

Ready for suspended animation?

The emergency preservation and resuscitation procedure has already been used on at least one patient to give doctors more time



QUANTUM LEAP

DEVANGSHU DATTA

Suspended animation is an old science fiction (SF) trope. The SF idea is, freeze a living body and temporarily stop all its functions. Keep it in a sterile environment, where it will not decay. Resuscitate later. In various SF scenarios, this (non-existent) technology is used to make long spaceflights, and to preserve somebody with an incurable disease until a cure is found.

In real life, medical researchers have started looking at a far more feasible scenario. A patient taken into an emergency room with near-fatal injuries could be put into suspended animation through an emergency preservation and resuscitation (EPR) procedure to give doctors more time.

The unusual effects of freezing have been known for centuries. At normal body temperature (37°C), cells die if the heart isn't pumping oxygen into the bloodstream. There is irreversible brain damage in about five minutes if there is no oxygen supply to the brain.

However, people who fall into icy water have been resuscitated up to 30 minutes after their heart stopped beating. This is because cell functions slow, and nearly stop at low temperatures, and the need for oxygen is drastically reduced.

Heart and brain surgery can involve using ice-packs to cool the body externally, while the blood is rerouted through an artificial circula-

tion system to cool it. This gives surgeons more time. But this is a slow process.

If the heart has stopped beating, there are just a few minutes to spare. Ditto for massive blood loss. EPR could come into play here. The inspiration for EPR goes back to studies during the Vietnam War. Military surgeons noted that one leading cause of death was blood loss in the first 5-20 minutes after an injury, even for soldiers who had wounds that could have been treated.

In the early 2000s, researchers at the University of Arizona started experimenting on pigs, replacing their blood with cold saline solutions after inflicting serious wounds. They discovered that the animals could be resuscitated up to three hours later, with no apparent ill-effects, after treatment.

Now, the School of Medicine at the University of Maryland (Baltimore) has received permission to use EPR techniques on emergency cases where

the victim has a very low chance of survival. According to reports, EPR has already been used on at least one patient.

EPR involves replacing all the blood in the body with ice-cold saline solutions. It takes about 15 minutes for the temperature to drop to 10°C. At this point there is no blood in the body, the patient is not breathing, and there is no brain activity.

This clinically dead patient is then disconnected from the machinery, and surgery or other emergency medical procedures can then be performed. After that, the saline is replaced with blood, which heats the body slowly. Researchers estimate that EPR could give doctors a window of about two hours for treatment, instead of mere minutes, in working with near-fatal injuries.

It isn't clear how long an EPR procedure can last without lasting damage. Nor are the parameters for "reboots" clear. During the "warmup" period, chemical reactions restart at the cellular level. This can cause damage — "reperfusion" injuries may be

caused when oxygen supply returns to cells. The reperfusion process is not fully understood, and there could eventually be drugs developed to minimise this damage and thus, allow for longer EPR times.

The EPR trials in Baltimore will initially involve 10 EPR subjects and 10 controls. All will be trauma victims brought into the Emergency Room of the University of Maryland Hospital with near-fatal injuries. This is legally awkward because the subjects and controls may be incapable of giving consent.

The US Food and Drug Administration has waived the consent requirements for this important experiment. The logic is, this procedure will only be performed on subjects with very serious injuries, where there is no alternative treatment, and the chances of survival are very low.

The EPR technique will be tested on 10 people, and the outcome compared with 10 controls. The technique will be refined, then tested on another 10, etc. The EPR trials will continue through 2020. This is a long way from the SF scenario, where people in suspended animation are taken on century-long spaceflights. But it could be a powerful new tool for emergency medicine.

CHINESE WHISPERS

Monkey menace



Several members of the Lok Sabha on Thursday spoke of a monkey menace, both in the Lutyens' zone, where they have their official bungalows, as well as at pilgrimage sites. During the Zero Hour, Mathura MP Hema Malini said her constituents, particularly in Vrindavan, faced this situation. She said sterilisation attempts had made monkeys "violent", and suggested that a monkey safari be set up there. Lok Janshakti Party MP Chirag Paswan said monkey terror in the Lutyens' zone was such that children could not play outdoors. "And all this is happening as we destroyed their homes (forests). Now they have entered our homes," he said. Trinamool Congress MP Sudip Bandyopadhyay recounted how during a visit to Haridwar, a monkey took away the glasses he was wearing, and returned them only after a shopkeeper offered packaged fruit juice to it.

