

Middle class rising

Civil society is finally acquiring dynamism in India

From Hong Kong to the US, France, the UK and New Delhi, the mobilisation of civil society has been one of the notable trends of the second decade of the 21st century. These public protests, in the form of marches and sit-ins and mostly peaceful demonstrations, will remain a heartening reminder that liberal values have not lost their currency in an increasingly authoritarian world. The year 2019 alone will be remembered for the success of the pro-democracy protestors in Hong Kong, who recorded significant victories against the might of the Beijing administration. India, too, has attracted

global attention for the countrywide demonstrations against the Citizenship Amendment Act (CAA) and the National Register of Citizens (NRC), the latter in abeyance as a result. The little-noticed aspect of these protests is that they reflect a trend in civil society that has been gathering momentum over the decade.

Till the noughties, public demonstrations were largely considered the province of party workers mobilising the grassroots for a cause: Farmers, adivasis, dispossessed peasants, slum dwellers, and so on. An educated, agnostic civil society of the kind that has existed in the West since the revolutions of

1848 was virtually absent (the student movement during the Naxalite riots in West Bengal was too *sui generis* to fit this paradigm). Middle-class Indians were either too reticent about getting involved in public issues or too self-absorbed to do so — a fact that was starkly in evidence during the Emergency (1975-77). But starting with civil society's candlelight vigils against the blatant miscarriage of justice in the murder trial of the socialite Jessica Lal, India's expanding middle class is experiencing an awakening of social consciousness beyond narrow concerns.

This new dynamism was starkly in evidence at the end of 2012 and the start of 2019 in states as distant as Delhi and Kerala. In 2012, the gang rape of a young paramedic caused an unprecedented turnout of women (and some men) in the heart of the national capital to protest against the lack of safety for women and girls in the city. It was a potent

demonstration that reflected the growing confidence of professional, middle-class women in a male-dominated society that reflected their rising participation in the workforce. It had a salutary impact on the political class, which eventually passed more stringent (and slightly more sensitive) rape and workplace harassment laws. In this instance, it was a question of society leading politics. In the dramatic 620-km human chain formed by women in the southern state of Kerala on January 1 this year, it was a case of civil society pressuring politicians to enforce the law. This was in response to the continuing ban on women entering the iconic Sabarimala temple, though it was overturned by the Supreme Court in September 2018. This potent demand for gender equality has not, regrettably, encouraged the male priests and their chauvinist supporters to change their mind but it remains an uncon-

fortable reminder of the dissonance between tradition and modernity.

Students have been at the forefront of demands for civil rights from as far back as 2015, when protests erupted over the suicide of the Dalit student Rohith Vemula and later over the hanging of Afzal Guru, which launched the career of leftist student Kanhaiya Kumar. It has, again, been students who have catalysed civil society at large to mobilise against CAA and NRC protests, provoking the prime minister to stretch the truth about his party's policies. The notable point about the latest protests is that Hindus, Sikhs, Christians, and Indians of all denominations have united to protect the rights of Muslims. They provide a bulwark against the crude communalism fanned by majoritarian politics and highlight the reassuring potential embedded in the forever argumentative Indian.

Unravelling India's growth story

Major structural reforms are needed to raise growth rates to the highs achieved between 2003 and 2008

ALOK SHEEL

The Central Statistical Office's (CSO's) gross domestic product (GDP) data show that the economic expansion that began in 2014-15 peaked in 2016-17 at 8.2 per cent. Growth declined thereafter to 7.2 per cent in 2017-18, 6.8 per cent in 2018-19, and further to 4.8 per cent in the first half of 2019-20.

Quarterly data pinpoints growth peaking at 8.1 per cent in Q4 2017-18, followed by six successive quarterly declines, with Q2 2019-20 coming in at 4.5 per cent. The sharpest decline can be dated to Q2 2018-19, when growth fell to 7 per cent, from 8 per cent in the previous quarter. This was followed by 6.6 per cent in Q3 and 5.8 per cent in Q4. Growth continued to fall to 5 per cent in Q1 2019-20, and to 4.5 per cent in Q2.

