nation (although the poor are affected in disproportionately higher numbers) and can be seen around the world today. Fifty years from Bhola's landfall, Bangladesh's real achievements in literacy, gender equality and overall gross domestic product growth are an exemplar for other nations in the region. Given the vagaries of climate changes, including other deadly cyclones (Aila in 2009 and Amphan in 2020 to name a few) that have battered this nation, that in itself is a remarkable achievement.

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# Inadequate Analysis of Social Mobility

AVINASH KUMAR

**Urban Headway and Upward Mobility in India**
by Arup Mitra, *UK: Cambridge University Press, 2020; pp 185, ₹750 (hardcover).*

The World Economic Forum's 2020 Global Social Mobility Index, which measures intergenerational social mobility in 82 countries, ranked India 76th in its Global Social Mobility report. Studying social mobility has been a difficult task for social scientists, let alone economists, who generally define it as the ability (of individuals/groups) to move upward or downward in a status based on wealth, occupation, education, or some other social variables over their lifetime or even across generations.

Urbanisation in India, which has resulted in large-scale rural-to-urban migration, owing mostly to the agricultural crisis and large-scale demand for low-wage casual workers, has been viewed as an essential link in the process of gaining social mobility. However, there are differing views on the urbanisation–social mobility link. While some see urbanisation as a guaranteed social elevator, some see as repositories of unfree labour for capitalist enterprises.

The volume under review, *Urban Headway and Upward Mobility in India*, not so much through its analytic ability but by virtue of its title, seems to be advancing the former. The title appears to have placed an unrealistic optimism on urbanisation making headway in a unidirectional path towards upward mobility, that is, the movement of individuals/groups towards a higher income bracket and social status.

The analysis based on the data provided in the book, as will be discussed below, however, does not support this optimism, and indicates towards the rising vulnerability and income inequality due to the lack of opportunities for upward mobility. It is true that the hope for better job prospects among those facing agrarian crisis drives migration into cities, but placing oneself in urban centres does not necessarily guarantee access to the job or labour market for all equally.

The book with its seven chapters can be neatly divided into two parts. The first four chapters of the book are devoted to understanding urbanisation and its changing contours. The next three chapters are dedicated to showcasing upward mobility. Arup Mitra in the very beginning has said that "whether upward mobility can actually take place and urbanisation can be termed as inclusive" is one of the key questions (p 3).

## Non-inclusive Urbanisation

In its attempt to assess the quality of cities and towns in Chapter 1, Mitra asserts that urbanisation does not appear to be inclusive as the percentage of lower castes shows a declining tendency with city size. He also suggests that the positive association between deprivation index and the incidence of lower castes indicated their vulnerability in comparison to the higher castes and was a matter of policy concern. The author thereafter goes on to examine the new patterns and new strategies in Indian urbanisation in Chapter 2. And it is here that the reader is left wondering what the urban headway is when even the smart city mission—the union government's pioneering urban road map—has failed to achieve the "objective of inclusive urbanisation." With an understanding that the agglomeration economies facilitate inequality among the urban residents, both due to concentration of economic activities and the subsequent uneven distribution of investment, Mitra is critical of the inclusion of several urban agglomerations, instead of the newly emerging census towns, in the smart city project. He concludes that the "success of the project may lead to overall growth" but it fails to "unravel a strong employment tendency" (p 61) and "whether it would allow migrants from low-income households to enter such spaces and access new livelihood opportunities, remains a major concern" (p 63). Given that "many of the public utilities will be priced ... it is less likely that the objective of inclusiveness will be served" (p 62). While the author leaves the readers clueless as to why he has not included any variable to examine social mobility in the deprivation index, the chapter reaches at the valuable conclusion on non-inclusiveness of urbanisation project through "workforce participation rate taken as a broad indicator of dynamism in the job market." He draws three major conclusions: (i) weaker section not being able to derive the benefits of agglomeration effects; (ii) lower castes are vulnerable as compared to other castes; and (iii) large cities do not offer more labour market opportunities to women (p 32).

These arguments are further substantiated by the author in the next chapter where he interrogates the nexus between urban growth, informal sector and poverty. He contends that while "urbanisation and migration show beneficial effects in terms of reduction in both rural and urban poverty ... this process is not strongly evident" because "inequality rises in the process of growth and urbanisation." The limited demand of labour is clearly unable to absorb the rural surplus productively and hence the rural poor are unable to meet the cost associated with migration. The positive impacts of growth on poverty are often offset by the negative consequences of growing inequality. As a result, the net drop in poverty remains small. However, using factor analysis, the chapter concludes that there is no relationship between informal sector employment and urbanisation, although the former show a positive correlation with migration. One wonders why does the author accept this mathematical reductionism of a sociopolitical process when his own findings suggest that the percentage of self-employment increases and household-based activities represented by household manufacturing share in the workforce decreases with higher level of urbanisation. One could also argue that if the author's findings suggest that migration from rural to urban is positively associated both with urbanisation and informal sector employment, then urbanisation and informal sector employment can be positively associated. Several studies have argued that even when informality creates a vast barrier to social mobility, it is within the informal sector that urbanisation generates agglomeration benefits, perhaps more so than for the formal sector.

What is more surprising, however, is that the author has very conveniently ignored informal employment which as defined by the 17th International Conference of Labour Statisticians (ICLS) held in 2003 and in the report submitted by the National Commission for Enterprises in the Unorganised Sector in 2006, comprises of the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households. In other words, the author's excessive dependence on the mathematical reductionism completely ignores the growing informalisation of employment in the formal sector. It is true that the share of formal sector in total employment has increased from 11.62% in 2004–05 to 16.31% in 2011–12 and further to 18.20% in 2017–18, but that increase is not translated into an increase in the share of formal employment, that is, employment with both job security and social security. The share of formal employment has declined from 20.86% in 2004–05 to 14.1% in 2017–18 and precarious employment with neither job security nor any social security has increased up to 70% of the total nonfarm employment.

With the rise of Uber, Amazon, and other platforms that have escalated the externalisation of economic activities as part of the logistics of global production in the last few decades, it is rather naïve to accept the mathematical deduction uncritically or to choose not to explore it further in a book which is claiming to examine the relationship between upward mobility and urbanisation. According to a 2018 International Labour Organization (ILO) report ("Women and Men in the Informal Economy: A Statistical Picture"), more than 60% of all employments are informal in nature globally, and India and sub-Saharan Africa tower over all other regions. The link between urbanisation and informalisation is certainly more complex than what has been presented in the book. Perhaps a reminder here that social science in India has well-settled the question that mere numbers and models are not sufficient to explain that any social phenomenon might be of some help. After all, statistical analyses also depend heavily on "well-selected" words for interpretation and, hence, there is no harm in learning from a large number of path-breaking qualitative studies on urbanisation and social mobility, which the author has ignored as the "other." A simple review of studies would show that studies that have used a variety of methods in studying urbanisation and social mobility rather than restricting merely to mathematical reductionism in the recent past have produced a much better and reasoned arguments.

## Skewed Understanding of Discrimination

Chapter 5 attempts to delve into the nuances of impediments of disadvantaged sections in experiencing the beneficial aspects of an urban life. Strange enough, the definition of disadvantaged section is only restricted to those suffering from housing poverty (p 91). Using an econometric analysis on the data on slum households from four cities conducted way back in 2006–07, Mitra suggests that although with city size upward mobility varies positively, education does not have any positive effect on upward mobility. For examining mobility over time, the chapter confines itself to the survey of households conducted only in Delhi in 2007–08 and 2012 and confirms to the gender and caste bias in experiencing upward mobility in cities. However, what appears intriguing is that Chapter 6, where the author attempts to examine the caste factor within the universe of low-income households, shows a clear departure in the method for drawing its major conclusion that "poverty issues cannot be resolved simply in terms of caste-based reservation policy; rather such interventions may inflict violence and caste wars" (p 140). At the very least, the author's understanding of caste-based reservation policy as a poverty reduction scheme is totally misplaced and his dependence on Thorat (p 120) is misleading. There are enough writings and even judicial interventions, which, time and again, has asserted that ever since its inception reservation was not designed as a tool for poverty eradication. It was introduced in education and public sector jobs as a part of an affirmative action plan to ensure protection and representation of the depressed classes and to disavow monopoly of the upper castes in such institutions. In the last two decades, researchers in anthropology, political science, history, sociology and even economics in India have shown that practice of caste is not just confined within traditional systems but has become a dynamic aspect of modern economic life.

That the author comes to such conclusions, despite his own findings that caste has not been eroded and urbanisation has not strengthened the lower social groups, that non-Scheduled Castes/Scheduled Tribes have a larger proclivity to migrate and hence experience higher probability of upward mobility, that there is a positive association between deprivation index and incidence of lower castes, and that lower caste workers are engaged in vulnerable categories of occupation, can best be described as vacuous and insipid. Probably it needs to be remembered that reservation policies that have remained confined to the public sector and the private sector—both formal and informal—have been excluded from its purview. The massive inequality created by practising discrimination based on caste, ethnicity and gender in the labour market is a matter of great concern in the contemporary times. That intervention in the markets through anti-discrimination policies can be used to ensure fair access to jobs, fair wages, and social protection for the discriminated and marginalised groups is a well-accepted position, even among the neo-liberals. Ignoring the evidences of nexus between social identity, economic vulnerability and informality in the urban areas and using rather the term "caste war" without delving into its historical and sociological roots, let alone his penchant for using mathematical models, is rather reflective of his own biasness.

Despite the shortcomings stated above, there is no doubt that the book in question is a significant collection of research papers published over time which will provoke readers to engage with the urban question critically. Barring its title, the book unravels new findings and asserts some of the old conundrums relating to urbanisation process. A careful copy-editing by the publisher might have helped the author to make better connections between the chapters and avoid repetitions.

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# Public Health for All

## People over Profits

DAKSHA PARMAR

**Universalising Healthcare in India: From Care to Coverage** edited by Imrana Qadeer, K B Saxena and P M Arathi, *Delhi: Aakar Books, 2019; pp 475, ₹1,495.*

The COVID-19 pandemic has led to a surge in books on the subject of public health and healthcare as we are living in the deadliest health crisis of modern times. But the edited volume, *Universalising Healthcare in India: From Care to Coverage*, gives a close look at the critical issues plaguing health systems in the country and attempts to answer the questions of "how" and "why" of the India's healthcare crisis that it was confronting before the outbreak of pandemic itself. It documents the shift in the role of the state in the provisioning and financing of healthcare services which once upon a time was the hallmark of the welfare state policy in postcolonial India. It critically looks at the role of the state and the private sector in healthcare, and discusses major neo-liberal reforms since the early 1990s and its implications on the health of the population. Most importantly, it focuses on the transition in the role of the government in providing comprehensive primary healthcare (CPHC) in the context of Alma Ata Declaration of 1978. The declaration aimed at ensuring equitable, universal and integrated primary healthcare

> as a need based comprehensive primary level service covering more than just clinical care and supported by secondary and tertiary care with a strong inbuilt referral support. (p 32)

and by locating it within the socio-economic, historical and political context and focusing on community participation and people's health at the centre of its intervention. The book maps how health services were transitioning from comprehensive care to coverage for clinical and curative services.

The book is divided into four parts, with 19 chapters, an introduction and a postscript. Part I, titled "Ideas, Concepts, History and Practice of UHC in India," sets the theoretical context of universal health coverage (UHC) and its actual implementation in the country. The introduction and Chapter 1 by Imrana Qadeer locates the idea of universal healthcare in the history of the welfare states and the critical role it played in healthcare for all. She examines the transformation in the role of the World Health Organization (WHO) in shaping health policies and its increased dependency on the external donors, particularly the World Bank. The latter started setting the agenda for healthcare at the global level with a greater push for the involvement of the private sector since the 1990s. The objective has been higher economic growth and advocating technological solutions for health problems. By the early 2000s, WHO allowed "UHC to become a vehicle for neoliberal reforms" (p 38). The government was now seen as a "guarantor" and "enabler" and not necessarily the only "provider." The public–private partnerships (PPPs) and medical insurance became the buzzwords and policy mantra, resulting in increased fragmentation of health services.

### Equity Steps In, Equality Steps Back

The private healthcare sector in India is heterogeneous in nature with varying sizes and characteristics. Indira Chakravarthi in Chapter 2 delineates the ways in which the UHC supported policies for the "entrenchment of healthcare industry" largely dominated by corporates with private finance and equity capital. However, their objectives of profit-making stand completely in contrast to the public health goals. The corporate health sector in search for newer markets led to the setting up of hospitals in semi-urban, Tier 2 and Tier 3 cities in the name of "taking world class quality healthcare to masses" (p 81). Indranil Mukhopadhyay in Chapter 3 examines the National Health Policy 2015 and shows how in the current discourse of the UHC the government is becoming a "strategic purchaser" of care from the private sector. Thus, new avenues for profiteering and restructuring health system are made by bringing in the private sector. It tried to expand its position in the government-financed healthcare, using public funds to further the interests of profit (p 106). In Chapter 4, Prachin Ghodajkar while critically reviewing the various dimensions and determinants of quality in healthcare cautions that in the bandwagon of promoting quality,

> there is a risk of quality assessments and accreditation systems being used for closing down public facilities and favouring corporate hospitals. (p 139)

Archana Diwate in Chapter 5 shows the implications of highly privatised medical education in Maharashtra. The nexus of private medical colleges, backed by political leaders, has made medical education an instrument of profit. This does not strengthen the vision of universalisation of healthcare (p 163).

Part II of the book includes empirical studies on the functioning of PPPs and medical insurance schemes. PPP in healthcare was promoted by the state to improve the functioning of public health services and ensure quality care to the population. Sylvia Karpagam and her co-authors in Chapter 6 produce evidence about the failure of the PPPs in Karnataka. A number of problems were observed, ranging from the absence of baseline data to be maintained by the private partner to compare the performance of the PPP, huge financial irregularities and frauds by the private hospital, large-scale violation of labour laws as unqualified and untrained humanpower ran the health centres, illegitimate or unethical means to maximise profits, lack of concern for public health goals (p 182). The PPPs failed in the quality of delivery and in providing cost-effective health services. Despite this, the two PPPs discussed in the chapter—one, which was a PPP of tertiary level public hospital with a corporate hospital—and two, of handing over primary health centres to non-governmental organisations—were presented as models for replication by the Planning Commission. The chapter highlights an important point of how government selectively uses "evidence" for its own interests of expanding the role of private sector in health.

By reviewing different types of PPPs in health for a period of two decades 1995–2015, Bijoya Roy in Chapter 7 argues that PPPs have provided a "range of opportunities" for the private sector to expand their role and have a foothold within the public health system. Based on her detailed review, she shows that "PPPs are an unreliable means to achieve UHC" (p 205) as there is hardly any evidence of PPPs being efficient; instead it has created multiplication of authorities with diverse set of interest groups, without any regulatory mechanism to make the private sector accountable for non-compliance and resulted in increased commercialisation of healthcare. By taking the case study of sterilisation deaths of women at a camp organised in the Bilaspur district of Chhattisgarh in 2014, P M Arathi in Chapter 8 argues that PPPs have distorted whatever little public infrastructure was there in the provisioning of services. The shift of public subsidies away from the health infrastructure leads to the paucity of infrastructure and regular services, which prepare the grounds for organising of camps for sterilisation where the women from marginalised and socially vulnerable communities are callously treated. She highlights an important point ensuring accountability and responsibility of the state. While state accountability is extremely important, it is also vital to make the private and corporate health sector accountable.

The present pandemic of COVID-19 across all the three different waves have clearly exposed the way in which the private health sector is profiteering in times of crisis without being accountable/answerable to anyone. Hence, the need for strong state regulation, people's health movement and recourse to legal mechanisms are necessary to protect the rights of populations.

### Health Cover for a Few?

Medical insurance is pushed as one of the strategies to attain UHC. Rajib Dasgupta and co-authors in Chapter 9 provide critical analysis of the insurance schemes in Chhattisgarh by focusing on the Rashtriya Swastha Bima Yojana (RSBY) for below the poverty line (BPL) population and Mukhyamantri Swasthya Bima Yojana (MSBY) for above the poverty line (APL) population. From the qualitative study on the RSBY, which was unique in nature as it gives insights on the design issues from the provider's perspectives, it was evident that the for-profit private hospital empanelled under the RSBY often tends to

> pick and choose health conditions which have profitable package and treat only simple and uncomplicated conditions. (p 232)

One of the important objectives of health insurance schemes is to protect beneficiaries from incurring catastrophic health expenditures. However, it became clear from the MSBY study that women living in slums continued to incur very high expenditure for hospitalisation as they were charged for the fees of nurse/doctor, medicines prescribed, tests and investigations to be done and transportation for which they exhausted their savings or sold jewellery and valuables. Thus, they continued to incur very high expenditure for hospitalisation despite being covered under the scheme. Sunita Reddy and Immaculate Mary in Chapter 10 evaluate the Aarogyashri medical insurance scheme in Andhra Pradesh for BPL population. They argue,

> the scheme largely caters to the health issues (surgeries or chronic diseases) that require hospitalisation, at the cost of communicable diseases. This has resulted in over-medicalisation with unnecessary surgeries being conducted by corporate private hospitals. (p 255)

The illnesses that constitute major disease burden in the population are not covered under the scheme. From the studies, it is evident that the outreach of the schemes is limited and there is transfer of public funds into private hospitals.

The Pradhan Mantri Jan Arogya Yojana (PM-JAY), a flagship programme introduced by the government in 2018 provides insurance coverage up to ₹5 lakh for secondary and tertiary level medical care. During the crisis of COVID-19, this scheme failed to provide any benefits to the population. Of the total hospitalisation under the scheme, in the time period between January 2020 and June 2021, merely 5% was for COVID-19 treatment (Dutta 2021). Despite being covered under the scheme, private hospitals demanded cash payment to admit the COVID-19 patients. Thus, it miserably failed to meet its prime objective of reducing the financial stress during a health emergency. There is no doubtthat this pandemic has affected all and yet the vulnerable socio-economic communities have been disproportionately burdened.

Throughout the pandemic, the public health services have been in the forefront. With all the limitations due to poor budgetary allocations, the public healthcare system played a major role in providing preventive care as well as emergency care and saving many lives. However, the policies adopted by the government continue to promote increased commercialisation and corporatisation of healthcare despite having lived through one of the most severe health crises.

## Intersections of Global and National Agenda

The third section of the book, titled "Drugs and Pharmaceuticals: Critique of Policies and Practices," examines the implications and interconnections of global and national agendas with respect to the drugs and vaccines. In India, the highest proportion of out-of-pocket expenditure is incurred by people on drugs and medicines for outpatient and inpatient care. Hence, access to affordable medicines can increase the utilisation of healthcare services. Biswajit Dhar and Reji Joseph in Chapter 11 study the impact of neo-liberal economic policies on the development of drugs industry. Post independence, India was able to expand its drug production capacity with state support, and this led to the revolution in the pharmaceutical sector. The country earned the epithet of pharmacy of low-cost drugs of the developing world. However, after the 1990s, with the elimination of import restrictions, the entry of foreign direct investments, competition from multinational corporations, product patents and intellectual property rights, India's public sector drugs industries were negatively affected resulting in their neglect and closure. Increased import dependency makes the country more vulnerable in areas like drug production. During the COVID-19 pandemic, severe disruptions were seen in the global supply chains, which showed the serious implication of such a skewed economic regime.

S Srinivasan and Malini Asola in Chapter 13 argue that despite being the pharmacy of low-cost drugs, access to medicines within the country is poor due to many factors, but most importantly because of overpricing of the drugs and irrational prescriptions of medicines. However, there are examples of states like Tamil Nadu and Rajasthan that have better managed subsidised or free drug supply. They say that the flexibilities available under the intellectual property rights can be used strategically so that India's drugs industry can also be a pharmacy to its own poor and disadvantaged (p 330).

The role of international organisations, their influence on the national policies for health and vaccine promotion is extensively discussed in some of the chapters. Jacob Puliyel in Chapter 12 argues that commercial interests and powerful global institutions, such as the Global Alliance for Vaccines and Immunisation (GAVI), Bill and Melinda Gates Foundation along with WHO push for the inclusion of newer and costly vaccines in the national health programmes, thereby distorting the national health priorities. Y Madhavi in Chpater 14 shows how

> GAVIS pushes new vaccines in poor countries irrespective of their need, safety and efficacy based on local epidemiological evidence. (p 348)

There is also overstating of the disease burden for vaccine preventable diseases without proper cost benefit analysis. Pushpa Bhargava in Chapter 15 discusses the politics of bureaucracies, from local to international, and how they work hand in glove to fulfil their own interests. She cites the example of India's shift from injectable polio vaccine to the oral polio vaccine (OPV), whereby India became the market for the OPV manufacturers based in the west and many officials from the department were given cushy jobs with WHO (p 371).

## Broader Determinants of Health

Part IV, titled "Missing Links in the Debate," locates public health within the broader socio-economic, political and environmental context by drawing its association with poverty, inequality, water supply, nutrition and community participation. An important chapter by Sourindra Ghosh links the widespread prevalence of hunger and undernourishment in the country during the post-liberalisation period, when people lacked the purchasing power, endangering their ability to afford food. The book has much more to offer for those interested in wide-ranging issues plaguing India's healthcare system. However, the space of a book review prevents an indepth analysis and it is not possible to do justice to all the chapters in the book. This book should serve as an essential reading for students, scholars, activists, and, most importantly, administrators and bureaucrats who want to understand the trajectory of UHC and its negative impact. The book highlights as to why we need to struggle to provide universal healthcare for all from a rights perspective and by strengthening the public health that is available and accessible for all as public goods. My only concern with the book comes from my location at present in one of the north-eastern states of India. While there are a number of chapters from different states of India, the book does not include any chapter or discussion from the north-eastern region of the country which is often neglected in academic discourse in the study of health policy and politics.

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# Isolated Complaints Committees
## Is SHWW Act, 2013 Effective in Higher Education Institutions?

Rowena Robinson, Monica Sakhrani

The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 has been translated into policies against sexual harassment in corporations and organisations and in many higher education institutions. This article draws on our joint experiences working on Internal Complaints Committees in HEIs to examine current practices and show the new issues and concerns that have emerged, and how accumulating case law impacts the implementation of the act. We point out some best practices of HEIs to show that despite continuing challenges, ICCs have tried to not only secure justice for survivors of sexual harassment but also created broader support systems for them.

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The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (hereafter the act) has entered its 10th anniversary year. Its passage would not have been possible without the active engagement of many feminists and activists across the country. The law has been translated into policies against sexual harassment in private and public corporations and organisations and indeed in many higher education institutions (HEIs) as well; it is with the last of these that we are specifically dealing here. The University Grants Commission (UGC) set up a committee in order to bring out a set of guidelines to be followed in all state-funded Indian colleges and universities. Several Indian Institutes of Technology (IITs) and other HEIs also established their own policies, which included in some cases the concerns of transgender and sexual minority persons as well.

This is a good moment to pause and review the potential of this law and examine the working of the Internal Complaints Committees (ICCs) to create support mechanisms in HEIs within the ambit of the law. Though a decade has not passed since the law came into being, an array of criticisms has accumulated against its working and in particular against the functioning and effectiveness of ICCs. Some writers felt that the ICCs should be outright rejected. Just after the passage of the act, John (2014) articulated a sharp critique of ICCs. She argued that the act treats sexual harassment in the workplace as a private affair between two individuals or parties, with no explicit responsibility on the employers, and disconnected from the state's juridical obligations. She held that the separation of the handling of sexual harassment complaints from the normal disciplinary apparatus within organisations effectively bifurcates gender and labour issues, damaging both, as it potentially pitches individuals in the organisation against each other and carves out a discrete sphere of employer-appointed adjudication of sexual harassment complaints as opposed to arbitration involving employee associations and unions. For others also (Chadha 2017), the spread of the #MeToo movement in India in 2017, which concentrated particularly on academia, constituted a sharp indictment of male transgressors in higher educational spaces across the country and the difficulty of obtaining justice against them through formal mechanisms.

### The Questions Raised

Struggles for an altogether different adjudicative mechanism as articulated by John (2014) constitute one level of response to the act. At another level, those serving on ICCs tried to work within the act's boundaries in the effort to secure justice for women in sexual harassment cases. While among the scholars and feminists too, doubts were raised about the limits of formal legal processes given the patriarchy and sexism inherent in Indian HEIs, simultaneously the need for "due process" was extensively invoked (Chadha 2017; Menon 2017).

Among the difficulties discerned in the operation of the act, four years after its passage, Sakhrani (2017), for instance, pointed to the inclusion of the limitation of three months (extendable by another three months at the discretion of the committee), which she saw as effectively defeating claims filed after the woman is victimised and going beyond the Vishaka guidelines in so limiting the rights of women to seek redress. She noted the threat of punitive action for false and malicious complaints and evidence against women if they were unable to prove their complaint and the ICC found adversely against them; the fact that employers have no liability to the woman for failing to provide them a safe working environment and for any victimisation they face; the general emphasis on redress rather than prevention or prohibition in the way in which organisations implement the act; the difficulties of due process as committees were not aware of legal requirements rooted in the law of departmental inquiries, did not understand the importance of cross-examination and often overstretched their reasoning in favour of complainants; and finally, the lack of coordination typically manifest between committees and the legal/personnel departments in the organisation, the inattention of employers to ensuring committees were equipped to deal with procedures in accordance with the law and the lack of information committees had with regard to the action taken on their reports.

In this article we draw on our joint experiences working on these committees to examine how ICCs in HEIs are handling complaints at the present time. In doing so, we locate current practices against the difficulties perceived earlier and examine the changes, new issues and critical concern, the impact of accumulating case laws on certain aspects of the implementation of the act and its limitations. It is true that perhaps in many parts of the country, ICCs are not even constituted or not functioning properly (Dhamotharan 2021). Moreover, one finds continuing difficulties in the process followed by committees to determine and then convert their conclusions into legally valid findings.

At the same time, we focus here on some of the better-functioning ICCs in order to assemble best practices so that other HEIs can learn from them. Our experiences demonstrate that despite persistent challenges, several ICCs have been engaged, with some measure of success, in working within the framework of the law to create interconnected networks of assistance within institutions for survivors of sexual harassment, thereby attempting to move justice beyond punitive measures towards wider notions of security and support.

## Regulations for HEIs

Apart from some HEIs putting in place their own policies, a positive development in the law has been the passing of the All India Council for Technical Education (Gender Sensitisation, Prevention and Prohibition of Sexual Harassment of Women Employees and Students and Redressal of Grievances in Technical Institutions) Regulations, 2016 applicable to institutions of technical education as well as the UGC (Prevention, Prohibition and Redressal of Sexual Harassment of Women Employees and Students in Higher Educational Institutions) Regulations, 2015 applicable to those HEIs under the UGC. The regulations (which are in tandem) addressed third-party harassment as well as categorically prohibited victimisation of the complainant, provided for gender sensitisation, and understanding that students of all genders are vulnerable to sexual harassment, permitted them to file complaints (Regulation 2[1]). The regulations further recognise that

> Vulnerable groups are particularly prone to harassment and also find it more difficult to complain. Vulnerability can be socially compounded by region, class, caste, sexual orientation, minority identity and by being differently abled. (Regulation 3.2 [3])

The regulations acknowledge that doctoral scholars and research students are particularly vulnerable to sexual harassment and mandate that HEIs have a zero-tolerance policy towards sexual harassment.

## ICCs: Training and Sensitisation

HEIs in India are largely male-dominated and patriarchal and ICCs, generally composed of members without direct legal knowledge, continue to struggle to dispense justice within them. There is limited understanding of what constitutes sexual harassment and this narrow view blindsides men and management regarding the impact of sexual harassment not just on the women but upon the ethos of the organisation. However, over the years, several ICCs have worked assiduously to train themselves, gain a reliable comprehension of the law and fill the gaps therein in order to offer protections to the often young and vulnerable complainants who approach them. We accept that many challenges have emerged in the implementation of the act and in making ICCs effective in HEIs. This is not only because such institutions and their leadership are deeply patriarchal but also due to caste and other aspects of social distinctions and discrimination that are often implicated in sexual harassment cases. Thus, ICCs do struggle to retain their autonomy and deliver justice, especially in complaints against men in powerful positions.

As pointed out earlier, there are other concerns as well. However, given that nearly a decade has gone by since the passage of the act, we argue that it is essential to bring out the different ways that ICCs in HEIs have worked to render justice to complainants. This will lay the foundations for creating conventions that other institutions may follow and could become the basis for collective action, to improve the law and its implementation. Thus, in this section, we will try and sketch out some of the negotiated possibilities that might be writ into formal redress mechanisms, making them more sensitive to the diverse and complicated issues that survivors face apart from the search for punitive justice.

In recent years, ICCs have become far more aware of the need for training their own members as well as the employees and students in HEIs. Training is increasingly offered by professional organisations, non-governmental organisations and some HEIs call outside experts to conduct workshops. However, this professional training often comes at considerable cost and may be geared more to the needs of private corporate offices, rather than academic spaces per se. Hence, several HEIs prefer to conduct their own training and mould it to the requirements of the universities. Thus, over the years, experiences and learnings have been put together in order to hone training packages. In some instances, the external experts have trained ICC members with regard to the critical aspects of proceeding into complaints.