Pillar victims

People whose seats are behind supporting pillars in the Lok Sabha got an opportunity on Thursday to speak during the Question Hour and Zero Hour. Raj Bahadur Singh, a Bharatiya Janata Party (BJP) member from Sagar, Madhya Pradesh, said he was *khamba peedit* or "pillar victim" because one such structure blocked his view of the rest of the House, and, more importantly, the cameras that covered the proceedings. The BJP's B P Saroj, an MP from Uttar Pradesh, also spoke standing behind a pillar. Some MPs said the problem would be solved once the new Parliament building came up. During the last session, Minister of State for Parliamentary Affairs Arjun Ram Meghwal had softened the feelings of such members by telling them how those who sat behind pillars achieved great success, giving the examples of Parliamentary Affairs Minister Pralhad Joshi and Speaker Om Birla, both of whom sat behind a pillar.

Naidu's tough stand

Vice-President M Venkaiah Naidu, who is also chairman of the Rajya Sabha, has taken a serious note of absenteeism on the part of MPs in the meetings of parliamentary standing committees and select committees. Naidu has asked for the attendance records of all Rajya Sabha MPs. He is set to write to House leaders of political parties to ensure better attendance in committee meetings. According to rules, MPs can be sacked from committee membership if they do not attend two meetings in succession, which could be invoked if absenteeism continues.

LETTERS

Need solutions

This refers to "The Job crisis worsens" (November 19) by ex-CEA Shankar Acharya. He explains in the subtitle that for the worsening job crisis, the main blame should not fall on the slowdown but on weak policies. He has quoted remarkable quantity of data to prove the extent of job loss. About weak policies, he has simply enumerated the poor state of public education, skilling system, labour laws, exchange rate, exports that are not labour intensive, import-competing domestic production, poor infrastructure, weak public sector banks etc. In effect, he has blamed everything. But what is wrong with everything, he has not discussed. Certainly import-competing domestic production is not bad. And labour-intensive products stand no chance in the highly competitive export market.

These serious issues just cannot be damned as arising out of poor policy without discussion. As a solution he has only said we have no alternative to "tackling policy and programme weaknesses" without saying how. Maybe there is no space in this article. In that case, he could have written one more article indicating what those policies should be. Otherwise his article is only a great collection of data of rising unemployment and nothing more. We are deprived of his wise advice emanating from his long experience at high policy pedestal.

Sukumar Mukhopadhyay
via email

Shankar Acharya responds:

I appreciate Mr Mukhopadhyay's wish for more detailed suggestions on how to deal with our mounting unemployment/underemployment challenge, which I have summarised in my recent article. As he graciously acknowledged, I have, in my opening paragraph, outlined some key areas in which our policies and programmes need to seriously improve. He also correctly surmises that "there is no space in this article" to give the desired detail and encourages me to write another one. I will consider his suggestion seriously. In the meantime, I would encourage him to peruse my extensive writings on all these areas over the past 20 years. I shall be happy to provide him with detailed reading suggestions.

Letters can be mailed, faxed or e-mailed to:
The Editor, Business Standard
Nehru House, 4 Bahadur Shah Zafar Marg
New Delhi 110 002
Fax: (011) 23720201 • E-mail: letters@bsmail.in
All letters must have a postal address and telephone number

Dealing with crop residue burning

Blaming farmers will not solve the problem. Stopping free power for irrigation and the transfer of the same subsidy to farmers in other forms alone will make a significant difference



RAMESH CHAND

Severe pollution in Delhi and other parts of north-west India during October and November has become a regular phenomenon for some years now. Though several factors contribute to this crisis, the burning of residues of paddy crop in the neighbouring states is held responsible for driving pollution to such dangerously high levels. In order to find a durable solution for this recurring problem it is important to look at the genesis of paddy stubble burning and explore options to turn farmers away from such unhealthy practices.

