THEIR VIEW

Political economy of federalism: Contain 'transfer union' discord

Perceptions have grown in the Eurozone and India that transfers from richer states are funding profligacy in poorer ones

ALOK SHEEL
is a retired Indian Administrative Service officer and former secretary, Prime Minister's Economic Advisory Council.

MINT

Although all federal states have some mechanisms for the transfer of resources from richer to poorer constituents, if the perception grows that the richer states are subsidizing profligacy or incentivising populist policies in the poorer states, the union could be politically destabilized. Such perceptions are gaining currency both in the Eurozone and in India.

In the Eurozone, there is rancour between the poorer southern states and the richer northern ones. The phrase 'Transfer Union' is often used to describe transfers of resources from the latter to the former. Although the Union of India is structurally a very different kind of federation than the Eurozone, there is nevertheless a similar perception in the southern and western states that revenues generated from their taxpayers are being transferred to northern and eastern states. They have therefore been compelled to borrow more than what is necessary for their own development.

What does Indian data show?: The table alongside aggregates data for direct (personal and corporate) and indirect (goods and services) tax collections, their share in the common tax pool and the public debt of 21 major Indian states and Union territories. Since the states vary in size, they have been brought on the same level by showing the numbers on a per-capita basis.

The averages of states aggregated into the northern and eastern region (Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Bihar, Orissa, Jharkhand, West Bengal, Assam) on one hand, and the southern and western region (Maharashtra, Gujarat, Karnataka, Goa, Andhra Pradesh, Telangana, Tamil Nadu, Kerala and HDPC) on the other, are shown in the table. 'HDPC' is an acronym for Haryana, Delhi, Punjab and Chandigarh that comprise a high-income enclave in the otherwise poorer northern and eastern region.

The table shows, first, that the taxes raised by India's northern and eastern states are equal to the taxes transferred to them. The southern and western states, however, raise four times the amount in taxes than what is transferred to them.

Second, the table shows that on average, there is no significant difference between the two sets of states in the debt burden as a share of gross state domestic product (GSDP). However, the per capita debt burden in the southern and western states is much higher, as their borrowing capacity is higher on account of higher per capita incomes and tax-paying ability.

Third, unlike the European Monetary Union, the Indian version of the 'Transfer Union' does not entail transfers from richer southern states and western states to the poorer north and east, but from the two surplus regions to the central government in Delhi that collects most of these taxes.

Uneven burden

Per capita tax collections of India's richer southern and western states are far higher than those of northern and eastern states; their debt burdens are heavier too.

Per capita tax collections, transfers and debt — mint

States	Tax collection	Tax transfers	A-B: Net contribution	C: Public debt	
				Per capita	Debt/ GSDP
Average North and East (9)	6,550	6,538	12	22,662	27
Average South and West (12)	24,510	5,900	18,610	38,094	24

Note: All figures in ₹ except debt/GSDP ratio (in %)

Sources: Income Tax department, Parliament papers, RBI

Fourth, in the European Monetary Union, it is the poorer states that are more highly indebted, which is what one would expect. In India, however, there is no appreciable difference in the indebtedness of the two sets of states. What lies behind this counter-intuitive difference is the nature of budget constraints in the two federations. Protocol No. 12 annexed to the Maastricht Treaty of the EU imposes an upper limit of 3% of GDP for budget deficits and 60% of GDP for gross public debt. There is, however, no effective mechanism to enforce these limits, even though the Delors Commission that formed the basis of the European Monetary Union had recommended 'binding' constraints on budget deficits among its constituents.

In the Indian Union, the kind of 'binding' or hard budget constraint envisaged by the Delors Commission is mandated in Article 293 (3) of the Indian Constitution. This ensures that the debt of constituent states of the Indian Union is kept in check by New Delhi, as states in India need the Centre's permission to borrow. Since this constraint is strictly imposed through restraints on both budget deficits and tax/GSDP ratios (also envisaged but not enforced in the EU), there is on average no appreciable difference in the tax/GSDP ratios of the richer and poorer states.

However, on a per-capita basis, India's richer states are more indebted because their per-capita incomes are higher. Since there are large net tax transfers from the southern and western states, it can plausibly be argued that they are effectively borrowing money to facilitate such transfers.

Of course, the Eurozone and the Union of India are structurally very different. The former is essentially only a monetary union, though greater fiscal union was originally envisaged. India is both a monetary and fiscal union. The former comprises independent nation-states that have sovereign authority, whereas sovereignty resides with New Delhi in the latter. There are, however, transfers from richer states in both cases that can create domestic geopolitical instability.