## Limitations of Training

One of the negative aspects that we have noticed over the last few years is that despite training several heads of departments or supervisors, they prefer to conduct some kind of "internal" inquiries when sexual harassment complaints are brought to them by their staff or by students. They do not approach the ICC and perhaps fear the repercussions to respondents who work in their sections or departments or are resistant to giving up control when it comes to complaints. As a consequence, respondents may be threatened or asked to sign apology letters without any hearings. On the other hand, complaints may be buried, or complainants may be placated by the sense that the head of their department is looking into the matter. Later, when complainants face repeated harassment or realise that effective action has not been taken, they feel betrayed. Moreover, ICCs are obviously unable to ratify the informal actions that have been taken by the section heads without going through due process. They are often unable to rectify the damage caused, apart from the harm done by undermining the integrity of the law and the redressal systems set up under it.

This is compounded by a lack of recognition of covert and insidious acts as constituting sexual harassment. Thus, unwelcome flirtatious or familiar behaviour/sexual innuendos/jokes, emotionally coerced consent, gender-based bullying, sex-based harassment and abusive and intimidating behaviour that women routinely go through are not seen as part of sexual harassment and are ignored, and many of the cases fail to come up or, if they are filed, the escalation of the harassment makes it difficult for the women to continue to function or they face action for standing up against harassment. This often leads to the perception of the complainants as reactive or vindictive. The problem in the Indian law itself is that it still largely understands sexual harassment as motivated by desire (intent of a sexual nature) rather than recognising its close connections with invidious forms of gender discrimination and harassment at workplace (MacKinnon 1979; McLaughlin et al 2012).

## New Initiatives in Gender Inclusion

In many HEIs, the ICCs function alongside Women's Development Committees or Gender Cells/Committees, which have wider mandates than complaint redressal and attempt to work towards greater gender inclusion on campuses. At IIT Bombay, for instance, Gender Cell members have been conducting face-to-face trainings for first-year students and some sections of the employees. They have more recently started training in "Dos and Don'ts" for all institute functionaries and heads of departments and centres. The institute has developed a set of frequently asked questions, created a more accessible and user-friendly website to know the policy against sexual harassment, the basic steps followed by the ICC, action taken on (anonymised) complaints in previous years, links to resources to understand and identify sexual harassment and concepts such as "consent" and the like.

Moreover, given the difficulty of conducting in-person sensitisation due to the large number of students and employees, the Gender Cell created an online gender sensitisation programme. The programme modules have now been rolled out for all institute students and are in the process of being launched for all employees. The modules contain units for members of the institute on their responsibilities in the different roles they play (student/mentor/guide/section head, etc) within the workplace. They have been prepared in-house, describe situations familiar to those within the institute and explain the act, its history and the working of the IIT Bombay policy, which include male-on-male and sexual/gender minority harassment. The gender sensitisation programme has been subtitled in Hindi, and a set of modules made available online for use by other HEIs.

## ICCs: Intricate Negotiations

In the institutions with which we are directly acquainted, ICCs have used interim measures creatively as well as proposed recommendations beyond punitive action in order to safeguard the peace of mind, the access to educational and financial resources and the careers of complainants. In particular, students with sexual harassment complaints against peers, seniors or those in some position of authority over them are considerably distressed, traumatised and feel a deep sense of betrayal. The ICCs make sure that they have access to clinical counselling and psychiatric assistance whenever required, to get the help they need to handle the psychological stress of filing a case, even as they set to work to take care of the legal aspects of the complaint. Moreover, the ICCs pass orders to prevent respondents communicating with or attempting to influence the complainants. In some cases, restrictions may be imposed on respondents entering the campus. If a student or young staff member has to report to the respondent, the ICCs work with institutional authorities to remove them from such a situation. They go into complex details—changing hostels or hostel rooms, setting aside separate working spaces for complainants, ensuring that the complainant has access to mess facilities where they will not come into contact with the respondent and the like.

A student complainant may need to have their supervisor/advisor/tutor/mentor changed in case the complaint is against any of them. The ICC works with institution authorities to ensure that the processes are immediately effected as interim measures with no facts of the complaint leaking out. There may be other complex issues to be worked out. The student may face harassment from someone in a club or group and this may affect their participation therein. The ICC may need to put in place measures to ensure that the complainant gets continued and safe access to the club and its activities. Further, the ICCs work with institution officials to make sure a complainant on contract is not summarily terminated or if a student has to change guides or even research areas because of a complaint. The academic clock is reset accordingly to ensure that the complainant is not penalised for the loss of time and fresh funding may be secured. ICCs have worked with the authorities to try to ensure that such academic approvals are routinised.

Situations arise that are nowhere perhaps even envisaged by the bare law. What access does a student have to the data collected jointly with the person complained against? What right do they have to laboratory space or to have their name on joint publications submitted prior to the complaint? The ICCs work out details with academic authorities to guarantee their access to laboratories, research facilities and resources and the right (as well as that of the witnesses if necessary) to use data collected for publication, even if that data is part of a project of the accused. The right to cite papers already published with or have the name retained on papers co-authored with the respondent may need protection. In the case of proven complaints that merit actions, committees consider the safety of complainants and may suspend respondents till the complainant has completed the course of study so that the complainant continues the work without disturbance.

Even after a complaint is closed, the student may have to deal with queries from other HEIs about why their job or postdoctoral applications have no references from the advisor. Over time, the ICC has gradually put in place the support steps and then strengthened them either by connecting them to already existing care mechanisms or making them legible as accepted practice through a process of sensitising institution authorities. In all such cases, ICCs have worked earnestly and painstakingly to establish practices addressing the needs of students and complainants, at each step, thereby filling the gaps that neither law nor policy may envisage. They have sought to standardise the practices, so that they are cemented as part of accepted and recognised institutional arrangements. At the same time, as we see below, it is clear that there are concerns with basic procedures and the competence of ICCs varies considerably in this regard.

## The Act, Case Law and Service Rules

One of the fundamental issues that continues to plague ICCs is that of the disconnect between them and the legal departments/authorities of HEIs, which do not assist in training or guiding ICC members but may disregard or water down the committee's recommendations on the grounds that procedures and service rules were not adhered to. Several HEIs abide by CCA (CCS) service rules. In 2015, the Department of Personnel and Training came out with an office memo containing a set of "guidelines" to hold inquiries into sexual harassment in cases involving government servants, which contain provisos that contravene the provisions of the act. Rule 14(2) of the CCA (CCS) rules only iterates that the complaints committee constitutes the inquiring authority in cases of sexual harassment and the inquiry shall be held "as far as practicable in accordance with the procedure" laid down in the rules, even though the guidelines do not constitute rules in the meaning of the word "rules" under Sections 29 and 30 of the act and cannot override its provisions or those of the CCA (CCS) rules.

The Supreme Court judgment in the Medha Kotwal Lele ([2013] 1 SCC 312) had held that the

> Complaints Committee as envisaged by the Supreme Court in its judgment in Vishaka's case will be deemed to be an inquiry authority for the purposes of Central Civil Services (Conduct) Rules, 1964 (hereinafter called CCS Rules) and the report of the complaints Committee shall be deemed to be an inquiry report under the CCS Rules. Thereafter the disciplinary authority will act on the report in accordance with the rules.

However, in Nisha Priya Bhatia's case (Civil Appeal No 2365 of 2020), the Supreme Court by its judgment dated 24 April 2020[1] distinguished between the inquiry under the act calling it a "separate inquiry of a fact finding nature" after the conclusion of which a departmental inquiry would be conducted under the relevant departmental rules, which "is in the nature of an in-house mechanism" conducted between the respondent employee and the employer wherein the complainant would stand excluded (see para 95).

In another recent judgment,[2] a single judge of the Karnataka High Court interpreted Section 13 (3)(i) of the act, which states, "to take action for sexual harassment as a misconduct in accordance with the provisions of the service rules applicable to the respondent" to mean that "where the Service Rules exist, the report of the Committee becomes a fact finding report or a preliminary report, with regard to the allegation of sexual harassment and the employer becomes duty bound to proceed under the Service Rules before imposing any major penalty" and that "a regular inquiry or departmental action as per service rules is indispensable so as to enable the employee concerned to vindicate his position and establish his innocence." The Court held that Medha Kotwal Lele's judgment was in operation pre-legislation. Though the division bench of the Karnataka High Court stayed this judgment on 21 March 2022,[3] it does raise questions regarding the manner in which the law is being interpreted.

While it could be argued that the changes do not apply to students in HEIs, they impact their rights vis-à-vis complaints against faculty and staff members, further skewing the power imbalance. The judgments not only ignore the lived realities of the tremendous courage that a complainant requires to come forward but also undo the hard-won victories of Vishaka ([1997] 6 SCC 241) and the act, apart from dismantling the basic framework of sexual harassment law.

## ICCs, Procedural Issues and Legal Expertise

This also indicates that with the recent Supreme Court judgment and the growing body of the case law from various high courts in matters involving government servants, ICCs now require legal expertise in dealing with cases and often such rule adherence may come at the cost of tailoring the processes to be complainant-friendly, especially in cases where the respondents are more powerful. The plethora of judgments on the issue necessitate legal knowledge as part of the core competency of being an ICC member along with an understanding of gender and sexual harassment issues.

Even where the rules lay down the procedure, ICCs have to grapple with issues concerning the nature of the rules as being mandatory or merely directive with regard to a range of questions that may come up during inquiries. For instance, decisions ICCs have to make with respect to extension of time to respondents to file their reply, permitting parties to submit documents while recording evidence, determining how to record the evidence (audio or video recordings versus writing the broad points of the evidence) or deal with witnesses backtracking and refusing to sign their statements, weighing the advantages of bringing the complainant and respondent face to face versus recording of their statements separately, assessing questions that are permissible or alternatively might have to be disallowed in the cross-examination and multiple other issues.

ICCs have to balance the rights of the parties and the mandate of the principles of natural justice by giving each side an adequate opportunity to put forth their case, while not allowing one side to browbeat the system. Some of the issues occur in the background of the inquiry as witnesses are contacted and dissuaded or pressurised into not giving evidence before the ICC or evidence is fabricated as the case proceeds, to counter the admissions made or the new facts that emerge during the course of the inquiry.

The ICCs still remain unsure or in the dark about how to deal with procedural issues like witnesses anonymity, the need to give respondents the complaint and all accompanying documents, the cross-examination requirement and process, and the necessity to forward the findings to both parties, if they are employees for them to be able to make their representation to the committee. The fact that it is a part of the inquiry process is an important point because it means that it needs to be completed within the 100-day period allotted to the ICC to conduct hearings and prepare its final report. Most ICCs are completely unaware of this obligation and hence the report they forward to the disciplinary authority is treated as a preliminary report. The legal or personnel department of the HEI sends the report to the respondent (they often do not bother to send this to the complainant) and give him a month or more to respond. This means that action on the report, which should be taken within 60 days of its receipt by the employer, is delayed and the spirit of the act which envisaged prompt closure of cases is violated.

In several instances, ICCs are not aware that they must give the respondent all the evidence in order to prepare the defence, the right to cross-examine the party and witnesses of the other side, as well as to present one's own witnesses. The fact that the complainant/respondent have to be given due notice before *ex parte* decision is taken by the committee is not often realised. Much more seriously, in cases against men at the lowest levels in the organisational structure, particularly those in temporary or contract positions, officials often resort to suspension and even dismissal without any inquiry or due process. In some instances, the cases may not even reach the ICCs, with decisions being taken at the level of the disciplinary authorities of the HEIs.

Nevertheless, one has begun to see some committees taking the initiative to employ the different options available to them to secure evidence, in cases which lack substantial material proof. ICCs now call for email and visitor records, CCTV footage and other forms of documentary evidence that may be secured through the institution. Further, they exercise their legal authority to call on witnesses that might help with the inquiry even if they are not named by either party. In the course of their inquiries, they may speak to section heads, laboratory mates and colleagues of complainants and respondents as well as approach the institution's medical and mental health counsellors for confidential reports in order to ascertain the impact of sexual harassment in particular cases. As a result, ICCs are able to construct a stronger body of documentation and evidence on which to legally base their arguments in the cases they are handling.

On the flip side, one needs to mention the different ways that have surfaced of applying pressure on ICCs or intimidating the committee and its individual members. Though the law does not allow either party to be represented by lawyers and insists that everyone maintain confidentiality, it is not unknown for complainants to consult lawyers before making their complaints. Moreover, it has become fairly routine for respondents to take recourse to lawyers privately the moment a complaint is served on them. Further, powerful male respondents could seek to thwart the inquiry by complaining to the institutional authorities of bias by the committee at the initial stages of the process of hearings itself as well as cast aspersions on the qualifications, credibility and character of the committee members; they may attempt to get information of the committee's findings through informal networks within the institution as well as put pressure on committees by filing RTIs through different individuals; and finally, they may attempt to pressurise or influence members of the ICC through their contacts by demanding information regarding the inquiry and warning them by recommending strict action against the respondent.

## Recommendations of ICCs

Finally, with regard to recommendations by committees, there remains confusion, especially in relation to the government service rules. The kind of action (major or minor) committees can recommend is still not very well understood; further, disciplinary authorities may discourage committees from making explicit recommendations (or may expect to be informally consulted by the committee before the recommendations are made in the report) even though the law does not place a constraint on ICCs. While in many private organisations, the ICC itself presents its report to the disciplinary authority; in most HEIs, this task is carried out by the legal or personnel department. Thus, their own interpretation and where they choose to place emphasis intervenes in the examination of the committee's report by the board of governors or the disciplinary authority.

There is no mechanism under the law to oversee the implementation of the "recommendations," which as the term makes clear, are advisory in nature leaving the decision-making power with the management. The law does not see the role of the ICC continuing beyond the inquiry and the report submission, but in reality, they are the custodians of the law and key to its implementation in letter and spirit. In a case that we are aware of, the ICC used the compensation clause in the act to impose financial penalties on the respondent in order to counterweigh the trauma, loss of work days and distress caused to the complainant. However, for the most part, committees have not employed this section of the law, which is available to them notwithstanding anything in the service rules of the concerned HEI.

The working of the law shows that despite the best efforts of the ICCs to counter the skewed power equation between the parties, the law functions better where the power differentials between the parties are minimal or skewed in favour of the complainant.

## In Conclusion

The picture that emerges is, over the last decade, ICCs in some HEIs are becoming better equipped to deal with sexual harassment cases: the passage of policies in the institutions or the guidelines issued by the UGC/AICTE have helped in this process along with training, the inputs of external members and the like. At the same time, there remains a lack of clarity in the law and understanding of the procedural aspects, the difference between the preliminary and final report and the process of making recommendations. It is observed that apart from being disconnected from the legal and personnel departments in the HEI, ICCs may not be informed of actions informally taken at various levels by section heads in cases that come to their attention and they may be intimidated by powerful respondents through various means. Thus, in some ways, ICCs do remain isolated in HEIs. It is only if they are strongly backed by disciplinary authorities that they can act effectively and that trust in these bodies will increase. Part of this gap is being slowly bridged by the process of training and sensitisation that ICCs have been engaging in. However, sustained work is needed in this regard.

It is clear that some ICCs work better than others and the law is not well implemented everywhere. There are concerns relating to the law and problems to be confronted with regard to state action and the implications of successive judgments delivered by different judicial benches. For instance, while the need to report the number of cases to the relevant ministry might be a positive accountability measure, if they are used to rank HEIs, there may be indirect pressure on lowering them. Vulnerable complainants face challenges in finding the courage to complain, especially against someone in authority. They could be easily victimised and hence may have good reasons for delay in coming forward to complain. Thus, the strict time-barring of complaints, even in cases where there is sufficient evidence and reason, is a significant constraint. This was pointed out very early on by Sakhrani (2017) and it remains a deficiency in the law.

Finally, the narrow legal framing of the idea of sexual harassment as misdirected sexual pursuit rather than a wider appreciation of the complexity and pervasiveness of sex-based harassment constrains the kind of cases that can be brought up. This leaves out a whole range of gender discrimination that seethes under the surface of unequal workplace relations.

Then again, some concerns transcend individual ICCs and may require collective campaigns. Collective forums of ICC members across HEIs are useful and attempts have already begun in the direction of creating common platforms. The efforts could perhaps lay the foundation for larger public action leading to better implementation of the law and ironing out creases within it. In the meantime, our argument is that we can constructively learn from the practices of better-functioning ICCs to understand how they fill the gaps in creating and sustaining forms of substantive justice for those experiencing sexual harassment in HEIs. Further, collective ICC forums could gain from each other's best practices, implement them on HEIs with non-functioning or inadequately functioning ICCs. They can connect with and learn from lawyers and activists throughout the country with experience in this field. Indeed, the online mode which has become familiar to all of us in recent times may facilitate such collective engagements.

### NOTES

1 https://indiankanoon.org/doc/177798109/.

2 *Dr Arabi U v the Registrar*, WP No 15070 OF 2020, Karnataka High Court, judgment dated 20 July 2021, viewed on 6 April 2022, https://indiankanoon.org/doc/162910397/.

3 Arya Raje (2022), Karnataka High Court stays order calling for Service Rules to be followed for dismissal, Bar and Bench, viewed on 6 April 2022, https://www.barandbench.com/news/litigation/sexual-harassment-karnataka-high-court-stays-order-calling-for-service-rules-to-be-followed-for-dismissal.

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# An Investigation into the Selected Non-banking Financial Companies in India

## Performance, Concerns, and Regulatory Requirements

ANUP KUMAR BHANDARI, NITHIN PRADEEP

The non-banking financial companies play a critical part in credit intermediation in India, with an active participation in credit lending to the segments that are largely left out by the formal banking channels. These include micro, small and medium enterprises, agriculture sector, and other unbanked sectors. Hence, they play a noteworthy role in the last-mile delivery of financial services and overall financial inclusion. Against the backdrop of the recent liquidity crisis, the financial health of selected 15 large NBFCs and the capital requirement regulations towards the sector are examined.

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The non-banking financial companies (NBFCs) are important constituent components of India's financial system. These are private sector institutions and have been there since the 1940s, although formally recognised by the Reserve Bank of India (RBI) only in 1964. This sector has grown substantially over the years, with the size of assets becoming almost 13% of India's gross domestic product (GDP). These are regarded as shadow banking[1] entities and their activities largely fall outside the regular banking system (Financial Stability Board 2012). Being an emerging market economy, a considerably large section of the Indian society still remains out of the reach of the formal sector financial network. The NBFCs act both as substitute and complement for the banking system. Substitutability comes through its penetration into the geographical locations where formal banks are absent and complementarity through the process of financial intermediation with certain edge over banks, like lower transaction costs, proximity with the customers, and regulatory arbitrage to a certain extent. NBFCs cater to niche areas, such as automobile financing, gold loan, and agricultural credit. Success of the NBFC ecosystem is due to its diversified product lines with low costs, wider reach, lower bad debts, and better risk management. NBFCs in India fill the gap in extending financial services that still remain unfulfilled by the banking sector and corroborate the global trend in this regard. NBFCs are perceived to have quick decision-making ability, bring in flexibility as per the requirements of the customers, and assume greater risks and hence are free from the rigid structure of the banks.[2]

However, the overall vulnerable nature of the NBFCs in India remains a serious cause of concern. For instance, the so-called India's mini-Lehmann moment is crucial here. The Infrastructure and Leasing Financial Services (IL&FS) went bankrupt, affecting the funding channels for other NBFCs in the market and created a scary situation for the banks as well (since banks, which are the major sources of funds for the NBFCs, hesitate to lend further to infuse liquidity). Although, a possible predicament in the NBFC market may have far-reaching implications on the formal sector banking. Unfortunately, this segment does not get any direct support from the central bank to tide away the crisis. Given this backdrop, we investigate the liquidity management issues and some other related aspects of the NBFCs in India. We are specifically interested since the overall functioning of the NBFCs remains largely unexplored despite the fact that the NBFC segment plays a significant role in India's financial system. Thus, even when the literature on Indian banking is voluminous, that on NBFCs is astonishingly scanty. We study three specific issues: (i) the main parameters to be considered for examining financial performance of the NBFCs; (ii) performance of our sample NBFCs in terms of these parameters and their implications on the NBFC sector at large; and (iii) whether there is a need to tighten the regulatory standards for this sector?

## A Brief Literature Review

Literature on the Indian financial sector is overwhelmingly skewed towards the banking sector and NBFCs remain largely ignored. It is too scanty, except for a few RBI working papers and its reports. For instance, the RBI working committees under the chairpersonship of Usha Thorat (2011) and Nachiket Mor (2013) study the role of NBFCs and their implications on India's overall economic development, specifically through those that can help in last mile delivery of financial services to the unbanked. Issues relating to the funding of the NBFCs and its implications against the backdrop of the prevailing regulatory environment for the NBFCs have also been studied with special focus on prudential norms, non-performing assets (NPAs), and capital adequacy. Those apart, Kannan et al (2019) discuss an overview of the risk management, credit portfolio, asset and liability mismatch (ALM), and other related aspects of the NBFCs in India and make several suggestions to improve the NBFC ecosystem that may effectively further the objective of financial inclusion. Considerable attention has also been put towards maintenance of financial stability and sustainable economic growth.

There are recommendations for establishing special funding lines for selected NBFCs in the lines of rural infrastructure investment fund so that (i) NBFCs are able to reach the unbanked population; (ii) there is easing of asset securitisation norms for sectors such as transport where NBFCs have a significant interest; and also (iii) inclusion of the NBFCs in priority sector lending categories for their effective role in fostering the objective of financial inclusion. The needs of the NBFCs' prudential risk management have also been pointed out since their risk profile is quite distinct from those of banks. Anshuman and Sharma (2020) study financial fragility of retail NBFCs by computing a health score of 15 major NBFCs in India to understand their financial health that throw further light on their financial vulnerability. It helps in having predictive content so that focused steps may be taken to prevent unexpected shocks to bring the entire system under siege. They pick selected ratios like the *operating expenses ratio*, *ratio of short-term borrowings*, *cash to loan ratio*, and *provisioning norms* in this regard. They criticise its overreliance on wholesale funding markets for short-term finance. It can accentuate the ALM problem, particularly for the infrastructure finance companies and housing finance companies as their assets are mostly long term and hence start generating returns only after a gestation lag. On the other hand, increased dependence on short-term sources like commercial papers gives rise to rollover risk. This is accompanied by the increasing interlinkages between NBFCs and banks, and among different NBFCs to fetch the risk of interconnectedness.

Acharya (2020) argues that there was flooding of cashback into the banking system in the aftermath of the demonetisation in 2016. The public sector banks, already burdened with mounting NPAs, were unable to lend and thus credit growth dampened. On the other hand, investors receive low returns from bank deposits. Thus, hunting for alternative high return investment opportunities and commercial papers become popular. Nonetheless, NBFCs also shift dependence from bank loans to commercial papers for funding, irrespective of their financial health. This increased dependence on short-term papers turns out to be a major cause of the liquidity crisis in 2018, as the NBFCs with a noteworthy proportion of debt in commercial papers experience severe liquidity crunch. Acharya (2020) also shows a positive relation between government borrowings and NBFCs' dependence on short-term papers. This is because the government borrows more in the long-term bond market to bridge its ballooning fiscal deficit. This has a crowding out effect with private sector investment getting affected, leading to the NBFCs' exploration more towards commercial papers for funding requirements.

Acharya et al (2013) examine the growth of shadow banking in India and document the linkages between the banks and the NBFCs, with special emphasis on the fact that the growth of NBFCs crucially depends on bank finance. In fact, this linkage is more evident in loans for asset financing companies than for the investment companies. Moreover, the nature of shadow banking in India and other emerging markets is quite different from those of advanced Western economies. To be specific, unlike the West, these institutions fill the gaps of the banking system and are comparatively well-capitalised. Manda and Rani (2019) examine the events that lead to the NBFC sector crisis and their implications on various sub-sectors. They observe that the NBFCs have outperformed banks in certain aspects, like credit growth. Analysing the liquidity crunch in credit allocation to sectors like automobiles and gold loans, where NBFCs have major interests, they argue for strengthening of regulatory norms for the NBFCs in order to avoid long-term problems. In fact, the Thorat Committee (2011) also recommends favouring regulatory strengthening of the Indian NBFC sector.

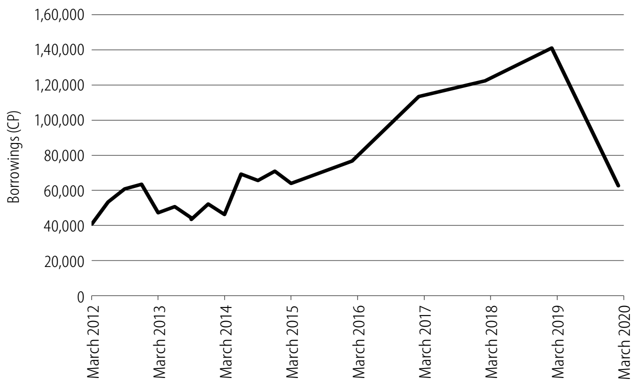
Although shadow banking space in most countries has considerably expanded over the years, banks still dominate in terms of assets held as a proportion of total assets. Nonetheless, the sector remains vulnerable to systematic risks, ALM problems, and lack of liquidity support from the central bank. Arora and Zhang's (2018) comparative study shows that, although there are parallels in NBFCs' significant growth in both China and India, however, while financial repression is the major influencing factor for the former, financial liberalisation has provided the necessary impetus to the latter. It also provides credit lifelines to the small and medium enterprises (SMEs) due to lack of credit facilities from the formal sector banks despite the SMEs being extremely valuable in employment generation. Nevertheless, the interlinkages between shadow banking and formal sector banks in both India and China have intensified over the years (Sharma 2014).[3] Likewise, the shadow banking space in the United States has undergone massive changes, with a large amount of securitisation in the home mortgage market. The investment banks have created innovative and speculative securities in the form of collateralised debt obligations (CDOs) and other mortgage-backed securities. These instruments have been the favourites of hedge funds and other asset investment funds, which led to piling-up of risks in the system and ultimately it culminated in the fall of the Lehman Brothers. In fact, huge amounts of credit intermediation provided by shadow banking led to asset mispricing in real estate. Massive quantum of securitisation not only improves the efficiency of credit intermediation but also leads to agency problems (Poszar et al 2013). Ashcraft and Schuermann (2008) document these agency issues that arise in the securitisation market. Even government-sponsored entities play an important role in the securitisation of home mortgages. Two famous entities in this regard, namely the Federal National Mortgage Association (commonly known as Fannie Mae) and Federal Home Loan Mortgage Corporation (commonly known as Freddie Mac) have been the early players in this domain (Rajan 2011). Thus, the global financial crisis (GFC) of 2008 intricately links with the activities of the shadow banks. Hence, being the major constituents of the Indian shadow banking sector, NBFCs need to be under thorough scanner of the controlling authorities in order to avoid a financial disaster and our study would humbly contribute towards this direction.

## Structure of the Indian NBFCs

The non-banking financial institutions (NBFIs) in India are broadly classified into: (a) all-India financial institutions, (b) primary dealers, and (c) NBFCs. NBFCs are further categorised on the basis of: (i) assets and (ii) liabilities. On the assets side, they are classified as infrastructure finance companies, asset management companies, hire purchase companies, infrastructure debt funds, NBFC factor, and others. On the liabilities side, these are classified as deposit taking (NBFC-D) and non-deposit taking (NBFC-ND). The size of NBFC-Ds have been reduced in the post-GFC period as the regulators are concerned about systemic risks and hence their expansion is discouraged. On the contrary, the size of the NBFC-NDs have grown rapidly. The asset sizes of more than ₹500 crore are designated as systemically important (SI) and subject to regulations to comply with.

Major sources of finance for the NBFCs are money market and bank loans, with the former being a source of short-term finance that makes them exposed to rollover risk. However, the RBI has put forth prudential limits for the latter. A bank must not lend more than 10% of its capital funds to a single NBFC, with an exception for the Infrastructure Finance Company (NBFC-IFC) where it is 15%. Moreover, the banks are advised to limit their exposures to the NBFC sector as a whole. The fact that the banks and NBFCs are getting increasingly interconnected is a matter of anxiety as far as the vulnerability during external shocks is concerned. Kroszner (2010) has pointed out that the entire system becomes more vulnerable when there are many layers of intermediation that create a chain of interlinkages.

**Figure 1: Borrowings through Commercial Papers by the NBFC-ND-SI**



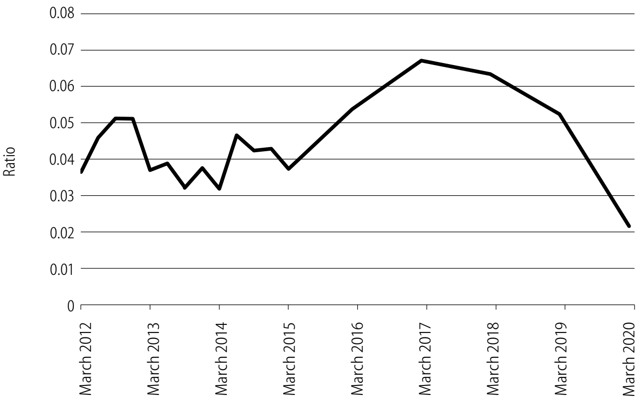

Source: The Reserve Bank of India.