Traditionally, crop residue (stalks, straw and stubble) was used as fodder for livestock or as a fuel. A small amount was converted into compost. Over time, the supply of crop residue has far exceeded the demand mainly because of its substitution by other sources. Green fodder is replacing dry fodder and the use of crop residue as fuel is replaced by LPG and other sources with high calorific value and less smoke. Because of the fall in demand and the increase in supply, the market for the residue of most crops has collapsed. The residue of paddy in north-west India has an added problem. Dry straw of non-basmati paddy is poor quality fodder compared with wheat straw. Farmers are left with no choice but to either incorporate it in the soil or destroy it by burning. Consequently, crop residue burning has become widespread and practiced throughout the country. It is felt more seriously in Delhi and the surrounding areas where its concentration is very high and where air quality is already poor.

It is common to find farmers in Haryana and Punjab even burning the

residue of wheat in their fields, harvested with combine harvester in the months of April and May. However, the damage from the burning of wheat straw is not felt much because of its low incidence and because of the hot weather and windy conditions prevailing during that time that helps dissipates smoke quickly. But putting one acre of wheat straw on fire is no less damaging for the atmosphere than burning one acre of paddy. It is sad that the growing tendency towards crop residue burning has not been taken seriously. It is going to assume catastrophic proportions throughout the country in the coming years if effective measures are not taken soon.

Turn to paddy. Till a few years back most of the crop was harvested manually and a small area was harvested using combine harvester. In manual harvesting, the paddy plant is cut at 6-10 cm above the ground. This leaves a very small stubble after harvest, which is easily incorporated into the soil through ploughing by disc-plough or by using the rotavator. Paddy crop was then manually thrashed and straws were kept in one corner of the field where they decomposed over time and then got mixed up with the soil.

At present, due to a shortage of manual labour and for quick completion of harvest operations, about 94 per cent of the area in Punjab is harvested through combine harvester. This machine picks about 20 cm from the top of the plant consisting of the pinnacle and spikes and leaves the rest of the plant (straw and stubble) as it is. The straw left in the field comes in the way of field preparation for the next crop. Wheat is sown after a short span of four to six weeks after the harvest of paddy, but late sowing varieties can be sown till the fourth week of December but the yield is lower. This raises a serious problem — that of clearing the field of straw and stubble and preparing fine soil for the next crop within a tight schedule. Most farmers settle for the easy and almost zero-cost option — of putting the straw on fire to reduce it to ashes. This takes little time, involves no cost for the farmer but is environmentally hazardous.



Most farmers settle for the easy and almost zero-cost option — of putting the straw on fire to reduce it to ashes. This takes little time, involves no cost for the farmer but is environmentally hazardous

The problem is much more severe in Punjab where 75 per cent of the net sown area in kharif is under paddy and about 78 per cent of paddy biomass is disposed through burning. This amounts to burning about 20 million tonne of biomass which has high moisture and low combustibility.

Some farmers, who realise the harm to ecology and environment and to human health, go for incorporating crop residue into the soil. This requires chopping and shredding of the crop residue into small pieces and ploughing them back into the soil. This practice improves soil fertility, but as crop residue gets decomposed, it releases methane into the environment, though at a very slow rate. This method involves some cost as the farmer has to use some sort of a straw management system to plough small pieces of straw back into the soil. Machines like straw choppers, straw shredders, mulchers, new seeder and happy seeder are available, which help incorporate crop residue into the field. This process involves an investment — of about ₹3,000 per acre as machinery charges. A sizeable part of this cost is supposed to be included in the cost of cultivation of the next crop, as preparatory tillage, and thus factored into the MSP of the next crop.

The central government has given huge subsidies for machinery to be used for straw management and or the incorporation of straw back into the soil. However, its adoption has remained slow because of the cost involved, the restriction of subsidy to selected manufacturers, and the lazy option available for destroying the biomass through fire.

