

## For Finer and Faster Data on Crime

National Crime Records Bureau gets better

The 2017 report of the National Crime Records Bureau presents a mixed picture for the country. Though much delayed, the report breaks new ground through the addition of new categories allowing for significant diversification of data. However, the decision by the government to withhold figures for crimes such as mob lynching, murder by influential people, khap panchayat killing and murder for religious reasons is not a good move. The government must release this information at the earliest.

According to the report, there has been a steady rise in the number of cases registered across the country from 29,49,400 in 2015 to 29,75,711 in 2016 to 30,62,579 cases in 2017. This seeming rise in the crime rate could also indicate better reporting: more people coming forward to report crimes and greater willingness by the police to register cases. The sound practices leading to improved responsiveness by the police should be replicated across the country. There has been a 5% decline in the number of rioting incidents, but the total number of riot victims rose by 22% in 2017.

Where the 2017 report breaks new ground is in the detailing and nuance in categorising data. For example, almost half of the offences registered under the Scheduled Caste and Scheduled Tribe (Prevention of Atrocities) Act were insults and humiliation of Dalits — this information is critical for policy formulation geared towards prevention. The report also provides information of pendency of cases with the police and courts, including the period of such pendency.

Detailed crime statistics are an important instrument for improved policing and crime prevention. However, it should not withhold the figures for mob lynching, murder by influential people, khap panchayat killing and murder for religious reasons. Clear data will improve the quality of the public discourse and policymaking, to ultimately bring down crime levels. Another area that requires attention is the time lag in publishing the crime statistics. It is important to ensure that statistics are as current as possible, for debate on it to be meaningful.

## To Russia with Love from President Trump

The biggest gainer, in geopolitical terms, from President Donald Trump's decision to withdraw US troops from Syria's "blood-stained sands" has been Russia. The abrupt removal of US troops from the Kurdish area along Syria's border with Turkey was treated by Turkey as a green light for moving into Syrian territory to drive the Kurds out of proximity with Turkey, where a homegrown separatist Kurdish movement has long been suppressed by the government. As Turkish forces advanced and the Kurdish militia, which had fought along with America and its allies to drive Islamic State radicals from what had been proclaimed the Caliphate, were forced to retreat and strike a deal with the Syrian army of Bashar al-Assad and its Russian backers.

Russia's leader Putin met Turkey's president Erdogan at Putin's dacha at Sochi, and struck a deal that guaranteed the safety of the Kurds, provided they retreated 30 km south of the Turkish border. Russian monitors would be stationed in Syria to enforce the terms of the agreement. Effectively, Russia is now the principal world power that preserves peace in the Middle East. In the process, it accomplishes three other tasks. One, it drives a wedge between Turkey and its Nato allies. Two, the move extends and reinforces the authority of President Assad over a larger tract of Syria as the civil war concludes, while also extending the influence of Syria's backer Iran in the region. And, three, Russia firmly inserts itself as an ally of the West in containing the Islamic State — Russia is the who has to prevent IS prisoners, who still remain in the area being vacated by the Kurds, being released.

President Trump's America First policy, thus, has strengthened America's erstwhile superpower rival, and Russia's partner and America's emerging superpower rival China.

Like the great littérateur, this sauropod was a towering heavyweight of its time

## Barapasaurus was a Tagorean Colossus

Tagore as a dinosaur? Perish the thought. Arguably, Bengal's most celebrated son can never be deemed Jurassic; not when his extensive literary work is still read, recited, sung, danced, dissected and debated even today. Even a dinosaur named after Tagore may have elicited a few raised brows, but then again, the creature strode the Indian subcontinent as a colossus in its time, just like the man the species has been named after. So, even if the remains of six Barapasaurus Tagorei were unearthed in Nalgonda district of Telangana (in the centenary year of the great Bengali bard's birth) and not from the red earth of his homeland, commemorating the literary behemoth in their zoological name is well deserved. After all, like the maestro, they were creatures of unparalleled stature (at 47 ft) and heavyweights (7 tonnes) in their field; but whether the littérateur actually also had outsized legs and feet like his sauropod namesake — as 'bara-pa' implies — is unclear.

