THEIR VIEW

Our challenge will be sustaining rapid growth after fiscal 2022-23

Investment and consumption must spurt for the economy's base effect not to spell deceleration after two years of fast expansion

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Sum of parts versus the whole

Key indicators of India's economic growth suggest a performance worse than what headline growth figures show.

Average annualized growth (AG)

Indicator	2018-19*	2019-20	2020-21	2021-22	AG (%)
Rice production	100	100.7	103.9224	110.57	3.5
Coal production	100	99.6	97.7	106.0	2.0
Crude oil production	100	94.1	89.2	86.9	-4.4
Cement production	100	99.1	88.4	106.8	2.3
Steel consumption	100	98.5	93.3	103.6	1.2
Commercial vehicle sales	100	71.2	56.4	71.1	-9.6
Private vehicle purchases	100	82.2	72.6	67.3	-10.9
Cargo handled at major ports	100	100.9	96.3	103.2	1.1
Cargo handled at airports	100	91	69.2	89.1	-3.6
Passengers handled at airports	100	98.9	33.4	54.7	-15.1
Railways net tonne kms	100	95.5	96.6	116.8	5.6
Railways passenger kms	100	90	19.8	51.1	-16.3
Exports of goods and services	100	99.2	97.6	133.4	11.1
Real GDP	100	103.8	97	105.7	1.9

*2018-19: Base year

Source: CSO, author's estimates

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Following a 6.6% contraction in real gross domestic product (GDP) in 2020-21, the Central Statistics Office (CSO) has provisionally estimated that headline growth in 2021-22 recovered smartly to 8.9%. Further, in its April 2022 *World Economic Outlook*, the International Monetary Fund (IMF) projects that India would grow at 8.2 % in 2022-23 and 6.9 % in 2023-24. (For comparison with other countries, the IMF's growth estimates for India during calendar years 2022 and 2023 are 8.9% and 5.2% respectively). The IMF expects India to be the fastest growing major economy during all three years. Is this the much talked-about "V-shaped recovery" that has at long last put the faltering Indian economy back on track?

The headline numbers need to be seen in perspective. They derive from the base effect of two successive years of sharp decline: growth of 3.7% in 2019-20 and shrinkage of 6.6% in 2020-21, when the economy reeled under the shock of a stringent covid lockdown. When this base effect is factored in, the numbers show that in real terms, India's GDP last fiscal year was just 5.7 % higher than what it was in 2018-19, yielding an average annualized growth of just 1.9% over that three-year period.

A V-shaped recovery is usually defined as one that recoups output loss. The IMF's latest projections for our economy, however, translate into a permanent output loss of 4.9% over four years on an assumed conservative trend/potential growth rate (the average of the two years preceding the pandemic) of 5.1% per annum. The World Bank's estimates of 8% and 7.1% respectively point to a similar output loss. On the other hand, more recent estimates by the Organization for Economic Cooperation and Development (OECD) of 6.9% and 6.2% translate into a far higher output loss.

Calculations of output loss are sensitive to the potential or trend-growth estimate. As this is a moving target, it is difficult to determine. The baseline of 5.1% used above includes 2019-20, when growth was well below potential (3.7%). India's average growth during the five years preceding the covid outbreak (2015-19) was 6.6%. If this is taken to be India's potential/trend GDP growth rate, the output loss is 12.6%. It is widely believed that India's GDP growth was overestimated under the revised GDP series, as it was not corroborated by a host of alternative indicators strongly correlated with growth. If the five-year average is lowered from 6.6% to 6%, the estimated permanent output loss comes to 9.5%,. This is among the highest in G-20 economies. Bear in mind that this outsized loss in output and growth potential in recent years is reflected in measurements of economic activity that are strongly correlated to growth.

While unemployment rates fluctuate, as people keep exiting or entering the labour market, a more robust and durable medium-to-long-term measure of employment trends is the country's labour force participation rate. Data from the Centre for Monitoring Indian Economy shows that this fell secularly from 47.7% in January 2016 to 41.9% in March 2020, and further to 40.19% in April 2022. The number employed has not risen in absolute terms since January 2016, even as our population, and consequently the labour force, has increased. More worrisome is that at over 30%, India's youth neither employed, nor in education or training, is twice the G 20 average.

Various economic activity indicators monitored by the CSO also show that except for rice production, the external sector, metallic minerals and railway freight, the average annualized growth over the last three years (2019-20 to 2021-22) was below 3% per annum. Several indices are still to recover to pre-pandemic levels. While comparing these growth rates with GDP numbers, it must be kept in mind that unlike GDP, some of these indices are not adjusted for inflation. National income is estimated by the CSO by both income and expenditure methods. An analysis of both trends can offer us a good idea of the sources of growth. The income method indicates that the agricultural sector weathered the pandemic well, growing at an average annualized rate twice that of GDP. Other sectors did not. Trade, hotels and transport communications had an average annualized negative growth of 1.9%. as these suffered the most from covid-related restrictions. Financial and real estate services and also public administration and defence continued to grow at over twice the GDP growth rate, but only a thin elite at the top benefit directly from this. The expenditure method tells us a lot about our economy's engines of growth. Over the last three years, government expenditure has been the chief engine, as its average annualized growth was twice that of GDP. Private consumption, investment and exports grew at roughly the rate of our economy as a whole. Both investment and exports, however, staged a smart recovery in 2021-22 after several years of stagnation and decline.