There is a pressing need to find a long-term solution to paddy straw burning in north west India as well as to address the potential problem of crop residue burning in other parts of the country. There are three options to check paddy straw burning and all three must be used. The best option seems to be the production of bio-CNG from crop residue. The process involves anaerobic digestion in completely sealed digesters where only biogas is taken away from crop biomass, involving almost zero emission. The rest of the biomass is turned into manure suitable for use in soils. Discussion with experts working in the field reveals that the use of rice straw for CNG is economical and financially viable. This process is also environment friendly as it does not result in the slow release of GHG from decomposition of biomass incorporated into soil using any of the straw management systems or with the happy seeder. Such

investments should be considered eligible for loans at concessional rates of interest as green projects.

The Ministry of Petroleum and Natural Gas and the government of Punjab had announced plans for setting up bio-CNG plants but they have not seen much progress except for the setting up of two plants — one coming up in Sangrur district of Punjab with German investment and another coming up in Karnal in Haryana. The centre and the states should facilitate setting up bio-CNG plants and provide quick credit at concessional rates to the parties interested in setting up the Bio CNG plants.

The second option is briquetting of loose biomass into compact, high density, easy to transport material that can be used for energy generation in place of coal in thermal plants or as a fuel in industry. Both the bio-CNG and briquetting options can work well in areas with intensive cultivation of paddy that generate large biomass from small, contiguous areas.

The third option is to decompose biomass in a short period and plough it back into the soil. Scientists in ICAR, Indian Agricultural Research Institute, New Delhi, have developed a microbial formulation (consortia of 4 fungi) which decomposes paddy biomass in 20-25 days. They are now working on standardising the technology for mass application in the fields. Hopefully, this technology will be ready for adoption in farms in a year or so.

These options can convert waste into wealth and can effectively check the serious problem of rampant burning of paddy biomass and the prospect of crop biomass burning spreading through the country.

During the last three decades our crop patterns have been seriously distorted through an output price policy and the input subsidies. Today we are producing 10 per cent more rice than there is demand. The reason is policy bias towards rice. This is destroying groundwater, damaging environment, and putting severe burden on fiscal resources. We must reform our policies to incentivise a shift away from paddy particularly in Punjab and Haryana. Stopping free power for irrigation and the transfer of the same subsidy to farmers in other forms alone will make a significant difference and dilute the concentration of paddy and the problems associated with it.

The author is member, NITI Aayog. Views are personal

INSIGHT

Making sense of energy data

Production cuts in the manufacturing sector is bound to reflect on energy consumption numbers



JYOTI MUKUL

After the country reached the milestone of providing power to all rural households, the legitimate expectation would have been an increase in power consumption and a demand surge by those who got limited power load through subsidised connections. But two figures released last week suggest that energy consumption in India is not rising, indicating slowdown has hit the core of economic activity in the country.

According to National Power Portal data for October 2019, power generation in the country in October fell to 98,886.73 giga watt per hour from

113,507.43 gwh in the same month last year. That translated into a 12.8 per cent fall while cumulatively for the seven months starting April 2019, power generation showed a 1.2 per cent increase.

Another set of data giving diesel demand figures shows that in October, diesel consumption was down 7 per cent. According to Petroleum Policy & Analysis Cell, 12 categories of petroleum products recorded consumption of 17.4 million tonne during the month which was down from last year's 17.6 million tonne.

Clearly, the demand for energy has slowed down as also power supply by state distribution companies despite their taking on 26.5 million additional customers through the rural household electrification programme or Saubhagaya. This can be explained through a simple data point given out by the government's Energy Statistics 2019 publication which says the industrial sector accounted for about 56 per cent of the total energy consumption in 2017-18. Though this figure came down by two percentage points from the previous year, it is expected that it

will come down further this year even though the share of households will increase. With such a big share of industrial consumption, it is unimaginable that overall energy consumption will go up since manufacturing in the country is on a downturn.

Union power minister RK Singh, however, has vociferously countered this theory by denying that power generation numbers reflect a slowdown in the economy. In a strongly-worded Twitter post on Wednesday, Singh said, "Statement that the lower demand in October was indicative of slowdown in the economy is nonsensical."

