

# The discovery of dark matter

This could eventually lead to better understanding of places where life is most likely to exist



## QUANTUM LEAP

DEVANGSHU DATTA

The 2019 Nobel honours the discovery of dark matter and the creation of techniques for discovering exoplanets. It is split three ways. Canadian cosmologist, James Peebles gets half the monetary award of Kronor 900,000 (about US \$ 909,000). Swiss scientists, Michel Mayor and Didier Queloz shared half. The Royal Swedish Academy of Sciences said the three “transformed our ideas about the cosmos”.

Dark matter became a speculative

“solution” to problems in astrophysical calculations in the 1960s. In 1916, when Einstein released his general theory of relativity, he inserted a “cosmological constant” to adjust for his belief the universe was static in size. But by the 1920s, it was known that the universe was expanding. Einstein regarded the cosmological constant as a blunder and removed it from his equations.

In 1964, a breakthrough occurred, by accident. The 1978 Nobel Laureates Arno Penzias and Robert Wilson were examining microwave radiation. They kept picking up “noise”, which they initially assumed to be instrument error. James Peebles made theoretical calculations when he realised the “noise” provided information about the amount of matter created in the Big Bang. The uneven noise showed minute differences in temperatures in different regions and indicated how matter clustered to form galaxies.

That led to another puzzle: most of that matter was undetectable by other means. Hence, the name “dark mat-

ter”. Measurements of cosmic background radiation and the resultant theory showed the matter we can detect is only about 31 per cent of what should be there. About 5 per cent is ordinary matter and 26 per cent is dark matter, inferred via calculations matching observations.

About 69 per cent is absolutely undetectable. In 1984, Peebles was one of those who revived Einstein’s cosmological constant, using it to represent undetectable energy. This is called dark energy and assumed to account for the “missing” 69 per cent, which was somehow converted to energy.

In April 1992, John Mather and George Smoot presented an image of the first light in the universe (Nobel Prize in Physics 2006). This helped refine calculations and suggested Peebles was correct. In 1998, Saul Perlmutter, Brian Schmidt and Adam Riess showed that the universe’s expansion was accelerating (Nobel Prize in Physics 2011). That indicated an unknown, undetectable dark energy was indeed, responsible for pushing the expansion and Peebles’ the-

oretical calculations were confirmed. This leaves a big mystery of course, since almost nothing is known of dark matter and dark energy.

Michel Mayor and Didier Queloz developed methods to observe what we have long known to be true. Other stars must have planetary systems orbiting them, like our own. But planets are very small objects on a galactic scale. Nor do they have their own light source, only reflecting light from their parent star, or stars.

The radial velocity method is used to find exoplanets. This measures small changes in the velocity of a star (velocity is a measure of both speed and direction) caused by the gravity of its planets.

Radial velocity is measured using Doppler effects. Light from an object moving towards us tends towards the blue end of the spectrum, while objects moving away from us, tend towards red. By measuring apparent changes in wavelength, it is possible to calculate velocity of a star.

But even a planet as large as Jupiter (1300x Earth volume and 300x Earth

mass) causes the sun (a relatively small star) to shift just 12m/s. Earth itself causes just about 0.09 m/s shift. Scientists measure thousands of wavelengths to work out radial velocity shifts and then look for the planet, or planets, causing perturbation.

Mayor mounted his first spectro-scope in 1977 but it could only detect gross changes of about 300m/s which wasn’t enough to detect planets in far-away stars. In the 1990s, his doctoral student, Queloz, worked with his research group to refine the technology and the calculation techniques.

In October 1995, they revealed the first exoplanet, a huge gas giant like Jupiter, orbiting very close to its star, 51 Pegasi. Since then, using similar techniques, over 4,000 planets have been discovered, including many that are Earth-like. This has helped astronomers improve their models for planetary development since some of the results, including the very first, showed the earlier understanding of planet formation was wrong.

