



The gap within

We need to address the issue of slower growth in our poorer States

India, as the world's fastest-growing major economy, may well be catching up with the richer economies in terms of absolute size. But economic convergence within the country remains a distant dream as poorer States continue to lag behind the richer ones in economic growth. A report from the rating agency Crisil found that the inter-State disparities have widened in recent years even as the larger economy grows in size and influence on the global stage. Many low-income States have experienced isolated years of strong economic growth above the national average. Bihar, in fact, was the fastest-growing State this year among the 17 non-special category States evaluated by the report. But they have still failed to bridge their widening gap with the richer States since they have simply not been able to maintain a healthy growth rate over a sustained period of time. Richer States like Gujarat, for instance, have been able to achieve sustained economic growth and increase their gap over other States. The report found that there was a slight, albeit weak, convergence in the per capita income levels of the poorer and richer States between fiscal years 2008 and 2013, but the trend was reversed in the subsequent years. Between fiscal years 2013 and 2018, there has been a significant divergence rather than convergence in the economic fortunes of the poorer and richer States. This was the result of richer States continuing to show strong growth while the poorer States fell behind. In fact, only two of the eight low-income States in 2013 had growth rates above the national average over the next five years. On the other hand, six out of the nine high-income States recorded rates higher than the national average during 2013-18.

What explains the divergence in the economic fortunes of States? The report suggests that, at least during fiscal year 2018, government spending may be what boosted gross domestic product growth in the top-performing States, particularly in Bihar and Andhra Pradesh whose double-digit growth rates have come along with a burgeoning fiscal deficit. The impact of greater spending was that 10 of the 17 States breached the 3% fiscal deficit limit set by the Fiscal Responsibility and Budget Management Act. Many other big-spending States, however, have not managed to achieve growth above the national average. Punjab and Kerala, which are at the bottom of the growth table, are ranked as profligates by the report. This suggests that the size of public spending is probably not what differentiates the richer States from the poorer ones. Other variables like the strength of State-level institutions, as gauged by their ability to uphold the rule of law and create a free, competitive marketplace for businesses to thrive, and the quality of public spending could be crucial determinants of the long-run growth prospects of States.

A reckless experiment

Editing the 'human germline' is an exercise fraught with unknown risks

The saga of the Chinese scientist who created the world's first gene-edited babies last November has forced researchers everywhere to take a hard look at the ethics of gene-editing. Chinese authorities have since condemned the researcher, He Jiankui, with a government report this week saying he violated both ethics and laws. But though Mr. He's actions drew international outrage, they weren't revolutionary in technological terms. Editing DNA to correct disease mutations has been possible for a while now, which means others can also do what Mr. He did. The promises of such gene-editing are boundless; over a dozen clinical trials are currently on to treat diseases like HIV, multiple myeloma and other forms of cancer, using the CRISPR-Cas9 editing system. But none of them involve editing the so-called human germline; instead, they have restricted themselves to fixing genetic flaws in sick adults. In contrast, Mr. He deactivated a gene in two human embryos, which means that the changes he made could be inherited by the next generation. In doing so, he violated the widely held ethical consensus that it is too early for germline editing, for we simply don't know enough yet about the risks of such fiddling.

One pitfall of embryo gene-editing is that it is not as precise as we need it to be today. Studies have shown that the technology can result in unintended mutations, which in turn can cause cancers. Then there is the danger of mosaicism, in which some cells inherit the target mutation, while others don't. To be sure, the error-rates of CRISPR are falling with each passing year. But we aren't in the clear yet. What is more, even when gene-editing becomes fool-proof, the decision to edit embryos will still be a weighty one. This is because, today, scientists are far from understanding how exactly individual genes influence phenotypes, or the visible traits of people. Every gene likely influences multiple traits, depending on the environment it interacts with. This makes it hard to predict the ultimate outcome of an embryo-editing exercise without decades of follow-up. This uncertainty became evident in Mr. He's experiment, in which he sought to immunise a pair of twins from HIV by tinkering with a gene called CCR5. The problem is that while protecting against HIV, a deactivated CCR5 gene can also make people more susceptible to West-Nile Fever. Every gene influences such trade-offs, which scientists barely understand today. This is why several scientific societies have advised abundant caution while fiddling with the human germline. In a 2017 report, the U.S.'s National Academies of Sciences, Engineering, and Medicine said such an intervention would be defensible only in very rare situations, where no alternative exists. The He Jiankui incident shows it is time to translate these advisories into regulations. Unless this happens, the CRISPR revolution could well go awry.