To support his argument he said with good rains, hydropower generation showed an unprecedented increase. The April-October 2019 period saw the highest growth in hydro-electricity generation in five years at 16 per cent, he said. Besides, power generation has shifted to renewable sources. "The lower PLF in thermal power plants is the result of our changing generation mix, consciously done to lower our carbon footprint." What Singh did not acknowledge was that the overall power generation in terms

of generated units is down which means that the fall in thermal power generation has not been entirely made up by the growth in renewable power (including hydropower) generation.

Besides, in September also, the total power generation fell by 3.7 per cent. Though analysts blamed lower coal output for this, renewable energy sources also saw a fall of 7.13 per cent, indicating an overall downturn in demand.

Singh also argued that the monsoon season continued till October leading to switching off of air-conditioning units in many institutions. It is worth noting that the mere use or non-use of air-conditioners does not alter energy consumption in a big way.

Another argument which is being put forth is that the dip in energy demand is due to improvement in efficiency. According to government data, the energy intensity at 2011-12 prices decreased from 0.274 mega Joules a rupee in 2011-12 to 0.233 mega Joules in 2017-18.

Energy intensity has decreased over the last decade. This decline is attributed to faster growth of GDP than

The big push, finally

Strategic sale decision welcome; should have come earlier

The Cabinet Committee on Economic Affairs has finally set the ball rolling on strategic disinvestment. According to the plan, the government will sell its shares in Bharat Petroleum Corporation Ltd (BPCL), Shipping Corporation of India (SCI), Container Corporation of India (Concor), Tehri Hydro Development Corporation India Ltd (THDCIL), and North Eastern Electric Power Corporation Ltd (NEEPCO). While THDCIL and NEEPCO will be taken over by NTPC, the government will sell its stake in BPCL and SCI with transfer of control. In Concor, the government will not sell its entire stake but will transfer control to the strategic buyer. Besides, the government has also decided to reduce its shareholding below 51 per cent in select public sector undertakings. This will help increase the pool of assets for disinvestment. Although the transfer of stake in THDCIL and NEEPCO to NTPC is not exactly in line with the idea of disinvestment, because it will effectively remain in the government's control, on balance, Wednesday's decision to take the disinvestment process forward and give an impetus to strategic disinvestment is in the right direction.

However, it remains to be seen how quickly the government can sell its stake and transfer management control in these companies. In the case of BPCL, for instance, the company's stake in the Numaligarh Refinery will first be transferred to another public sector undertaking. The transfer of stake in the Numaligarh Refinery and due diligence by potential strategic buyers in BPCL and other firms will take time. In its bid to achieve the disinvestment target of ₹1.05 trillion in the current fiscal year, the government should not try to conclude the process in a hurry because it could affect valuations. Transfer of control should happen at a decent premium. At current market prices, the government stake in BPCL is valued at about ₹63,000 crore and the proceeds from Concor and SCI would be worth about ₹12,900 crore.

Since the government had set an ambitious target for mobilising funds through asset sale, it would have helped if the decision of strategic disinvestment had come earlier in the fiscal year. The process of disinvestment should be more systematic. A ready list of companies for disinvestment, both for strategic and minority sale, should be prepared well in advance. Apart from avoiding a last-minute rush to meet the Budget target, which can potentially affect valuations, it will give the market enough time to prepare and bid for assets put on the block. This will help fetch a better price.

The delayed decision on strategic disinvestment makes the government's task on cushioning the fiscal problems this year even more difficult. Tax revenues are expected to fall short of the target significantly, and in the absence of expenditure compression, the fiscal deficit is expected to overshoot. Therefore, irrespective of the outcome of the disinvestment process, the government will need to reassess its fiscal position more realistically. The economy will benefit if the proceeds of disinvestment are used for building new assets and not to fund recurring consumption expenditure.