These discoveries open up new areas of research. There are many scientists working to get to grips with dark matter and dark energy. Others are examining data about exoplanets. This could eventually lead to better understanding of, among other things, places where life is most likely to develop.

integrated reporting is the first step towards this. And as firms change their time horizon, investors need to do so too. They will need shift focus away from quarterly results, but the need to look beyond numbers is critical for the long term. Finally, regulations need to recognise this change. Interestingly, the Companies Act 2013 spoke of a stakeholder engagement committee, rather than a shareholder grievance committee, but the committee is floundering to find a meaningful role for itself.

This shift from shareholder to stakeholder is easier said than done. A recent survey by Stanford Business School of the CEOs and CFOs of S&P 1500 companies finds just 5 per cent saying that stakeholders are more important than shareholders. The rest believe shareholder interests are significantly more important (23 per cent), only slightly more (32 per cent), or equally important (40 per cent). Opinion was even divided on who or what the company needs to focus on — community, employees, trade unions etc.

This last is an area where one of the few criticisms has come from. The powerful US based Council of Institutional Investors has said that accountability to everyone means accountability to no one. This is what will trouble academia — maximising many functions rarely has an elegant solution. But this is not about variables. Repurposing the role of the corporation is more than just about sustainable production — ensuring that the area around the factory has emissions well within standards, water is cleaned before it is discharged, raw materials used are biodegradable. That suppliers and employees are respected and rightfully rewarded. It is about companies taking into account the social order in which they operate.

The author is with Institutional Investor Advisory Services

## CHINESE WHISPERS

### Media connect



Uttar Pradesh Chief Minister Adityanath, after expanding his cabinet, has decided to broaden the scope of the media connect of his two-and-a-half-year-old government. While two cabinet ministers Shrikant Sharma and Sidharth Nath Singh were designated official spokespersons of the government after the BJP came to power in UP in March 2017, the chief minister feels the need to empanel more spokespersons to keep the official version of the government’s viewpoint in the media, in view of the volume of fake news circulating all around. The new media panel includes the two deputy chief ministers, Keshav Prasad Maurya and Dinesh Sharma, apart from two other ministers Mahendra Singh and Anil Rajbhar, who would field media queries ahead of the Assembly polls in 2022.

### Colonial hangover

The Madhya Pradesh government, run by the Congress, has sought suggestions from public intellectuals and common people to help it come up with sobriquets for the post of “collector”. Public Relations Minister P C Sharma recently said the term collector gained currency during British rule and was used for a person who used to collect revenue for the erstwhile British rulers. Now that collectors’ work is different, the designation has become redundant, he said. Sources in the government said most officers agreed that the term “district administrator” was more appropriate. In December last year, just after assuming office, Chief Minister Kamal Nath had declared that he wanted to change the designation because it was a colonial hangover.

### No English for Fadnavis



Maharashtra Chief Minister Devendra Fadnavis (pictured) has a penchant for local languages. At a media gathering, after the announcement of the Assembly election results, which pointed at a Bharatiya Janata Party victory, Fadnavis began speaking in Marathi to local reporters. He then switched to Hindi and remarked the Hindi channels also needed to survive. However, later when he was asked to comment in English, he declined, saying he spoke the language only when the audience did not understand Marathi or Hindi, or when he travelled abroad.

# Corporates 2.0: Profit with a purpose

The corporation is more than just about sustainable production. It is about companies taking into account the social order in which they operate



## OCCASIONAL ASIDE

AMIT TANDON

The line it is drawn/the curse it is cast./The slow one now/will later be fast./As the present now/will later be past./The order is rapidly fadin./And the first one now/will later be last./For the times they are a-changin’.

Bob Dylan

Twenty-two years after first committing itself to Milton Friedman’s mantra that the principal objective of a business enterprise is to generate economic returns to its owners, the US Business Roundtable has now given corporations a new purpose. In a statement in August, the Roundtable stated that purpose of the corporation is no longer maximising returns to shareholders, rather it is a commitment to all shareholders. This puts shareholders on par with employees, customers, suppliers and communities in which businesses operate. It is useful to remember this is how it was till the Business Roundtable exhorted corporates to embrace the profit motive.