The debate over this asymmetric contribution can get geopolitically messy if the political dispensations in the Centre and states are at loggerheads and there is a feeling that the rights guaranteed to them under the Constitution are being undermined either in letter or in spirit, or the perception gains ground that they are being made to foot the bill for profligacy and poor policies in other states. Measures need to be taken to assuage growing resentment. The two unions can also perhaps learn from each other's experience in adjusting their extant fiscal rules—too soft a budget constraint in one case and too hard in the other—to arrive at an optimal policy mix.

MINT CURATOR

Scientists should admit their covid errors for their own cred

American trust in them has dropped but they could earn it back

FAYE D. FLAM
is a Bloomberg Opinion columnist covering science.

Scientists must show their dedication to the pursuit of truth BLOOMBERG

During the covid years, Americans' trust in scientists fell, according to a Pew poll. In 2019, only 13% of Americans were distrustful enough to say they weren't confident in scientists to act in the public's best interest. Now that figure is 27%—despite recent triumphs in astronomy, cancer research, genetics and more. It's reasonable to assume the problem stems from covid-era public health missteps. Some public health agencies took years to admit what had become obvious: that the virus was airborne. Others suggested precautions like closing playgrounds and beaches whose benefit would have been minimal. Some promoted policies like sustained social isolation that were hard to implement and endure.

Public health researchers and officials seem to think that rebuilding trust is just a matter of clearer, more persuasive communication. That would help, but it's not enough—they should admit their mistakes.

There has been reluctance. Last week, I attended an international meeting at Boston University on pandemic preparedness, and a panel on communication never got into covid mistakes. When I asked experts afterwards about policies and declarations that look wrong in retrospect, I got a chorus of "We didn't know"—an unsatisfying answer. Even at the time, scientists should have been clearer when they were basing policies on educated guesses.

Sandro Galea, dean of public health at Boston University, delves into what public health got wrong in his new book, *Within Reason: A Liberal Public Health For an Illiberal Time*, to be published soon. He tackles the silencing of dissent which led to groupthink and the encroachment of political and personal opinions into science. That led to policies that were not always within reason—restrictions on outdoor behaviour, closed playgrounds and prolonged school closings.

In an interview, Galea told me that the reluctance to talk about such mistakes comes from insecurity—a fear of giving in to the other side, equated here with former US President Donald Trump. Public health officials were rightfully dismayed by Trump's unreliable bombast. But the answer isn't to pretend to be infallible.

Even as early as January and February 2020, the US public health community was making unforced errors. Evidence mounted week after week that this disease was wreaking havoc in China and was spreading around the world. Health authorities should have been scrambling to prepare hospitals and nursing homes, to create tests that worked, and to develop a strategy for contact tracing and virus monitoring. They should have warned people of possible closures ahead.

Instead, the US got reassurance from public health officials, including editorials claiming that seasonal flu was a worse threat. New York's major outbreak in March 2020 created the conditions for a U-turn. As people died despite the lockdowns, we got moralizing about the dangers of going outside, despite reasonable evidence that was not the problem.

Perhaps it's misguided to expect people to trust scientists when trust in so many institutions has fallen. (Scientists are still more trusted than journalists, by the way.) And yet science works because scientific methods were developed to smooth out the work of fallible humans into a body of reliable and useful knowledge.

The double-blind clinical trial is an ingenious antidote to bias and our human tendency to see what we want rather than what's really there. That's why I got the covid vaccine—not because I uncritically trust Anthony Fauci. The same level of evidence didn't support the implementation of vaccine mandates, and some institutions went beyond reasonable evidence in forcing workers and students at very low risk of severe disease to get second and third booster shots.

This public health excess fed into existing pockets of irrational paranoia, giving new power to gurus on YouTube who proclaimed that the government was covering up deadly vaccine side effects as well as the 'real' cure for covid, apart from UFO aliens and plots to take away everyone's property. Some of those spouting conspiracy theories were scientists (or at least people with the right degrees), which pointed to a flaw in the idea that people should trust the whole profession. Historian Edward Tenner calls them "alt-thorities" and they show up not just on YouTube, but *Fox News* and the popular Joe Rogan show.

So maybe the best we can hope for is more trust in scientists who appeal to that great body of established knowledge, and who present new knowledge when bolstered with multiple lines of evidence. And we should trust them not necessarily to act in the public interest, but to act in the pursuit of truth. ©BLOOMBERG

MY VIEW | IT MATTERS

Altman's return to OpenAI as its CEO: Humanity's loss?

SIDDHARTH PAI

is co-founder of Siana Capital, a venture fund manager.