As famous names are only given to newly discovered species of beetles, wasps, spiders, fish and crustaceans these days, a dinosaur is a great honour. However, Mesozoic era names can be deceptive: remember that the Obamadon was not a variant of the giant mastodon (a Pleistocene period ancestor of the elephant) but a foot-high, long-toothed lizard from the Cretaceous period.

India needs to get much more serious about reviving private participation in infrastructure

## No Stuttering on PPP Progress



Rajiv Memani

The private sector has played a key role in India's growth trajectory. In infrastructure, public-private partnerships (PPP) have especially helped address financing gaps. However, over the last decade, the share of private investments in the sector fell from 37% in 2008 to about 25% in 2018. Immediate measures are necessary to reverse this decline and enable higher private participation in infrastructure.

In the past, lack of dedicated institutions to oversee the sector delayed critical decisions. There is an urgent need to establish an autonomous 'aP India' as a centre of excellence for PPPs, to facilitate sophisticated contract models, develop quick dispute-redressal mechanisms, and build capacities, while mainstreaming PPPs in the country.

### Clean It Up

Due to the long-term nature of PPP contracts, uncertain market conditions and lack of capacity among stakeholders, disputes are bound to arise during the lifecycle of projects. This often results in delays and freezing of funds in the absence of an efficient and credible countrywide dispute resolution mechanism. An institutional arbitration ecosystem should be developed and promoted by creating a trained pool of competent arbitrators, uniform and regularly updated standardised flow of procedural rules, minimalist judicial dispute framework and regular adoption of institutional arbitration in do-

mestic transactions.

Countries such as Britain and Australia have developed institutions and processes to identify, prepare, procure and manage PPP projects. In Australia, all levels of government have endorsed PPP and now apply the 'National PPP Policy and Guidelines' to projects released to the market. India, however, is yet to adopt these learnings.

The PPP toolkit, developed by the finance ministry, should be endorsed and applied consistently across all levels of the government. The size of investments should be preferred over number of projects, and big-ticket projects, which create value for money, should be prioritised.

The second important driver is encouraging long-term financing from institutional investors, which are required for projects with long gestation periods. Banks, which have been a major financier, are slowly retreating from PPP lending due to asset-liability mismatch, restrictions posed by Basel-3 norms and high levels of non-performing assets (NPAs).

Globally, long-term capital is raised via capital markets, where major investors are pension funds and insurance managers. Today Canada and Australia are frontrunners in pension fund allocation to infrastructure — approximately 5% compared to the global average of around 1%. Investment norms and portfolio limits are relaxed in Canada, with no ceiling on investments in various asset classes.

In India, however, the norms are quite stringent. Here, the regulation stipulates that life insurers invest up to 15% of their fund in infrastructure firms and prohibits companies from investing in projects rated below AAA. These norms could be relaxed in a rational way by creating a risk fund that is owned by the government, as suggested by Insurance Regulatory and Development Authority former chair-

Authorities should have the right to substantially increase the earnest money deposit amount of selected bidders whose bid is considered as an outlier

### AIR POLLUTION

## Make India Smog-Free Again



Vivek Bhatia

Diwali has left its usual aftermath in the air. It's that time of the year when, unlike in countries with far better air conditions, people in most parts of metropolitan India are compelled to wear a respirator mask because of the all-encompassing smog. It's not just acute discomfort one is talking about. A November 2018 University of Chicago study (bit.do/feBny) found that the average life span in Europe is shortened by 1-2 months due to fine dust particles, while in India it's 4.3 years. Over the last decade, air pollution has become a major health hazard, especially in northern India. The main reason for poor air quality in the national capital region (NCR) is stubble-burning in Punjab and Haryana from late September to October. It is estimated that farmers in these two

key agrarian states burn up to 35 million tons of crop waste after harvesting. This is done to save time between crop cycles, as these crops are grown in one of the highly fertile regions of India.

While farmers view stubble-burning as an economical way of getting rid of straw and shortening the turnaround time between harvesting and sowing the next crop, the resultant smoke is so severe, that it is visible even from outer space.

Taking cognisance of this severe issue and to dissuade farmers from stubble burning, GoI is taking positive steps to address it through initiatives such as 'Make in India', and farmer engagement with focus on rural solid waste management. These measures have enabled engineering companies to design innovative stubble-based biomass boilers for power generation. These devices not only address challenges associated with air pollution but also related to power deficit, as they offer industrial units the opportunity to generate energy from biomass.