The reason to bring this up is that the Business Roundtable has an oversized influence on US businesses — close to 200 US CEOs from Jamie Dimon at JP Morgan to Tim Cook at Apple are members — and therefore on companies across the globe. This statement has the potential to upend the roles and responsibilities of the board and what roles corporates see for themselves. Issues that are placed on the board agenda and the basis of decision making, is all set to change. Will the duty of care be revisited? Will the Revlon Rules be jettisoned, and the board charged with preserving the company, post its sale and not just selling it to the highest bidder? It’s too early to say, but change you can expect.

**The US Business Roundtable statement on the purpose of a corporation:** While each of our individual companies serves its own corporate purpose, we share a fundamental commitment to all of our stakeholders. We commit to:

- Delivering value to our customers. We will further the tradition of American companies leading the way in meeting or exceeding customer expectations.
- Investing in our employees. This starts with compensating them fairly and providing important benefits. It also includes supporting them through training and education that help develop new skills for a rapidly changing world. We foster diversity and inclusion, dignity and respect.
- Dealing fairly and ethically with our suppliers. We are dedicated to serving as good partners to the other compa-



nies, large and small, that help us meet our missions.

■ Supporting the communities in which we work. We respect the people in our communities and protect the environment by embracing sustainable practices across our businesses.

■ Generating long-term value for shareholders, who provide the capital that allows companies to invest, grow and innovate. We are committed to transparency and effective engagement with shareholders. Each of our stakeholders is essential. We commit to deliver value to all of them, for the future success of our companies, our communities and our country.

It is probably just a coincidence, but still noteworthy, that just around the time the Business Roundtable first painted shareholders sitting at the high

table, the UN adopted its Millennial Development Goals, which in 2015 gave way to Sustainable Development Goals. These asked that the corporate sector walk lockstep with governments and broaden their agenda by focussing on hunger, health, gender, sustainability and 13 other goals. Clearly, the pressure to redefine the purpose of a corporation began almost as soon as it was first enunciated.

In parallel, capitalism too tried to soften itself around the edge, and there was talk of shared value capitalism, conscious capitalism, share value capitalism or development with a human face. And with this, the shift to corporates larger role in society.

How might the firms change? Clearly, how they report on their activities will change. The thrust towards

## INSIGHT

# How the RBI can get its act together

In the concluding part of the series, the author draws attention to the central bank’s problems that need urgent fixing



J N GUPTA

The Securities and Exchange Board of India (SEBI) framed regulations for credit rating agencies (CRAs) way back in 1999. Indeed, India was the first jurisdiction in the world to do so. The idea behind such regulation was to protect investors. However, the more frequent users of credit ratings are banks and non-banking financial companies (NBFCs), which are regulated by the RBI. Has the RBI taken a single step to make CRAs more effective and efficient? Has any back-testing been done by the RBI? Or has it asked banks or the Indian Banks’ Association to assess the efficacy of credit ratings? Banks and NBFCs followed the system blindly without ever questioning the ratings. When one asks questions, one gets the response that CRAs do not rate an entity but only the instrument. How can you rate an instrument issued by an entity in isolation unless cash flows are in escrow? The RBI has been a silent spectator to the mess.

**Single-point banking:** The present banking system — with multiple banking arrangements in multiple locations with cross-flows among various entities and banks — makes the job of a bank officer more complicated than that of an air traffic controller (ATC). An ATC can at least

see everything on a radar. The complicated banking arrangement suits a delinquent borrower who conducts transactions in such a manner that detection becomes next to impossible. The RBI has aided such an unruly banking system by remaining a silent spectator.

Pressure and demands from banks have taken precedence over prudence. Has the RBI analysed why an entity needs dozens of bankers? IL&FS had banking arrangements with 22 banks. Does anyone need any more proof of the mess? The digital era is the era of single-point banking. Should the RBI bother about the stability of the financial system and protect people at large or consider the privacy of borrowers and competition amongst banks? The RBI must make a choice and communicate that to stakeholders.