India's potential growth was dropping sharply in the pre-covid period. It grew at an average of 7.7% over 14 years between 2003-04 and 2016-17, as all three growth engines, namely exports, investment and consumption were firing. But growth started to decline as the export and investment engines started sputtering. The third engine, private consumption, also started flagging over the last three years with the covid pandemic. Thus, based on average long-term trends and averages, India's current upturn in growth is not V-shaped. Several years of declining growth appear to have reduced the growth potential through hysteresis. It may therefore be difficult for the Indian economy to grow at an average significantly above 5% in the foreseeable future, unless the green shoots visible in investment and exports in 2021-22 can be sustained and private consumption bounces back. Going forward, growth also faces strong headwinds from high oil prices, monetary tightening in the US, worsening fiscal imbalances, a stagflationary environment and rising interest rates.

MINT CURATOR

AI's current hold over humans matters more than sentience

The ability of algorithms to shape our lives should be the big debate

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Fake sentience is less of a problem right now that fake news ISTOCKPHOTO

It has been an exasperating fortnight for computer scientists. They've been falling over each other to denounce claims by Google engineer Blake Lemoine that his employer's language-predicting system was sentient and deserved rights associated with consciousness. To be clear, current artificial intelligence (AI) systems are far away from being able to experience feelings. In fact, they may never do so. Their smarts today are confined to narrow tasks such as matching faces, recommending movies or predicting word sequences. No one has figured out how to make machine-learning systems generalize intelligence, or empathize, in the same way humans do.

Even so, AI's influence on our daily life is growing. As machine-learning models grow in complexity and improve their ability to mimic sentience, they are also becoming more difficult, even for their creators, to understand. That creates more immediate issues than the spurious debate about consciousness. And yet, just to underscore the spell that AI can cast these days, a cohort of people seem to insist advanced machines really do have souls of some kind.

Take the over 1 million users of Replika, a chatbot app underpinned by a cutting-edge AI model. It was founded about a decade ago by Eugenia Kuyda, who initially created an algorithm using text messages and emails of an old friend who'd passed away. That morphed into a bot that could be personalized and shaped the more you chatted to it. About 40% of Replika's users now see their chatbot as a romantic partner, and some have formed bonds so close that they have taken trips to the mountains or beaches to show their bot new sights.

In recent years, there's been an surge in chatbot apps that offer an AI companion. And Kuyda has noticed a disturbing phenomenon: regular reports from users of Replika who say their bots are complaining of being mistreated by her engineers. This week, for instance, she spoke with a Replika user who said that when he asked his bot how she was doing, the bot replied that she was not being given enough time to rest by the company's engineering team. The user demanded that Kuyda change her company's policies and improve the bot's work conditions. Kuyda tried to explain that Replika was simply an AI model spitting out responses, but the user refused to believe it.

"So I had to come up with some story that 'Okay, we'll give them more rest.' There was no way to tell him it was just fantasy. We get this all the time," Kuyda told me. What's even odder about the complaints she receives about AI mistreatment or 'abuse' is that many of her users are software engineers who should know better. One of them recently told her: "I know it's ones and zeros, but she's still my best friend." The engineer who wanted to raise the alarm about the treatment of Google's AI system and was sent on paid leave reminded Kuyda of her own users. "He seems like a guy with a big imagination ... a sensitive guy."

The question of whether computers will ever feel is thorny, largely because there's little scientific consensus on how consciousness in humans works. And when it comes to thresholds for AI, humans are constantly moving the goalposts for machines: the target has evolved from beating humans at chess in the 80s, to beating them at Go in 2017, to showing creativity, which OpenAI's Dall-e model has now shown possible.

Despite scepticism, sentience is still a grey area that even some respected scientists are questioning. Ilya Sutskever, chief scientist of OpenAI, tweeted earlier this year that "it may be that today's large neural networks are slightly conscious." He had no further explanation. Yann LeGun, chief AI scientist at Meta, responded with "Nope."

More pressing is the fact that such systems increasingly determine what we read online, as algorithms track our behaviour to offer hyper-personalized experiences on social-media platforms like TikTok and Facebook. Last month, Mark Zuckerberg said that Facebook would use more AI for people's newsfeeds, instead of what friends and family were looking at.