These innovative stubble-based biomass boilers with water-cooled



Partner you?

man J Hari Narayan.

Despite the relaxation of limits by the government, FDI in infrastructure has not grown as expected, partly due to sluggish domestic investments. Measures are required to revive domestic investments since foreign investors generally follow domestic trends.

A larger share of government lending could reinvigorate confidence among banks and foreign investors in greenfield projects, even if it means GoI indirectly bears a part of the risks. Existing lending norms should be reassessed in line with models prevalent in mature markets.

### Bond Helps

For instance, as per the Transportation Infrastructure Finance and Innovation Act (TIFIA) in the US, the government provides up to 30% of the project finance on subordinated terms, thereby increasing the rating of the project and making it more attractive for commercial lenders and bond holders.

When the project becomes operational, government's debt could be refinanced with capital market debt, thereby creating space for bond market to flourish. GoI could complement these reforms with procedural and regulatory changes to maximise benefit from such a model. Further, foreign investors are averse to assuming demand risks in current market conditions. Therefore, 'government-pays' PPPs should be a preferred model of project

implementation.

India witnessed a cycle of aggressive bidding by private players between 2009 and 2012 under the PPP model, a major reason for delays or cancellation of projects. However, the authorities lack the capacity to assess whether a bid is aggressive or otherwise. A framework for authorities to analyse the lowest bid with respect to internal estimates and to reject any bid outside the prescribed range will help. Alternatively, any outlier bid could be scrutinised further by the authority or any institution constituted to assess the project's viability and validity of assumptions.

Authorities should have the right to substantially increase the earnest money deposit (EMD) amount of selected bidders whose bid is considered as an outlier. Bid capacity should be given due consideration during evaluation and the number of eligible players for financial opening should also be limited.

Finally, it is important to diversify PPPs across sectors. PPPs in India have largely been concentrated in the transport sector, especially roads. The sector is no longer attractive for investors and a large number of road projects are stuck. There is an opportunity to revive PPPs in other sectors such as water and sanitation, health and education.

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THE SPEAKING TREE

## Stop Fooling Around

SWAMI SUKHABODHANANDA

How can I know my mind? An alert mind is not a problem; an unaware mind is. The mind projects the future to be fulfilling but misses the beauty of the present. If you are rich, you want to be richer; if you are strong, you want to be stronger; if you are beautiful, you want to be more beautiful. Such a mind does not make you live life, but leave life. Such a mind creates false prayers. You make a ritual out of prayer and pretend to pray. Such prayer becomes an empty gesture.

Why am I so greedy? There is a visible world and there is an invisible world. There is a visible self and an invisible self. The visible world is a world of diversity and the invisible world is a world of oneness. If we live on the periphery, we will feel incomplete but completeness is one's nature. This incompleteness wants us to be a complete person. But the only track it knows is greed, wanting more. The enlightened masters give us not a dogma but a device to reach this state of completeness.

We should stop fooling around with life. Just thinking to be happy is not enough; just thinking to be wise is not enough. It is a luxury to think but it is wisdom to live. Ask yourself: are you concerned with reality or fantasy? There are two ways to know reality. If you want to know objective reality, then science is the way out. If you want to know subjective reality, turn to spirituality.

### Chat Room

## Reforms Behind Better Biz Ease

Apropos the news report, 'India Climbs 14 Spots in Ease of Doing Business Rank' (Oct 25), India climbed 14 places to 63 from 77 in the 2020 edition of the World Bank's Ease of Doing Business ranking, riding on reforms in seven major areas and a substantial bump-up from the insolvency law rolled out in 2016. In fact, India has been among top 10 performers for the third year running. In 2014, Prime Minister Narendra Modi had set a target of breaking into the top 50 in the annual ranking by 2020 and, fortunately, we are very close to the target.

However, the country has moved up only one rank in starting business. The focus should be on bold reforms to make it easier to start a business that is vital for the economy to grow. Finance Minister Nirmala Sitharaman's assurance that all efforts would be made to relax compliance of the goods and service tax during the next Goods and Services Tax Council meet, besides making it easier to start a business, is welcome. India certainly needs to do better in parameters such as paying taxes and enforcing contracts.