Meet the old new boss. Same as the old boss." These are the ending lines of a song by The Who, written by Pete Townshend, titled *We Won't Get Fooled Again*. The song is in many ways emblematic of what we have seen at OpenAI over the last few days. The back-and-forth will go down in legend. But what we have really seen is probably the death of any form of artificial intelligence (AI) as a force for good. Let me explain: OpenAI was first a non-profit research lab whose mission was to safely develop AI that was at a human level or beyond, often called artificial general intelligence or AGI (with 'singularity' defined as the point at which AI goes beyond human intelligence). The emphasis was on safety to avoid what Yuval Noah Hariri once warned of in the *Financial Times*: "Once big data knows me better than I know myself, authority will shift from humans to algorithms." (*on.ft.com/49WXBIa*)

OpenAI found a very productive route in large language models (LLMs) that generate surprisingly good text via a chatbot that sounds remarkably like a human, but what is more striking is that the bot has access to virtually the entire information storehouse that is the internet. This development has come to be known as 'Generative AI.'

However, Generative AI is extraordinarily inefficient. Poring through 175 zettabytes of data, the entire web in 2022, is a Herculean task. And this store is growing at warp speed. A zettabyte is equal to 1,000 exabytes, and an exabyte is 1 trillion gigabytes. To put one zettabyte in perspective, consider this: It would take 2,535 years to stream one zettabyte to your device, even if the device had access to some of the fastest commercial networks available today, which are at about 100Gbps (Gigabits per second). (*bit.ly/3STQdO8*)

It should go without saying that developing and implementing those large models requires enormous amounts of computing infrastructure, and as a result, a massive hoard of money.

This was a conundrum for OpenAI. How does a non-profit lure enough investment for such a massive enterprise? The powers that be dreamt up a scheme that they may have thought was a perfect answer: Create a commercial entity to draw external investors with "capped profits." Almost everyone in the company worked for this new for-profit arm. Limits were placed on the company's commercial pickings, however. The profit delivered to investors was to be capped—for the first backers at 100 times what they put in—with overflows to go back to the non-profit part. This drew Microsoft as a huge backer, which pumped billions of dollars into OpenAI to feed its zettabyte appetite.

The last barrier to a commercial takeover of AI advances has fallen even as biotech rushes brashly ahead

The overall structure was governed by the original non-profit board, which answered only to the goals of OpenAI's original mission, and had the power to fire Altman. Also, only a minority of directors could hold shares in the for-profit entity, and the for-profit company's founding documents required it to prioritize public benefits over profits. But all this is moot now. The truth is that Altman was not in fact replaceable by the board, as we have seen.

Now that the old boss is back, most of the old board gone and directors who will probably be more pliant have taken over, OpenAI is in a free-for-all situation, which could impact the entire sector. There was nothing stopping Google in its bid for AI hegemony (and neither indeed Microsoft, which has an army developing its own AI products based on OpenAI advances, among others). The point is that now nothing can stop OpenAI from participating in this free-for-all either, despite Altman's agreement to submit to an internal review of his behaviour as CEO of OpenAI.

These developments aren't good for us. The last barrier to AI's unbridled commercialization has fallen. Vijay Chandru of the Indian Institute of Science and the founder of Strand Genomics, in a guest editorial in the December 2020 issue of *Current Science*, a well-respected scientific journal published by the Indian Academy of Sciences, identified the fact that humanity faces a stark reckoning with the pace of technological and scientific innovation, and that we need to get our act together. (*bit.ly/3uvSCEy*). Chandru says, "The second machine age also warns us of the anthropological impact of the unbridled power of digital machines, which will also create difficult social problems such as inequity in access to technology, the perverse use of technology to spread fake news and the ability of technology to influence traditional democracies."

Chandru also talks about the rate of change in biotechnology and cites Flatley's law, a biotechnology counterpart to Moore's law. Named after Illumina CEO Jay Flatley, this law posits that the cost of sequencing DNA has dropped 1,000 times more than Moore's Law, from $100 million per human genome to only $1,000. (*acesse.dev/UuT8B*). Chandru says "The next wave of the genomics revolution comes from our ability to write on genomes, i.e. to edit, or more accurately proofread, and modify them. This could have enormous impact, because potentially we will be able to do this for humans, plant genomes, animals, and microbes."

We should be concerned by the unbridled growth of biotechnology. AI is in the public eye and being closely watched by governments, even if only to appropriate AI advances for their own causes. We know less about the impact that biotechnology could have, and risk ignoring an Armageddon larger than any that AI could bring on.