A test case

DHFL resolution will strain IBC, but is systemically vital

The Reserve Bank of India (RBI), which serves as the banking regulator, has superseded the board of the troubled non-banking financial company Dewan Housing Finance Corporation (DHFL) and appointed an ex-banker as the company's administrator. This is in order to prepare DHFL to enter the process under the Insolvency and Bankruptcy Code (IBC); the National Company Law Tribunal will have to appoint the administrator as the appropriate resolution professional for this case. DHFL will be an important test case, because it is the first such systemically important financial company to be entrusted to the insolvency and bankruptcy process under new rules, which have been recently drawn up for non-banking financial companies (NBFCs) that have an asset size of at least ₹500 crore. The precedents set in this case might have to be relatively widely applied to an NBFC sector that has shown many signs of stress over the past year, since the collapse of Infrastructure Leasing & Financial Services (IL&FS). DHFL, while less systemically intertwined than IL&FS, nevertheless has debts of around ₹90,000 crore on its books and an outsize impact on the vital housing and real estate sector. Almost ₹40,000 crore of that is owed to banks. Under 10 per cent is to public deposit holders.

Although DHFL has been troubled since June, there have been multiple delays in getting to this point. The first reason is that, as a financial institution, there is no separate law to deal with its unwinding. The rules under the existing IBC are one way of going about it, but their robustness will have to be examined. The second problem was, that, again as a financial company, it has multiple different creditors — not just banks, but mutual funds, bond holders, and retail fixed depositors — with varying interests involved, so creating an inter-creditor agreement was not straightforward. The question now will be whether the IBC process will manage to balance these priorities. The final problem was that there is also a fraud investigation underway. The progress of this investigation impacts how lenders wish to treat their loans to DHFL. An audit report had suggested fund diversion, perhaps into accounts linked to DHFL's promoters, and lenders naturally wanted to know first if that was recoverable. Finally, there have been various revival plans floated, most of which seemed unlikely to achieve a consensus or success.

The IBC will thus have to manage these multiple problems while keeping in mind the precedents that are being set, the systemic importance of the sector, and the possibility that many projects linked to DHFL might be viable on their own. What will be particularly important is to keep in mind the fact that the Supreme Court has recently underlined the necessity for the IBC to honour the variable importance of various creditors — secured get priority over unsecured. Thus, while the banking regulator might like to see deposit holders paid off, the fact is that the IBC process will have to prioritise the secured creditors. If the DHFL test case runs into problems, then the government will have to act swiftly and re-introduce a modified version of its Bill to deal with insolvent financial institutions, which it withdrew last year after public concern about deposit safety.

ILLUSTRATION: BINAY SINHA



The problem with investment scores

The various reports on investment climate of states do not match the ground reality

Gauging India's investment climate through various rankings has become a common practice lately. While the World Bank's Ease of Doing Business (EoDB) shows a rise in India's rank from 77 to 63 in 2019, the World Economic Forum's Global Competitiveness Index (GCI) reported a fall in the country's position from 58 to 68 the same year. In keeping with global trends, various rankings of the states of India have been executed as well, like the Department for Promotion of Industry and Internal Trade's (DPIIT's) EoDB and the National Council of Applied Economic Research's (NCAER's) State Investment Potential Index (N-SIPI) which provide analogues of the World Bank's EoDB and GCI, respectively.

However, despite the confidence of investors and policymakers, there remains a concern regarding the relation of these rankings to ground reality.

The scores on the current indices are a combination of the Indian states' performance on a variety of indicators, such as access to infrastructure, political stability, factors of production, economic environment and business perceptions covered by N-

SIPI and regulatory measures, namely contract enforcement, single window clearance, etc. under DPIIT's EoDB. The relative weights of these pillars are assigned at the discretion of the researchers. Thus, given the present approach of evaluating the business climate of a state, the current indices are open to criticism on mainly three accounts.

Firstly, these indices are designed to act as an indicative tool only. To understand this concern better, let's consider the instance of an auto-manufacturing firm trying to establish a plant in a particular state that has risen in rank by two spots. What does such a jump in rank convey to the firm? It suggests that the firm's profitability is likely to be higher if it invests in that particular state. But, the index fails to address, what is equally or perhaps more important to know, by how much more the firms' return potential or profits would increase owing to the state's rise in rank. The quantum of improvement, and not merely the direction of improvement, plays a crucial role in the cost-benefit analyses of investors and policymakers alike.

Secondly, the practice of assigning arbitrary weightage to the different indicators makes it easier



SAMARTH GUPTA & MADHURA DASGUPTA

Beware of the unfolding Washington drama

With the start of public hearings in the impeachment proceedings against President Donald Trump, this process has now entered a new phase fraught with political risks for both Democrats and Republicans in the US and which could have a significant impact on the outcome of the 2020 presidential election.