Economists are divided over whether the decline in growth is cyclical or structural. There is also an unresolved debate over the sanctity of the new 2011-12 GDP series, on which the above estimates are based. Both the former chief economic advisor, Arvind Subramanian, and the then Reserve Bank of India governor had voiced scepticism over the revisions when the 2011-12 series was put out in 2015. This was because the new numbers were out of synch with high-frequency data.

There was even greater incredulity when the back numbers for the new series were made available. The (old) 2004-05 series estimates were revised downward from an average of 8.8 per cent to 7.8 per cent for the period 2003-04 to 2007-08. This meant that average growth during this period of global boom was just 30 basis points higher than what it was in 2014-15 to 2018-19 (7.5 per cent), as against 130 basis points earlier. This revision was done over a decade after the events.

What gave credence to these doubts were calculations done by technical experts in the Committee on Real Sector Statistics, formed by the National Statistical Commission. These showed GDP growth during the boom years to be actually higher than what was originally estimated under the 2004-05 series.

Rival politicians publicly sparred over these numbers, especially since they overturned received wisdom. This was that while the preceding UPA-II government (2009-14) may have lost the plot, growth during the UPA-I regime (2004-09), but excluding the global crisis year of 2008-09, was nevertheless significantly higher than during the tenure of the succeeding NDA government, as there was a global boom.

The debate over GDP numbers was joined recently by Mr Subramanian, with the publication of two papers in June and July 2019, respectively, following up on some observations made by him earlier.

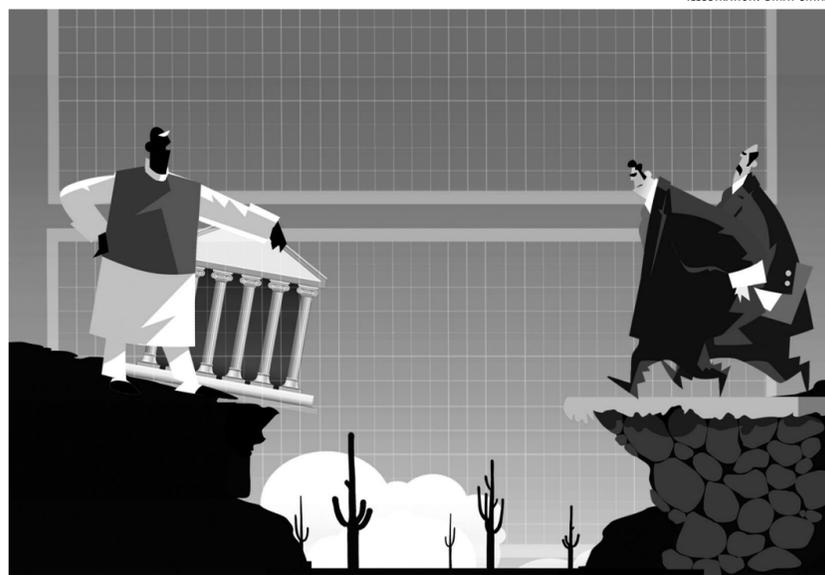
First, he compared India's growth trends with those of similarly-based major developing economies. Second, he took stock of the discrepancies between headline GDP numbers and high-frequency indicators.

On this basis he estimated that India's growth for the period beyond 2011-12 was about 2.5 percentage points lower than what the CSO had estimated. His second paper reiterated these arguments but avoided quantifying the overestimation.

GDP growth numbers should be broadly consistent with other economic data to be amenable to macroeconomic logic. If these are not, GDP numbers need to be revisited.

One can think of several data sets that have a strong positive correlation with the GDP growth rate. There may be occasions when, for specific reasons, a particular indicator is misaligned over a short period. Taken collectively, it is hard to imagine lead indicators being anything but positively correlated with GDP. All such indicators go into the calculation of the national income, directly or indirectly.