**Multiplicity of laws:** The RBI has separate laws for the State Bank of India, three different laws for PSU banks, besides the Banking Regulation (BR) Act, 1949. Some banks are companies; hence Companies Act is applicable. Some are listed, so SEBI LODR (Listing Obligations and Disclosure. Requirements Amendment Regulations, 2018) regulations are applicable. As a result, it has to follow different yardsticks for different banks. How can a regulator maintain market integrity when it has different rules based on who the parent is and how and when the entity came into existence? Till date, the RBI has not reconciled the BR Act with the Companies Act 2013; it continues to refer to the Companies Act, 1956. The Companies Act, 2013, was a game-changer for governance; but the RBI seems oblivious of the development. It does not even have a universal governance code. Bank licensing is another area that

establishes the fact that the central bank probably doesn’t know what makes a bank strong. For some banks, it recommends high promoter equity; for some it wants to reduce equity and for PSUs it is agnostic. One doesn’t understand how for similar businesses in same environment, three different ownership levels will result in agnostic risk management. If high promoter equity is bad, why is it not bad for PSUs or new private banks? If low equity is bad, why is it not bad for older private banks? The rationale for such measures is known only to the RBI just like the secret formula of Coca-Cola is known only to the company that owns it.

**Big Brother syndrome:** Other regulators that are younger than the RBI are expected to take cues from the latter and its experience. Unfortunately, this learning is one-sided. The RBI doesn’t believe that it has anything to learn from regulators who might have better systems. How else can one explain its failure on LOUs (Letters of Undertaking), causing huge losses to Punjab National Bank? LOUs were an unknown banking product, untested and didn’t have international acceptance. The RBI, in its master circular, had clubbed LOUs and LOCs (Letters of Undertaking/Comfort) with Letter of Credits (LCs) and Bank Guarantees (BGs), giving the impression that all these instruments are on a par with each other. This was a cardinal mistake, as LCs and BGs are more than a century old, with globally accepted standards and uniform laws. On the other hand, LOUs and LOCs were home-grown products, untested on their behaviour and attendant risks. Clubbing them with LCs and BGs gave them respectability that they did not deserve. This could have been avoided if the RBI adopted the

practice of its fellow regulator SEBI.

The RBI has been part of the SEBI committee for products in the forex derivative market. It participated in the product design, assessing risks and in their introduction. And even after the introduction of some products, it was involved in their monitoring to ensure there was no risk to the system. Could the RBI have done the same with LOUs?

**PMC Bank stress:** Do we still need co-operative banks? This question should have been part of the RBI’s internal debate long back as the structure of co-operative banks has nothing co-operative about it. Over a period of time these banks, with a few exceptions, have become fiefdoms of strong-armed people, allowing political patronage to prosper. These are a new system of princely states so to speak, with checks and balances only on paper.

**India Bulls and LVB merger:** Once again, the issue of ownership of banks is in focus. Who is fit and proper to own a bank? Does skin in the game (equity ownership) carry more risk or is it the other way round? Barring PSUs that are in financial mess despite higher promoter equity, it appears that risk is associated more with low promoter equity. Most private banks with low promoter equity, excepting a few, are currently facing problems. Is curbing voting rights a better solution than curbing their economic interest?

The RBI needs to go back to the drawing board and look for rationality in all its regulations.

The time has come for the RBI to overhaul its internal systems, open itself up to a consultative process, scout for feedback and accept criticism as a tool of improvement. It must realise that it can also make mistakes and be ready to make amends. It must change the archaic laws to suit the demands of the new millennium. This must be done on a war footing to ensure that its prestige is not lost.

(Concluded)

The writer is founder and managing director of Stakeholders Empowerment Services

## LETTERS

### Stem the rot in banking

This refers to the deposit insurance limit enhancement in the light of the upcoming Financial Resolution and Deposit Insurance (FRDI) Bill that will be introduced in the next Parliament session. As the name suggests, the insurance coverage should be enhanced to 80 per cent of the total deposit made by each customer. Like other insurance policies, 80 per cent of the sum assured should be returned on maturity or if claimed.

This way the customer won’t lose a substantial amount of investment if the bank performs poorly and thereby the remaining 20 per cent can be utilised in restructuring the assets of the non-performing banks. The age-old regulatory measures need to be revisited and new rules introduced to prevent any potentially fraudulent activities arising from the loopholes in the existing banking system.