Let us make it clear that barring some new spectacular revelation about proofs of additional misconduct by Mr Trump, new skeletons coming out of the closet, there is quasi-zero chance that the process will end up with the president being removed from office. Of course, one can expect that the Democrats dominated House of Representatives will vote at the end of the public hearings for recommending the impeachment of Mr Trump, but then it will be for the Republicans dominated Senate to have the final say. And, as Mr Trump has subjugated the Republican Party to his will, there is no chance that the Upper House will garner the two-thirds majority of votes to oust the president.

Then where are the risks?

For the Democrats, the issue is that almost nothing that can be said or demonstrated about Mr Trump seems to be able to shake his core base of support — especially the viewers of Fox News and the white evangelical Christians. In fact, according to the latest survey the percentage of them who want Mr Trump to be their candidate in 2020 has even increased. Beyond this hard core of supporters, if the impeachment process fails to remove the president, then the risk is that many people beyond Washington might consider that this was much ado about nothing, to borrow the title of William Shakespeare comedy, and that the Democrats spent a lot of public money and wasted the time

of the Legislative branch in an exercise that might be perceived as futile. Add to that the perception spread by Fox News reporting that the whole impeachment process was the expression of the ongoing vendetta of all those who never accepted the victory of Mr Trump, one more expression of the sore loser attitude of the elites against the supposed popular will. This might not help enhance the chances of the candidate in next year's presidential election.

For the Republicans, the risk is that although their leader will have survived the public hearings, too much will have been exposed about the way Mr Trump has been using and abusing his Oval Office power for personal and partisan advantages that moderate Republican voters, and some percentage of the people who voted for him in 2016 will consider that enough is enough. For many people in the 2016 election it was a matter of "anybody but Hillary Clinton". In 2020, it might be for the same category of voters a matter of "anybody but Donald Trump". Although state elections are of a different nature and trigger different kind of choices for many voters than a presidential election, the back-to-back defeats of Republican candidates for governor in the states of Kentucky and Louisiana — despite Mr Trump's active support — cannot but make Republican leaders nervous about what could well be warning signs of a weakening of their base of support.

Beyond the political calculations, one even more important element as the impeachment drama unfolds is the reality it illustrates of a nation more polarised and divided than it has ever been since the war of secession. If one looks at the reporting of the hearings on Fox News and on CNN, one might wonder if these two media are witnessing — and reporting about — the same



CLAUDE SMADJA

for policymakers to game the system. For instance, the state may only reform those areas that are easy to tweak, rather than the ones that prove to be the biggest bottlenecks in changing the industrial setting of a country. Such practices are likely to dilute the value of these rankings to the auto-manufacturing firm or any other potential investor.

Lastly, the recommendations that stem from these rankings seem to be uniform across states. Owing to the vast diversity across the states of India, a one-size-fits-all measure is unsuitable to address the heterogeneity, which in turn leads to unequal growth. This point becomes even more relevant in a post-GST world, where location of industries cannot be driven by tax margins but by comparative advantage of states.

A way to overcome the aforementioned loopholes in the existing indices is to reduce the arbitrariness of factor selection and weights assigned to them. To be specific, the exercise of developing such indices should be more data-driven, where a firm's productivity in a given state should be correlated with various business environment factors of that state. This exercise will throw up the relative importance of each factor in stimulating a firm's productivity in the state. A firm's productivity — the part of the output after the costs of production have been accounted for — is the returns accrued by the entrepreneur/investor, making it a relevant measure of investment potential. Developing such an index would add three values to the existing measure. First, it would guide investors in their cost-benefit analyses of locating investments in sectors with higher return potential.

Secondly, the relative importance of the pillars, as suggested by the data on firm-productivity, would inform policy-makers to focus on the ones with the highest impact on productivity, thereby reducing the incentive for gaming the system. Finally, since such an exercise can be repeated in different industries across the states, a data-driven index can also shed light on a state's comparative advantages.