The indicators considered in the accompanying



	AVERAGE ANNUAL GROWTH (%)	
	2003-04 to 2007-08	2014-15 to 2018-19
Real GDP	7.8	7.5
Real bank credit	21.6	7.5
Real tax revenue	13.1	8.2
Index of Industrial Production	10.1	3.8
Automobile production (mn)	9.9	6.9
Export growth (%)	27.0	3.3
Power generation (bn Kwh)	6.0	4.5
Rail freight (bn tonne km)	10.2	11*
Air cargo (tonnes)	10.5	8.5
Coal production (tonnes)	5.6	2.0
Index of Agricultural Production	6.4	0.3
IT market (\$)	26.2	8
Sensex inflation	25.9	10.5
Net FDI (\$)	15.3	0.2
Corporate profits (% of GDP)	22.2	-8.4
Employment (NSSO and PLFS)	0.80	-1.0

*Data available only up to 2015-16

table are the index of industrial production, the index of agricultural production, automobile production, power generation, rail, road and air freight, exports, central tax revenue, corporate profits, employment, bank credit, information technology market size, net foreign direct investment (FDI) and the Sensex. Wherever monetary data sets are involved, such as bank credit, revenue growth and Sensex (asset) inflation, these have been deflated with the average of wholesale and consumer price inflation. This is because comparisons are made with real GDP growth. Dollar-denominated series are taken at face value.

Overall, these data sets point to robust growth between 2003-04 and 2007-08. This was followed by a sharp fall in 2008-09 and 2009-10, coinciding with the global financial and economic crisis. There was an

equally sharp recovery that peaked in 2010-11. Growth, however, declined and flattened out thereafter, at levels significantly below the earlier period.

The data also points to a modest uptick between 2014-15 and 2017-18, when a new government had taken charge. Growth, however, fell back yet again in the wake of demonetisation and a flawed (Goods and Services Tax) tax reform.

The data also indicate that overall growth between 2014-15 and 2018-19 was markedly lower than in the period 2003-04 to 2007-08.

It is difficult to come up with alternative authoritative GDP numbers in the absence of a comprehensive review. The data, however, appear to be broadly consistent with Mr Subramanian's estimation that GDP growth in the post-2011-12 period is overstated by 2-2.5 percentage points.

This means that the average growth between 2014-15 and 2018-19 could be closer to 5 per cent, as against 7.5 per cent estimated by the CSO under the 2011-12 series. It also means that GDP could be currently trending nearer 2-2.5 per cent.

To conclude, if one were to keep the contentious GDP figures aside, and look at other high-frequency data directly correlated with growth, it would appear that there was only a weak recovery following the growth crisis beginning 2011-12. The decline in potential growth from the highs of 2003-04 to 2007-08 would therefore appear to be structural, through a process of hysteresis. The sharper decline over the last few quarters, on the other hand, could possibly be cyclical, but on a lower base GDP.

That being the case, while macroeconomic (fiscal and monetary) policies might raise growth back to 5 per cent, major structural reforms would be required to raise the growth potential back to anywhere near the 2003-04 to 2007-08 levels. These include, in addition to the longstanding suspects, addressing frictions in the banking system, restoring the lost trust between government and economic players, and a well-articulated, predictable forward-looking policy road map that is adhered to.

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How vulnerable are bank ATMs?

ATANU BISWAS

At least 22 people of the same locality in Kolkata lost more than ₹5 lakh in early December, as fraudsters possibly using skimming machines at multiple ATMs emptied bank accounts within hours of salaries and pensions being deposited. On another "Black Sunday" in August 2018, more than 50 people lost over ₹20 lakh.

How vulnerable are ATMs worldwide? About five or six years ago, a restaurateur in the American state of Tennessee, along with his associate, withdrew more than \$400,000 in \$20 bills around Nashville over a period of 18 months. Using a special button sequence and some insider knowledge, they allegedly reconfigured ATMs to believe they were dispensing \$1 bills, instead of the twenties actually loaded into cash trays. The vulnerabilities of ATMs can be illustrated in numerous such instances.