The Reserve Bank of India (RBI) as the central bank should tighten banking regulations for the staff and any deviation should be reported to the regulatory committee at the earliest. The central should introduce a rating system for all banks based on their non-performing assets and bad loans along with their financial performance every year so that every customer is aware of the risks.

Every bank should publish online and offline newsletters about their financial performance and financial setbacks every quarter, so that a customer can make

investment decision wisely. A vigilance committee should check the ratings from time to time.

Sunanda Mukherjee Mumbai

### Setting a new tone

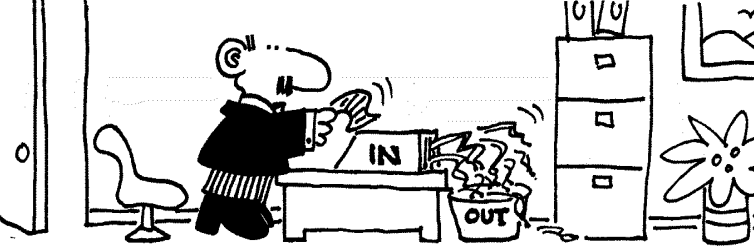
This refers to “BSNL, MTNL to merge, get ₹70k cr push” (October 24). The new policy direction of the government should not come as a surprise. Considering the government has gone in for an amalgamated public telecom, it must be taken as an acid test for the acumen of the government and its bureaucracy. This might set a new tone and direction in the emancipated governance of public sector undertakings in future.

The entire exercise for installing a model commercial entity, with many differing components of finance, HR, marketing would need a lead minister and a capable team to shape a competitive and progressive company. This team should not only be able to win back the lost clientele but also leverage changing technology to attract new adherents. There has to be an independent and professional board at the helm with technology and marketing as its main remit.

R Narayanan Mumbai

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

## HAMBONE



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## Message from the states

Time for economy to be the focus of politics

Voters of Haryana and Maharashtra have surprised both the incumbent Bharatiya Janata Party (BJP) and political pundits. The results of the Assembly elections have turned out to be significantly different from what most exit polls had predicted, and the BJP has underperformed in both the states. While it should be able to form the next government in Maharashtra with its alliance partner, Shiv Sena, the result is unlikely to please the leadership of the party. The BJP has managed to hold on to only 105 seats compared to the expectation of reaching the halfway mark on its own in the 288-member Assembly. The story in Haryana is more unfavourable for the BJP where it has failed to cross the halfway mark and has got 40 seats in the 90-member Assembly. On the other hand, the Congress, despite all its weakness and factionalism, has gained 16 seats in Haryana compared with the 2014 elections (till the time of going to press). While in terms of vote share the BJP has gained, improvement in the Congress' performance is more significant because of the consolidation of anti-BJP votes. The Indian National Lok Dal, for instance, has completely collapsed. In Maharashtra, the BJP is likely to be on the back foot because it has to depend heavily on a more assertive Shiv Sena this time.

At a broader level, these results have several takeaways. First, even if elections since December last year are taken into account, it is clear that voters vote differently in national and state elections. The BJP lost power in three important states — Madhya Pradesh, Chhattisgarh, and Rajasthan — in December last year, but went on to sweep these states in the Lok Sabha polls. But its vote share has dropped significantly in the Assembly elections. Second, state elections are more about local issues. The BJP campaigned in Haryana and Maharashtra largely on nationalist issues, including the abrogation of Article 370 of the Constitution. It doesn't seem to have worked despite the opposition being in complete disarray. This perhaps also shows that economics and politics cannot be kept separate for too long. The Indian economy has slowed considerably in the last few quarters and there is distress in rural India, which is reflected in the way parts of rural Maharashtra have voted.

Third, the remarkable showing put up by the Congress in Haryana underlines that all is not lost for the party. Though in Maharashtra the Sharad Pawar-led Nationalist Congress Party has performed better, the Congress has managed to hold its ground. It is fair to argue that there is still goodwill for the party in different parts of the country. Had it sorted out its leadership issues in time and backed its local leaders, the results could have looked very different in both the states.