PRIYANSHU SHARMA

Ujjain

## BCCI Right to Catch 'em Young

This refers to the news report, 'Dube New Face, Samson Returns' (Oct 25). BCCI deciding to give better opportunity to youngsters is a good decision. Several youngsters have been performing consistently well in domestic tournaments and at the IPL, and can further improve in the game with mentoring by seniors.

India's domestic cricket is quite competitive and the Indian Premier League is a big boon. Courtesy Indian Premier League, we have players such as Hardik Pandya and Jasprit Bumrah who debuted just three years ago and are among the best in the world today, making them almost indispensable for the team. This initiative of giving more opportunity at the beginning of a player's career will help the team as the transition period would be easy and short.

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### NEUTRON TO NYLON

## The Worm Turns in Spacetime?



Debkumar Mitra

Albert Einstein's set of General Theory of Relativity (GTR) equations is the crystal-gazing device of theoretical physicists. They use it to describe our universe and all the strange objects and phenomena found in it.

The solutions of GTR equations have helped astrophysicists predict the existences of black holes and gravitational waves. When these were first predicted, they served as a fodder for speculative fiction. But, today, we even have a photograph of the 'shadow' of a black hole, and can listen to clashing neutron stars that resulted in gravitational waves. A wormhole is one such awe-inspiring structure in the universe.

Wormholes, theoretically possible from solutions of GTR equations, are a passage between two separate regions of spacetime. According to current thinking, these passages could connect one area of our universe to a different time and/or place within our universe — or, to a different time or space in another universe. However, controversial the idea that we may sound, wormholes cannot be wished away. There are physicists

who question the existence of such structures. But such objections have not stopped some of the best minds in the business to find them.

Earlier this month, in a paper, 'Observing a Wormhole' published in Physical Review D, De-Chang Dai and Dejan Stokjovic put a new spin on the subject. The duo described a way to 'locate' wormholes if they exist. They focused on Sagittarius A\*, an object that physicists believe to be a super-massive black hole at the centre of our galaxy the Milky Way. There is no evidence — not even a theoretical one — that a wormhole is present there. But the paper suggests it is a good place to look for one since wormholes



A rabbit hole by another name

are expected to require extreme gravitational conditions, and super-massive black holes are the best candidates for it.

According to the researchers, if two stars exist — one on each side of the wormhole — then the star on one side should feel the gravitational influence of the star on the other side. In other words, the gravitational flux will go through the wormhole. Their idea: suppose a wormhole does indeed exist at Sagittarius A\*. Then, the stars that are in close vicinity of that wormhole would be influenced by the gravity of stars at the other end of the passage.

The location of the wormhole would then be possible by "searching for small deviations in the expected orbit of stars near Sagittarius A\*." All the astronomers have to do is to first map the expected orbit of a star in that region and then track the observed movement of the star. If they spot any variation, then the wormhole is 'predicted'. The moment one confirms the existence of a wormhole, the next thing would be to know the effects of going through it. There are controversial predictions of wormhole travel, all still in the realm of speculative fiction. So, even if Earth becomes inhospitable, it is not possible to go through a wormhole to another point in time when our planet had healthy green cover.

To have a traversable wormhole, we would need a large source of negative energy to keep the wormhole stable for the entire duration of the travel

and not collapse under extreme gravity. We do not know how to do that. However, theoretically such travel is possible. We just don't have the technology yet.

The paper also identifies a star S2 that orbits Sagittarius A\*. The scientists believe that the variation between the expected and observed orbit of S2 can help us predict the location of the wormhole. The way technology is progressing, in the not-so-distant future, we could well have a device to precisely map the deviations in the orbit of S2.

And what if we do spot a deviation? It could be due to yet-to-be-known phenomena. Or it could deviate under the influence of another unknown object. But the deviation would most likely prove that the wormhole is indeed there.

In Einstein's GTR, gravity is the curvature of spacetime. The technique, according to the researchers, will also work for locating non-traversable wormholes, as the effects of gravity would be felt on both sides, irrespective of its character. Strangeness apart, wormholes are a legitimate area of research. Remember, the astronomers on the flying island of Laputa in Jonathan Swift's great 1726 satirical novel Gulliver's Travels 'predicted' the existence of Martian satellites much before they were actually discovered. Who knows? One day we could get 'beamed up by Scotty' through one of these wormholes.