ATM jackpotting is the exploitation of physical and software vulnerabilities to get the machines to dispense cash. There are mostly three ways to rob an ATM — remote (involving remote-controlled malware), almost remote (a Bluetooth keyboard) and physical. There has been a string of smash 'n' grab robberies in countries such as the US, where trucks are crashed into stores and ATMs hauled out. Poor security, defunct CCTV cameras and easy availability of cheap, high-tech skimming devices are major reasons for ATM frauds around the world.

Skimer, a Trojan able to steal funds and bank card data, was introduced in 2009. Logic attacks have become increasingly popular among cybercriminals since then, through other malware families, including GreenDispenser, Alice, Ripper, Radpin and Ploutus, among others. Micro cameras are also sometimes placed either above the keypad or where bank forms are kept. They capture PINs, which enables card-cloning for fraudulent cash withdrawals.

How can ATM security be enhanced? It can be done by increasing awareness, tightening security measures, and incorporating new technologies for security.

Many customers are careless; they use overly simple and non-random PINs (such as date of birth), and do not change PINs periodically, compromising security. Are banks careful about such issues? In 2014, two 14-year-old boys of Winnipeg, Canada, managed to crack the password of a Bank of Montreal ATM on the first try, using a default factory password (000000) that had apparently never been changed. They had used the operating manual of the ATM, available online, to find almost all the information needed to reprogramme the ATM.

The implementation of chip technology to prevent card skimming has been successful in many places. Also, we know that the PIN is encrypted and decrypted during transactions, and several computations

occur within the ATM where the PIN is converted into a binary string. Several sophisticated modes of attack, such as side-channel attacks, are practised by attackers using this simple feature. Essentially, side-channel attacks are based on statistical methods used to estimate the PIN. American cryptographer Paul Kocher pioneered such techniques.

Several types of side-channel attacks are practised by hackers. The "power-monitoring attack", for example, uses the fact that a "1" involved in computation consumes more power, and a "0" consumes less power. The power consumption curve, if recorded by a sensor, can be statistically analysed to estimate the PIN. In similar fashion, a "timing attack" is based on measuring how much time various computations take within the ATM — the PIN can be statistically estimated by analysing this. Similarly, an "electromagnetic attack" relies on leaked electromagnetic radiation, which can directly provide plain-texts and other information, and "acoustic cryptanalysis" uses sound produced during a computation.

To make a system perfectly secure, "mutual information", which is a measure of association between the message to be sent and stored, actually should be zero. Such an idea was introduced by Claude Shannon, known as "the father of information theory". This essentially requires that when any information is converted to binary string, they are needed to behave like the outcomes of repeated independent flips of a coin, so that no pattern can be identified from the binary string of data. This can be ensured by introducing suitably designed fake computations within the ATM, so that the power consumption curve, time consumption, electromagnetic radiation, and produced sound curves become either flat or completely random, bearing no information of the PIN or the user.

Also, financial institutions have been experimenting with viable implementation of biometric-enabled authentication systems for their customers. Banks in Japan, for example, have widely deployed biometric-enabled ATMs using fingerprint or finger vein scans. Citigroup in the US attempted to use iris scans of customers. In such cases, the ATM communicates with the bank server by encryption and decryption of biometric information only. Also, cardless ATMs are now coming in the domain. So, the dynamics of ATM usage is being changed with added security features. However, privacy might be a serious issue for biometrics-enabled ATMs, and the system should comply with the law of the land.

To conclude, the continual war between hackers and banks over ATM security is going to be dynamically redefined — no doubt about that.