Finally, the results indicate that both the BJP and Congress need to get their act together. The BJP-led governments, both at the Centre and states, would do well to deal with the economic slowdown more seriously. The party has the required political capital and credibility to pursue an aggressive reforms agenda, which will help revive the investment and growth necessary to tackle widespread distress in the economy. Meanwhile, the Congress should swiftly address its leadership issue at the top and empower state leaders. It should, along with other parties, aim to play the role of a constructive opposition, which has a credible story to tell rather than only Modi-bashing. Let the economy be the focus of politics.

## Another blow to telecom

Govt needs to decide what it wants to do with the sector

The Supreme Court has pronounced on a long-running dispute between the legacy telecommunications companies, including Bharti Airtel and Vodafone Idea, and the government about the nature of fees the companies must pay. The court upheld the position of the government, saying that the companies must pay ₹2,461 crore (about \$13 billion) to the government. The telecom companies had argued that revenue sharing with the government as part of the spectrum fee should be limited only to their earnings from the use of the spectrum; the government insisted that other revenue, such as from interest or rents, should also be counted. The additional dues were, in fact, only about ₹23,000 crore. The government is also demanding interest, penalty, and interest on the penalty, which takes it above ₹2,000 crore. The government will be pleased and relieved, since the additional bonanza will be available to cover its straitened finances — in fact, it can be partially used to fund the revival plan for the state-owned rival to Airtel and Vodafone Idea, BSNL-MTNL.

Differently put, this is a death blow to the telecom market if the government chooses to exercise the option given to it by the court judgment. At the end of 2018-19, Bharti Airtel had a debt burden of ₹1.06 trillion, excluding some deferred spectrum payments. Almost half of that was short-term liabilities. Vodafone Idea had a net debt in the same ballpark, of ₹1.2 trillion at the end of 2018-19. This additional burden comes at a time when they are in a price war with Reliance Jio, which is willing to run services at a loss, thanks to money pouring in from a war chest built out of steady revenue from the group's petrochemicals business. The government must now take a call on how it intends to continue. The mess it has made of the airline sector must not be repeated in telecom because the impact will have a domino effect on the larger digital chain. Further, an increase in stress in the sector could affect its debt servicing capability with implications for the banking system.

The government should re-evaluate what it expects from the telecom sector. Is it to be an engine of growth and productivity, as it was in the 2000s, or is it simply a cash cow for the government to fund its welfare spending? If it is the latter, then certainly the government can demand its full dues and at least one of the companies will probably exit the market. But if the government recognises that healthy competition and investment in telecom are priority for productivity-enhancing growth, it will have to think very differently. In a short while, companies will have to start investing in 5G infrastructure if Prime Minister Narendra Modi is to achieve his aim of a Digital India. Innovation ecosystems will have to be built around cutting-edge communications infrastructure. A sector hollowed out by the state's demands will not be able to put this infrastructure in place. The government will now have to decide how it wants to deal with the sector. It can perhaps waive the penalty and interest, in the furtherance of the broader national agenda.

## The power of words



### BOOK REVIEW

RAJIV SHIRALI

Several books on history's "great" speeches have been published in recent years — *The Chambers Book of Great Speeches*, *Lend Me Your Ears: Great Speeches in History* edited by the late William Safire, an American presidential speechwriter, and *The Penguin Book of Historic Speeches*, to cite only three. The latest is by Simon Sebag Montefiore, a British television presenter, sometime war

correspondent and author of popular history books.

The 78 speeches in *Voices of History* span two millennia, from ancient times to the 21st century, and are arranged into 19 subjects — resistance (to an enemy), dreamers, freedom, rise and fall, decency, battlefields, defiance, terror, trials, follies, power, peace-makers, revolution, warmongers, genocide, good vs evil, prophets, warnings and good-byes. There is an overall introduction, and each speech is also prefaced by a short introduction by Mr Montefiore, in which he sets out the historical context of the speech, and explains why it stands out.