An electoral intervention that has clicked

Improvements to the EVM are certainly possible, but a return to paper ballots is an untenable proposition



SRINIVASAN RAMANI

The implementation or evaluation of any policy decision must consider not just abstract reasoning but base it on empirical and historical evidence. This holds true for the debate on the question of persisting with the electronic voting machine, or EVM, in the Indian electoral process. Much has been said by commentators and political party representatives about the futility of using the EVM because of the possibility of electoral fraud by manipulating the technology that drives the machine. Informed critiques of the EVM and its handling have helped in some ways, one of them being the universal implementation of the Voter Verifiable Paper Audit Trail (VVPAT) that allows for a layer of verification to the electoral process.

Misrepresentation

But more often than not, there have been accusations made about the EVM that do not stand up to scrutiny or reality, primarily made by political parties that have chosen to blame EVM manipulation as an easy excuse for their losses in various elections. Also, despite there being barely any shred of evidence to show that any election held recently was subject to electoral fraud through a manipulation of EVMs, and repeated assurances by the Election Commission of India (ECI) of the robustness of the administrative and technical safeguards in place to prevent EVM tampering, the swirl of accusations refuses to die down.

Complex layer

The introduction of the VVPAT to allow for a paper count of the registered votes has also added a level of complexity to the otherwise simple technology that runs the EVM. The VVPAT was also rushed into service because of the constant carping about the possibility of EVM hacking by political parties. The VVPAT failure rates were high early on in elections held in late 2017 and early 2018, with hardware issues occurring during transportation and exposure to extreme weather conditions. The ECI sought to correct these problems by repairing components related to the printing spool of the VVPAT machines and the deployment of many corrected machines in the three Assembly elections held recently - Madhya Pradesh, Rajasthan and Chhattisgarh - resulted in much reduced replacement rates (close to 2.5% in Madhya Pradesh and 1.9% in Chhattisgarh). This suggests that the ECI is relatively better prepared to handle VVPAT-related glitches in the upcoming Lok Sabha elections.

While glitches and machine failures have been reported or misrepresented as outcomes of "EVM hacking", administrative errors in transporting the machines have been presented as evidence of tampering. The fact that glitches being reported have gone up is true enough. The replacement rate for machines deployed in the by-elections of Uttar Pradesh in 2018 went up to as high as 20% because of failures - primarily of the VVPAT machine that is adjunct to the control and ballot units of the EVM. These glitches had caused difficulties in conducting polls in the Karnataka Assembly elections, in May 2018, as well. But there were specific reasons for these.



K. MURALI KUMAR

Checks and balances

The ECI has reassured us many a time that the simplicity of the architecture of the EVM (software written onto a one-time programmable chip; standalone machines that are not networked; the lack of any frequency receiver or wireless decoder that will allow for communication externally; and advancements in newly deployed machines that allow for self-diagnostics to render the machines tamper-proof among other things) has helped it evade some of the misgivings experienced by EVMs used in other countries. Combining this with administrative safeguards that allow for rigorous checks at various levels, such as after manufacture, during deployment, and so on; randomisation of deployment of machines, a listing of candidates in alphabetical order rather than on party basis on ballot units; sealing of machines by political party representatives after polling and storing in high security "strong rooms", the ECI has asserted that all these have made tampering impossible.

With these safeguards in place, it would require "insider mis-

use is also necessary to address doubts related to the possibility of EVM hacking despite the safeguards in place.

More about the VVPAT

Fortunately, the implementation of the VVPAT as a device has rendered it possible to verify if at all such schemes have happened to subvert the mandate of voters. VVPATs will help find if there is anything malicious that has gone on by comparing machine tallies with the hand-counted tally of the slips.

Currently, the ECI allows for the votes recorded in the VVPAT to be counted in only one randomly chosen polling booth in each Assembly segment. Statisticians such as Atanu Biswas of the Indian Statistical Institute, Kolkata, and former bureaucrat K. Ashok Vardhan Shetty have argued that this is not enough. Mr. Shetty has suggested that a more robust count of VVPAT slips would entail the setting of a State-wise number of the booths to be counted, that is ad-

justed for population, voting turnout and other factors. This is a legitimate suggestion that the ECI should pay heed to in order to dispel any lingering doubts about the electoral process. That being said, the idea that EVMs should be junked because of the possibilities mentioned above and that we should return to paper ballots as the means of voting is not just problematic but is also an ahistorical argument. In a recent paper, researchers such as Shamika Ravi et al have shown that the use of EVMs had led to a significant decline in election fraud such as rigging, booth capturing, ballot stuffing, etc in many States and even resulted in increased voter turnout especially of the vulnerable and poorer sections of the Indian electorate. I had found, in a statistical study for The Hindu in April 2016, that not only had EVMs rendered "invalid votes" to be a complete non-factor but also invalid votes had significantly affected several Assembly elections in the past.