Such interconnectedness comes through structural and financial linkages. Structural linkage refers to a situation where the NBFCs are subsidiaries of established banking institutions. Some NBFCs are associates and some are even joint ventures with foreign banks. Due to the GFC, the central banks across different countries become more concerned about this interconnectedness and the systemic risk that may be induced through it from possible economic shock(s). Thus, shadow banks may percolate this to deposit holders via deposit collections. Hence, the RBI tightens regulatory norms for the NBFC-Ds. Consequently, the share of deposits with the NBFCs has consistently fallen and focus has shifted to other sources of finance, including bank borrowings and other short-term commercial papers. This increases the probability of default for the financially weak NBFCs as commercial papers need to be rolled over. Figure 1 shows the recent trend of borrowings through commercial papers by the NBFC-ND-SIs.

Figure 1 shows that commercial paper borrowing of the NBFCs has substantially increased in the aftermath of the demonetisation in 2016 and sharply fallen following the defaults of the IL&FS and Dewan Housing Finance Limited (DHFL) in 2018–19. Similar trend is also observed for the share of commercial papers to total borrowings and is shown in Figure 2 (p 48). Acharya (2020) has hypothesised this dependence on short-term borrowings and its linkage with demonetisation has ultimately resulted in the financial deterioration of the major NBFCs. In fact, the increased dependence on commercial papers can also be linked to the increasing borrowings from the government (Acharya 2020). This has been validated in our estimated correlation between the government borrowings and the short-term borrowings by the NBFCs for the last few years, which is positive and significant as shown in Figure 3 (p 48).

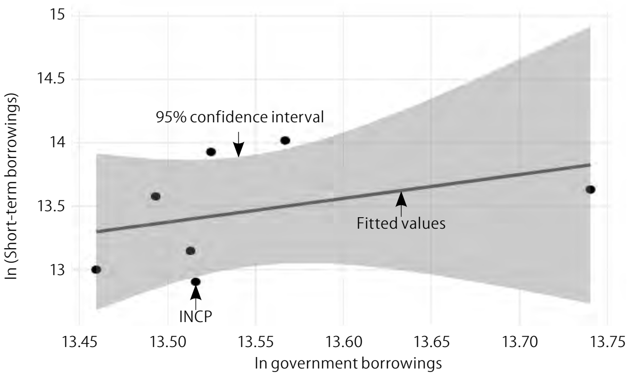
To explain, increased government borrowings in the long-term bond market reduce fund availability for the private sector borrowing through a typical crowding out effect. Such a situation emerged in 2018 when IL&FS defaulted. This has opened up redemption pressure for many liquid debt mutual funds (LDMFs), with chain reactions, and the funding for the sector itself got affected. DHFL has defaulted in 2019. Both

**Figure 2: Ratio of Commercial Papers to Total Liabilities of the NBFCs**



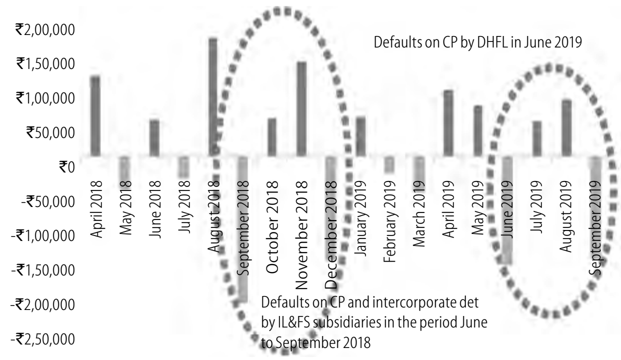

Source: The Reserve Bank of India.

**Figure 3: Government Borrowings and Short-term Borrowings by the NBFCs**



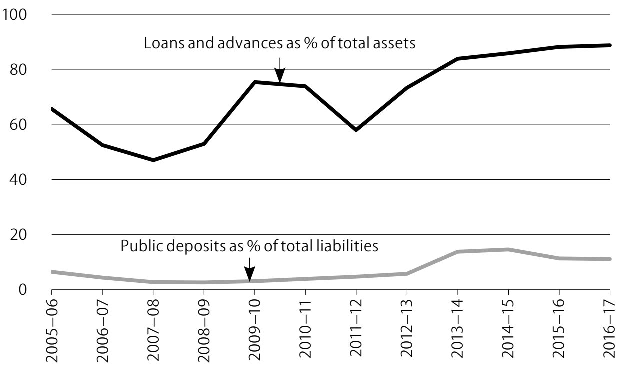

Source: The Reserve Bank of India.

**Figure 4: Impact of IL&FS and DHFL Defaults on Liquid Debt Mutual Funds**




Source: Anshumann and Sharma (2020).

**Figure 5: Public Deposits and Loans and Advances Extended by the NBFCs**




Source: The Reserve Bank of India.

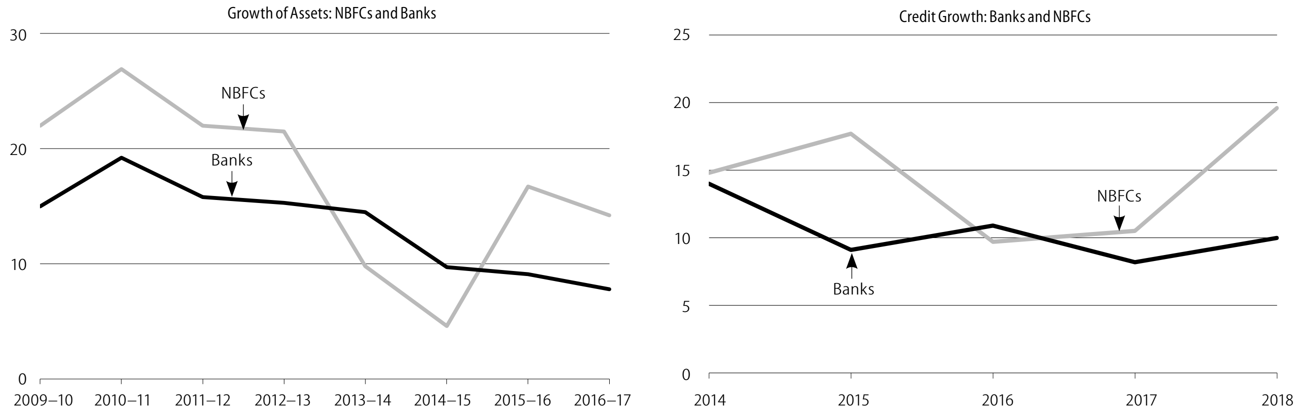
IL&FS and DHFL have defaulted for being unable to roll over the commercial paper and non-convertible debentures on the payment due date, coupled with their inability to arrange alternate sources of funding. Thus, rollover risk becomes a key source of risk for NBFCs and can even spread to the wider system in the event of shocks due to high interconnectedness of various arms of the financial system (Karunagaran 2011). This might hamper real sector economic activities due to fund crunch, specifically for the automobile, infrastructure, and real estate sectors where NBFCs are important players in terms of funds lent. Since news of defaults usually gets transmitted rapidly, the mutual funds would quickly start withdrawing investments to reduce exposures to the risky NBFCs, consequently, pushing them under tremendous redemption pressure. This gives rise to the risk of refinancing or rollover risk. The major determinants of this are financial institutions' dependence on wholesale funding. The ALM problem arises from this dependence on the long-term investment projects and hence may be quite acute for the NBFCs in the infrastructure sector and housing market, where returns typically start generating after a (5–10 years) gestation period. The emergence of the ALM problem is a classic case for an NBFC that largely depends on short-term sources of funds but lends out money to a long-term project. Hence, the ALM problem can be rectified only through robust risk assessment, which may also help an NBFC to avoid generating NPAs. Hence, investors would panic and start withdrawing money from mutual funds. This is corroborated with the observed surge in outflows from the LDMFs in the months of major NBFC defaults, as shown in Figure 4.

The effects of the major NBFC defaults have been felt not only in debt markets but also in the equity markets, with sharp fall in their share prices. It is also to be noted that, the share prices of the IL&FS and their subsidiaries, like IL&FS Investment Managers, IL&FS Transportation Networks, and IL&FS Engineering and Construction Company, have started falling well before their default in 2019 (Anshuman and Sharma 2020). It affected credit growth in the economy as a whole because fund houses stopped investing in NBFCs.

## Credit Allocation by the NBFCs

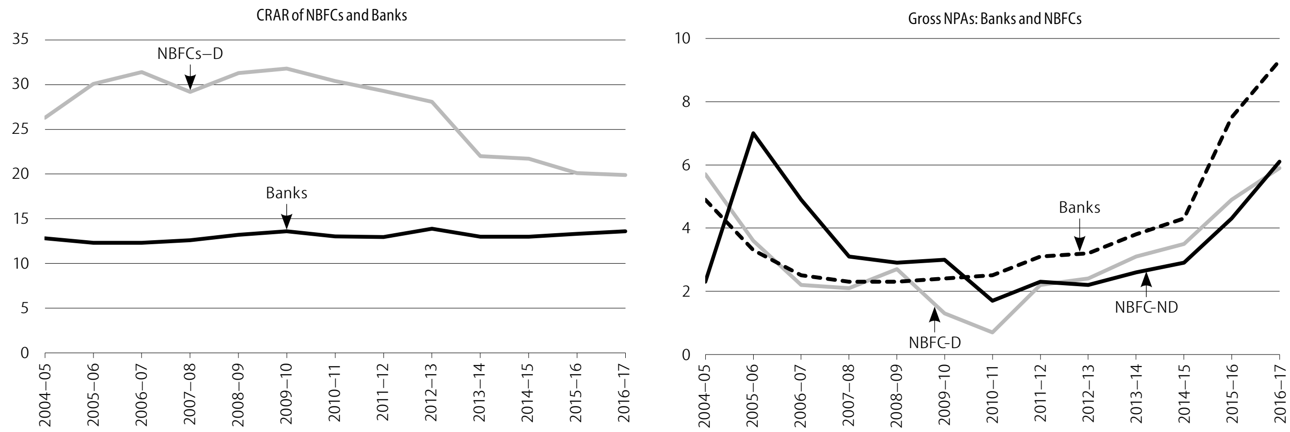
NBFCs play an important role in the Indian credit ecosystem. These are the major sources of funding for the micro, small and medium enterprises (MSMEs) and other sectors which generally remain beyond the reach of the formal banking system. In fact, industry is the largest recipient of NBFC credit. Vehicle financing, gold loans, and loans against property form a substantial portion of their portfolio and 40% of the retail loan is given to the vehicle and auto sector. However, lending to the automobile sector underwent a slowdown in 2018–19 due to a general reduction in aggregate demand in the economy and some sector-specific changes like Bharat Stage-VI (BS-VI) environmental norms, increased insurance costs and regulations regarding commercial vehicles. The IL&FS default has also dampened the credit allocation business. The growing balance

**Figure 6: Asset and Credit Growth of the Banks and the NBFCs**




Source: The Reserve Bank of India.

**Figure 7: Capital to Risk-weighted Assets Ratio and Gross NPA Ratio of Banks and NBFCs**




Source: Kannan et al (2019).

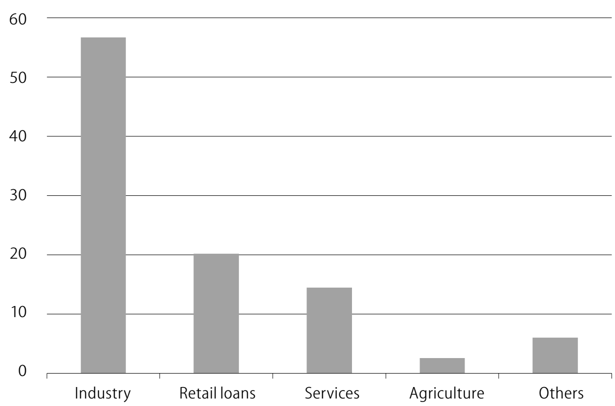
sheet of NBFCs has slowed down after the default. The subsectors like housing finance companies (HFCs) and infrastructure finance companies (IFCs) have been worst affected as their assets are of relatively longer gestation periods and intricately linked with the general health of the economy. Consequently, their credit volume had fallen by 17% during October–December 2018. Industry-wide sanctions had been reduced by 31% during January–March 2019. Although the NBFCs are not primarily deposit mobilising institutions (since its share in the total liabilities remains 15% or even less during 2005–06 through 2016–17), they are reasonably important for their role played in loans and advances in markets (since its share in the total assets varies between 47% and 90% during this period), as shown in Figure 5 (p 48).

For a relative standing, NBFCs perform fairly better than the banks in terms of growth in both assets and credit, with a couple of exceptions, as shown in Figure 6.

This is accompanied by overall better risk management scenario, as indicated by capital to risk-weighted assets ratio (CRAR) and gross NPA ratio, shown in Figure 7.[4]

Figure 8 shows the sectoral distribution of the credit disbursed by the NBFCs in 2019. The industry has been the largest recipient, whereas automobile, infrastructure, and medium and small enterprises also form a substantial portion of the

**Figure 8: Sectoral Distribution of NBFC Credit** (%)




Source: The Reserve Bank of India.

overall portfolio of the NBFCs. However, we restrain ourselves from a detailed discussion of demand for credit from the NBFCs which is substantially documented in Kannan et al (2019).

## An Investigation into Selected NBFCs

We have studied 15 major NBFCs in India to evaluate their financial performance during 2012–19 and to draw attention therefrom to the specific problems of the sector. We have used both the RBI and ProwessIQ database of the Centre for

Monitoring Indian Economy (CMIE). Eight of them are owned by some corporate group and remaining seven are stand-alone NBFCs, as shown in Table 1. We have considered the largest NBFCs in India for this purpose. All are listed entities, and use a set of four ratios on the basis of the CMIE data. These are explained below with justifications for choosing them.

**Ratio of short-term liabilities (through commercial papers) to total borrowings:** Increased dependence on short-term sources of funds like commercial paper can make already stressful NBFCs more vulnerable financially through rollover risk.

**Cash to borrowings ratio:** Eruption of asset-side shocks may induce pressure on liquidity. If so, vulnerable NBFCs may face difficulty to cope up with redemption pressure from mutual funds and other investors during financial turmoil, which may get accentuated for those having negative asset–liability gaps. Hence, liquidity is vital for even survival.

**Table 1: Details of Sample NBFCs**

| Corporate Group-owned NBFCs | Standalone NBFCs |
|---|---|
| 1 Bajaj Finance | 1 Muthoot Finance |
| 2 Mahindra & Mahindra Finance | 2 Manappuram Finance |
| 3 L&T Finance | 3 Motilal Oswal Financial Services |
| 4 Cholamandalam Finance | 4 Indostar Capital Finance |
| 5 Tata Capital | 5 SREI Infrastructure |
| 6 Sundaram Finance | 6 Capital First |
| 7 Shriram Transport Finance | 7 Sakthi Finance |
| 8 Edelweiss Financial Services | |

**Capital to assets ratio:** Having enough capital is important to absorb losses when there are asset quality issues, like NPAs. That is precisely the reason behind the RBI's stringent regulations for capital adequacy. Thus, having enough capital is crucial for a financial organisation's survival ability.

**OPEX ratio:** It is the ratio of operating expenses to outstanding loans, which is an indicator of operating efficiency through economies of scale. Thus, one may expect a lower OPEX ratio for a larger organisation and vice versa.

We have categorised our sample NBFCs into three size groups, each having five NBFCs, and labelled them as large, medium, and small. (Geometric) averages of all four of our performance indicators are reported in Tables 2, 3 and Table 4 (p 51), over the sample period 2012–19. While Table 2 shows it as per the two ownership categories, Table 3 presents them as per different size categories. Again, we have shown the trend of each of these four indicators over time across various size and ownership categories in Table 4. According to ownership categories, standalone NBFCs perform better in both cash to borrowing and capital to asset ratios. However, the corporate NBFCs perform better in the two other aspects. As is already noted, Acharya (2020) has hypothesised that the rise in the dependence

**Table 2: Ownership-wise Performance Indicators of the NBFCs during 2012–19**

| | Corporate Group NBFCs | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Name of the NBFC | Bajaj Finance Ltd | Mahindra & Mahindra Financial Services Ltd | L&T Finance Ltd | Sundaram Finance Ltd | Tata Capital Financial Services Ltd | Edelweiss Financial Services Ltd | Shriram Transport Finance Co Ltd | Cholamandalam | Overall |
| Short-term borrowings | 13.050 | 9.033 | 20.237 | 17.264 | 25.519 | 27.504 | 5.159 | 12.107 | 14.357 |
| Cash to borrowings | 1.976 | 1.704 | 2.417 | 1.503 | 1.701 | 17.524 | 6.865 | 4.608 | 3.219 |
| Expenses to loan | 7.937 | 54.225 | 57.162 | 2.368 | 7.999 | 0.716 | 3.694 | 12.417 | 7.909 |
| Capital to assets | 0.164 | 0.262 | 4.500 | 0.521 | 5.408 | 2.487 | 0.288 | 0.549 | 0.825 |
| | Standalone NBFCs | | | | | | | | |
| Name of the NBFC | Muthoot Finance Ltd | Manappuram Finance Ltd | Motilal Oswal Financial Services Ltd | Capital First Ltd | Indostar Capital Finance Ltd | SREI Infrastructure Finance Ltd | Sakthi Finance | | |
| Short-term borrowings | 31.962 | 46.838 | 14.001 | 14.457 | 28.312 | 48.991 | 24.376 | | 26.920 |
| Cash to borrowings | 26.891 | 30.639 | 49.252 | 15.778 | 14.718 | 2.037 | 10.501 | | 15.359 |
| Expenses to loan | 41.729 | 17.232 | 8.525 | 33.063 | 63.141 | 1.489 | 26.542 | | 17.516 |
| Capital to assets | 1.223 | 1.198 | 0.761 | 0.593 | 1.428 | 2.933 | 5.943 | | 1.492 |

**Table 3: Size-wise Performance Indicators of the NBFCs during 2012–19**

| | Large | | | | | |
|---|---|---|---|---|---|---|
| Name of the NBFC | Bajaj Finance Ltd | Muthoot Finance Ltd | Shriram Transport Finance Co Ltd | Mahindra & Mahindra Financial Services Ltd | Manappuram Finance Ltd | Overall |
| Short-term borrowings | 13.050 | 31.962 | 5.159 | 9.033 | 46.838 | 15.554 |
| Cash to borrowings | 1.976 | 26.891 | 6.865 | 1.704 | 30.639 | 7.177 |
| Expenses to loan | 7.937 | 41.729 | 3.694 | 54.225 | 17.232 | 16.279 |
| Capital to assets | 0.164 | 1.223 | 0.288 | 0.262 | 1.198 | 0.448 |
| | Medium | | | | | |
| Name of the NBFC | Sundaram Finance Ltd | L&T Finance Ltd | Motilal Oswal Financial Services Ltd | Edelweiss Financial Services Ltd | Cholamandalam | Overall |
| Short-term borrowings | 17.264 | 20.237 | 14.001 | 27.504 | 12.107 | 17.473 |
| Cash to borrowings | 1.503 | 2.417 | 49.252 | 17.524 | 4.608 | 6.791 |
| Expenses to loan | 2.368 | 57.162 | 8.525 | 0.716 | 12.417 | 6.342 |
| Capital to assets | 0.521 | 4.500 | 0.761 | 2.487 | 0.549 | 1.195 |
| | Small | | | | | |
| Name of the NBFC | Tata Capital Financial Services Ltd | Capital First Ltd | Indostar Capital Finance Ltd | SREI Infrastructure Finance Ltd | Sakthi Finance | Overall |
| Short-term borrowings | 25.519 | 14.457 | 28.312 | 48.991 | 24.376 | 26.254 |
| Cash to borrowings | 1.701 | 15.778 | 14.718 | 2.037 | 10.501 | 6.101 |
| Expenses to loan | 7.999 | 33.063 | 63.141 | 1.489 | 26.542 | 14.585 |
| Capital to assets | 5.408 | 0.593 | 1.428 | 2.933 | 5.943 | 2.401 |

of commercial borrowings during post-demonetisation period compels the large NBFCs to go bankrupt. We also observe this tendency for the large and medium NBFCs in our sample. Smaller NBFCs remain more or less stable in this regard. Nonetheless, overall positions of the large NBFCs are the best during our sample period, followed by the medium and small NBFCs, perhaps through quick corrective measures out of the lesson from the IL&FS episode. To summarise, although we fail to observe any definitive trend for OPEX ratio across different size categories, unambiguous trends are observed in three other measures. To be specific, larger NBFCs are relatively better positioned in cash to borrowing ratio, followed by the medium and small ones. However, small NBFCs seem to be less burdened from the bad loan issues, followed by the medium and large ones.

Table 4 shows that the dependence on short-term borrowing has increased over time for the small and standalone NBFCs. As more exposure to short-term borrowing increases vulnerability of the NBFCs, the risk profile of these two categories is on the rise. Hence, developing a long-term corporate bond market is a good alternative in this regard. The empowered authorities like the RBI, along with other stakeholders, should play a proactive role towards this. Moreover, over time, capital to asset ratio has witnessed a falling tendency for all our sample NBFCs and across all five different categories. This is another major concern that puts the NBFCs under risk, which got accentuated due to the ongoing pandemic. Although the activities of the NBFCs have been significantly disrupted during this period, their credit intermediation has continued showing resilience in the face of adverse situations (RBI 2021). Hence, a looming threat from NPAs exists and the NBFCs need to maintain stricter risk management strategies, coupled with adequate capital reserves, to successfully mitigate that. Moreover, corporate NBFCs' cash to borrowings ratio has shown a declining trend until 2017. It has slightly increased thereafter; however, there is no such clear picture for the standalone NBFCs. Nonetheless, this ratio is substantially large for the latter group throughout the study period. This might be due to the safeguarding feeling of the former of being able to have required capital flows from the parent group during exigencies. However, others are more risk-averse without any protective sentiment. Further, OPEX ratio has considerably increased for medium sized and standalone groups, whereas it has fallen slightly for the corporate NBFCs. Thus, overall sustainability of medium sized and standalone NBFCs has become more costly. In fact, there seems to be a U-shaped relation between size of an NBFC and its OPEX ratio and no notable trend pattern is observed for the cash to borrowing ratio.

**Table 4: Both Size- and Ownership-wise Performance Trend over Time**

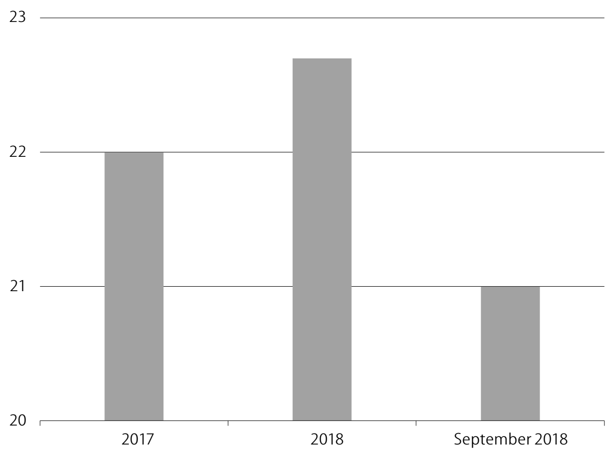
| | Year | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|
| According to size categories | Large | | | | | | | | |
| | Short-term borrowings | 17.007 | 14.263 | 15.894 | 16.005 | 18.834 | 17.080 | 13.649 | 12.645 |
| | Cash to borrowings | 11.428 | 9.415 | 10.039 | 4.506 | 4.492 | 3.432 | 6.160 | 15.235 |
| | Expenses to loan | 21.673 | 23.783 | 12.425 | 12.146 | 12.944 | 14.060 | 17.153 | 20.308 |
| | Capital to assets | 0.625 | 0.584 | 0.516 | 0.564 | 0.450 | 0.392 | 0.325 | 0.267 |
| | Medium | | | | | | | | |
| | Short-term borrowings | 15.264 | 18.376 | 26.066 | 19.558 | 20.643 | 18.645 | 11.099 | 14.224 |
| | Cash to borrowings | 4.428 | 3.739 | 3.450 | 6.993 | 5.397 | 9.959 | 14.944 | 14.101 |
| | Expenses to loan | 5.247 | 4.015 | 4.852 | 3.244 | 5.234 | 10.308 | 11.378 | 12.853 |
| | Capital to assets | 1.952 | 1.756 | 1.693 | 1.462 | 1.317 | 0.799 | 0.692 | 0.673 |
| | Small | | | | | | | | |
| | Short-term borrowings | 22.816 | 21.640 | 20.914 | 23.001 | 24.341 | 27.810 | 29.365 | 47.815 |
| | Cash to borrowings | 8.235 | 11.362 | 7.345 | 4.244 | 4.005 | 5.075 | 8.924 | 3.628 |
| | Expenses to loan | 14.738 | 14.271 | 10.069 | 15.785 | 15.242 | 15.526 | 17.955 | 14.417 |
| | Capital to assets | 3.356 | 2.872 | 2.572 | 2.355 | 2.435 | 2.124 | 2.013 | 1.821 |
| According to ownership | Corporate | | | | | | | | |
| | Short-term borrowings | 13.599 | 14.011 | 17.541 | 14.878 | 16.648 | 17.268 | 10.891 | 11.597 |
| | Cash to borrowings | 3.316 | 3.441 | 2.953 | 1.981 | 2.677 | 2.388 | 4.930 | 5.481 |
| | Expenses to loan | 11.496 | 9.947 | 6.116 | 5.557 | 6.507 | 7.120 | 8.615 | 9.865 |
| | Capital to assets | 1.238 | 1.059 | 0.984 | 0.952 | 0.831 | 0.692 | 0.592 | 0.510 |
| | Standalone | | | | | | | | |
| | Short-term borrowings | 25.074 | 23.495 | 24.598 | 26.013 | 27.810 | 25.438 | 26.343 | 39.260 |
| | Cash to borrowings | 18.894 | 17.588 | 15.162 | 15.114 | 8.525 | 14.701 | 19.497 | 16.640 |
| | Expenses to loan | 12.332 | 12.550 | 12.279 | 13.941 | 16.719 | 26.314 | 29.039 | 26.172 |
| | Capital to assets | 2.144 | 2.026 | 1.815 | 1.700 | 1.604 | 1.137 | 1.033 | 0.972 |

Thus, a central question worth further investigation is, whether the NBFCs on their own are able to combat the risks emanating from higher NPA load and worsening macroeconomic indicators? Capital adequacy may be an important factor to be examined for understanding it and hence the regulatory apparatus needs further examination.

## Regulatory Aspects of the NBFCs

Although institutional neutrality[5] has been recommended for fostering innovation, competition, efficiency, and functional optimisation of the regulated institutions, certain relaxations have been granted to the NBFCs. The regulatory norms for the NBFCs are quite different from the banks on certain aspects as they serve: (i) niche areas and cater to unbanked segments; and (ii) industries that are underserved by the formal banking channels. Although the NBFCs were earlier regulated mainly on prudential parameters and assets, the RBI came up with a more comprehensive regulatory framework in 1996 and 1997 since the size of the sector grew substantially over the years and the need for that was felt. This was revised again in 2014. The new regulatory framework mainly focuses on two specific areas: (i) prudential regulation—it is mainly with capital requirement and adequacy norms, exposure to different sectors, net owned funds, etc. This is crucial for all NBFCs utilising public funds through the capital markets (including debentures, commercial paper, and inter-corporate deposits). (ii) Conduct regulation—these pertain to the ethical conduct of business, customer protection, and anti-money laundering norms. Attempts have been made to reduce the regulatory arbitrage towards non-banking firms on the basis of the recommendations of the Thorat and Mor Committees. Hence, asset classification and other related norms with raising money through debentures and enabling raising of funds through external commercial borrowings (ECB) have been

**Figure 9: Capital to Risk-weighted Assets Ratio of NBFCs** (%)




Source: The Reserve Bank of India.

harmonised. The securitisation and Reconstruction of Financial Assets and Enforcement of Interest (SARFAESI) Act has been enacted too.

Nonetheless, regulatory divergence between NBFCs and banks still exists in terms of capital requirements (as shown in Table 5). These are mandated by the RBI so as to cushion the impact of losses on account of bad loans or any external asset-side shocks. Since firms with a low equity base have a tendency to take more risk (Rochet 2004), capital requirement norms help to keep regular monitoring on that. Moreover, even if bankruptcy of a small firm may not have any systemic risk, such a failure within a small geographical location without a formal banking channel may have non-monetary cost implications beyond the shareholders of the bankrupted, particularly on its borrowers in the form of welfare loss (through reduction in consumption and increase in expenditure on education and health) (Breza and Kinnan 2021). As NBFCs could maintain proximity with their customers (which also ensures proper utilisation of disbursed credit), with huge stock of information on repayment capacity of the borrowers, their failure may lead to loss of such valued information usually used by the regulatory agencies to design credit bureaus and credit registry.