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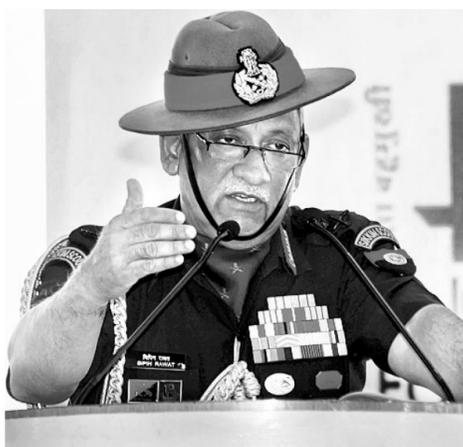
OTHER VIEWS

Gen Rawat's comments on a political issue are improper

His criticism of the student protests has damaged his reputation and office

When the Army chief, General Bipin Rawat, took a position on the ongoing students' protests against the new citizenship law at a public event in the national capital on Thursday, he overstepped an important line. Despite the exception and aberration, it is a line that has, by and large, held in India's constitutional democracy, dividing the polity from the military, and underscoring civilian supremacy. General Rawat's criticism of the protests, therefore, his publicly expressed conviction that protesters are "leading masses and crowds to carry out arson and violence in cities and towns", and his stern pronouncing of judgement "this is not leadership", are conspicuously improper. The fact that the general, only days away from retirement, chose to wade into a sensitive political issue playing out live across the country, and in doing so, echoed the point of view of the ruling regime, says disquieting things. General Rawat's comments reinforce attempts by the Narendra Modi government in the last few days to criminalise the protests.

Beyond the immediate events, the backdrop for General Rawat's intervention is also made of a more general tendency by the ruling regime to paint all criticism and political oppo-



sition as unpatriotic, if not pro-Pakistan, and to put the figure of the soldier to political and electoral use. By being seen to make a partisan point in this moment, by appearing to fall in political line, General Rawat does damage to both his own reputation and to his high office.

The Indian Express, December 27

Mental health a serious issue

India ill-equipped to deal with it

Mental illness continues to struggle for recognition as a significant contributor to poor health in spite of the existence of the Mental Healthcare Act, 2017. The problem has gained frightening proportions according to the findings of a recent study published in the medical journal, *The Lancet*. The data reveal that an estimated one in seven Indians — or 197 million persons — suffered from mental disorders, at varying degrees of severity, in 2017. That this is a first-of-its-kind study implies that the seriousness of the mental health crisis in India is not only ignored at the societal level, but is also far from being adequately represented in policy.

In the latest health budget, the funds allotted for the gov-

ernment's flagship National Mental Health Programme was just ₹50 crore — a paltry ₹15 crore more from the previous year's budget. Of what use is a mental healthcare law if proper investments are not made to alleviate the crisis? Indian lawmakers must look at international care-giving models to understand how the social aspect of treating patients — contact with family, a sense of community, rehabilitation — is as crucial as the medical aspect and that integration must find its way into policy. The scale of the challenge is immense, and will grow unless civil society and the State find comprehensive solutions together.

The Telegraph, December 27

Leander Paes' mixed legacy

Could he have done more?

Leander Paes' career, which the Indian tennis legend announced would terminate at the end of the 2020 season, will always be remembered for what could have been, as much as what he did go on to achieve. Would Paes have gone on to add to his eight men's doubles majors had he buried the hatchet with the most successful of his 130 doubles partners, Mahesh Bhupathi? But back in 1991, when Paes turned pro, his presence promised a tennis renaissance in India. That renaissance never did fully occur, but his individual career thrived. His legacy will always be his pioneering effort to put Indian tennis on the doubles map — an Indian-record of 18 Grand Slams titles and a world-

record 42 wins in the format in the Davis Cup. All that, however, came at the cost of his singles career, which peaked with India's first-ever individual medal at the Olympics — a bronze in Atlanta in 1996.

Paes has often stated that nothing has given his life more meaning than representing India. In the country's colours, he became both a hero and a villain — his presence fragmenting the Indian tennis landscape into camps and factions. Those indiscretions and many controversies will be forgotten once he hangs up his racket, but Paes' contribution to the game in India never will.

Hindustan Times, December 27