Other words, the EVM has served the purpose which was the reason for its deployment by the ECI in the first place - to assure free and fair elections, and to ease the process of voting. Improvements to the EVM are certainly possible, but a return to paper ballots is an untenable proposition.

In sum, the best possible way of improving upon our electoral process and bringing in greater trust in it is in a continuing and constructive critique of India's EVM through a scrutiny of the election process including technical assessments of the devices used. But there should be no place for an uninformed dismissal of the EVM as a part of the discourse as this will only increase distrust in our democratic process.

srinivasan.vr@thehindu.co.in

Moving away from 1%

Sluggish health spending can be reversed with a substantial increase in the allocation for health in the Union Budget



SOMITRA GHOSH

India's neighbours, in the past two decades, have made great strides on the development front. Sri Lanka, Bangladesh and Bhutan now have better health indicators than India, which has puzzled many. How could these countries make the great escape from the diseases of poverty earlier than their much bigger neighbour? India's health achievements are very modest even in comparison to large and populous countries such as China, Indonesia or Brazil.

Clear trends

Therefore, it is imperative to understand why India is not doing as well as these countries on the health front. Looking at other developed and transitional economies over many years, two important trends can be discerned: as countries become richer, they tend to invest more on health, and the share of health spending that is paid out of the pocket declines. Economists have sought to explain this phenomena as "health financing transition", akin to demographic and epidemiologic transitions. The point to be noted is that

similar to these transitions, the health financing transition is not bound to happen, though it is widespread.

As with the other two transitions, countries differ in terms of timing to start the transition, vary in speed with which they transition through it, and, sometimes, may even experience reversals. Economic, political and technological factors move countries through this health financing transition. Of these, social solidarity for redistribution of resources to the less advantaged is the key element in pushing for public policies that expand pooled funding to provide health care. Out-of-pocket payments push millions of people into poverty and deter the poor from using health services. Pre-paid financing mechanisms, such as general tax revenue or social health insurance (not for profit), collect taxes or premium contributions from people based on their income, but allow them to use health care based on their need and not on the basis of how much they would be expected to pay in to the pooled fund.

Hence, most countries, which include the developing ones, have adopted either of the above two financing arrangements or a hybrid model to achieve Universal Health Care (UHC) for their respective populations. For example, according to the World Health Organisation's recent estimates, out-of-pocket expenditure contributed



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only 20% to total health expenditure in Bhutan in 2015 whereas general government expenditure on health accounted for 72%, which is about 2.6% of its GDP. Similarly, public expenditure represents 2%-4% of GDP among the developing countries with significant UHC coverage, examples being Ghana, Thailand, Sri Lanka, China and South Africa.

Low spending, interventions

Unlike these countries, India has not invested in health sufficiently, though its fiscal capacity to raise general revenues increased substantially from 5% of GDP in 1950-51 to 17% in 2016-17. India's public spending on health continues to hover around 1% of GDP for many decades, accounting for less than 30% of total health expenditure. Besides low public spending, neither the Central nor the State governments have undertaken any significant policy intervention, except the National Health Mission, to redress the issue of widening socioeconomic inequalities in

health. But the NHM, with a budget of less than 0.2% of GDP, is far too less to make a major impact. And worryingly, the budgetary provision for the NHM has decreased by 2% in 2018-19 from the previous year.

Last year, the Union government launched the Pradhan Mantri Jan Arogya Yojana with much fan-fare but only ₹2,000 crore was allocated to this so called 'game-changer' initiative. This assumes importance as the National Health Policy 2017 envisaged raising public spending on health to 2.5% of GDP by 2025. Certain key indicators suggest that public health expenditure has stagnated since the National Democratic Alliance came to power in 2014.

As a percentage of GDP, total government spending (Centre and State) was a mere 0.98% in 2014-15 and 1.02% in 2015-16. Although the revised estimate of government expenditure for 2016-17 and budget estimate for 2017-18 show an apparent increase in allocation (1.17 and 1.28%, respectively), actual expenditure might turn out to be quite less. This could be explained by looking at the difference between the revised allocation and actual expenditure for the years 2014-15 and 2015-16. Actual expenditure dropped by 0.14 and 0.13 percentage points, respectively.