**Table 5: Capital to Risk-weighted Assets Ratio for Different Financial Institutions** (%)

| Institution | CRAR | Tier-1 CRAR* | Leverage |
|---|---|---|---|
| Banks | 9 | 6 | 4.5 |
| NBFC-D | 15 | 10 | — |
| NBFC-ND-SI | 15 | 10 | — |
| NBFC-MFI | 15 | Should be greater than Tier-2 CRAR | 7 |
| Other NBFC-ND | — | — | 7 |
| IFC | 15 | 10 | — |
| Gold Loan-NBFC | 15 | 12 | 7 |
| HFC | 12 | Should be greater than Tier-2 CRAR | — |

* For supervisory purposes, capital is split into two categories: Tier I and Tier II. These categories represent different instruments' quality. Tier I capital consists mainly of share capital and disclosed reserves and it is a bank's highest quality capital because it is fully available to cover losses. Tier II capital, on the other hand, consists of certain reserves and certain types of subordinated debt. The loss absorption capacity of Tier II capital is lower than that of Tier I capital (see RBI for further details: https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=9894&Mode=0).
Source: The Reserve Bank of India.

Capital adequacy-related regulation has a trade-off in the form of stabilising effect of maintaining mandated capital levels and the opportunity costs involved in restricting the utilisation of capital. Capital requirements cannot be completely given over to market forces as the regulator sets the adequacy norms considering a whole set of (monetary and non-monetary) costs associated with potential failure of a financial firm. These include costs in addition to those borne by the shareholders. Hence, this is a main reason for regulators to keep capital requirements in place. For defining the trade-off between stability of institution and opportunity costs, it is important to estimate how stable the institution will be with an additional unit of capital (Estrella 2004).

The higher capital requirement for the NBFCs generates a perception that these are a little riskier despite their asset quality being in a better shape. In fact, the NBFC sector has maintained capital levels much above the stipulated minimum in recent years, as shown in Figure 9. This is because of various reasons. The creditors might be demanding higher levels of capital to ensure that the debtor firm is sufficiently capitalised. The excess capitalisation of the NBFCs is driven by the absence of diversified funding sources, since they generally depend on bank loans and the wholesale funding market. As is already noted, they borrow funds from the commercial paper market and other short-term sources. Banks can mobilise funds through deposits from the public and can also approach the RBI as the lender of the last resort.[6] Nonetheless, the NBFCs are less risky than the banks for the quality of assets they own vis-à-vis the banks. As is already mentioned, the NBFCs have shown better resilience in the face of external shocks. This is evident from the *Financial Stability Report* of the RBI (2007) in which stress tests were conducted. Moreover, Kumar (2019) has documented (using DuPont analysis) that the NBFCs are capable of generating more revenue per unit of asset compared to banks and hence more profitable. In fact, credit intermediaries exist to reduce the costs of transactions. His analysis also shows that the NBFC channel not only decreases the transaction costs for banks, but also reduces the cost of equity to save the institution from unexpected losses.

## In Conclusion

NBFCs play a critical part in credit intermediation in India through lending to the segments that are traditionally left out of the formal banking channels. These include MSMEs, agriculture sector, and those unbanked. Hence, they do concentrate in rural areas where scheduled commercial banks often do not have branches. Thus, NBFCs play an important role in financial inclusion and last mile delivery of financial services. Recent bankruptcies and liquidity crises have opened up fresh discussions on the concerns around this sector, like the problems of ALM, regulatory shortfalls, and capital issues. There are also issues in the macroeconomic aspects (like the overall reduction in aggregate demand). Business cycles in any economy are unavoidable and rather quite a common phenomenon. Hence, cycle-proof regulations are desired as policy responses. During the base of any cycle, there is demand for strong regulation and when the economy is booming, there are arguments to soften regulations. The idea that markets can govern themselves becomes dominant. But from the regulator's perspective, the objective must be to create and maintain stability in the system. Therefore, regulations have to be comprehensive, non-discretionary, contingent, and cost-effective (Rajan 2011).

We examine 15 NBFCs in India in terms of important financial health parameters in the backdrop of the recent liquidity crisis and the capital requirement regulations towards them. To conclude, the present set of regulatory measures are not well suited, though the NBFCs also need to have capital regulations. However, addressing only the solvency concerns is not the right approach. Capital regulations should be set on the basis of the prevailing financial situation of the NBFCs. The *Financial Stability Report* periodically reviews the health of NBFCs and their capacity to withstand any external shock. A harmonisation of capital limit at 9% for NBFCs and banks would be beneficial for the sector. It would be ideal to have an effective revolutionary mechanism for the financial firms and protecting the interests of the small customers must be of the utmost priority. The present micro-prudential regulations are mainly to protect the interests of the banks which are the institutional lenders towards the NBFCs. The Insolvency and Bankruptcy Code (2016) does not consider financial service providers as corporate entities. Hence, a corporate resolution process for financial institutions is better capable of handling possible bankruptcy situations. This must be a major desired reform in the sector.

Besides, regulations have to be implemented across all levered financial institutions which can stop the shift of activities from highly regulated to lightly regulated institutions during the boom period. Such a shift may have major consequences during crises as different segments of financial institutions are interconnected and it might be difficult to predict how the troubles can spread from one segment of the system to the other. Regulations need to be non-discretionary and transparently enforced. However, on a case to case basis, regulations should be judiciously allowed to kick in, if the situation so demands. Finally, they should not be too costly to implement and should be fool proof so that the possibility of evasion is minimised. The regulator can step up its efforts to limit the leverage of NBFCs. Higher level of debt was one of the main factors for the collapse of major NBFCs in the recent past. A better scrutiny of this parameter can be a worthwhile measure for a timely intervention to maintain the sectoral stability. The ALM issue also warrants attention. Higher level of mismatch is common in infrastructure finance and housing companies, whereas retail NBFCs need to keep efficient risk management strategies.

## NOTES

1 This term was first coined by Paul McCulley in his 2007 speech at the Annual Financial Symposium hosted by the Kansas City Federal Reserve Bank in Jackson Hole, Wyoming.

2 See Neelima et al (2017) for further details on the role of the NBFCs in India's financial landscape.

3 See Sherpa (2013) also for further details in this regard.

4 Gross NPA ratio stands for the ratio of gross non-performing assets to total assets.

5 This sentiment comes out through the statement of the Committee on Financial Sector Legislative Reforms (FLSRC) (2011) that

> … in an efficient financial system, there is a level playing field so that different institutions compete to provide a function; no institution dominates because of the privileges it enjoys; competition results in resources being allocated efficiently and society gets maximum out of its productive resources.

6 See Santomero et al (1977) and Hellmann et al (2000) for further details on the prudential norms in the banking sector.

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# Challenges of Persons with Severity of Disabilities

## Evidence from the Indian Labour Market

MINAKETAN BEHERA, PRATAP C MOHANTY, KAMAL K SHARMA

The paper maps the present status of employment opportunities for persons with severity of disability with an emphasis on their factors of labour force participation and the likelihood of employment in public or private enterprises. The paper employs the two latest comparable databases of the National Sample Survey on disability. The findings reveal that although the Indian Constitution and legislation have provisions for equal rights, disability remains an axis of social discrimination, inequality, and exclusion from employment opportunities. The odds of employment in private enterprises are against the persons with disabilities.

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The "decent work for all" has been promoted through Sustainable Development Goal 8 for inclusive and sustainable economic growth (United Nations nd). Work or employment is essential in everyone's life, especially persons with disabilities (PwDs). It provides a sense of accomplishment as well as a source of income. It improves their quality of life socially and economically, incorporates them into the mainstream, and ensures integrity and respect in the family and community. They are often isolated from ordinary life, only to remain stereotyped, vulnerable, and marginalised. PwDs are also primarily denied access to economic resources such as job opportunities, sustainable wages, and a chance for their 4% of seats reserved for the disabled in government jobs. Article 27 of the United Nations Convention on the Rights of Persons with Disabilities (CRPD) recognises "the right of persons with disabilities to work, on an equal basis with others; this includes the opportunity to gain a living by work freely chosen or accepted in a labour market and work environment that is open, inclusive and accessible to persons with disabilities" (United Nations 2006). The disabled population constitutes 15% of the world population (WHO 2011). India has 2.68 crore PwDs, of which 1.5 crore are male and 1.18 crore were female (MoSPI 2016).

Almost all jobs can be done by those with a disability, provided there is a proper working environment. However, many studies in both developed and developing countries show that the disabled workers have considerably lower rates of jobs and much higher unemployment rates than those without disabilities (WHO 2011). Low employment rates are the result of many factors—including disability-related work limitations, lower levels of education and experience, discrimination by employers in hiring or provision of accommodations, difficulty in sustaining employment after the onset of a disability, and lack of access to necessary support services. Lower labour force participation rates are one of the main mechanisms through which disability may lead to poverty. In 2006, labour market participation of the disabled population was 38.8% against 64% of the non-disabled population (Mitra and Sambamoorthi 2006). This unemployment varies based on the sociopolitical and legal framework of the country. In countries where there is sound civil rights legislation or where there is a legal provision for the population of disabilities, the ratio of employment is twice than that of people without disabilities. And the situation is dreadful in places where there is no provision for such laws (Macias et al 2001).

The paper presents the status of employment opportunities for the persons with severity of disability and identifies the barriers to the disabled in the labour market. It also explains the factors of labour force participation of the PwDs, and their likelihood of employment in the public or private enterprises.

## Exclusion of People with Disabilities

Across countries, disability gaps in employment rates are more often found for men than women, and the largest disability gap in employment rates is found for persons with multiple disabilities (Mizunoya and Mitra 2013). Employment among persons with disabilities is influenced more by individual and household characteristics than human capital (Angela 2015). The nature of disability also affects the probability of employment. Persons with mental disabilities are disproportionately out of the labour force when compared to persons with other types of disability (Boman et al 2015; Naraharisetti and Castro 2016), and persons with hearing, speech, and locomotor disabilities have better absorption rates in the labour market among the disabled (Angela 2015). In rural areas, having a mental disability decreased the chance of employment while being female and having movement or sight impairment (compared to other disabilities) increased the employment likelihood. In urban areas, being female and illiterate decreased the likelihood of employment but having sight, mental, and movement impairment (compared to other disabilities) increased the probability of employment (Naraharisetti and Castro 2016).

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Considering that persons with disabilities already had a weak position in the labour market, better participation is observed in the services sector and informal employment. This section is likely to be particularly affected by the adverse labour market scenario during the crisis and the recovery period. Although specific data in this regard are scarce, research in Paraguay estimated that 40% of persons with disabilities in the country became unemployed after the start of the quarantine, with significant impacts on their household incomes (United Nations 2020). However, a lack of early research is noted about the effects of COVID-19 experienced by people with physical disabilities (Lebrasseur et al 2021).

## Data, Methods, and Variables Description

This study used the two latest rounds (that is, 76th round in 2018 and 58th round in 2002) of data from the National Sample Survey (NSS) on "persons with disabilities in India" conducted by the Ministry of Statistics and Programme Implementation. The NSS 76th round on disability in India was surveyed from July to December 2018 with a sample of 1,18,152 households and 5,76,569 individuals. The 58th round of the NSS was conducted

**Table 1: Summary Statistics of Variables**

| Variables | Measurement | NSS 58th Round | | | | NSS 76th Round | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | SD | Min | Max | Mean | SD | Min | Max |
| Persons with Disabilities LPF (age 15 to 59) | LF participation = 1, otherwise = 0 | 0.37 | 0.48 | 0 | 1 | 0.31 | 0.46 | 0 | 1 |
| Persons with Disabilities LPF (all age) | LF participation = 1, otherwise = 0 | 0.25 | 0.43 | 0 | 1 | 0.2 | 0.4 | 0 | 1 |
| Enterprises | Public =1, private = 2 | – | – | – | – | 1.63 | 0.48 | 1 | 2 |
| Disability | Any kind of disability = 1, multiple disability = 2 | 1.12 | 0.32 | 1 | 2 | 1.12 | 0.33 | 1 | 2 |
| Social group | ST = 1, SC = 2, OBC = 3, other = 4 | 2.96 | 0.93 | 1 | 4 | 2.84 | 0.94 | 1 | 4 |
| Residence | Rural = 1, urban = 2 | 1.34 | 0.5 | 1 | 2 | 1.3 | 0.45 | 1 | 2 |
| Gender | Male = 1, female = 2 | 1.48 | 0.5 | 1 | 2 | 1.49 | 0.5 | 1 | 2 |
| Religion | Hindu = 1, Islam = 2, other = 3 | – | – | – | – | 1.3 | 0.6 | 1 | 3 |
| Age | Complete years | 28.11 | 20.35 | 0 | 99 | 32.08 | 20.9 | 0 | 120 |
| Square age | Square of complete years | 1,204.17 | 1,507.14 | 0 | 9,801 | 1,465.5 | 1,624.9 | 0 | 14,400 |
| Education | Not literate = 1, primary = 2, higher secondary = 3, graduation and above = 4 | 1.69 | 0.85 | 1 | 4 | 2.16 | 0.95 | 1 | 4 |
| Technical/vocational education | No = 0, yes = 1 | 0.02 | 0.14 | 0 | 1 | 0.01 | 0.11 | 0 | 1 |
| Landholding | No holding = 0, marginal = 1, small = 2, semi-medium = 3, medium and large = 4 | 1.23 | 0.91 | 0 | 4 | 1.22 | 0.61 | 0 | 4 |
| Logarithm of household UMPCE | In ₹ | 7.97 | 0.62 | 0 | 11.59 | 9.23 | 0.57 | 4.6 | 12.54 |
| Logarithm of frequent medical expenditure (monthly) | In ₹ | – | – | – | – | 6.82 | 1.03 | 1.61 | 10.82 |
| Accesses public building | No = 0, yes = 1 | – | – | – | – | 0.57 | 0.5 | 0 | 1 |
| Uses public transport | No = 0, yes = 1 | – | – | – | – | 0.43 | 0.5 | 0 | 1 |

LFP = labour force participation, "–" = not studied in this round.
Source: Authors' estimation.

between July and December 2002. This covered a total of 45,571 and 24,731 households in rural and urban areas, respectively. Data collection was made using a stratified multistage sampling approach (MOSPI and NSO 2003, 2018). The analytical sample of this study is based on 1,06,894 respondents in the 76th round and 75,979 respondents in the 58th round. The variables and their details used in the models are explained in Table 1 (p 59).

Using the background information and based on the existing studies, we specified five regression models discussed in Table 6. Two regression models (Models 1 and 4) explain the factors of labour force participation of the PWDs using the age group 15–59, and the other two models (Models 2 and 5) include their likelihood of employment in all the age groups. Another model (Model 3) explains the likelihood of employment of PWDs in public or private enterprises. This model utilises the 76th round only since the 58th round did not disaggregate the enterprises into public and private. The models include variables such as labour force participation (yes/no), gender (male/female), sector (rural/urban), religion, social group, age, age_squared, education attainment, technical education, landholding, the severity of the disability, usual monthly per capita consumer expenditure (log_UMPCE: proxy of income), frequent medical expenditure (log_OOPE healthcare: proxy of non-labour market hours), access to public buildings, and use of public transport. The details of these are discussed in Table 1.

The logit regression models are estimated since the dependent variable is binary and the error distribution is not normal (examined through the Kernel density function). There is no multicollinearity in the regression models as the mean value of the variance inflation factors (VIF) is within the limit.

**Table 2: Types of Disabilities in India** (%)

| Type of Disability | Rural Male | Rural Female | Rural Person | Urban Male | Urban Female | Urban Person | India Male | India Female | India Person |
|---|---|---|---|---|---|---|---|---|---|
| NSS 76th round | | | | | | | | | |
| Locomotor | 12 | 8.43 | 10 | 13 | 10.01 | 11 | 12 | 8.9 | 10.7 |
| Visual | 2.2 | 2.23 | 2.2 | 1.8 | 1.87 | 1.8 | 2 | 2.1 | 2.08 |
| Hearing | 2.8 | 2.7 | 2.8 | 2.4 | 2.37 | 2.4 | 2.7 | 2.6 | 2.65 |
| Speech and language | 2.6 | 1.91 | 2.3 | 2.4 | 1.59 | 2 | 2.6 | 1.8 | 2.19 |
| Mental | 3.1 | 2.25 | 2.7 | 3.1 | 2.15 | 2.6 | 3.1 | 2.2 | 2.65 |
| NSS 58th round | | | | | | | | | |
| Locomotor | 11 | 6.75 | 9.1 | 13 | 7.99 | 10 | 12 | 7.2 | 9.54 |
| Visual | 2.4 | 2.73 | 2.5 | 1.9 | 2.25 | 2.1 | 2.2 | 2.6 | 2.37 |
| Hearing | 2.1 | 1.9 | 2 | 1.8 | 1.88 | 1.8 | 2 | 1.9 | 1.93 |
| Speech and language | 1.3 | 0.82 | 1.1 | 1.2 | 0.75 | 1 | 1.3 | 0.8 | 1.04 |
| Mental | 2.9 | 1.88 | 2.4 | 2.7 | 1.75 | 2.2 | 2.8 | 1.8 | 2.33 |

The base coverage for the locomotor category increased in the 76th round.
Source: Authors' calculation.

**Table 3: Socio-economic and Demographic Characteristics of Persons with Disabilities** (%)

| Variable | NSS 58th Round No Disability | NSS 58th Round Any Kind of Disability | NSS 58th Round Multiple Disabilities | NSS 76th Round No Disability | NSS 76th Round Any Kind of Disability | NSS 76th Round Multiple Disabilities |
|---|---|---|---|---|---|---|
| Gender | | | | | | |
| Male | 77.96 | 19.48 | 2.56 | 79.55 | 18.01 | 2.44 |
| Female | 83.96 | 13.97 | 2.07 | 84.22 | 13.82 | 1.97 |
| Sector | | | | | | |
| Rural | 81.04 | 16.73 | 2.23 | 81.74 | 16.05 | 2.21 |
| Urban | 80.52 | 16.98 | 2.5 | 82.02 | 15.76 | 2.22 |
| Age group | | | | | | |
| 0–14 | 87.74 | 10.26 | 2.01 | 90.67 | 7.49 | 1.84 |
| 15–29 | 82.69 | 15.08 | 2.23 | 87.54 | 10.4 | 2.06 |
| 30–44 | 82.96 | 15.27 | 1.77 | 84.35 | 13.92 | 1.73 |
| 45–59 | 76.99 | 21.22 | 1.79 | 77.53 | 20.58 | 1.89 |
| 60–74 | 60.18 | 36.03 | 3.79 | 60.68 | 36.39 | 2.92 |
| 75–120 | 40.94 | 48.93 | 10.13 | 39.16 | 52.04 | 8.79 |
| Social group | | | | | | |
| ST | 81.04 | 17.15 | 1.81 | 83.0 | 15.1 | 1.91 |
| SC | 80.02 | 17.67 | 2.31 | 81.11 | 16.7 | 2.2 |
| OBC | 81.07 | 16.5 | 2.43 | 81.99 | 15.8 | 2.21 |
| Other | 81.06 | 16.59 | 2.34 | 81.55 | 16.11 | 2.34 |
| UMPCE (quintile) | | | | | | |
| 1st | 71.96 | 24.98 | 3.06 | 73.48 | 23.38 | 3.14 |
| 2nd | 80.03 | 17.49 | 2.48 | 81.34 | 16.5 | 2.15 |
| 3rd | 82.44 | 15.35 | 2.21 | 83.17 | 14.82 | 2.01 |
| 4th | 84.34 | 13.72 | 1.94 | 84.84 | 13.28 | 1.89 |
| 5th | 87.01 | 11.16 | 1.83 | 86.36 | 11.81 | 1.84 |

N = 3,96,943 (NSS 58th), N = 5,76,569 (NSS 76th).
Source: Author's calculation based on the NSS 58th round and 76th round.

## Persons with Disability

In 2011, 26.8 million people were living with a disability in India: 20.3% of them had movement disabilities, 18.9% hearing impairments, 18.8% visual impairments, and 5.6% with a mental disability (MOSPI 2016). Our estimate of the statewise disabilities highlights the rising cases of multiple disabilities in Punjab, Uttarakhand, Uttar Pradesh, Assam, West Bengal, Jharkhand, Odisha, Andhra Pradesh, and Kerala. Andhra Pradesh is the only state where the cases of any disability and cases of multiple disabilities increased over this period of study.

The major forms of disabilities in India are locomotor, visual, hearing, speech, and mental. Among them, the cases of locomotor disability are more than 50% of the total in both the periods. Table 2 disaggregated the types of disabilities into rural and urban by gender. The percentage of disabilities in rural areas is higher than in the urban areas except for the locomotor disability in both the rounds. The cases of male disabilities outweigh the female disabilities in both rural and urban areas.

The study identifies the socio-economic and demographic characteristics of persons in India with single and multiple disabilities. The severity of the disability is also higher among males than females (Table 3). However, the gap between the genders over the study period has declined from 0.49% to 0.47%. The overall cases of multiple disabilities have declined as well. They declined both in rural and urban areas. Our estimates find a positive relationship between age groups and the percentage of disabilities. Nearly 40%–50% cases of any kind of disabilities are reported in both the periods. The success of very low cases for the early age group is due to the major achievement of the polio programme and development in the health sector. Among the social groups, the Scheduled Castes (SCs) and Scheduled Tribes (STs) have higher cases of disabilities than the other categories.

Nonetheless, these cases reduced in the 76th round. The income (standard of living) of the household is explained using the usual monthly per capita consumer expenditure (UMPCE). This is expressed in quintiles. The result shows that the standard of living is inversely linked to the cases of any and multiple kinds of disabilities in both the survey rounds. However, this is higher in the 5th quintile income group over the period of study (76th round).

## Education Attainment and Nature of Employment

The literature identifies through some specific case studies that the PWDs are adversely affected in the labour market due to factors such as nature of employment, earnings, and compromised low educational attainment (Gudlavalleti et al 2014; Mizunoya and Mitra 2013). These have a strong bearing on their significant cut-off from the labour market participation. Table 4 presents the status of educational attainment of the PWDs from 2002 to 2018. A significant number of persons with disabilities are not literate in both the study periods. It is indeed striking to know that the educational attainment of persons with any disability as well as multiple disabilities have been drastically reduced. However, the number of literates without any schooling increased in the study period. There has been a major fall in the secondary and higher secondary levels of educational attainment.

Table 5 includes the principal and subsidiary activity status of the PWDs by their enterprise type. As per the latest survey data, persons with multiple disabilities are mostly running their proprietary enterprises. No single person with more than two disabilities could run the proprietary business as their subsidiary activity. There are nearly zero enterprises other than proprietary where the person has more than two types of disabilities. Around one-third of persons with a single disability are engaged with the government/local body as their principal status activity. In the case of the subsidiary status, this is 20% only.

**Table 4: Educational Attainment of the Persons with Disabilities** (%)

| Variables | NSS 58th Round | | | NSS 76th Round | | |
|---|---|---|---|---|---|---|
| | No Disability | Any Kind of Disability | Multiple Disabilities | No Disability | Any Kind of Disability | Multiple Disabilities |
| Not literate | 79.5 | 18.07 | 2.43 | 72.13 | 23.59 | 4.29 |
| Literate without any schooling | 81.2 | 16.89 | 1.91 | 78.31 | 18.93 | 2.76 |
| Below primary schooling | 81.22 | 16.47 | 2.31 | 85.4 | 12.81 | 1.79 |
| Primary | 81.5 | 16.28 | 2.22 | 84.26 | 14.11 | 1.62 |
| Upper primary/middle | 82.06 | 15.78 | 2.16 | 85.6 | 13.18 | 1.22 |
| Secondary | 81.83 | 15.68 | 2.49 | 86.98 | 12.03 | 0.99 |
| Higher secondary | 81.76 | 15.94 | 2.30 | 89.69 | 9.71 | 0.60 |
| Diploma/certificate course | 79.90 | 17.45 | 2.65 | 87.19 | 11.75 | 1.06 |
| Graduate | 81.22 | 16.42 | 2.36 | 89.03 | 10.39 | 0.57 |
| Postgraduate and above | 81 | 16.82 | 2.18 | 86.99 | 12.57 | 0.44 |

N = 3,96,943 (NSS 58th), N = 5,76,569 (NSS 76th).
Source: Authors' calculation.

**Table 5: Principal and Subsidiary Activity of PWDs in 2018** (%)

| Enterprises Type | Usual Principal Activity | | | | Usual Subsidiary Activity | | | |
|---|---|---|---|---|---|---|---|---|
| | Any One Type of Disability | Any Two Types of Disability | Multiple Disabilities | Total | Any One Type of Disability | Any Two Types of Disability | Multiple Disabilities | Total |
| Propriety | 24.85 | 23.68 | 75 | 24.86 | 50 | 100 | 0 | 56.52 |
| Partnership | 4.36 | 6.58 | 0 | 4.46 | | | | |
| Government/local body | 35.52 | 25 | 0 | 34.94 | 20 | 0 | 0 | 17.39 |
| Autonomus bodies | 2.37 | 1.32 | 0 | 2.31 | | | | |
| Public/private limited company | 16.28 | 21.71 | 0 | 16.53 | 15 | 0 | 0 | 13.04 |
| Cooperative societies | 1.43 | 0 | 0 | 1.36 | | | | |
| Trust/other non-profit institutions | 3.87 | 1.32 | 0 | 3.74 | 10 | 0 | 0 | 8.7 |
| Employer's household (that is, private households employing maid servant, watchman, cook, etc) | 1.43 | 5.92 | 0 | 1.65 | | | | |
| Others | 9.9 | 14.47 | 25 | 10.15 | 5 | 0 | 0 | 4.35 |

Source: Authors' calculation using 76th round data.

## Barriers to Employment

In a life full of barriers, PWDs face numerous challenges from the day of their birth until their death. Many significant obstructions restrict the growth and empowerment of the person with a disability and enter into the labour market. The major challenges include lack of education, limited financial resources, poor infrastructure, lacking a skill development programme, etc. Thus, it has been realised that the social protection systems make them leave their jobs and adopt the incentives generated from these disability benefits (Gilbert 2010). Most of the time, this disadvantaged position of the person with disabilities leads to their discrimination. This negative attitude towards them makes them vulnerable to the outside world. This can also make them face prejudices, stereotypes, and backlash from their employers and colleagues at the workplace, most importantly during the hiring process. Most of the time, disable persons themselves do not apply for the jobs available in private and other such organisations, fearing social stigma, the co-workers' unwelcome reaction, and indifferent as well as negative attitude from the society in general. This happens because they are not encouraged for their performances and initiatives, resulting in "lost opportunities effect," where they lose their opportunities in effect (Kulkarni and Valk 2010). Apart from these, a person with disabilities also faces a layer of other disadvantage positions such as low literacy levels—this has been a problem among children with disabilities of all categories (also explained in Table 4). Based on the World Bank report, illiteracy among children with disabilities (52%) is much higher than the children from the general category (35%) (World Bank 2007). Other issues include lack of daily wage skills, self-esteem and confidence, which makes them isolated and restricts them from contacting their friend and families (Adlakha 2008), poor knowledge of English, overprotective parents, basic skills, and rural disconnect from the market. There is a lack of assistive devices in the Indian workplace setting that proves beneficial in creating opportunities, increasing efficiency, and enhancing the working potential of the population with disabilities.

Discrimination also emerges from workplace interactions and the perceptions of the employer. Adaptation to the workplace is also a major obstruction in front of specially abled people.