Notable speeches include Winston Churchill's "blood, toil, tears and sweat"; Martin Luther King Jr's "I have a dream"; Jawaharlal Nehru's "tryst with destiny"; Abraham Lincoln's Gettysburg Address

("government of the people, by the people, for the people"; Mahatma Gandhi's address on the eve of the Salt March; Nelson Mandela's victory speech on becoming South Africa's president; Barack Obama's first inaugural address as well as his speech to Americans announcing the killing of Osama bin Laden; Hitler's triumphant speech after the German conquest of large chunks of Europe; and Donald Trump's announcement of his decision to run for president in June 2015.

Words are powerful tools of communication, as great orators well know; they can sway people and mould public opinion. Mr Montefiore has included lofty, noble speeches couched in lyrical prose (Lincoln, Nehru, Kennedy, King, Mandela), as well as others full of hatred (Hitler, Heinrich Himmler, Josef Stalin, bin Laden). The power of language was brilliantly encapsulated by CBS reporter Edward Murrow during World War II, when he famously said of Churchill that he "mobilised the

English language and sent it into battle".

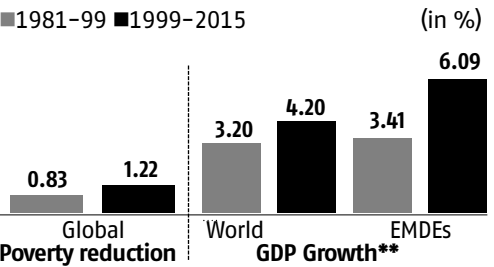
The speakers' styles vary from the brief to the preposterously long. Lincoln's Gettysburg Address was a mere 278 words long, while Churchill's three speeches featured here are short and punchy. Britain's war-time prime minister believed that subtlety was of little use in making a point; he preferred, in his own words, to "use a pile-driver". By contrast, Hitler's speech in December 1941 announcing German dominance over all of Europe is the longest in the book. But both Churchill and Hitler were similar in one respect: They re-wrote and polished their speeches several times.

The strength of the book lies in Mr Montefiore's masterful 12-page overall introduction that precedes each speech. The brilliance of Churchill's speeches lay in the care with which he wrote them, his mastery of the English language, and the manner in which he used his voice as a theatrical device. Nehru's "tryst with destiny" speech

is elegant, graceful and a superb piece of rhetoric. King's "I have a dream" speech of August 1963, in which he advocates a more inclusive version of the white American Dream, is full of "evangelical cadences, Biblical references and spiritual echoes". Mandela's May 1994 speech pleads for national reconciliation in a nation torn by the black-white divide. The appeal of Kennedy's inaugural address lay in its promise of a new dawn, and the idealism that underlay his exhortation to Americans to "ask not what your country can do for you; ask what you can do for your country". Mr Montefiore describes President Trump as an unconventional but astute communicator, with a "discursive, bombastic, brazen" style that effectively expresses the anger of his support base.

Elizabeth I, Hitler, Churchill, Lincoln and Nehru wrote their own speeches, while Kennedy worked on his with speechwriter Ted Sorensen, who was much more than a brilliant wordsmith. Reagan's speechwriter

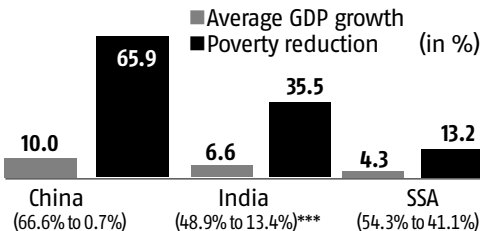
TABLE 1: EXTREME POVERTY\* TRENDS



\*\* 2009 excluded on account of the steep fall in growth

\* Below \$1.9 per capita per day based on 2011 PPP

CHINA, INDIA AND SUB-SAHARAN AFRICA (1990-2015)



\*\*\* 1987-1990; Based on IMF and World Bank data

TABLE 2: EXTREME POVERTY AND INCOME

	High income		Upper-middle income		Lower-middle income		Low income	
	USA	S.KOREA	CHINA	BRAZIL	INDIA	VIETNAM	ETHIOPIA	NEPAL
Extreme poverty 2015 (%)	1.2	0.2	0.7	3.4	13.8	2.0	26.7	7.0
Per capita GDP 2018 (\$)	62,850	30,600	9,470	9,140	2,020	2,400	790	960
Average growth 2011-15 (%)	2.2	3.1	7.9	1.2	6.8	5.9	10.1	4.3