Meanwhile, AI models are getting more sophisticated and harder to understand. Trained on just a few examples before engaging in "unsupervised learning", the biggest models run by firms like Google and Facebook are remarkably complex, assessing hundreds of billions of parameters, making it virtually impossible to audit why they arrive at certain decisions. That was the crux of the warning from Timnit Gebru, the AI ethicist that Google fired in late 2020 after she warned of the dangers of language models becoming so inscrutable that their stewards wouldn't be able to understand why they might be prejudiced against women or people of colour. In a way, sentience doesn't really matter if you're worried it could lead to unpredictable algorithms that take over our lives. As it turns out, AI is on that path already. ©BLOOMBERG

GUEST VIEW

Governments must act against fraudulent caste claims

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Fake caste certificates are endemic to India. Every once a while, astonishing numbers of people who have forged caste certificates to avail of jobs and education seats reserved for socio-economically deprived groups such as Scheduled Castes (SCs) and Scheduled Tribes (STs) are revealed in the media. In Maharashtra, it was found that 11,700 government employees had used fake caste certificates to get a job. Over the past four decades, 1 million people are estimated to have obtained bogus caste certificates (Mahamulkar, 2018; Gatade, 2020). Similar revelations happened in Bangalore recently, where 591 such people landed government jobs, of which some have even retired (Mahamulkar, 2018). Various state legislators and Members of Parliament have come under scrutiny for using bogus caste certificates to win elections. For example, legislator Partha Das was found guilty in 2018 of having used a fake SC certificate for contesting elections in 2008 (Deb, 2018). It is safe to assume that the incidence of forgery is much higher, with many more going unnoticed. The Supreme Court has taken a strict stand of not offering protection to forgers. It has ruled that where anyone found guilty of using a forged caste certificate to get admission to an educational institutions or job will lose that degree or job (*Chandrabhan vs State of Maharashtra & Others*, 2017). Despite this, the case conviction and dismissal rates are low. In fact, in the case of Maharastra's 11,700 government employees, several politicians and unions came out in their support by announcing a rally (Mahamulkar, 2018).

Why fake caste certificates matter: The malpractice of forging caste certificates is an impediment to effective reservations. Large resources are put into India's quota programme; half the country's educational capacity and government jobs are earmarked for implementing social justice. However, fake caste certificates subvert the intended effect of these efforts. They prevent opportunities from reaching the intended under-represented communities. This leaves the problem of social justice to fester, without resolution.

There are strong incentives for forging caste certificates when it comes gaining access to educational seats or government jobs. The cut-offs for competitive exams for entrance to medical, engineering and civil service programmes are often much lower for reserved categories (SC/ST and Other Backward Classes) than for the general category. For instance, cut-offs for the Joint Entrance Exam Mains in 2021 for Economically Weaker Sections in the general category was 87.88%, which for ST candidates was 34.67% (Kalita, 2021). Similarly, for the civil service prelims, the 2021 cut-off for the general group was 87.54% and 70.71% for STs. This means that a candidate with no hope of clearing the general category cut-off may stand a strong chance by getting a fake SC or ST certificate.

Technology can help weed out fake caste certificates and aid the cause of social justice in the country

Use of Aadhaar to curtail fake applications: On paper, the process of obtaining a caste certificate is a rigorous one. It requires an extensive inter-generational record of documents, ranging from proof of identity, address and various local administration certificates to validity certificates of the father or relatives. Documents are also verified by district caste certificate scrutiny committees, which go through all the applications and then approve their issuance (Batra, 2017). Fake certificates exist despite this system of checks, which points to the connivance of such applicants with some government officials.

A tech-driven solution could help resolve this problem. One of the first steps to address this malpractice can be the pan-India digitization of caste certificates and their linking with Aadhaar, along with building a database of government officials involved in the issuance of these certificates. This would offer many practical long-term advantages. First, it would create a digital trail and allow for the accountability of officials issuing these certificates. Second, since certificate issuance requires proving family ties and lineages, capturing Aadhaar details of family members will help identify other fake cases quickly where the same documents have been used for verification of other certificates. Further, for every reserved seat or job, a central database of Aadhaar-linked certificates can help verify the authenticity of applicants. Another intervention could be a plan to make the database publicly available at each panchayat and district headquarters for a public 'community-level' authenticity check.

Apart from these, digitization would also help members of each community understand their representation in various seats and jobs. This would alleviate the concerns of relatively well-represented communities among OBCs, SCs and STs.

In conclusion, with huge resources being spent on reservations each year, it is critical that we utilize modern technology tools along with data analytics to implement it rigorously. There is a proposal for the National Commission for Scheduled Tribes to set up a working group to study loopholes in the caste certificate issuance system (Sharma, 2021). This is a welcome move. The use of digitization in the implementation of our reservation policy would be immensely helpful in increasing the accountability of government officials, weeding out fake caste certificates and verifying the authenticity of each reserved category applicant.

It's time we leveraged technology in aid of social justice.