Overcoming information asymmetries for firms and investors is an essential requirement for improving the business operating environment for firms. Current metrics provide some indicators for policy-makers and investors, but sadly there are large gaps. This is where a data-driven index which also tells the amount of change, along with direction, could prove to be a far more useful indicator and a more accurate measure of a state's investment potential.

The writers are associate fellows at NCAER. The views are personal

A flaneur in Old Delhi



BOOK REVIEW

UTTARAN DAS GUPTA

If you get off the Delhi Gate metro station on the Violet Line and walk down Dariyaganj towards Jama Masjid and Red Fort, it is unlikely that you will be able to spot the Sunheri Masjid or imagine a time when one could have caught a glimpse of the Yamuna from this busy, congested thoroughfare. At Chandni Chowk, you will encounter the chaotic beautification of the busy street and if you visit the Red Fort, many of the area will be

inaccessible as they are being refurbished. The chaos of this living, contemporary city conceals centuries of history, and few books trace it better than the one under review.

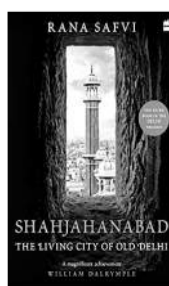
This book is the third in Ms Safvi's Delhi trilogy, following *Historical Trails in Mehrauli* and *The Forgotten Cities of Delhi*. She has also translated several books from Urdu, including Sir Sayyid Ahmad Khan's *Asar-ud-Sanadid*, which, Ms Safvi says in the Preface, was one of the sources for *Shahjahanabad*.

In the Preface, she writes: "Old Delhi... is a living city... [its residents] describe a Delhi that no longer exists... The narrow lanes of Shahjahanabad are not conducive for vehicular traffic... The *havelis* have been rented out and have become warehouses... I have tried to describe these changes."

She does a wonderful job of it.

Those who follow Ms Safvi on social media will also be aware that she has, like Sir Sayyid before her, visited each and every monument she describes in the book, documenting them through photographs. These have found a home in this book, illustrating her descriptions. These are also used very imaginatively. For instance, the ninth part of the book, "The Ridge", begins with a picture of a British ammunition store. (This is one of the rare pictures taken by Rameen Khan and not Ms Safvi.) Many of us might

have encountered such a structure while exploring the Ridge, without any clue of what it was. Even familiar structures, such as the Orpheus panel inside the Red Fort, designed by jeweller Austin de Bordeaux, takes on new significance in this book.



SHAHJAHANABAD: The Living City of Old Delhi
Author: Rana Safvi
Publisher: HarperCollins
Price: ₹395
Pages: 999

Khari Baoli. Some of the details Ms Safvi writes about would be familiar to those residents of the city who are curious about its history. Several

excellent books have been published in recent times on this, such as Swapna Liddle's *Chandni Chowk* (2017). There are other parts of the book, however, which are unique in their own way, and delightfully entertaining. For instance, one section is devoted entirely to the "kooche, katre aur mohalle", the lanes and bylanes of Old Delhi, often accessible only on foot.

For instance, Gali Batasha, describing which, Ms Safvi writes: "It is the place where pickle and raw jaggery are sold. Batashas and candy toys, etc. are made here, hence the name." Another is Katra Neel, or the blue lane. Ms Safvi writes there are two possible reasons for this — one because people of the Khatri community lived there, or because the area is named after Lord Shiva, also called Neelkanth. Describing her experience of wandering around this

year, Ms Safvi writes: "this place has many temples... I found the Ghanteswara Temple in a lane branching off from it, as well as Ladliji ka Mandir." She also found a Shiv temple in the area.

My favourite section of the book is the one reserved for the food of Shahjahanabad. When I adopted Delhi as my home six years back, one of the first things I explored was the ample options for food around Urdu Bazaar, tucking into kebabs from handcarts, *kulfi* from Kuremal, and the mysterious *daulat ka chaat*. Ms Safvi not only writes

about where you might find the food you desire, but also recipes for *mutton nahari* or *qaliamba*. Personally, I prefer the *nahari* at shops around the Nizamuddin dargah. But these are minor squabbles that Delhiwalas have among themselves.