Most PwDs feel that due to institutional, functional, and policy differences or the lack of universality in all working spaces, it takes some time to adjust. The most distressing situation is women with disabilities who counter physical, emotional, and sexual assault across the institutions. Thus, most of them had to leave their jobs, while some take fatal decisions like dying by suicide. It is difficult for a person with this state of mind to give their maximum in their labour. Employer discrimination creates a limitation through the stereotypes and prejudices attached to physical and mental disability. The views and beliefs of the individuals become composite and are projected as the organisations' viewpoint, creating an exclusive work environment. Coworkers tend to draw from their supervisors and the management staff to appear coherent with the company's stereotypical ideas, which further negatively connotes the PwDs (Gudlavalleti et al 2014). Frequent sickness leaves and the cost of maintenance

**Table 6: Results of Logit Regression Models**

| | | LPF (age 15–59) | | Employment of PwDs (All age) | | Enterprises (public/private) | | LPF (age 15–59) | | Employment of PwDs (All age) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Disability 76th Round | | | | | | Disability 58th Round | | | |
| | | Model 1 | | Model 2 | | Model 3 | | Model 4 | | Model 5 | |
| Variables | | Coefficient | (dy/dx) | Coefficient | (dy/dx) | Coefficient | (dy/dx) | Coefficient | (dy/dx) | Coefficient | (dy/dx) |
| Gender: Male@ | Female | -1.98 *** | -0.25 *** | -1.86 *** | -0.15 *** | -0.71 ** | -0.14 ** | -1.67 *** | -0.31 *** | -1.65 *** | -0.22 *** |
| | | [0.07] | [0.007] | [0.06] | [0.005] | [0.28] | [0.05] | [0.02] | [0.004] | [0.02] | [0.002] |
| Sector: Rural @ | Urban | 0.111 | 0.01 | 0.075 | 0.006 | 0.36 | 0.07 | -0.086 *** | -0.02 *** | -0.09 *** | -0.012 *** |
| | | [0.06] | [0.008] | [0.05] | [0.004] | [0.23] | [0.05] | [0.03] | [0.005] | [0.02] | [0.003] |
| Religion: Hindu @ | Islam | -0.063 | -0.008 | -0.096 | -0.008 | 0.24 | 0.05 | – | – | – | – |
| | | [0.08] | [0.01] | [0.07] | [0.006] | [0.35] | [0.07] | | | | |
| | Other | -0.19 | -0.024 | -0.082 | - 0.006 | 0.39 | 0.08 | – | – | – | – |
| | | [0.11] | [0.01] | [0.09] | [0.007] | [0.41] | [0.08] | | | | |
| Social group: ST@ | SC | -0.075 | -0.009 | -0.025 | -0.002 | 0.64 | 0.13 | -0.054 | -0.01 | -0.06 | -0.009 |
| | | [0.12] | [0.02] | [0.10] | [0.008] | [0.51] | [0.10] | [0.04] | [0.008] | [0.04] | [0.005] |
| | OBC | -0.173 | -0.022 | -0.044 | -004 | 0.49 | 0.1 | -0.078 | -0.014 | -0.08* | -0.012 * |
| | | [0.12] | [0.01] | [0.10] | [0.008] | [0.48] | [0.1] | [0.04] | [0.008] | [0.04] | [0.003] |
| | Other | -0.121 | -0.015 | 0.016 | 0.001 | 0.98 | 0.2 | -0.2 *** | -0.037 *** | -0.19 *** | -0.026 *** |
| | | [0.12] | [0.014] | [0.10] | [0.008] | [0.48] | [0.1] | [0.04] | [0.008] | [0.04] | [0.005] |
| Age | Age | 0.274 *** | 0.034 *** | 0.239 *** | 0.019 *** | -0.22 *** | -0.045 *** | 0.23 *** | 0.04 *** | 0.25 *** | 0.03 *** |
| | | [0.02] | [0.002] | [0.008] | [0.0] | [0.064] | [0.012] | [0.004] | [0.0] | [0.003] | [0] |
| Age squared | Square age | -0.003 *** | -0.0004 *** | -0.003 *** | -0.0002 *** | 0.002 ** | 0.0004 *** | -0.002 *** | -0.0005*** | -0.003 *** | -0.0003*** |
| | | [0.002] | [0.0] | [0.0] | [0] | [0.0007] | [0.0001] | [0.0] | [0] | [0] | [0] |
| Education: Not literate@ | Primary | 0.215 ** | 0.03 ** | 0.15 * | 0.012 * | -0.60 | -0.12 | 0.45 *** | 0.08 *** | 0.35 *** | 0.05 *** |
| | | [0.08] | [0.01] | [0.06] | [0.005] | [0.45] | [0.1] | [0.03] | [0.005] | [0.02] | [0.003] |
| | Higher secondary | 0.442 *** | 0.055 *** | 0.394 *** | 0.03 *** | -0.87 * | -0.17 | 0.51 *** | 0.09 *** | 0.57 *** | 0.078 *** |
| | | [0.07] | [0.01] | [0.06] | [0.005] | [0.39] | [0.08] | [0.03] | [0.005] | [0.03] | [0.003] |
| | Graduate and above | 1.18 *** | 0.14 *** | 0.841 *** | 0.068 *** | -1.47 *** | -0.3 | 1.22 *** | 0.23 *** | 1.19 *** | 0.162 *** |
| | | [0.12] | [0.015] | [0.10] | [0.008] | [0.43] | [0.08] | [0.06] | [0.01] | [0.06] | [0.008] |
| Technical education: No@ | Yes | 0.632 ** | 0.08 ** | 0.75 *** | 0.06 *** | 0.022 | 0.004 | 0.53 *** | 0.1 *** | 0.53 *** | 0.072 *** |
| | | [0.20] | [0.02] | [0.18] | [0.014] | [0.37] | [0.08] | [0.06] | [0.012] | [0.06] | [0.008] |
| Landholding: No land@ | Marginal | 0.053 | 0.007 | -0.215 | -0.017 | – | – | -0.09 ** | -0.018 ** | -0.058 * | -0.008 * |
| | | [0.33] | [0.04] | [0.28] | [0.02] | | | [0.03] | [0.006] | [0.03] | [0.004] |
| | Small | 0.193 | 0.024 | -0.04 | -0.003 | – | – | 0.017 | 0.003 | 0.12 ** | 0.016 ** |
| | | [0.35] | [0.04] | [0.29] | [0.023] | | | [0.05] | [0.008] | [0.04] | [0.008] |
| | Semi-medium | 0.16 | 0.02 | 0.053 | -0.004 | – | – | 0.1 | 0.019 | 0.2 *** | 0.027 *** |
| | | [0.36] | [0.046] | [0.30] | [0.024] | | | [0.06] | [0.01] | [0.05] | [0.004] |
| | Medium and large | -0.26 | -0.03 | -0.381 | -0.03 | – | – | 0.07 | 0.014 | 0.19 ** | 0.026 ** |
| | | [0.43] | [0.05] | [0.37] | [0.03] | | | [0.07] | [0.01] | [0.06] | [0.009] |
| Disability: One kind of disability@ | Multiple disability | -0.963 *** | -0.12 *** | -0.834 *** | -0.067 *** | -0.56 | -0.11 | 0.06 | -0.012 | -0.07 * | -0.01 * |
| | | [0.10] | [0.012] | [0.09] | [0.007] | [0.44] | [0.09] | -[0.04] | [0.006] | [0.03] | [0.004] |
| UMPCE | log (UMPCE) | -0.056 | -0.007 | -0.176 *** | -0.14 *** | -0.32 | -0.07 | -0.17 *** | -0.033 *** | -0.2 *** | -0.27 *** |
| | | [0.06] | [0.007] | [0.04] | [0.003] | [0.2] | [0.04] | [0.18] | [0.003] | [0.02] | [0.002] |
| Frequent medical expenditure (monthly) | ln(OOPE)_monthly | -0.31 *** | -0.039 *** | -0.315 *** | -0.025 *** | -0.20 * | -0.04 * | – | – | – | – |
| | | [0.03] | [0.004] | [0.02] | [0.001 | [0.1] | [0.02] | | | | |
| Accesses public building: No@ | Yes | 1.08 *** | 0.14 *** | 1.05 *** | 0.084 *** | -0.089 | -0.018 | – | – | – | – |
| | | [0.08] | [0.01] | [0.06] | [0.005] | [0.29] | [0.06] | | | | |
| Uses public transport: No@ | Yes | 0.491 *** | 0.06 *** | 0.044 *** | 0.035 *** | -0.44 | 0.09 | – | – | – | – |
| | | [0.06] | [0.008] | [0.05] | [0.004] | [0.27] | [0.05] | | | | |
| Constant | | -4.6 *** | | -2.82 *** | | 10.72 *** | | -2.62 *** | | -3.14 *** | |
| | | [0.67] | | [0.51] | | [2.24] | | [0.17] | | [0.14] | |
| Number of observations | | 10,171 | | 22,509 | | 491 | | 46,626 | | 75,813 | |
| Pseudo R2 | | 0.2275 | | 0.2765 | | 0.1295 | | 0.155 | | 0.255 | |
| LR chi (24) | | 2,355.81 | | 4,547.2 | | 86.48 | | 9,517.47 | | 21,698.35 | |

Variable@ is the reference category; LPF is the labour force participation; "–" variables are not studied in this round.
Significance level : * p<.1, ** p<.05, and *** p<.01.
Source: Authors' estimation.

are also a concern for employers. The actual behaviour and attributes of PwDs tend to be overshadowed by the impairments and shortcomings. They fear that they would be treated differently, and the absence of an inclusive process further creates socio-economic hurdles for them (Shenoy 2011). They are victims of the "lost opportunities effect," where they are excluded from the improvement opportunities due to the absence of a mechanism of criticism and feedback. Physical access within the workplace, communication and technological barriers, and skills training are critical barriers to the inclusive involvement of PwDs in the labour market. There hardly is any institution or agency like an employment exchange or counselling centre that is actively working in any institution for providing support to the specially abled people. It has been comprehended from the respondents that this communication void between the authorities and the PwDs has been making their condition more volatile. Factors responsible for fallaciousness in implementing government policies for PwDs are another important aspect to look into. It has been recorded that most of the establishments or organisations do not follow the rules and regulations prescribed to them in order to extend the benefits designed for the PwDs. The government's social security systems also contribute to this steady decline in their participation in the production process as the allowances act as incentives to gather the disability benefits.

## Factors of Labour Force Participation

The PwDs are exposed to several obstacles in the labour market. The regression coefficients in Table 6 are consistent across five models. Our estimation suggests that female persons with disabilities are less likely to be absorbed in the labour force and also in private enterprises. The PwDs located in urban areas have higher chances of being included in the labour force till the 58th round. However, the gap between rural and urban is not significant in the 76th round. Religion and social hierarchy do not significantly explain their participation in the labour market. The age of the persons is positively and significantly linked to the labour force participation, whereas age squared (indicates beyond a threshold age) is negatively associated with the labour force and positively linked to the private sector since experience matters.

It is interesting to note that education plays a significant role in labour force participation, which is largely owing to the public/government sector. However, the private enterprises do not facilitate the PwDs even though they attained better education. Nonetheless, the PwDs with technical education have a higher likelihood of engagement in the labour force and private enterprises. The severity of disability (with multiple disabilities) of the persons is negatively and significantly associated with the labour force participation. Standard of living and land possession of the PwDs do not have a major bearing on labour market participation. Frequent medical consultation (Log OOPE on healthcare as the proxy) by the PwDs indicates that they have a severity of the disability that diverts them from their participation in the labour market. Our regression results also validate that this factor has adversely affected their labour force participation as well as absorption in the private sector. The access to public transport and the buildings also significantly determines their participation in the labour market. Our findings are robust since these are consistent across different models. Therefore, our regression models categorically suggest facilitation to the PwDs in the policy prescriptions with regard to inequalities in access, locational disadvantages, vocational and technical education, special medical care to reduce their OOPE and time of non-labour market engagement, and direct income support.

## Legislation for the Employment of PwDs

With the culmination of the 20th century, Indian democracy has witnessed a number of social and constitutional security measures for protecting the rights and the enhancement of opportunities for the population with disabilities. The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995 was aimed to empower PwDs by creating job opportunities and protecting their rights without any discrimination. Another significant act was more specific for mentally ill people, the Mental Health Act, 1987 was passed to make changes in the laws that are constraining in the treatment and care of the mentally ill people. Then, the National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999 aimed at providing care to people with mental illnesses and cerebral palsy with the assistance bequeathed to the trust. The Rights of Persons with Disabilities Act (RPWD), 2016 replaced the PWD Act, 1995 to comply with the United Nations Convention on the Rights of Person with Disabilities (UNCRPD). The number of disabilities accepted by the act has been raised to 17 from seven recognised in the old act of 1995 (Ministry of Law and Justice 2016). The new legislation applies to both private and public businesses. It is the responsibility of the governments as well as service providers to comply with the central government's regulations. Even in government jobs, the reservation has been increased to 4%, and in educational institutions to 5%. This provision is as per Section 34 of the Rights of Persons with Disabilities Act, 2016. The executive magistrate and police officers have been given authority to deal with cases of assault and threats against the physically disabled. In collaboration with the chief justice of the high court, the act also requires state governments to notify the district and trial courts of the session to be special courts for the speedy trial of offences under the act. The act establishes the National Disability Savings Fund. The law aims to serve a number of purposes, including education, skill development, employment, well-being, and social security.

## The Way Forward

There are various discrepancies in the employment of PwDs in the labour market. Despite a large population of disabled people in India, their employment opportunities are largely constrained by the "normal" people's attitudes, which make these impaired people disabled. A multifaceted approach is required to address economic, social, medical, and legal aspects of barriers to participation in the labour market. Creating an accessible environment is a must. The creation of an inclusive work environment and the shedding of stigmatised beliefs is also crucial at increasing the chances of employment for them. PwDs should be made aware of the available schemes and policies that guarantee them employment. The central and state governments must establish necessary accessible infrastructure as per the disability policies and international commitments. The identification of work for each type of disability may be the stepping stone for creating gainful employment for this marginalised section of the population. For instance, people with hearing and speech impairment can be actively involved in teaching sign language.

With special training, persons with mild intellectual disabilities can be employed in unskilled and manual jobs. Using information and communications technology tools with technical/vocational training, they can perform a wide range of jobs in more productive and creative ways. Special provisions for easy access to credit should be facilitated through lower rates of interest. Self-help groups (SHGs) should also be promoted to assimilate a higher number of PwDs without discrimination. A large number of self-employment and entrepreneurship opportunities ought to be generated since it is difficult for individuals with disabilities to find jobs. Furthermore, persons with disabilities can be employed in several industries such as those manufacturing stationery items, textile, etc. The finished products generated from these units can be procured, purchased, marketed, and distributed by the government. The employers, non-governmental organisations (NGOs), and other concerned stakeholders should be sensitised and streamlined.

The vacant posts in government jobs must be filled, while reservations must be extended to the private sector. In addition, the latter should be required to recruit a higher number of PwDs. Moreover, there should be non-discrimination in the recruitment process; the attitudes of colleagues and management should be supportive. Special arrangements should be made for them in all the workplaces.

The Rights of Persons with Disabilities Act, 2016 should be implemented in letter and spirit. An audit system should be devised to look into various needs of the PwDs (Divyangjan) and discuss their problems in the organised public as well as the private sector. Provisions under corporate social responsibility could also be effectively utilised for their welfare. NGOs such as the National Platform for the Rights of the Disabled and disability rights activists must be involved in policy formulation and implementation of various welfare programmes for the disabled. Members of the community with disabilities must have a say in matters concerning their well-being. Planning and implementation on these lines can go a long way in securing the rights and welfare of the individuals with disabilities. It is high time to realise that disabled lives matter. They must be entitled to the jobs under the Mahatma Gandhi National Rural Employment Guarantee Act as well as the social insurance cover. A separate scheme ensuring employment guarantee for them must be mulled over. The COVID-19 pandemic has led to job losses for individuals with disabilities

. Unemployment allowance should be provided to them in such cases as a priority. In this allocation process, the role of the NGOs should be recognised, as they help them in attuning their rights and making them aware of the policies and welfare schemes. The findings of the study suggest that reducing all such barriers would entail better labour market participation and their holistic development.

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# Extreme Weather Events and Vegetable Inflation in India

Vimal Kishore, Himani Shekhar

Extreme weather events like cyclones, heavy rainfall/floods, thunderstorms, hailstorms, and droughts often damage standing crops, causing supply shortages and spikes in vegetable prices in India. Such supply shocks push up food inflation and also increase food price volatility. This paper analyses the impact of such extreme weather events on the prices of three key vegetables, that is, tomatoes, onions and potatoes in India. It also tries to find out whether the inclusion of these weather events improves out-of-sample forecast performances. The paper concludes that these events have a significant impact on the prices of TOP and aids in forecast performance in the case of onions and potatoes. Therefore, monitoring the occurrence of such extreme weather events in important TOP-producing states can help in predicting future surges in prices of these vegetables and improve forecasting performance of food inflation in the short term.

The views expressed in the paper are those of the authors and not necessarily of the institution to which they belong.

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Despite record foodgrains and horticulture production, food price inflation in India has not only increased but also become more volatile during 2019–21. A large part of such volatility is induced by vegetable (especially tomato, onion and potato [TOP]) prices. Such volatility results in large projection errors in inflation (RBI 2020). Coexistence of record production of horticulture crops along with large volatility in prices suggests the role of extreme weather events in affecting supply and supply chains and thereby impacting retail prices. In India, the impact of such weather events gets magnified due to agriculture's primary dependence on monsoons and dominance of informal channels of marketing.

Weather-related shocks usually impact the short- to medium-term price dynamics and output gap, which may have long-run macroeconomic effects on potential output, the natural rate of interest, sectoral composition and international competitiveness (NGFS 2020). Such short-term climatic variations often lead to heightened inflation, uncertainty and volatility (particularly for food prices), justifying the presence of an escape clause or a band surrounding the target to absorb such shocks (RBI 2021). The temporary disruption of the supply chain and the physical losses can create transient shortages of goods, subsequently raising the prices. The severity and persistence of such shocks create challenges for inflation projections. This may lead to policy errors as it is the base for policy formation. Short-term supply shocks in food prices also affect the medium-term inflation expectations (Pattanaik et al 2019).

Around 65% of India's total gross cropped area is unirrigated. Agriculture is heavily reliant on rainfall from the south-west monsoon, which provides for over 75% of the yearly rainfall (Dilip and Kundu 2020). However, deficient rainfall (leading to drought) is as deleterious to crops as excess rainfall (causing floods). Cyclones in the coastal states are accompanied with rainfall and high-speed winds, damaging standing crops. Other extreme weather events, like floods, thunderstorms, hailstorms, etc, usually confined to states, can also cause large-scale crop damage, leading to supply shocks. This can get magnified even up to the national level. India has a high weight of food and beverages in the consumer price index-combined (CPI-C) basket (45.9%). Thus, any adverse supply shock in food is subsequently reflected in CPI-C.

Among food items, vegetables are often the worst hit because they are perishable. In India, onions, tomatoes, and potatoes are the three main vegetables consumed in almost every household. They are also highly susceptible to the vagaries of nature. Although India is self-sufficient in the production of these vegetables, extreme weather events distort the supply–demand balance temporarily. The perishable nature and almost non-substitutability of TOP leads to considerable price spikes in case of supply shocks. Production damages caused by adverse weather shocks lead to lower storage. They also damage the stored produce due to higher moisture content leading to emergence of price pressures. Considering the importance of these vegetables, the Indian government announced Operation Greens in the 2018–19 Union Budget.

Analysing the recent extreme movements in the prices of TOP and their linkages with extreme weather events provide important insights. In 2019, onion prices skyrocketed and its inflation rose to an astounding 327.4% in December 2019 from (-)7.4% in July 2019. In the event, food inflation spiked to 12.2% pushing the consumer price inflation (CPI) to breach the upper tolerance limit of 6%. In 2020, inflation in prices of potatoes witnessed a sharp increase. It reached 107% in November 2020. The common factor in both these extreme price movements was the role of weather-related disturbances. Unseasonal rains during October–November 2019 in key onion-producing states of Maharashtra, Madhya Pradesh and Karnataka (for *kharif* onions) caused this adverse price development. Similarly, unseasonal rains in March 2020 in Uttar Pradesh and cyclone-related crop damage in West Bengal in May 2020 led to the surge in prices of potatoes (RBI 2020). These episodes of large price movements signify the role of extreme weather on vegetable price inflation in India.

Supply shocks in these vegetables also emanate from other factors like hoarding, pest attacks, significant post-harvest losses during storage and transportation, and strikes/protests by farmers, traders or transporters. Collusion among a few big traders and intentional hoarding by them was observed in the case of onions (Chengappa et al 2012). Further, anti-competitive practices by the supply-chain participants in the case of onions often exacerbates the price effect (Birthal et al 2019). In 2018–19, production of tomatoes was reported to suffer from a fungus-led crop damage in Karnataka (RBI 2019). Extreme weather events increase the risk of fungal and other infections in crops. Post-harvest losses are also affected by rainfall and temperature. Strikes/protests by farmers or transporters led to supply disruptions in the past. It led to tomato prices jumping exorbitantly in July 2017 (by 138% month-on-month) as farmers' protests led to lower supply of tomatoes. However, such occurrences are less frequent and their impact is limited.

Apart from vegetables, other food crops are also affected by extreme weather events. In 2019–20, the kharif crops of *arhar*, moong, *urad* and groundnut were damaged due to unseasonal rains and floods, leading to an increase in their prices. However, the extent of price increase was much lower in comparison to the increases observed in TOP. The non-substitutability, relative concentration of production in few states, and perishable nature of TOP leads to a dramatic impact on their prices.

Against this backdrop, this paper studies how weather-related shocks affect the CPI of these vegetables. It analyses whether the recognition of these extreme weather events can help in improving the inflation projections of TOP. The results of the empirical analysis indicate that cyclones followed by deficit rain have the maximum impact on the prices of TOP. Moreover, the inclusion of weather-related information improves forecast performance for onions and potatoes.

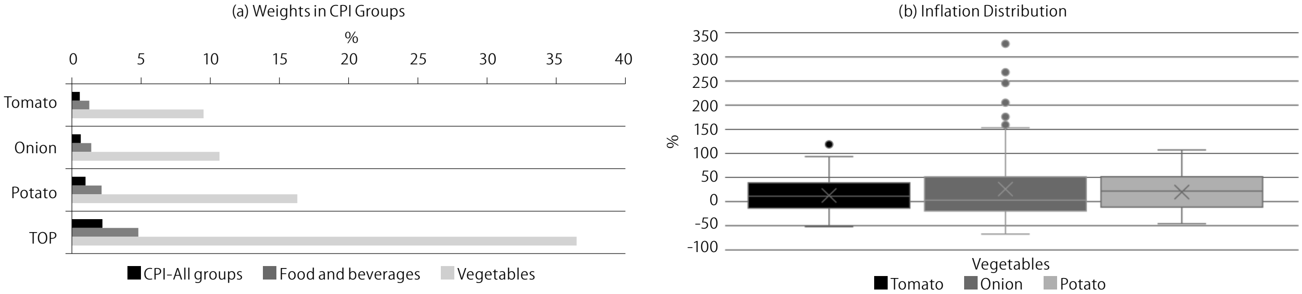
## Literature Review

Global organisations studying the impact of climate change on the planet have repeatedly highlighted the risk of food security and food prices caused by changes in climate. Studies have found that increasing temperatures, changing precipitation patterns, and greater frequency of some extreme events are already affecting food security (Mbow et al 2019). It is projected that future climate change will lead to an increase in the prices of cereals by 1%–29% by 2050 across shared socio-economic pathways (SSPs) (IPCC 2019). The vulnerability of fruit and vegetable production has also increased due to climate change. It has been highlighted that the warming of the planet is likely to worsen the climate impacts, such as extreme weather events, spreading pests and diseases, loss of biodiversity, degrading ecosystems, and water scarcity, damaging food security and livelihoods leading to forced migration (FAO 2019). Climate change could also have an impact on global trade flows, food markets and price stability along with introducing new risks for human health (FAO 2015).

Apart from these reports, other researchers have also produced elaborate work on the impact of climate change on food security. A study found that droughts and extreme heat led to a reduction of national cereal production across the countries studied by around 9%–10% during 1964–2007 (Lesk et al 2016). A recent study on the impact of climate change and agriculture states that extreme weather events are expected to occur more frequently in a warming climate (Kornhuber et al 2020). To quantify the changing risk of low production for the major food-producing regions (breadbaskets) over time, another study combines region-specific data on agricultural production with spatial statistics of climatic extremes and shows an increasing risk of simultaneous failure of wheat, maize, and soybean crops across the breadbaskets analysed (Gaupp et al 2020). The impact of disasters on inflation may vary over time as well as across subgroups. This depends on early disruption and shortages along with direct and indirect impact on different sectors of the economy; nonetheless, the impact on food price inflation remains positive.

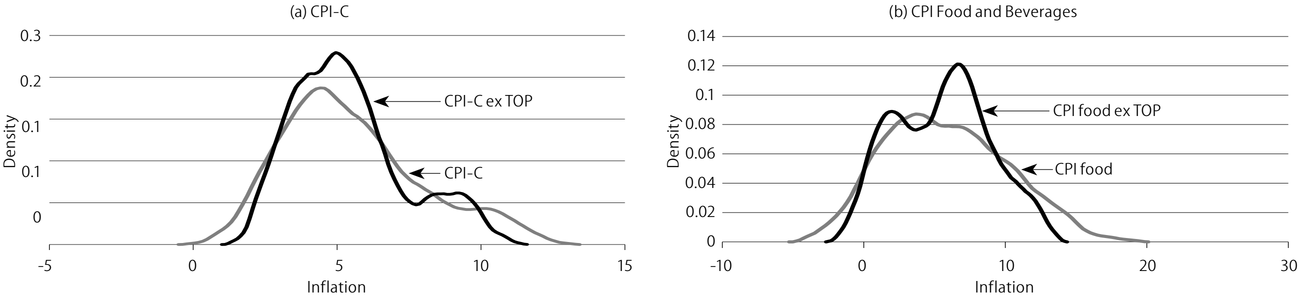
In India, a study analysed the effects of rainfall and temperature on yields of paddy and millets from 1966–99 and found that paddy was sensitive to climate variables, while millet was less affected (Gupta et al 2014). An analysis of wheat yields across 208 districts during 1981–2009 indicated that increase in temperature led to a reduction in yields of wheat by 5.2% (Gupta et al 2017). The macroeconomic impact of climate change, particularly on food inflation and certain indicators of real economic activity, were found to be statistically significant for India (Dilip and Kundu 2020). Another study indicated that a substantial shift in the climate may

**Figure 1: Weights in CPI and Inflation Distribution**



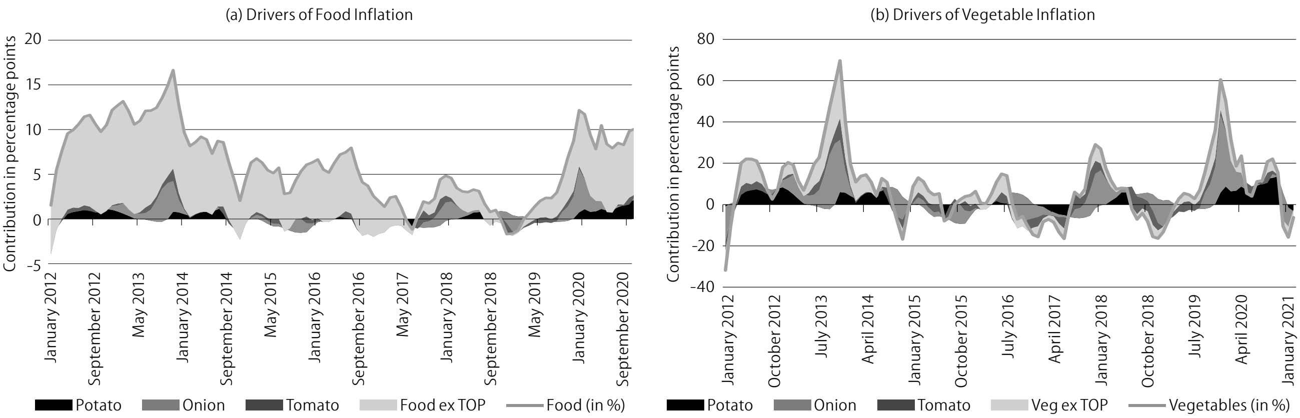

Source: National Statistical Office and authors' calculations.

**Figure 2: Inflation Distribution—Kernel Density Plot**




Source: National Statistical Office and authors' calculations.

**Figure 3: Contribution in Food Inflation and Vegetable Inflation**




Source: National Statistical Office and authors' calculations.

lower Indian agricultural productivity by 25% (Birthal et al 2014). While analysing data between 1967 and 2017 for 15 crops across the country, it was found that land productivity decreases with an increase in annual average temperature (Praveen and Sharma 2020).

Thus, the role of risk-mitigating policies and increasing resilience to climate change becomes important. Post-disaster recovery and reconstruction are important for lowering weather-related disaster risks. Risk-sharing and transfer mechanisms like insurance, relief finance, recovery of livelihood, etc, can increase resilience to climate change (IPCC 2012).

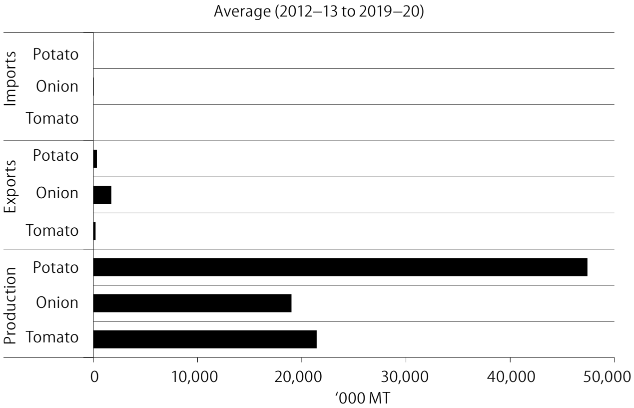
Most of these studies have focused on the growing relevance of climate-related changes and disasters, along with the threat they represent to food security and livelihoods. But, they have not focused so much on the influence on agricultural commodity prices. This paper analyses the impact of extreme weather events, whose frequencies and intensities are related to climate change, and on the prices of TOP in India. It addresses the gap in studies on the relationship between extreme weather events and vegetable price inflation at the national level in India.

## Stylised Facts

TOP with a combined weight of 36.5% in the CPI-vegetables basket, 4.8% in the food and beverages basket, and 2.2% in the overall CPI basket, are the major sources of supply shocks in food as they are highly sensitive to weather shocks (Figure 1a). The distribution of their inflations indicates high positive skew (Figure 1b).

Irrespective of such a low weight in the CPI-C, they are a significant contributor to the volatility of CPI-C inflation as the range of movement of CPI-C distribution is around 3.5 percentage points higher on account of TOP (Figure 2a). The impact of TOP is more pronounced in the case of CPI-food where the range of movement is about 9 percentage points higher on account of TOP (Figure 2b).

**Figure 4: Production, Imports and Exports of TOP**




Years refer to crop years (that is, July–June).
Source: *Horticultural Statistics at a Glance 2018*; Monthly Reports on Onion, Tomato and Potato, June 2020, Horticulture Statistics Division, Ministry of Agriculture and Farmers' Welfare; and Department of Commerce, Ministry of Commerce and Industry.