Assuming that the trend did not change in the last couple of years, India's public expenditure on

health would be around 1.1% even in 2017-18. This 'sticky public health spending rate' of 1%, which does not increase despite robust economic growth for years, is partly due to a decline in the Centre's expenditure, which fell from 0.40% of GDP in 2013-14 to 0.30% of GDP in 2016-17 (As per 2018-19 budget allocation, 0.33% of GDP).

Increase allocation

If this sluggish public health spending has to be reversed, there is a need for a substantial increase in the allocation for health in the forthcoming Union Budget. However, the rise in government health spending also depends on health spending by States as they account for more than two-thirds of total spending.

Hence, both the Centre and States must increase their health spending efforts, which would reduce the burden of out of pocket expenditure and improve the health status of the population. Else, the 2019 Budget would also see public health spending sticking at 1% of GDP. This would mean India, would, without doubt, miss the 2025 target, and thereby fail to achieve UHC in a foreseeable future.

Soumitra Ghosh is Assistant Professor, Centre for Health Policy, Planning and Management, School of Health Systems Studies, Tata Institute of Social Sciences, Mumbai

LETTERS TO THE EDITOR

Letters emailed to letters@thehindu.co.in must carry the full postal address and the full name or the name with initials.

The Left today

Given the declining support base of the CPI(M), its general secretary Sitaram Yechury's cautious optimism about the party's likely performance in the coming Lok Sabha elections is quite understandable (OpEd page, 'The Wednesday Interview' - "Sabarimala will have a positive impact on the Lok Sabha elections", January 23). It should be a matter of serious concern to the party leadership that its ideological arch rival, the Bharatiya Janata Party, has edged out the Left even in West Bengal, even increasing its vote share as well. Organisationally, the CPI(M)'s cadre base started declining with the emergence of the Trinamool Congress's Mamata Banerjee as an

undisputed leader of the State. Very little has been done by the Left's ageing and even uninspiring leadership to attract young aspirants to its fold. It does face an existential threat. The least that can be done is to first merge all Left-leaning parties under one umbrella.

S.K. CHOUDHURY, Bengaluru

The interview only reaffirms the precarious position of the CPI(M) - that it is in 'no man's land' as far as fighting the general election as part of a combined opposition is concerned. There is no way the party can be a part of the Opposition group being promoted by Trinamool Congress chief Mamata Banerjee. Moreover with its depleting influence among

voters, the party has hardly any bargaining power. The political snub to the Congress in Uttar Pradesh, a Communist party in the wilderness and the indifferent response to the Kolkata rally from the leaders of the Biju Janata Dal and the Telangana Rashtra Samiti, respectively, give enough breathing space to the BJP to gather itself together and project itself as the only party that can provide a stable government at the Centre.

V. SUBRAMANIAN, Chennai

Priyanka in politics

Priyanka Gandhi Vadra's entry in politics and being made the All India Congress Committee general secretary of Uttar Pradesh East, is welcome. It should also spell the beginning of a 50:50

ratio of women and men in Indian political space. UNNIKRISHNAN MANGALASSERI, Manjeri, Malappuram, Kerala

Talking about drought

The writer has attempted to press home the issue of water scarcity, but droughts are the product of multiple reasons, key among them being global warming. Climate change has no geographical boundaries. Also, it is not appropriate to try and lay the blame at the government's door (Editorial page, "India stares at water scarcity", January 23).

DEEPAK SINGHAL, Noida

If the ideas enshrined in the article are extrapolated, one gets a glimpse of the problems farmers would face, made worse by the politics in this country. The

Green Revolution has helped the world tackle hunger, but our water usage tripled. It is of utmost exigency that the government changes its attitude towards the farmer as meticulous resource allocation of water should be orchestrated. As the unreliability of rains has been increasing exponentially due to environmental factors, investments should be used to procure future proof technologies like osmotic water plants and drip irrigation. India must take a leaf out of the page from the book of countries that have conducted extensive research and planning of agriculture.

JACOB J. PUTHENVEETIL, Chennai

One has hardly heard of any political party focussing

on the issue of water scarcity. One hopes that some solutions are reflected in their manifestoes for 2019. ANISH ESTEVES, Mumbai

King Kohli

The choice of Virat Kohli as the winner of the Sir Garfield Sobers ICC Trophy for Men's Cricketer of the Year, and also captain of the ICC's Test and ODI teams of the year is in recognition of his tenacity and as a player with good stroke play and timing. As the Indian captain, he has shown the ability to rotate his bowlers and exploit their mettle. A little more focus in field placement will help him tap the team's full potential ('Sport' page, January 23).

M.R.G. MURTHY, Mysuru

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