Moreover, in the CPI-food basket, TOP is a significant contributor to inflation, especially during the periods of spikes. Peak contribution of 48.6% was observed in December 2019 (Figure 3, p 67). Besides, vegetable prices primarily mirror the movement in TOP.

The erratic nature of the prices of TOP on the back of supply shocks have also contributed to increased volatility[1] of the food group. The average volatility of TOP is around 25% against an average of 1.1% for food excluding TOP during 2012–20. The peak volatility in TOP was around 42% in 2019 when the volatility in food excluding TOP also reached its peak of 1.9%. This highlights the importance of TOP in shaping food-inflation trajectory.

India is the second largest producer as well as the second largest consumer of these vegetables. Over the years, the supply as well as the demand for these vegetables has steadily increased. The demand is likely to grow further with an increase in population and income of the country (Table 1).

**Table 1: Annual Production and Demand of TOP in India** ('000 tonnes)

| | Onion | | Potato | | Tomato | |
|---|---|---|---|---|---|---|
| | Production | Annual Demand | Production | Annual Demand | Production | Annual Demand |
| 2012–13 | 16,813 | 18,252 | 45,344 | 42,203 | 18,227 | 16,766 |
| 2013–14 | 19,402 | 18,503 | 41,555 | 41,502 | 18,736 | 17,182 |
| 2014–15 | 18,927 | 18,488 | 42,174 | 42,151 | 18,305 | 16,961 |
| 2015–16 | 20,333 | 19,002 | 43,417 | 43,169 | 18,732 | 17,259 |
| 2016–17 | 21,718 | 20,770 | 48,237 | 45,739 | 19,542 | 17,871 |
| 2017–18 | 23,262 | 20,531 | 51,310 | 47,463 | 19,759 | 18,366 |

Source: *Horticultural Statistics at a Glance 2018*, Ministry of Agriculture and Farmers' Welfare.

India is an exporter of these vegetables as the domestic production is more than the domestic demand. Imports are mostly negligible for these commodities. However, during periods of shortages, mostly caused by weather-related shocks, imports are required (Figure 4). Exports are significantly higher in comparison to production of onions (around 8%), but not so much for the other two vegetables (around 1%). Thus, the inflation of TOP is largely driven by domestic factors.

Another important factor in the price movements of TOP is that they all have seasonal patterns (in terms of cumulative momentum). This depends on the market-arrival pattern of these crops (Figure 5, p 69). During the lean season, prices generally move up, while during the peak arrival months, prices soften.

India's agriculture is highly dependent on south-west monsoon rains. The vagaries of monsoon affect production (kharif) and subsequently the food price inflation. The southwest monsoon rains also help in maintaining reservoir levels and soil moisture. It is important for agricultural yield during the non-monsoon season (mostly rabi). The north-east monsoon rains affect agriculture in Tamil Nadu and nearby regions. Since the country receives maximum rainfall during the monsoon, the performance of monsoon measured in terms of deviations from the long period average (LPA) rainfall becomes crucial for the agricultural output (Figure 6, p 70). When the departure is within 10% from the LPA, the rainfall is normal. In 2014 and 2015, rainfall was less than normal during monsoons ([-]12 and [-]14%). However, in 2019 and 2020 rainfall received was almost at the threshold level of being above normal monsoon rainfall (10% and 9%).

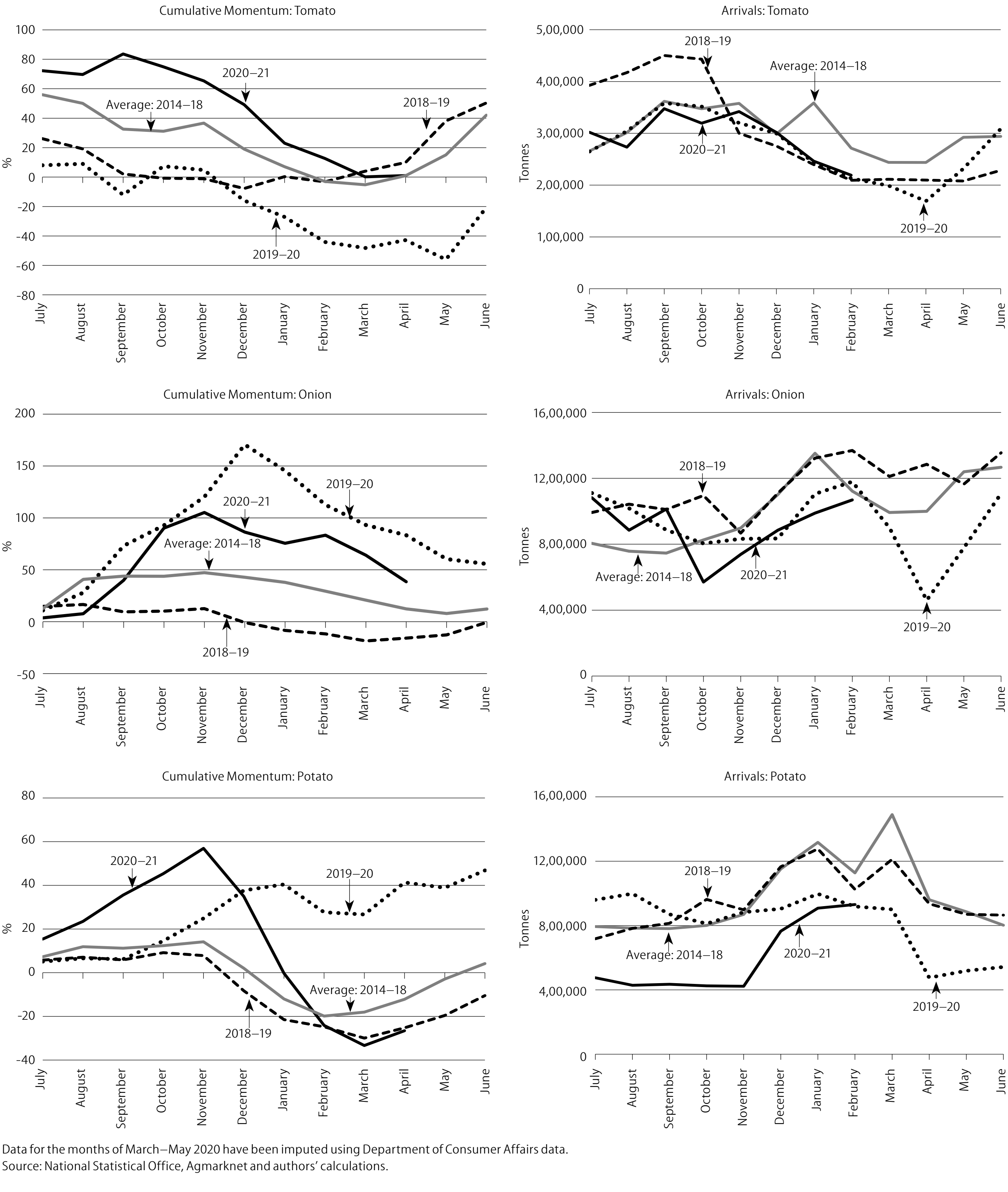
The excess rainfall in the post-monsoon season in 2019 (Figure 6b, p 70) led to onion crop damage. This pushed onion price inflation to 327.4%. Both the time of rainfall and spatial distribution of rainfall matters for crops. Large excess rainfall in Maharashtra and North Interior (NI) Karnataka and excess rainfall in west Madhya Pradesh and South Interior (SI) Karnataka, which are key producing states for kharif and late-kharif onions, led to the extraordinary price movement in onion.

India, being a peninsula and in the tropical region, is susceptible to tropical cyclones. On an average 12 cyclonic disturbances and 4.5 cyclones are witnessed over the North Indian Ocean (NIO) per year (1961–2017), with a normal of one cyclone over the Arabian Sea and four cyclones over the Bay of Bengal. The severity of these cyclonic distu rbances and storms affect the extent of damage caused to crops. The Indian Meteorological Department (IMD) has categorised low-pressure systems based on maximum surface wind speed into various categories like severe, very severe, supercyclone, etc. The year 2019 was most active during the period studied (2012 to 2020) in terms of the frequency of cyclonic storms over the NIO, with the highest number of cyclonic storms along with higher number of very severe cyclonic storms (VSCS), extremely severe cyclonic storms (ESCS) and supercyclones (Figure 7, p 70).

One supercyclone (Kyarr) and one extremely severe cyclone (Maha) formed over the Arabian Sea in 2019 as the year witnessed development of more intense cyclones. Out of the eight cyclones formed over the NIO in 2019, there were five landfalling cyclones, namely *Pabuk, Fani, Hikaa, Bulbul* and *Pawan*. These cyclones impacted the crops in the affected areas.

The impact of these extreme weather events on crops are localised since these events are themselves localised. However, if the disturbances occur in the major food-producing states during the time of sowing to harvesting, that is, during the period of standing crops, they lead to significant crop damage

**Figure 5: Seasonality in Prices (Cumulative Momentum) and Arrivals**



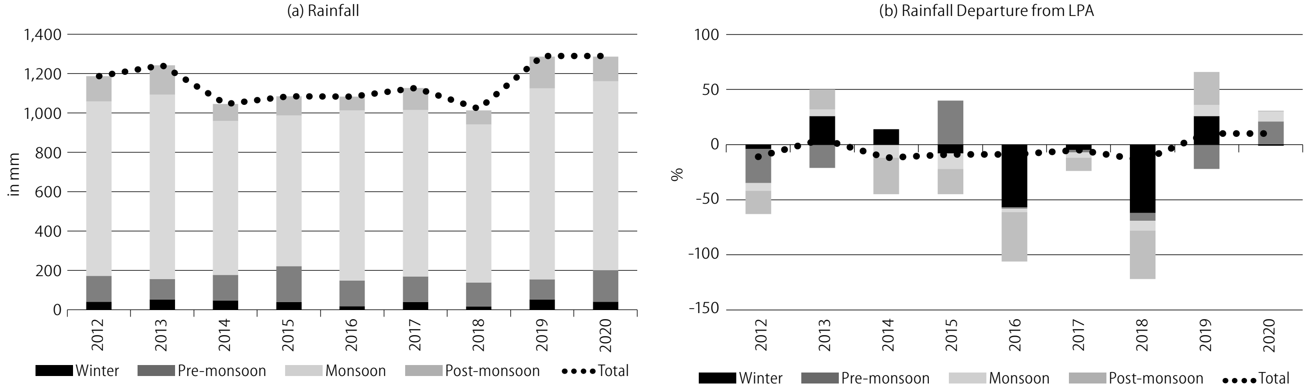

Data for the months of March–May 2020 have been imputed using Department of Consumer Affairs data.
Source: National Statistical Office, Agmarknet and authors' calculations.

and increase in prices at the national level. This was witnessed for onions during 2019–20.

## Data Description

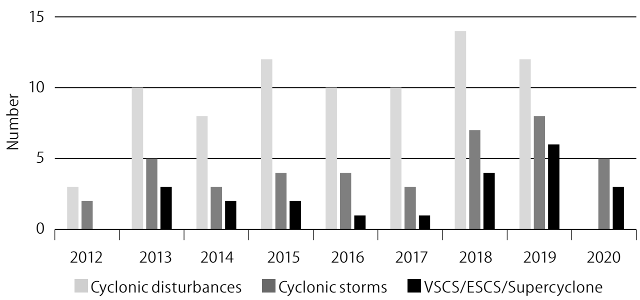
This paper uses CPI-C item-level data for TOP from January 2012 to December 2020 released by the National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI), Government of India (GoI) for empirical exercises. The item-level data in the current base year of CPI-C (2012=100). It is available from January 2014 and has been back-casted to January 2011 using the CPI-C item-level data available in the old base year (2010=100). For March–May 2020, item-level data was not released by the NSO due to the nationwide lockdown imposed to prevent the spread of the COVID-19 pandemic.

**Figure 6: Season-wise Rainfall and Rainfall Departure**




Winter—January and February, Pre-monsoon—March to May, Monsoon—June to September, Post-monsoon—October to December.
Source: Indian Meteorological Department (IMD).

**Figure 7: Cyclonic Disturbances and Cyclones in NIO**




The number of cyclonic disturbances for 2020 was not available from IMD at the time of submission of the paper.
Source: IMD and authors' calculations.

Retail price data for TOP released by the department of consumer affairs (DCA), Ministry of Consumer Affairs, Food and Public Distribution, GOI are used to impute indices for these months. They have a very high correlation (around 98%) with the month-on-month change in prices (that is, momentum) and inflation reported in the CPI.

Data on rainfall, rainfall departure from LPA and extreme weather events are collected from various reports of the IMD (Appendix Table 1, p 74). Using the information available from these reports, statewise mapping is done for extreme weather events like heavy rain/floods, cyclones (only landfalling), hailstorms and dust storms/thunderstorms. A rainfall departure of more than ±20% from the LPA is termed as excess rain/deficit rain, while information on heavy rain/flood has been captured from the IMD reports. Although excess rainfall leads to floods, it is not a sufficient condition.

**Table 2: Crop Calendar of Potato in India**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Punjab | Harvesting | Harvesting | Harvesting | | | | | Sowing | Sowing | Sowing | Harvesting | Harvesting |
| Uttar Pradesh | Harvesting | Harvesting | Harvesting | | | | | | | Sowing | Sowing | Harvesting |
| Bihar | Harvesting | Harvesting | Harvesting | | | | | | | Sowing | Sowing | Sowing |
| West Bengal | Harvesting | Harvesting | Harvesting | | | | | | | | Sowing | Sowing |
| Gujarat | Harvesting | Harvesting | Harvesting | | | | | | | | Sowing | Sowing |
| Karnataka | | | | | | Sowing | Sowing | Harvesting | Harvesting | Harvesting | | |
| Uttarakhand | | | | | Sowing | Sowing | Harvesting | Harvesting | Harvesting | Harvesting | | |
| Himachal Pradesh | | | | | Sowing | Sowing | Harvesting | Harvesting | Harvesting | Harvesting | | |

Sowing Harvesting
Source: MEIWS Dashboard, National Agricultural Cooperative Marketing Federation of India and Ministry of Food Processing Industries.

Heavy rain in mountainous regions and catchment areas can also cause floods in nearby states. As a result, there is low correlation between heavy rains/floods and excess rain (Appendix Table 2, p 74).

The Market Intelligence and Early Warning System (MIEWS) dashboard and reports of the Ministry of Agriculture and Farmers' Welfare provide statewise crop calendars for TOP. These have been used to map states with the sowing to harvest months for each vegetable. Around 85%–90% of the potato crop in India is raised in rabi (winter), while kharif production of potatoes is taken in Himachal Pradesh, Karnataka, Maharashtra and Uttarakhand (Table 2). Tomatoes are produced throughout the year in states like Andhra Pradesh and Maharashtra while onions have three main harvesting seasons—kharif, late kharif and rabi.

We have considered the top three states in terms of the share in total production of these commodities for this study (Table 3). The top two onion- and potato-producing states contribute almost 50% of the total production in the country, while also making these commodities vulnerable to extreme weather events in these states. On the other hand, production of tomatoes is well distributed across states, making it comparatively less vulnerable.

**Table 3: Statewise Share of Production (Average during 2013–14 to 2018–19)**

(%)

| | Onion | | Tomato | | Potato | |
|---|---|---|---|---|---|---|
| | State | Share | State | Share | State | Share |
| 1 | Maharashtra | 32.4 | Andhra Pradesh | 14.8 | Uttar Pradesh | 31.4 |
| 2 | Madhya Pradesh | 15.3 | Madhya Pradesh | 12.4 | West Bengal | 22.7 |
| 3 | Karnataka | 13.0 | Karnataka | 10.7 | Bihar | 14.7 |
| 4 | Bihar | 5.9 | Odisha | 7.0 | Gujarat | 7.1 |
| 5 | Gujarat | 5.7 | Gujarat | 7.0 | Madhya Pradesh | 6.5 |
| 6 | Rajasthan | 4.9 | West Bengal | 6.4 | Punjab | 5.1 |
| 7 | Andhra Pradesh | 4.1 | Telangana | 5.8 | Assam | 2.0 |
| 8 | Haryana | 3.3 | Bihar | 5.4 | Haryana | 1.8 |
| 9 | West Bengal | 2.2 | Maharashtra | 5.3 | Jharkhand | 1.4 |
| 10 | Uttar Pradesh | 2.0 | Chhattisgarh | 5.0 | Chhattisgarh | 1.3 |
| 11 | Tamil Nadu | 1.9 | Uttar Pradesh | 3.6 | Karnataka | 1.1 |
| 12 | Odisha | 1.8 | Haryana | 3.5 | Uttarakhand | 0.8 |
| 13 | Telangana | 1.8 | Tamil Nadu | 3.2 | Maharashtra | 0.7 |
| 14 | Others | 5.5 | Others | 9.6 | Others | 3.3 |

Source: Reports of Ministry of Agriculture and Farmers' Welfare and authors' calculations.

The period selected for the study begins from January 2012 as the annual reports of IMD are available only from 2012 on their website. An important aspect of price formation in TOP is the quick transmission of prices across states. Thus, if an adverse event occurs in one state, the prices in other states respond to it quickly, making it difficult to conduct the exercise in a panel framework as prices in a state might be affected even if there is no extreme weather event (Appendix Table 3, p 70). To overcome this difficulty, we have taken the top three TOP-producing states. An adverse weather event is more pronounced if it occurs while the crop is standing in the fields. Statewise crop cycles for these three production states have been mapped for adverse events during the period of standing crops. Thereafter, a dummy is defined for each extreme weather event on a monthly frequency. It takes the value of 1 if extreme events have occurred in any of the three states during the period of sowing to harvesting, else it is assigned a value of 0. For example, in the case of onion, if there is a flood in Maharashtra but not in Karnataka and Madhya Pradesh and the crop is in standing state, the dummy will take the value of 1. However, if there is a flood in a state but the crop cycle has not begun, it will take the value of 0. In the case of no floods being reported from any state during a month, the value will still be 0.

## Methodology

The study tries to model the price dynamics of TOP in different frameworks, including ordinary least squares (OLS), seasonal autoregressive integrated moving average (SARIMA), SARIMA with exogenous variables (SARIMAX) and random forests. Out-of-sample projections using these models are done and compared with univariate and random walk models. The models have been trained using data from January 2012 to December 2019. The forecast accuracies of the models are compared using root mean square errors (RMSE), mean errors and mean absolute errors (MAE) for 2020. No demand variable has been incorporated as there is no data on demand for vegetables in India at a monthly frequency and production has usually been higher than the annual demand for TOP. As the CPI indices and inflation rates are non-stationary, the models have been run on first log differences of indices (that is, momentums), while the errors are based on the forecasted inflation generated from forecasted indices (except for random walk and seasonal naïve). The different methods used are described as follows.

**Random walk and seasonal naïve:** A random walk model can be represented as:

$$\pi_t=\pi_{t-1}+\varepsilon_t \qquad \dots (1)$$

where $\pi_t$ is the forecast of inflation rate for time $t$, $\pi_{t-1}$ is the last observed inflation rate and $\varepsilon_t$ is a random disturbance term which has an expected value of 0. So, a random walk forecast is the last observed value.

For a time series exhibiting a high degree of seasonality, such as vegetables, seasonal naïve method can also act as a model for comparison. The seasonal naïve forecasts are equal to the last observed value for the same season (for example, the same month of the previous year).

**Random forest:** Random forest is a supervised learning algorithm which is an improvement over bagged trees. Tree models can manage complicated data relationships in a way that is both accessible and understandable and therefore are helpful in regression and classification problems (Chakraborty and Joseph 2017). The random forest method is based on bootstrap aggregation (bagging) of predictions from randomly generated trees (ensemble of trees). This model can address overfitting observed in trees. It also provides a way to measure variable importance.

**Ordinary least squares:** Building on the results derived from random forest regarding importance of variables, simple linear relationship between vegetable (TOP) prices momentum and their major determinants (also in month-on-month percent change form) are estimated in this multivariate model, which can be represented as:

$$CPI_t = c + \sum_{i=1}^{3} CPI_{t-i} + \sum_{i=0}^{2} \text{Net Imports}_{t-i} + \sum_{i=0}^{2} \text{Arrivals}_{t-i} + \sum_{j=1}^{6} \sum_{i=0}^{2} \text{Dummy}_{t-i,j}^{\text{weather}} \qquad \dots (2)$$

where $j=1$ to $6$ represents dummies corresponding to various weather events (cyclones, draughts, excess rains, deficit rains, hailstorms and thunderstorms) and $i=1$ to $3$ represent the lags. All the variables have been seasonally adjusted before estimation.

**SARIMA:** Vegetable prices in India display seasonality. Given their perishable nature, relative non-substitutability and dependence on rainfall makes them susceptible to weather-related disturbances (Figure 7). Therefore, to model and forecast vegetable prices, SARIMA, a generalised form of ARIMA that supports the seasonal component in a time series, has been utilised. These models allow for randomness in the seasonal pattern from one cycle to the next (Brockwell and Davis 2006). A SARIMA model is generally represented as SARIMA $(p, d, q)$ $(P, D, Q)$ $m$, with $p$ implying the non-seasonal autoregressive order, $d$ representing the non-seasonal integration order and $q$ meaning the non-seasonal moving average order. In the seasonal part, $P$ stands for the seasonal autoregressive order, $D$ stands for the seasonal integration order, $Q$ stands for the seasonal moving average order and m for the period or length of the season (in the monthly case 12, in the quarterly case 4). Following Gómez and Maravall (1998), it can be expressed as:

$$\phi (B^m)\ \varphi (B)\ (1-B^m)^D\ (1-B)^d\ Y_t = c + \Theta (B^m)\ \theta (B)\ \varepsilon_t \qquad \dots (3)$$

where $\varphi (B)$ and $\theta (B)$ are polynomials of degree $p$ and $q$, $\phi (B^m)$ and $\Theta (B^m)$ are polynomials of orders $P$ and $Q$, $B$ refers to the backshift operator.

Given the objectivity and computational simplicity in penalty function criteria, our model identification is based on the Akaike Information Criteria (AIC), which is also preferred in the literature (Brockwell and Davis 1991). The identified models have been tested for autocorrelation and heteroscedasticity based on residuals before going for projections.

**SARIMAX:** In an extension to the previous approach, SARIMAX has also been implemented. It incorporates relevant exogenous variables in the SARIMA model and can be represented as:

$$\phi (B^m)\ \varphi (B)\ (1\text{-}B^m)^D\ (1\text{-}B)^d\ [Y_t\text{-}\omega_t X_t] = c + \Theta (B^m)\ \theta (B)\ \varepsilon_t \quad \dots (4)$$

The vector $X_t$ constitutes other relevant exogenous variables that are difference stationary and $\omega_t$ is the vector of parameter values. Here, $Y_t$ refers to vegetable prices, that is, tomato, onion and potato. $X_t$ refers to exogenous variables such as net imports, arrivals and extreme weather-related dummies.

**Table 4: Variable Importance Observed from Random Forest Model** (Based on MDA: Other than lags of own momentums, arrivals, and net imports)

| Variable Importance | Tomato | Onion | Potato |
|---|---|---|---|
| 1 | Hailstorm (L3) | Deficit rain (L2) | Deficit rain |
| 2 | Hailstorm (L2) | Excess rain (L2) | Deficit rain (L2) |
| 3 | Deficit rain | Hailstorm (L3) | Cyclone (L1) |
| 4 | Deficit rain (L2) | Thunderstorm | Deficit rain (L1) |
| 5 | Hailstorm (L1) | Hailstorm | Deficit rain (L3) |
| 6 | Hailstorm | Cyclone (L2) | Excess rain (L2) |
| 7 | Thunderstorm (L3) | Floods (L3) | Excess rain (L1) |
| 8 | Excess rain | Floods (L2) | Excess rain |
| 9 | Thunderstorm (L2) | Deficit Rain (L3) | Cyclone |
| 10 | Excess rain (L3) | Floods | Cyclone (L3) |
| 11 | Cyclone (L2) | Cyclone (L1) | Thunderstorm (L1) |
| 12 | | Hailstorm (L1) | Thunderstorm (L3) |
| 13 | | Floods (L1) | Excess rain (L3) |
| 14 | | Deficit rains (L1) | Cyclone (L2) |
| 15 | | Thunderstorm (L1) | Floods (L3) |

L represents lag, MDA: Mean decrease in accuracy.
Source: Authors' estimates.

**Table 5: OLS Estimates for TOP**

| | CPI Tomato[a] | CPI Onion[b] | CPI Potato[c] |
|---|---|---|---|
| Constant | -7.48*** | -6.31*** | -0.52 |
| $CPI_{t-1}$ | 0.34*** | 0.33*** | 0.38*** |
| $CPI_{t-2}$ | -0.30*** | 0.13 | -0.05 |
| Net $Imports_t$ | 0.00 | -0.04*** | 0.03 |
| Net $Imports_{t-1}$ | 0.00 | -0.03*** | |
| $Arrivals_t$ | -0.15*** | -0.27*** | -0.15*** |
| $Arrivals_{t-1}$ | 0.11** | -0.11 | -0.16*** |
| $Cyclone_t$ | 8.73** | – | 10.21*** |
| $Cyclone_{t-2}$ | – | 35.33*** | – |
| $Hailstorm_t$ | 3.47* | – | – |
| $Hailstorm_{t-1}$ | – | 5.55** | 6.36*** |
| $Thunderstorm_{t-2}$ | 6.81* | – | |
| Excess $Rain_{t-1}$ | 3.62** | – | -2.39 |
| Excess $Rain_{t-2}$ | – | 5.11** | -0.10 |
| Deficit $Rain_{t-1}$ | – | 5.51** | -0.50 |
| Deficit $Rain_{t-2}$ | 6.85*** | | 2.42*** |
| $Flood_{t-2}$ | 3.97*** | 5.37** | 3.56*** |
| Diagnostics | | | |
| Adjusted R-Squared | 0.64 | 0.54 | 0.67 |
| Breusch–Pagan–Godfrey LM test test for autocorrelation (P-value) | 0.48 | 0.27 | 0.65 |
| Breusch–Pagan–Godfrey test for heteroscedasticity (P-value) (H0: Homoscedasticity) | 0.86 | 0.99 | 0.27 |

a: Other controls include Hailstorm (L2), dummy2014m7, dummy2017m7 and net imports (L2).
b: Other controls include Arrivals (L3) and Thunderstorm.
c: Other controls include Arrivals (L3), Thunderstorm (L1) and dummy2018m3.
*, ** and *** represent significance levels at 10%, 5% and 1%, respectively.
Source: Authors' estimates.

Two variants of SARIMAX models have been estimated for each vegetable—one with weather dummies and the other without. It analyses the importance of extreme weather events in addition to the information from arrivals and net imports.

## Estimation and Results

Random forest picks its own lag of momentum, arrivals and net imports as most important variables in explaining prices of TOP. Apart from these, other weather-related dummies have been found important (Table 4). Deficit rain clearly impacts all the three vegetables reflecting the rain-fed nature of Indian agriculture. Besides, hailstorms in the case of tomatoes, excess rains in onions and cyclones in potatoes are the significant drivers of prices.

Using the findings of random forests for variable importance, OLS regressions for each vegetable (TOP) are estimated and results are presented in Table 5. All variables have been seasonally adjusted. Regressions are run on momentums for January 2012–December 2019. Arrivals remain an important driver and are negatively related to prices. Imports play an important role in the case of onions, while deficit rain leads to building of price pressures in all three vegetables. With regard to onions, excess rain and floods, both have a significant impact on prices. In the case of potatoes, cyclones, hailstorms as well as floods have a positive impact on prices. Since tomato production is distributed throughout the year across the states, excess rains have no significant impact. However, the damage due to hailstorms, cyclones, and floods are significant. Among all the weather events, cyclones have the most severe impact followed by deficit rains in all the three vegetables, reflecting the large extent of damage to standing crops caused by cyclones and rain-dependent irrigation.

Out-of-sample projections for all the models have been produced after running separate regressions for each vegetable for January 2012–December 2019. The forecasts for 2020 (12-point forecasts) were generated using different models. Their forecast performances are presented in Table 6.

**Table 6: Forecast Performance of Different Models**

| | Tomato | | | Onion | | | Potato | | |
|---|---|---|---|---|---|---|---|---|---|
| | ME | MAE | RMSE | ME | MAE | RMSE | ME | MAE | RMSE |
| Random walk | 33.6 | 36.8 | 41.4 | 278.9 | 278.9 | 289.8 | -32.8 | 32.8 | 39.5 |
| Seasonal naive | 36.5 | 42.7 | 51.2 | -10.7 | 126.9 | 167.9 | -70.1 | 70.1 | 77.4 |
| SARIMA | 0.7 | 17.2 | 21.1 | 121.1 | 130.7 | 169.0 | 29.2 | 29.6 | 34.4 |
| SARIMAX without weather dummies | 7.2 | 18.5 | 22.3 | -2.7 | 54.0 | 62.0 | 42.4 | 42.4 | 47.9 |
| SARIMAX with weather dummies | -27.4 | 30.7 | 42.0 | 33.7 | 34.7 | 42.3 | -35.2 | 35.2 | 40.7 |
| OLS | 12.6 | 26.9 | 30.4 | 75.0 | 81.0 | 107.0 | 6.3 | 28.0 | 32.1 |
| Random forest | 42.5 | 42.5 | 47.5 | 137.6 | 137.6 | 144.6 | 1.3 | 11.6 | 14.4 |

Source: Authors' estimates.

It is observed that extreme weather events do not add much value to the models for tomatoes, when compared with SARIMA. Tomato production is well diversified across states. Thus, the weather event in the top three states may not affect its prices as much. However, in the case of onions and potatoes, the models that include weather dummies perform well indicating the importance of these events in explaining their price movements. Although, the error observed in the case of onions is quite large in most of the models due to the extreme volatility in its inflation observed in 2020. All the models perform better than the random walk and seasonal naïve forecasts. Moreover, when compared to the range of actual inflation levels observed for the three vegetables, the RMSEs are not that high.

### In Conclusion

Extreme weather events have affected the food production and availability of food items across the globe. In India, prices of vegetables, especially TOP, become the first casualty of such severe events. The statewise mapping of extreme weather events in the three major producing states shows that the prices of TOP are significantly affected by such events when they occur during the period of standing crop. Moreover, the inclusion of weather-related information improves forecast performance in the case of potato and onion. Such supply shocks, which are sudden and unanticipated in nature, may push food inflation for a few months. This can lead to headline inflation, breaching the upper tolerance band of the inflation target as observed in the past, thus posing a challenge for the conduct of monetary policy.

Although, as prices correct with the arrival of fresh crops, these price movements are transient in nature. This is evident from the seasonal pattern of prices. However, the extent of price movements is extreme during such events. This leads to periods of high food inflation which also affects the inflation expectations of households.

Therefore, the results of the study highlight the need to adopt risk-mitigating policies and measures to increase resilience for these perishable crops in response to increase in frequency of such extreme events. In order to safeguard the interests of farmers (who endure crop losses due to such events) and consumers (who have to face sudden increase in prices), risk-mitigating policies like crop insurance, improvement in storage facilities and increasing food-processing facilities lead to increase in welfare. Diversification of onion and potato crops across states, while keeping in mind the agroclimatic conditions, can help in reducing some of the risks. Governments can also frame policies to avoid the sharp price rise caused by extreme weather events for these crops.

#### NOTE

1 Measured by the standard deviation of monthly inflation numbers for the calendar year.

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## Appendix

**Table 1: List of Data Sources**

| S No | Data | Data Source/ Report |
|---|---|---|
| 1 | Severe weather events | Disastrous Weather Events—2012 to 2016 (IMD), Annual Reports of IMD—2012 to 2019, Statement on Climate of India during 2020 (IMD) |
| 2 | Rainfall and rainfall departure | Rainfall Statistics of India—2012 to 2018 (IMD), Customised Rainfall Information System (IMD) |
| 3 | Agricultural data—on area, production, yield and statewise crop calendar for TOP | *Agricultural Statistics at a Glance 2018*, *Horticultural Statistics at a Glance 2018*, Monthly Reports on Onion, Tomato and Potato June 2020 (Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers' Welfare), Market Intelligence and Early Warning System (MIEWS) Dashboard of NAFED |
| 4 | Imports and exports | Export Import Data Bank of Ministry of Commerce and Industry |
| 5 | Mandi arrivals | Agmarknet portal |

**Table 2: Correlation Matrix of Weather Dummy Variables**

| | Cyclone | Hailstorm | Thunder-storm | Heavy Rain/ Flood | Excess Rain | Deficit Rain |
|---|---|---|---|---|---|---|
| Tomato | | | | | | |
| Cyclone | 1.00 | | | | | |
| Hailstorm | -0.03 | 1.00 | | | | |
| Thunderstorm | -0.04 | -0.05 | 1.00 | | | |
| Heavy rain/flood | 0.06 | 0.03 | 0.04 | 1.00 | | |
| Excess rain | -0.01 | 0.20 | 0.19 | 0.13 | 1.00 | |
| Deficit rain | 0.01 | -0.13 | -0.14 | -0.29 | -0.26 | 1.00 |
| Onion | | | | | | |
| Cyclone | 1.00 | | | | | |
| Hailstorm | -0.07 | 1.00 | | | | |
| Thunderstorm | -0.06 | -0.14 | 1.00 | | | |
| Heavy rain/flood | 0.15 | 0.10 | -0.03 | 1.00 | | |
| Excess rain | 0.15 | 0.20 | 0.19 | 0.27 | 1.00 | |
| Deficit rain | -0.19 | -0.10 | 0.07 | -0.35 | -0.41 | 1.00 |
| Potato | | | | | | |
| Cyclone | 1.00 | | | | | |
| Hailstorm | -0.04 | 1.00 | | | | |
| Thunderstorm | 0.22 | 0.07 | 1.00 | | | |
| Heavy rain/flood | -0.03 | 0.15 | 0.51 | 1.00 | | |
| Excess rain | 0.26 | 0.31 | 0.19 | -0.10 | 1.00 | |
| Deficit rain | 0.02 | 0.16 | 0.12 | 0.23 | 0.23 | 1.00 |

Source: IMD and authors' estimates.

**Table 3: Correlation—CPI Year-on-year Percent Change and DCA Year-on-year Percent Change**

| | CPI | DCA All India | DCA Consumers | DCA Producers | DCA Top 3 Producers |
|---|---|---|---|---|---|
| Tomato | | | | | |
| CPI | 1.00 | | | | |
| DCA all India | 0.98 | 1.00 | | | |
| DCA consumers | 0.95 | 0.96 | 1.00 | | |
| DCA producers | 0.98 | 0.99 | 0.94 | 1.00 | |
| DCA top 3 producers | 0.96 | 0.95 | 0.90 | 0.97 | 1.00 |
| Onion | | | | | |
| CPI | 1.00 | | | | |
| DCA all India | 0.99 | 1.00 | | | |
| DCA consumers | 0.99 | 1.00 | 1.00 | | |
| DCA producers | 0.99 | 1.00 | 0.99 | 1.00 | |
| DCA top 3 producers | 0.99 | 0.99 | 0.99 | 1.00 | 1.00 |
| Potato | | | | | |
| CPI | 1.00 | | | | |
| DCA all India | 0.98 | 1.00 | | | |
| DCA consumers | 0.97 | 0.99 | 1.00 | | |
| DCA producers | 0.98 | 0.98 | 0.97 | 1.00 | |
| DCA top 3 producers | 0.96 | 0.94 | 0.92 | 0.97 | 1.00 |

Source: NSO, DCA and authors' estimates.

# Income Convergence among the Districts of West Bengal

## Evidence from Neoclassical Growth and Panel Unit Root Models

RAMESH CHANDRA DAS, BANKIM GHOSH, UTPAL DAS

The study of the inter-district convergence of per capita incomes in any state or country is crucial to policy agenda as it exposes the scenario of real income distribution. The present paper examines inter-district convergence of per capita income in West Bengal using the neoclassical growth and panel unit root models; the second is an advanced approach compared to the first. The results in line with the two approaches show that the districts are not converging in terms of income; rather the districts are diverging between 1993 and 2014. It is an alarming knock to the state since divergence in income leads to rising inequality across districts; it will hamper the development of the state.

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Since the introduction of the liberalisation policy in India, there has been an increasing growth of income in aggregate and per capita terms. However, there have been growing disparities across states in income and several other economic indicators during the post-liberalisation period (Marjit and Mitra 1996; Ghosh et al 1998; Subrahmanyam 1999; Dasgupta et al 2000; Das and Dinda 2014; Bhaduri 2008, 2016). Evidently, the states are diverging from each other. The districts in these states are also affected by unequal development. In common terms, the effect of the liberalisation policy has not trickled down to the bottom quartile of the population of the districts in West Bengal.

There are a few studies on income convergence at the district level in India. While the studies of Singh et al (2014) and Das et al (2015) cover 210 Indian districts, the study related to the districts of Odisha was carried out by Panda and Trivedi (2015). No studies on income convergence or divergence have been conducted on the districts of West Bengal to date, although Raychaudhury and Halder (2009) have investigated on the inter-district disparity in social and physical infrastructure in West Bengal. The present paper, thus, examines whether the districts of West Bengal are income converging in individual and panel data formats.

The entire study has been arranged as follows: the next section presents a review of the related literature. This is followed by the data, theoretical framework, methodology, empirical findings and discussion, and concluding remarks.

### Review of Related Literature

Although there is a vast amount of literature on income convergence across countries, regions, and groups, there are hardly any studies on income convergence at micro levels such as districts in a state in a specific country. Here, we present some studies on income convergence in general and some that are specific to micro levels.

The seminal work of Barro and Sala-i-Martin (1992) showed that the United States (US) produced a clear evidence of convergence in per capita income. But the findings can be reconciled quantitatively only if the diminishing returns to capital set in very slowly. In another insightful study, Sala-i-Martin (1996) applied unconditional and conditional $\beta$ convergence to a variety of data sets covering a large cross-section of countries, such as the subsample of Organisation for Economic Co-operation and

Development (OECD) countries, US, regions within several European countries, and the prefectures of Japan. There was strong evidence of absolute $\beta$ convergence and $\sigma$ convergence except for in the large cross-section of countries, which demonstrated $\sigma$ divergence and conditional $\beta$ convergence.

In a study specific to Indian states, Dholakia (1994) concluded that between 1960–61 and 1989–90, there was a strong tendency of convergence across 20 states. In another study, Nagraj et al (1997) showed the conditional convergence across the states between 1960 and 1994. Even though there has been little work on convergence across Indian states, there is a fair amount of literature on the growth of output of Indian states where divergence among states is observed prominently. Dasgupta et al (2000) did one such pioneering study. They found that between 1960–61 and 1995–96, Indian states diverged from each other in the growth of per capita domestic products but converged in the shares of different sectors in the state domestic product. Ghosh et al (1998) looked at economic growth and regional divergence in India between 1960 and 1995. They observed that Indian states have been diverging over the last 35 years. In their study, Marjit and Mitra (1996) pointed out that the statewise divergence in India may be due to imperfections in factor mobility across states. This was a critique of the Solow growth theory. The study by Ghosh and De (1998) analysed the regional divergence of Indian states and pointed out that the divergence occurred because of distributional and allocational disparity in infrastructural development. Rao et al (1999) tried to find a pattern in the growth paths of 14 states in India during 1965–94, using other variables in place of income. They also observed both absolute and conditional divergence among the concerned states. Rao et al (1999) examined trends in interstate inequalities at the income level over the last two and a half decades, between 1965 and 1994.

Contrary to the predictions of the neoclassical growth theory that state that differences in income levels tend to reduce as they approach a steady-state equilibrium, our analysis showed a widening of interstate disparities, the main cause of which is inequality in the distribution of private investments in infrastructure. But selecting a single point in time as the base year may be misleading in terms of derivation results and policy prescriptions. In his work on the convergence of Indian states, Subrahmanyam (1999) suggested that the average of three to five years' values of the variable as a base period's value may enable us to avoid this kind of problem.

In a selection of developed countries with quarterly gross domestic product (GDP) data for 1960–98, Holmes (2002) examined whether the countries were converging to the incomes of the US and Germany. Using panel unit root tests, the study revealed strong evidence in favour of convergence. In another study, Fischer and Stirböck (2004) examined regional convergence of per capita income in Europe between 1995 and 2000 and revealed evidence of unconditional $\beta$ convergence on the continent. Reza and Zahra (2008) examined real economic convergence and the catching up of 10 new members of the European Union (EU) towards the average EU per capita income and the average of older members, using the panel unit root methodology. The results revealed the existence of absolute convergence and catching-up processes in sample countries within EU standards.

Basu et al (2013) have attempted to examine the demographic factors of economic growth in the BRICS (Brazil, Russia, India, China, and South Africa) nations, selected developed countries of the world and identified that the working-age population contributes to increasing growth trends of the BRICS nations. The work of Das and Dinda (2014) explored how divergences in the allocation of commercial bank credit over time may have resulted in disparities in the growth of incomes in the states of India from 1972 to 2010. The researchers observed that there were diverging tendencies among the states during the post-reform period (from 1993 to 2010) for per capita credit and aggregate credit. The study also revealed that the agriculture and industrial sectors were converging during the pre-reform phase but that there were insignificant signs of divergences in these sectors during the post-reform period.

Suryanarayana and Das (2014) conducted a convergence analysis of world economies in two ways, measuring convergence and pseudo-convergence. Most developing economies are trying to come up with different public policies that will help them to level the disparities in economic prosperity. They are doing this not by levelling incomes but by hiking consumption facilities through public distribution systems. The concept of pseudo-convergence applies to the second one, that is, consumption facilities. The study revealed that countries in the world showed divergence and pseudo-divergence in per capita GDP and consumption between 1993 and 2011. In a fundamental study on convergence and divergence of the global economy, Piketty (2014) showed that a market economy based on private property, if left to itself, contained powerful forces of convergence, associated in particular with the distribution of knowledge and skills; but it also had powerful forces of divergence, which were potentially threatening to democratic societies. The principal destabilising force behind this fact was that the private rate of return on capital could be significantly higher for long periods than the rate of growth of income and output. The study by Mishra and Mishra (2015) examined the stochastic income convergence hypothesis for 17 major states in India from 1960 to 1961 and 2011 to 2012. Applying KPSS stationarity and the Lagrange multiplier unit root test with structural breaks, the study observed sufficient evidence in support of stochastic income convergence in Indian states.

There is scarce literature on the issue of convergence at the Indian district level. The efforts of Singh et al (2014) and Das et al (2013, 2015) established conditional $\beta$ convergence in Indian districts. The former used district-level domestic product data obtained from individual state governments for 210 Indian districts distributed over nine states. They found evidence of convergence conditioned upon road connections and access to finance. In a study on districts in Odisha, Panda and Trivedi (2015) examined whether real per capita incomes had converged or diverged during 1999–2000 and 2010–11. It revealed that though the inter-district regional income inequality had widened in the state, there was an absence of any significant divergence in per capita income. Further, there were the variables like the availability of banking and education facilities that influenced the conditional convergence results.

A review of the existing literature on income growth and convergence at the district level in Indian states reveals few studies. Additionally, the existing studies conducted at the district level do not focus on convergence and divergence in statistical terms. The present paper has tried to seal the gap in the literature by making a convergence analysis of real per capita net district domestic products in the major districts of West Bengal from 1993 to 2014.

## Data, Theoretical Framework, and Empirical Methodology

To conduct a convergence analysis of real per capita net district domestic product (PCNDDP), we have used the annual database of the Bureau of Applied Economics and Statistics (BAES) of the Government of West Bengal. There are 18 undivided districts in our study: Bankura, Bardhaman, Birbhum, Kolkata, Dakshin Dinajpur, Howrah, Hooghly, Jalpaiguri, Cooch Behar, Malda, Medinipur, Murshidabad, Nadia, North 24 Parganas, Purulia, South 24 Parganas, and Uttar Dinajpur.

Since BAES publishes data on PCNDDP at constant prices with different base year values, we have converted all the data for 1993–2014 with 1993–94 base prices to make the series uniform in deflated values. Further, as data for 1994, 1995, 2011, 2012, and 2013 are not available, we have interpolated them by augmenting them at the annual average growth rates of PCNDDP for the remaining years for all districts.

Cross-district income convergence can be analysed using two approaches: the neoclassical growth approach and the panel unit root test approach.

**Neoclassical growth model:** For inter-district income growth and convergence, a regression of the annual average growth rate of PCNDDP upon the logarithmic values of the base year value was done (Barro and Sala-i-Martin 1992). If the regression coefficient is found to be negative and statistically significant, then it is called absolute $\beta$ convergence among the districts, which means that the backward districts (with lower starting PCNDDP values) are catching up with the developed districts (with higher starting PCNDDP values) and are converging at a common steady-state PCNDDP. The underlying assumption behind this result is diminishing returns to capital, leading to income and homogeneity across districts. But under heterogeneous conditions, the diminishing returns assumption does not work and certain factors make the districts converge to their steady states. This particular theory is known as conditional convergence.

Let us suppose that there are $n$ number of districts (here $n = 18$) with $k_{it}$ being the real PCNDDP of the $i^{th}$ district at time point $t$. The primary growth regression equation as per Barro and Sala-i-Martin (1992) is

$$\log (k_{it}) = \alpha + (1 - \beta) \log (k_{i,t-1}) + u_{it} \quad \text{... (1)}$$

It can be rewritten as

$$\log (k_{it} / k_{i,\, t-1}) = \alpha - \beta \log(K_{i,\, t-1}) + u_{it} \quad \text{... (2)}$$

where $\alpha$ and $\beta$ are constants for intercept and slope, respectively, with $\beta > 0$; $u_{it}$ is a regular disturbance term following properties of normal distribution. In this equation, a positive $\beta$ means absolute convergence. That is, the growth rate of PCNDDP [$= \log (k_{it}/k_{i,t-1})$] is inversely related to the initial PCNDDP ($= k_{i,t-1}$). Also note that $\beta$ represents the slope of the PCNDDP growth function. In other words $\beta = -\mathrm{dlog}\,(k_t/k_{t-1})/\mathrm{dlog}\,(k_{t-1})$. Here, $\beta$ also shows the speed of convergence. More specifically, the speed of convergence depends on different structural factors like the base values of the concerned variable. Rassekh (1998) provides one possible derivation of the computing speed of convergence with the help of the slope factor $\beta$. Since the rate or speed of convergence depends on the gap between the initial value and the steady-state value of the variable, it can be determined by the reorientation of the growth equation (2) as follows:

$$1/T[\log (k_{it} / k_{i,\, t-1})] = \alpha - [(1 - e^{-\lambda t}) / T].\log (k_{i,\, t-1}) + \varepsilon_{it} \quad \text{... (3)}$$

where $\lambda$ stands for the speed of convergence and $T$ stands for the total time under observation. According to the study, $\lambda$ can be simplified by the following relation:

$$\lambda = -\log(1 + \beta) \quad \text{... (4)}$$

The estimated value of the speed of convergence $\lambda$ determines the time required for all countries to reach the steady-state point in the long run. Battisti and Di Vaio (2006) have shown that the time to cross half the value is 35 years, with the value of the speed of convergence being 0.02, by using the formula $e^{-\lambda t} = 1/2$ or $t = log(2)/\lambda$.

If we plot the data of each country's growth rate and initial value of per capita GDP on a scatter diagram and fit a linear trend through these points, then a downward trend will imply convergence in this region. That means there is a catching-up of the poor economies to the rich ones. On the contrary, if the fitted line is upward sloping, then there is divergence, which means the richer zones become richer and the poorer zones become poorer. To incorporate the heterogeneous nature of the districts, we have to modify the model of absolute convergence to accommodate the concept of conditional convergence. This theory of convergence is developed by the endogenous growth theory. Conditional $\beta$ convergence can be presented with the following equation:

$$\log (k_{it}) = \alpha + (1 - \beta) \log(k_{i,t-1}) + \eta W_t + u_{it} \quad \text{... (5)}$$

where $W$ is the vector of other variables (also known as conditional variables) that affect PCNDDP, such as working gross fixed capital formation, education level, agricultural productivity, etc, and $\eta$ captures the effects of these vectors of conditional variables upon PCNDDP. Conditional convergence occurs when the partial correlation between the growth rate of PCNDDP and the initial level of PCNDDP is negative and significant, along with significant signs and values of the coefficients of the conditional variables.

The postulation of absolute $\beta$ convergence has been criticised by Friedman (1992) and Quah (1993). They have pointed out that these regressions are liable to produce biased estimates of $\beta$ convergence. These two studies have suggested that the simple trend in the coefficient of variation of per capita GDP provides an unbiased estimate of $\beta$ convergence, known as $\sigma$ convergence. We can express the concept of $\sigma$ convergence using the following regression equation:

$$CV = a + bt + u_t \quad \text{... (6)}$$

where $a$ is the intercept constant, $b$ is the slope constant signifying the changes of coefficient of variation (CV) over time, and $u$ is the random disturbance term. If the sign of $b$ is negative and significant, we can say that the trend of CV is downward and that there is convergence among countries according to the criterion of $\sigma$ convergence. Sala-i-Martin (1996) advocated that two economies could not be close together at the end time points without the condition that an initially poor economy had been growing at a faster rate than the richer one. In other words, a necessary condition for the existence of $\sigma$ convergence is the existence of $\beta$ convergence. It follows that $\beta$ convergence, although necessary, is not a sufficient condition for $\sigma$ convergence. The reason why the two concepts of convergence may not always show up together is that they capture two different aspects. The principle of $\sigma$ convergence relates to whether or not the cross-country distribution of world income shrinks over time and $\beta$ convergence relates to the mobility of different individual economies within the given distribution of world income that ultimately leads to the catching-up process.

**Panel unit root test approach:** If there is panel data consisting of $n$ number of cross-sections and $m$ number of time points (leading to $n \times m$ of panel data), running individual unit root tests will involve power problems that would lead to spurious results. A panel unit root test overcomes this problem and provides results with more power.

For a data set ($k_{i,t}$, $i = 1, 2, \ldots, n$ [here $n = 18$] and $t = 1, 2, \ldots, T$ [here $T = 22$]), where $T$ denotes time and $k$ denotes per capita NDDP, let us consider the following linear regression set-up for a panel unit root test in line with the ADF (p) (1979) regression:

$$\Delta k_{i,t} = (\rho_i - 1)k_{i,t-1} + \sum_{j=1}^{p} \gamma_j \Delta k_{i,t-j} + Z'_{i,t}\alpha_i + u_{i,t} \qquad \ldots (7)$$

where $Z_{it}$ represents the exogenous variables in the model, including any fixed effects or individual trends. The null hypothesis for this model is $\rho_i = 1$ against the alternative hypothesis $\rho_i < 1$. The preceding equation can be rewritten as

$$\Delta k_{i,t} = \beta_i k_{i,t-1} + \sum_{j=1}^{p} \gamma_j \Delta k_{i,t-j} + Z'_{i,t}\alpha_i + u_{i,t} \qquad \ldots (8)$$

The null hypothesis for this model is $\beta_i = 0$ against the alternative hypothesis, $\beta_i < 0$.

According to the panel unit root test method, tests for convergence call for the cross-district PCNDDP differences to be stationary. However, if the difference is non-stationary, then there is an indication of divergence. If there were only two districts, instead of 18, this definition of convergence would be relatively unequivocal. But, if there were more than two districts, then the result of convergence/divergence would not be so apparent. There are, therefore, two yardsticks to consider regarding which standard of values of PCNDDP to converge. First is the consideration of a reference district's income (usually the richer in the group) to which the other districts' incomes would be converging (Oxley and Greasley 1999). Second is the convergence of individual districts' income towards the average income of the group (Carlino and Mills 1993).

The absolute convergence hypothesis requires panel unit root tests under the condition of "no fixed individual effects" and conditional convergence uses panel unit root tests under the condition of the presence of "fixed individual effects."

A panel unit root test is of two types in the existing literature. In one case, the coefficients ($\beta$s) are restricted to be homogeneous across all units of the panel, and in another case, the coefficients are restricted to be heterogeneous across individual units of the panel. For the first case, the testing modules have been proposed by Levin and Lin (LL) (1993) and Levin, Lin, and Chu (LLC) (2002) and for the second one, the modules are by Im, Pesaran, and Shin (IPS) (1997, 2003), ADF—Fisher chi square and PP—Fisher chi square by Maddala and Wu (MW) (1999) and Choi (2001) are used, since the assumption of homogeneity ($\beta_i s = \beta$) is restrictive and subject to the possible homogeneity bias of the fixed effects estimator.

The models by Levin and Lin (1993) and Levin et al (2002) are captured by equation (9), where $\beta_i s = \beta$:

$$\Delta k_{i,t} = \beta k_{i,t-1} + \sum_{j=1}^{p} \gamma_j \Delta k_{i,t-j} + Z'_{i,t}\alpha + u_{i,t} \qquad \ldots (9)$$

Maddala and Wu (1999) proposed a test statistic which is of the form

$$\chi^2 = -2\sum_{i=1}^{N} (\log p_i) \qquad \ldots (10)$$

(where $i = 1, 2, \ldots, N$). It follows a chi square distribution under the null hypothesis of $p_i = 0$ for all $i_s$.

The simulation suggests that the Maddala and Wu Fisher test is more powerful than the Im, Pesaran, and Shin test, which is more powerful than the Levin, Lin, and Chu test in a variety of situations.

In the present paper, we have followed the propositions of Oxley and Greasley (1999) and Carlino and Mills (1993) to test for convergence in panel unit root tests by taking the differences of the PCNDDP of the $i^{th}$ districts from the PCNDDP of Kolkata (the highest income district) and the average of the PCNDDP of all the 18 districts. Hence, we have calculated the series for $(k_{i,t} - k_{Cal,t})$ and $(k_{i,t} - k_{Avg,t})$ where all the $k_{i,t}s$ are in logarithmic values. In equation (11), we have modelled the panel data ADF test equation with the new variable $y$, where $y_{i,t}$ has been reduced by $(k_{i,t} - k_{Cal,t})$ in the first case and $(k_{i,t} - k_{Avg,t})$ in the second case.

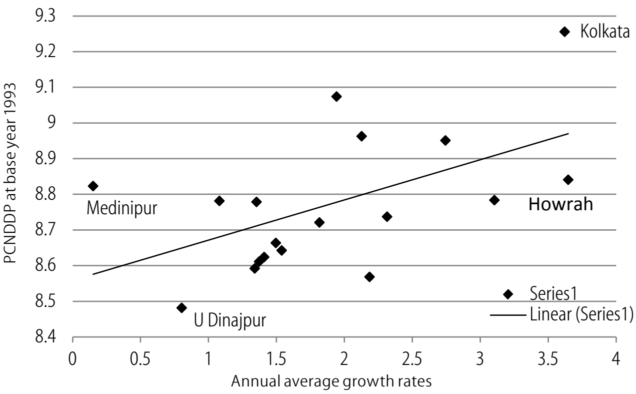
$$\Delta y_{i,t} = \beta_i y_{i,t-1} + \sum_{j=1}^{p} \gamma_j \Delta y_{i,t-j} + Z'_{i,t}\alpha_i + u_{i,t} \qquad \ldots (11)$$

We tested for the panel unit root in line with the homogeneous and heterogeneous natures of the group members.

## Empirical Results

**Barro–Sala-i-Martin's absolute $\beta$ convergence test results:** The initial step in examining whether the districts have converged in absolute $\beta$ terms is to plot the annual average growth rates of PCNDDP and the initial logarithmic values of PCNDDP corresponding to the base values of time point 1993 on a scatter diagram and then draw the trend lines along

**Figure 1: Scatter Diagram for 1993–2014**




Names of some of the outlier districts are shown in the diagram.
Source: Compiled by the authors.

the coordinating points. Figure 1 is a scatter diagram for the period of study.

Avg growth rate = –21.04 + 2.61 (log initial value of PCNDDP) of PCNDDP ... (12)
Probability (0.031) (0.019); $R^2 = 0.29$

The estimated regression coefficient took a positive value and the probability was very low (less than 0.05) for rejecting the null hypothesis of $\beta = 0$. The overall goodness of fit was 0.29. Hence, we concluded that there was a sign of absolute $\beta$ divergence across the districts, or that the catching-up process did not work.

There may be district-specific factors responsible for the occurrence of absolute $\beta$ divergence results. This is another way to state that there may be heterogeneity among the districts that may result in conditional convergence. We, thus, tested for conditional $\beta$ convergence for the member countries by estimating equation (5). The conditional variables included in vector *W* were bank credit, literacy rate, working population, industrial investments, and road infrastructure. The results of the conditional convergence are presented in Table 1.

Evidently, bank credit and road infrastructure have been working as conditional variables but all other variables, even the base year's value of *PCNDDP*, were insignificant to explain the divergence result. Hence, districts were not producing conditional $\beta$ convergence results. The panel of districts may produce absolute and conditional $\beta$ convergence results, as pooling the data may increase the power of the test.

To test for the $\sigma$ convergence hypothesis, we have estimated equation (6). The estimated equation is given in equation (13).

CV = 20.48 + 0.81*t ... (13)
Probability (0.031) (0.019); $R^2 = 0.84$

The estimated values of the regression equation revealed a $\sigma$ divergent result among the districts, which means there were increasing disparities among districts in the state in terms of per capita net domestic products. This is a serious matter as far as equitable distribution of income and wealth of the state are concerned since inter-district disparity leads to low levels of development in the state as a whole, resulting in disruptions to society.

The overall conclusion from the neoclassical theories of growth and convergence of income was that the districts of West Bengal were not converging, but rather diverging, from the common steady-state income.

**Panel unit root test results:** In our study, we have tested panel unit root for two series: one, deriving the difference of PCNDDP values of individual districts from the top district, Kolkata, over time and across the districts; and two, taking the differences of individual districts' PCNDDP values from the average PCNDDP value for all districts. After that, we ran panel unit root tests for common unit root process (LLC) and individual unit root process (IPS, MW) following equations (7) to (11). Testing for "with intercept" implies the existence of conditional convergence and "without intercept" means the existence of absolute convergence (or the catching-up process). The results of the two types of tests for the reference district of Kolkata and the average of all districts' incomes are offered in Tables 2 and 3 using EViews.

**Table 1: Conditional $\beta$ Convergence Results**

| | Coefficients | t statistic | p value |
|---|---|---|---|
| Intercept | -4.54 | –0.23 | 0.81 |
| Log initial value of PCNDDP | 0.11 | 0.05 | 0.95 |
| Log initial value of PC credit | 0.55 | 1.87 | 0.08 |
| Log literacy rate | 0.61 | 0.40 | 0.69 |
| Log working population | 0.61 | 0.78 | 0.45 |
| Log industrial investment | 0.068151 | 0.603135 | 0.558649 |
| Log road length | -1.40399 | -1.88172 | 0.086585 |
| Adjusted $R^2$ | 0.462 | | |

Source: Computed by the authors.

**Table 2: Panel Unit Root Test Results for the Series of (log $PCNDDP_i$— log $PCNDDP_{Kolkata}$) with and without Intercepts**

| Method | Null Hypothesis | Test Statistics with Intercept (Prob) | Test Statistics without Intercept (Prob) |
|---|---|---|---|
| Levin, Lin, and Chu | Unit root (under common unit root process) | **-3.139** (0.0008) | 3.789 (0.999) |
| Im, Pesaran, and Shin | Unit root (under individual unit root process) | -0.800 (0.2118) | – |
| MW-ADF: Fisher chi square | Unit root (under individual unit root process) | 33.318 (0.5008) | 7.926 (1.000) |
| MW-PP: Fisher chi square | Unit root (under individual unit root process) | 31.537 (0.5889) | 6.115 (1.000) |

Automatic lag length selection is based on AIC: 0 to 4. Bold figures indicate statistically significant results. Probabilities for Fisher tests are computed using an asymptotic chi square distribution. All other tests assume asymptotic normality. PP stands for Phillips Peron.
Source: Computed by the authors.

**Table 3: Panel Unit Root Test Results for the Series of (log $PCNDDP_i$—log $PCNDDP_{Mean}$) with and without Intercepts**

| Method | Null Hypothesis | Test Statistics with Intercept (Prob) | Test Statistics without Intercept (prob) |
|---|---|---|---|
| Levin, Lin, and Chu | Unit root (under common unit root process) | **-2.357** (0.009) | 2.352 (0.990) |
| Im, Pesaran, and Shin | Unit root (under individual unit root process) | -0.334 (0.369) | – |
| MW-ADF: Fisher chi square | Unit root (under individual unit root process) | 43.992 (0.169) | 15.509 (0.998) |
| MW-PP: Fisher chi square | Unit root (under individual unit root process) | 39.558 (0.314) | 15.097 (0.999) |

Automatic lag length selection is based on AIC: 0 to 4. Bold figures indicate statistically significant results. Probabilities for Fisher tests are computed using an asymptotic chi square distribution. All other tests assume asymptotic normality.
Source: Computed by the authors.

The results in Table 2 show that only the LLC test rejects the panel unit root with the intercept term. That means there were conditional convergences among districts towards the PCNDDP of the top district, Kolkata, in line with the LLC test statistic. All other test statistics show that there were conditional convergences to Kolkata. Further, the tests which are without intercept show that no test statistic rejected the panel unit root process. Therefore, in an overall sense, there were neither absolute convergences nor conditional convergences to the PCNDDP of Kolkata. There were therefore divergences in the panel data.

The results for convergence to the average incomes of all the districts, as depicted in Table 3, show that, although LLC demonstrated rejection of the common unit root, there was no conditional convergence to the average income in an overall sense. Further, there was no absolute convergence result in any of the test statistics.

The panel unit root test results, therefore, show that the districts were diverging to the top district and average value of all the districts. The two methods, the neoclassical growth theory and the panel unit root test, therefore, provided a common conclusion of divergence among the districts between 1993 and 2014. There may be factors other than what we have included in the conditional convergence test that are responsible for justifying the cross-district divergence.

## Conclusions

Studying inter-district convergence of per capita income in any state or country is crucial to policy agenda as it unveils the true scenario at the grassroots level. The approach of the present study, with the objective of examining inter-district convergence of per capita income in West Bengal was twofold: first, we tested in line with the neoclassical growth and convergence theory for individual districts with $\beta$ convergence and $\sigma$ convergence approaches, and second, we used a panel unit root test for the top district, Kolkata, and for the average of incomes of all the districts. The results show that the districts did not converge in absolute $\beta$ convergence, conditional $\beta$ convergence, or $\sigma$ convergence terms. Rather, the districts diverged in the period between 1993 and 2014. This result is striking for the state since divergence in the districts' incomes actually jeopardises the developmental achievements of the state. Hence, West Bengal should focus on minimising the distributional disparities of the economic resources across the different districts through proper planning.

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## Wholesale Price Index

The year-on-year (y-o-y) WPI-inflation rate decreased to 10.7% in September 2022 from 11.8% reported a year ago and 12.4% a month ago. The index for primary articles increased by 11.7% compared to 6.0% a year ago but was lower than 14.9% a month ago. The rate of inflation for food articles rose substantially to 11.0% from -2.6% a year ago. The index for fuel and power increased by 32.6% compared to 29.5% and with a higher weight in the WPI, the index for manufactured products decreased by 6.3% compared to 11.6% a year ago.

## Consumer Price Index

The CPI-inflation rate increased to 7.4% in September 2022 from 4.3% registered a year ago. The consumer food price index rose by 8.6% compared to 0.7% a year ago. The CPI-rural inflation rate increased to 7.6% and urban inflation rate to 7.3% from 4.1% and 4.6%, respectively, a year ago. According to Labour Bureau data, the CPI for agricultural labourers (CPI–AL) increased to 7.7% in September 2022 from 2.9% a year ago and the CPI for industrial workers (CPI–IW) to 6.5% from 4.4%.

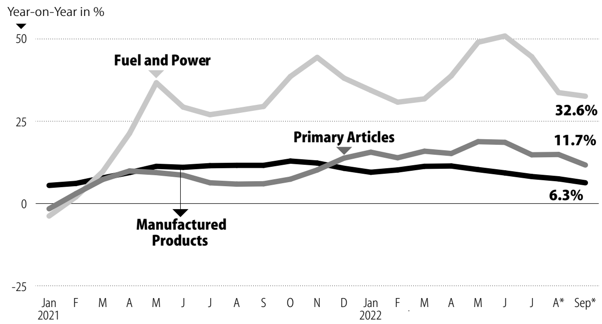
## Foreign Trade

The trade deficit widened to $25.7 bn in September 2022 from $22.5 bn reported a year ago. Exports increased by 4.9% to $35.4 bn and imports by 8.7% to $61.2 bn from $33.8 bn and $56.3 bn, respectively. Oil imports stood at $15.9 bn compared to $16.8 bn a year ago and non-oil at $45.3 bn against $39.5 bn. During the first half of the financial year 2022–23, cumulative exports rose by 17.0% to $231.9 bn and imports by 38.6% to $380.3 bn from $198.3 bn and $274.5 bn, reporting a trade deficit of $148.5 bn compared to $76.2 bn during the same period last year.

## Index of Eight Core Industries

The y-o-y growth rate of ICI increased to 7.9% in September 2022 from 5.4% reported a year ago. Production of coal was higher by 12.0%, refinery products by 6.7%, cement by 12.0% and electricity generation by 11.0% compared to their respective growth rates of 7.8%, 6.0%, 11.3% and 0.9% a year ago. Growth in the crude oil segment decreased to -2.3% from -1.7%, natural gas to -1.6% from 27.5% and steel to 6.7% from 7.1% but production of fertilisers grew by 11.8% against 0.04% a year ago.

### Movement of WPI-Inflation Rate January 2021–September 2022



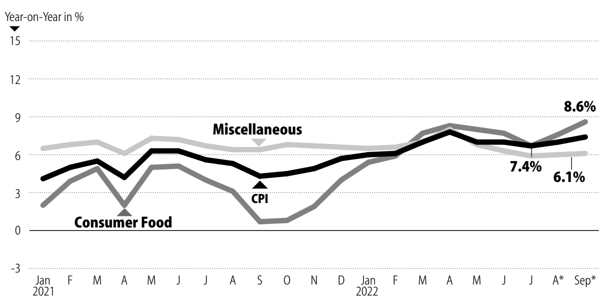

* Data is provisional; Base: 2011–12 = 100.

### Trends in WPI and Its Components September 2022* (%)

| | Weights | Over Month | Over Year | Financial Year (Averages) 2019–20 | 2020–21 | 2021–22 |
|---|---|---|---|---|---|---|
| All commodities | 100 | -0.7 | 10.7 | 1.7 | 1.3 | 13.0 |
| Primary articles | 22.6 | -1.3 | 11.7 | 6.8 | 1.7 | 10.2 |
| Food articles | 15.3 | 0.3 | 11.0 | 8.4 | 3.2 | 4.1 |
| Fuel and power | 13.2 | 0.1 | 32.6 | -1.8 | -8.0 | 32.5 |
| Manufactured products | 64.2 | -0.5 | 6.3 | 0.3 | 2.8 | 11.1 |

*Data is provisional; Base: 2011–12=100. Source: Ministry of Commerce and Industry.

### Movement of CPI Inflation January 2021–September 2022




* Data is provisional. Source: National Statistical Office (NSO), Ministry of Statistics and Programme Implementation, Base: 2012=100.

### CPI: Rural and Urban September 2022* (%)

| | Latest Month Index | Over Month | Over Year | Financial Year (Avgs) 2020–21 | 2021–22 |
|---|---|---|---|---|---|
| CPI Combined | 175.3 | 0.57 | 7.41 | 6.16 | 5.51 |
| Rural (2012=100) | 176.4 | 0.63 | 7.56 | 5.94 | 5.43 |
| Urban (2012=100) | 174.1 | 0.58 | 7.27 | 6.45 | 5.58 |
| **CPI: Occupation-wise** | | | | | |
| Industrial workers (2016=100) | 131.3 | 0.8 | 6.5 | 5.0 | 5.1 |
| Agricultural labourers (1986–87=100) | 1149.0 | 0.8 | 7.7 | 5.5 | 4.0 |

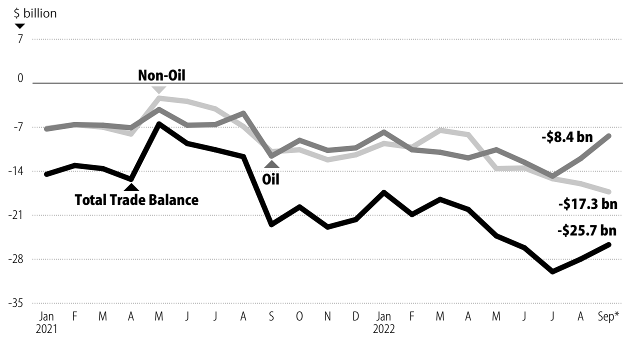
* Provisional. Source: NSO (rural and urban); Labour Bureau (IW and AL).

### Merchandise Trade September 2022

| | September 2022 ($ bn) | Over Month (%) | Over Year (%) | April–September (2022–23 over 2021–22) (%) |
|---|---|---|---|---|
| Exports | 35.5 | 4.5 | 4.9 | 17.0 |
| Imports | 61.2 | -1.2 | 8.7 | 38.6 |
| Trade balance | -25.7 | -8.1 | 14.4 | 94.7 |

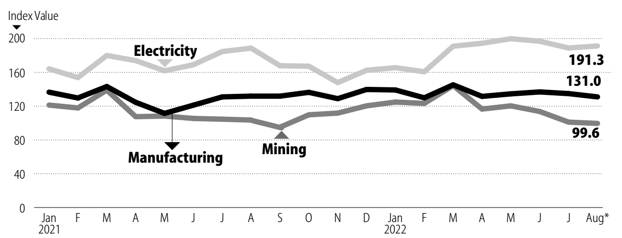
Data is provisional. Source: Ministry of Commerce and Industry.

### Trade Balance January 2021–September 2022




Oil refers to crude petroleum and petroleum products, while non-oil refers to all other commodities.

### Movement of Index Values of Components of IIP January 2021–August 2022




* August 2022 are quick estimates; Base: 2011–12=100.

### Index for Eight Core Industries September 2022* (%)

| | Weights | Over Month | Over Year | Financial Year (Avgs) in % 2020–21 | 2021–22 |
|---|---|---|---|---|---|
| Infrastructure industries | 40.27@ | -1.1 | 7.9 | -6.4 | 10.4 |
| Coal | 10.3 | 0.0 | 12.0 | -1.9 | 8.5 |
| Crude oil | 9.0 | -2.0 | -2.3 | -5.2 | -2.6 |
| Natural gas | 6.9 | -1.2 | -1.6 | -8.2 | 19.2 |
| Petroleum refinery products | 28.0 | -2.8 | 6.7 | -11.2 | 8.9 |
| Fertilisers | 2.6 | -3.0 | 11.8 | 1.7 | 0.7 |
| Steel | 17.9 | 1.0 | 6.7 | -8.7 | 16.9 |
| Cement | 5.4 | 4.4 | 12.0 | -10.8 | 20.8 |
| Electricity | 19.9 | -2.6 | 11.0 | -0.5 | 8.0 |

(Base: 2011–12=100); *Data is provisional; @ The revised eight core industries have a combined weight of 40.27% in the IIP. Source: Ministry of Commerce and Industry.

**Comprehensive current economic statistics with regular weekly updates are available at: http://www.epwrf.in/currentstat.aspx.**

## India's Quarterly Estimates of Final Expenditures on GDP

| ₹ Crore \| At 2011–12 Prices | 2020–21 Q1 | 2020–21 Q2 | 2020–21 Q3 | 2020–21 Q4 | 2021–22 Q1 | 2021–22 Q2 | 2021–22 Q3 | 2021–22 Q4 | 2022–23 Q1 |
|---|---|---|---|---|---|---|---|---|---|
| Private final consumption expenditure | 1532170 (-23.7) | 1839177 (-8.3) | 2169131 (0.6) | 2223256 (6.5) | 1753400 (14.4) | 2031624 (10.5) | 2330425 (7.4) | 2262405 (1.8) | 2207981 (25.9) |
| Government final consumption expenditure | 429241 (13.6) | 322530 (-22.9) | 344609 (-0.3) | 441224 (29.0) | 408789 (-4.8) | 351138 (8.9) | 354889 (3.0) | 462316 (4.8) | 414210 (1.3) |
| Gross fixed capital formation | 654479 (-45.3) | 1044735 (-4.5) | 1128117 (-0.6) | 1303947 (10.1) | 1063543 (62.5) | 1197408 (14.6) | 1152014 (2.1) | 1371090 (5.1) | 1277806 (20.1) |
| Change in stocks | -1995 (-107.4) | -3048 (-111.3) | -3040 (-111.7) | -3490 (-112.4) | 43907 (-2301.0) | 47531 (-1659.6) | 45050 (-1581.7) | 51450 (-1574.2) | 36262 (-17.4) |
| Valuables | 3790 (-91.4) | 52356 (18.3) | 50917 (37.2) | 100918 (156.9) | 23329 (515.6) | 142228 (171.7) | 77891 (53.0) | 51597 (-48.9) | 34839 (49.3) |
| Net trade (Export–Import) | 6189 | -28433 | -119730 | -167215 | -96309 | -174012 | -227446 | -205582 | |
| Exports | 523643 (-25.5) | 659753 (-6.4) | 645694 (-8.6) | 724592 (3.7) | 737146 (40.8) | 795994 (20.7) | 794990 (23.1) | 846715 (16.9) | 845323 (14.7) |
| Less Imports | 517454 (-41.1) | 688186 (-17.9) | 765424 (-5.2) | 891807 (11.7) | 833455 (61.1) | 970006 (41.0) | 1022436 (33.6) | 1052297 (18.0) | 1143736 (37.2) |
| Discrepancies | 79724 (17.0) | 83612 (-8.0) | 56217 (-6963.7) | 19085 (-92.0) | 49775 (-37.6) | -6738 (-108.1) | 89056 (58.4) | 84749 (344.1) | 12439 (-75.0) |
| Gross domestic product (GDP) | 2703598 (-23.8) | 3310930 (-6.6) | 3626220 (0.7) | 3917725 (2.5) | 3246434 (20.1) | 3589178 (8.4) | 3821878 (5.4) | 4078025 (4.1) | 3685125 (13.5) |

## India's Overall Balance of Payments (Net): Quarterly

| Item | 2021–22 ($ mn) Q1 | 2021–22 ($ mn) Q2 | 2021–22 ($ mn) Q3 | 2021–22 ($ mn) Q4 | 2022–23 ($ mn) Q1 | 2021–22 (₹ bn) Q1 | 2021–22 (₹ bn) Q2 | 2021–22 (₹ bn) Q3 | 2021–22 (₹ bn) Q4 | 2022–23 (₹ bn) Q1 |
|---|---|---|---|---|---|---|---|---|---|---|
| Current account | 6559 | -9734 | -22167 | -13424 | -23893 | 484 [0.9] | -721 [-1.3] | -1661 [-2.6] | -1010 [-1.5] | -1844 [-2.8] |
| Merchandise | -30715 | -44511 | -59750 | -54483 | -68556 | -2266 | -3298 | -4477 | -4099 | -5292 |
| Invisibles | 37275 | 34777 | 37583 | 41059 | 44663 | 2750 | 2577 | 2816 | 3089 | 3447 |
| Services | 25808 | 25579 | 27809 | 28319 | 31076 | 1904 | 1895 | 2084 | 2130 | 2399 |
| *of which:* Software services | 25136 | 26781 | 28356 | 29266 | 30692 | 1854 | 1984 | 2125 | 2202 | 2369 |
| Transfers | 19013 | 18991 | 21312 | 21132 | 22851 | 1403 | 1407 | 1597 | 1590 | 1764 |
| *of which:* Private | 19222 | 19212 | 21447 | 21350 | 23065 | 1418 | 1423 | 1607 | 1606 | 1780 |
| Income | -7547 | -9792 | -11538 | -8392 | -9264 | -557 | -726 | -865 | -631 | -715 |
| Capital account | 25392 | 39622 | 22500 | -1707 | 27966 | 1873 [3.7] | 2936 [5.2] | 1686 [2.7] | -128 [-0.2] | 2159 [3.3] |
| *of which:* Foreign investment | 11956 | 12575 | -1283 | -1439 | -1035 | 882 | 932 | -96 | -108 | -80 |
| Overall balance | 31870 | 31189 | 465 | -16024 | 4595 | 2351 [4.6] | 2311 [4.1] | 35 [0.1] | -1205 [-1.8] | 355 [0.5] |

*Figures in square brackets are percentage to GDP.*

## Foreign Exchange Reserves

| Excluding gold but including revaluation effects | 21 October 2022 | 22 October 2021 | 31 March 2022 | Variation: Over Month | Over Year | Financial Year So Far 2021–22 | Financial Year So Far 2022–23 | Financial Year 2017–18 | 2018–19 | 2019–20 | 2020–21 | 2021–22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ₹ crore | 3989685 | 4466123 | 4237617 | -17309 | -476438 | 531092 | -247931 | 353270 | 68050 | 668976 | 590416 | 302585 |
| $ mn | 482515 | 596419 | 559615 | -12291 | -113904 | 58240 | -77100 | 53217 | -14168.4 | 56831.4 | 94535 | 21435 |

## Monetary Aggregates

| ₹ Crore | Outstanding 2022 | Variation: Over Month | Over Year | Financial Year So Far 2020–21 | Financial Year So Far 2021–22 | Financial Year 2018–19 | Financial Year 2019–20 | Financial Year 2020–21 |
|---|---|---|---|---|---|---|---|---|
| Money supply ($M_3$) as on 7 October | 21345137 | 216653 (1.0) | 1777276 (9.1) | 723283 (3.8) | 851408 (4.2) | 1367897 (8.9) | 2044615 (12.2) | 1649151 (8.8) |
| Components | | | | | | | | |
| Currency with public | 3063134 | -9559 (-0.3) | 232538 (8.2) | 78768 (2.9) | 27445 (0.9) | 297539 (14.5) | 402079 (17.1) | 283861 (10.3) |
| Demand deposits | 2185607 | 75711 (3.6) | 266115 (13.9) | -75628 (-3.8) | -27384 (-1.2) | 111179 (6.8) | 257428 (14.8) | 217871 (10.9) |
| Time deposits | 16026625 | 142327 (0.9) | 1256591 (8.5) | 719756 (5.1) | 840021 (5.5) | 952412 (8.1) | 1376262 (10.9) | 1136326 (8.1) |
| Other deposits with RBI | 69770 | 8172 (13.3) | 22032 (46.2) | 387 (0.8) | 11326 (19.4) | 6765 (21.3) | 8844 (23.0) | 11093 (23.4) |
| Sources | | | | | | | | |
| Net bank credit to government | 6559027 | -24419 (-0.4) | 431824 (7.0) | 276829 (4.7) | 81398 (1.3) | 571872 (13.0) | 890012 (17.9) | 627255 (10.7) |
| Bank credit to commercial sector | 13593510 | 296435 (2.2) | 1982747 (17.1) | 53875 (0.5) | 976990 (7.7) | 655925 (6.3) | 518244 (4.7) | 1059632 (9.2) |
| Net foreign exchange assets | 4482541 | -158285 (-3.4) | -516221 (-10.3) | 419916 (9.2) | -371521 (-7.7) | 730196 (23.8) | 777810 (20.5) | 275216 (6.0) |
| Banking sector's net non-monetary liabilities | 3318733 | -102921 (-3.0) | 122573 (3.8) | 27717 (0.9) | -163763 (-4.7) | 590557 (24.2) | 142016 (4.7) | 314053 (9.9) |
| Reserve Money as on 21 October | 4138765 | 86597 (2.1) | 461032 (12.5) | 77751 (2.2) | 69878 (1.7) | 259224 (9.4) | 570276 (18.8) | 468905 (13.0) |
| Components | | | | | | | | |
| Currency in circulation | 3218315 | 51242 (1.6) | 273322 (9.3) | 91229 (3.2) | 84598 (2.7) | 310541 (14.5) | 406452 (16.6) | 279953 (9.8) |
| Bankers' deposits with RBI | 850449 | 27899 (3.4) | 164874 (24.0) | -13293 (-1.9) | -26277 (-3.0) | -58081 (-9.6) | 154980 (28.5) | 177858 (25.4) |
| Other deposits with RBI | 70001 | 7457 (11.9) | 22836 (48.4) | -186 (-0.4) | 11557 (19.8) | 6765 (21.3) | 8844 (23.0) | 11093 (23.4) |
| Sources | | | | | | | | |
| Net RBI credit to Government | 1091548 | 31001 (2.9) | 48444 (4.6) | -56582 (-5.1) | -359049 (-24.8) | 190240 (23.7) | 107495 (10.8) | 350911 (31.9) |
| *of which:* Centre | 1086498 | 32424 (3.1) | 48154 (4.6) | -58001 (-5.3) | -362474 (-25.0) | 189267 (23.6) | 106605 (10.8) | 352627 (32.2) |
| RBI credit to banks & commercial sector | 82682 | 90069 (-1219.3) | 732682 (-112.7) | -280642 (76.0) | 626384 (-115.2) | -353744 (-231.4) | -168465 (0.0) | -174344 (0.0) |
| Net foreign exchange assets of RBI | 4179125 | -17615 (-0.4) | -451332 (-9.7) | 431057 (10.3) | -263354 (-5.9) | 741814 (26.0) | 608998 (17.0) | 243079 (5.8) |
| Govt's currency liabilities to the public | 29003 | 212 (0.7) | 1711 (5.5) | 380 (1.4) | 991 (3.5) | 461 (1.8) | 564 (2.1) | 1100 (4.1) |
| Net non-monetary liabilities of RBI | 1243594 | 17071 (1.4) | -129528 (-9.4) | 16462 (1.2) | -64906 (-5.0) | 319547 (30.2) | -21682 (-1.6) | -48160 (-3.5) |

## Scheduled Commercial Banks' Indicators *(₹ Crore)*

| (As on 7 October) | Outstanding 2022 | Variation: Over Month | Over Year | Financial Year So Far 2019–20 | Financial Year So Far 2020–21 | Financial Year 2017–18 | Financial Year 2018–19 | Financial Year 2019–20 |
|---|---|---|---|---|---|---|---|---|
| Aggregate deposits | 17272942 | 216636 (1.3) | 1517076 (9.6) | 642354 (4.3) | 807629 (4.9) | 993721 (7.9) | 1546019 (11.4) | 1351801 (8.9) |
| Demand | 2044691 | 75568 (3.8) | 260002 (14.6) | -76504 (-4.1) | -28056 (-1.4) | 105716 (7.0) | 244190 (15.1) | 211554 (11.4) |
| Time | 15228251 | 141067 (0.9) | 1257074 (9.0) | 718858 (5.4) | 835685 (5.8) | 888005 (8.0) | 1301830 (10.9) | 1140247 (8.6) |
| Cash in hand | 110530 | 1496 (1.4) | 11096 (11.2) | 8686 (9.6) | 24604 (28.6) | 12385 (16.5) | 3487 (4.0) | -4822 (-5.3) |
| Balance with RBI | 784890 | 5704 (0.7) | 147345 (23.1) | 94852 (17.5) | 101453 (14.8) | -29521 (-5.2) | 6507 (1.2) | 140744 (25.9) |
| Investments | 5104372 | 2212 (0.0) | 412644 (8.8) | 229203 (5.1) | 375425 (7.9) | 366292 (10.8) | 715176 (19.1) | 266422 (6.0) |
| *of which:* Government securities | 5103538 | 2143 (0.0) | 412893 (8.8) | 229014 (5.1) | 375360 (7.9) | 359695 (10.6) | 722934 (19.3) | 266547 (6.0) |
| Bank credit | 12860089 | 309004 (2.5) | 1956700 (17.9) | 65458 (0.6) | 968775 (8.1) | 496916 (5.1) | 569292 (5.5) | 1053383 (9.7) |
| *of which:* Non-food credit | 12839456 | 316963 (2.5) | 1998475 (18.4) | 64304 (0.6) | 1003152 (8.5) | 486763 (5.0) | 559802 (5.5) | 1059627 (9.8) |

## Capital Markets

| | 28 October 2022 | Month Ago | Year Ago | Financial Year So Far Trough | Financial Year So Far Peak | 2021–22 Trough | 2021–22 Peak | End of Financial Year 2018–19 | 2019–20 | 2020–21 |
|---|---|---|---|---|---|---|---|---|---|---|
| S&P BSE SENSEX (Base: 1978–79=100) | 59960 (-0.0) | 56598 | 59985 (50.3) | 51360 | 60612 | 47706 | 61766 | 39714 (12.4) | 29816 (-21.8) | 49009 (63.7) |
| S&P BSE-100 (Base: 1983–84=100) | 18180 (0.6) | 17337 | 18072 (53.3) | 15563 | 18568 | 14482 | 18800 | 12044 (9.1) | 8693 (-25.2) | 14689 (68.2) |
| S&P BSE-200 (1989–90=100) | 7753 (0.8) | 7421 | 7695 (56.0) | 6603 | 7958 | 6136 | 8025 | 4987 (7.1) | 3614 (-25.1) | 6211 (71.1) |
| CNX Nifty-50 (Base: 3 Nov 1995=1000) | 17787 (-0.4) | 16859 | 17857 (52.2) | 15294 | 18070 | 14296 | 18477 | 11923 (11.1) | 8660 (-24.3) | 14507 (67.9) |
| CNX Nifty-500 | 15242 (0.3) | 14621 | 15191 (57.7) | 12951 | 15670 | 12024 | 15886 | 9805 (5.3) | 7003 (-26.3) | 12149 (73.7) |

*Figures in brackets are percentage variations over the specified or over the comparable period of the previous year. | (-) = not relevant | - = not available | NS = new series | PE = provisional estimates*

■ Comprehensive current economic statistics with regular weekly updates are available at: http://www.epwrf.in/currentstat.aspx.

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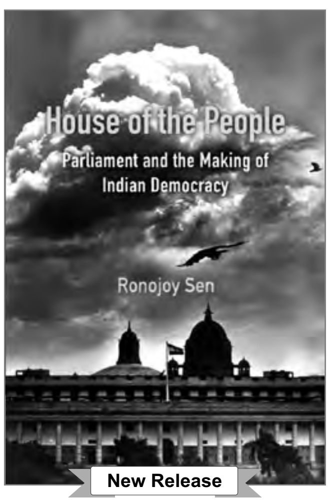


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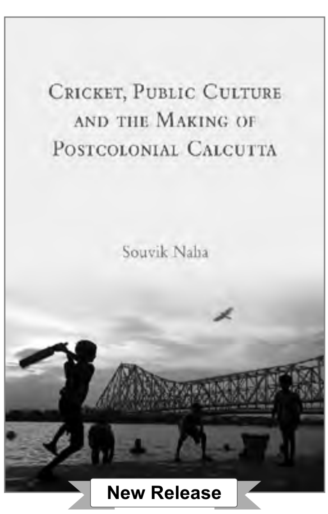


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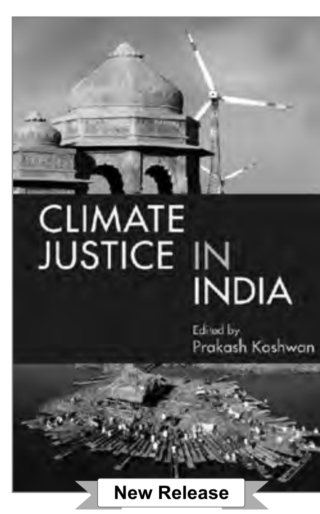


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