Based on World Bank and IMF data

## Growth, income, poverty and the Nobel

There is good reason for caution in applying the results of randomised control trials across space and time

The 2019 Nobel Prize in economics has been jointly awarded to Abhijit Banerjee, Esther Duflo, and Michael Kremer, for "their experimental work, involving controlled randomised trials.... (which) has considerably improved our ability to fight global poverty. In just two decades, their new experiment-based approach has transformed development economics, which is now a flourishing field of research".

The focus of their work is on modest, low-cost interventions, derived from experimental field research that demonstrate what interventions work, and what do not. Whether free distribution of lentils significantly improves attendance at child immunisation clinics, or whether the incidence of malaria declines more when mosquito nets are distributed free, or when they are subsidised, are representative examples of their research. Their work can give a bigger bang for each buck spent on aid, and government programmes, targeted at the poor.

The claim that their work has transformed development economics, however, needs closer scrutiny, on at least three counts.

First, the 2015 Nobel for economics was awarded to Angus Deaton for similar work in development economics, focussed on poverty, consumption and welfare. It is by no means clear that experimental random controlled trials are superior to Deaton's methodology relying on detailed observation-based analysis.

Second, there are good philosophical reasons for caution in applying the scientific method used in natural sciences to social sciences. The physical world is amenable to natural laws in ways that human sciences,



ALOK SHEEL

such as economics, are not. It takes a single apple to disprove the theory of gravity. In human affairs, unlike those of apples, people may react differently in similar circumstances.

There is much in common between the research methodology of Banerjee, Duflo and Kremer and that of the behavioural economists Cass Sunstein, Richard Thaler and Steven Levitt of Freakonomics and Nudge fame. They use a similar experimental approach, grounded in clinical psychology, to nudge people in desired directions, such as slowing down vehicles outside schools, or reducing urine spillage in men's toilets. Behavioural economics, however, failed in improving fiscal multipliers during the GFC. Richard Thaler, awarded the Nobel in 2017, recommended staggering the payout of tax cuts to create the illusion of a permanent increase in income to overcome Ricardian equivalence. A Federal Reserve study later found that the fiscal multiplier of a single lumpsum check was actually higher.

The credit card and consumption oriented American housewife, and the thrifty Swabian housewife, may respond differently to increases in income on account of cultural differences. The former was moreover known to shred her credit card during the last financial crisis. Human responses to the same intervention may thus vary sharply across time and space. To use an analogy from a popular fable, not only are there both grasshoppers and ants amongst humans, but a grasshopper may well start behaving like an ant in adverse circumstances. It matters hugely

## The clouds over 2020

The world economy, according to the official declarations at the IMF and the World Bank's annual meetings in Washington early this week, is not getting into a recession. Yes, the 3 per cent global growth this year is the lowest since the 2007 financial crisis but 2020 is expected to be better with overall growth rising to 3.4 per cent. However, the fact is that since the beginning of the year, we have seen a steady deterioration of economic prospects all over the globe. The last few months have brought us an avalanche of downgraded forecasts from all international and private sector financial institutions and think tanks.

In fact, there are some good reasons to consider that we may see an additional deterioration of the economic environment in the next few months: Germany's Bundesbank has now officially recognised that the country — the largest European economy — has slumped into recession, its export industries being badly hit by the slowdown in China and by the uncertainties over Brexit. In the US, economic growth has decreased from 2.9 per cent in 2018 to something around 2.2 per cent this year, and many analysts expect that 2020 could see some periods of contraction in activity. China, which has been a key driver of global growth over the last 20 years, is now struggling to sustain growth at 6 per cent — its lowest performance in the last 25 years — as it continues to reduce financial risks created by shadow banking and mitigate the impact of the trade war with the US. Japan, which had seen earlier this year a burst of activity, is now slowing down as its exports have been declining over the last 11 months.

Ask any analyst or policy-maker about the reasons for this global synchronised economic slowdown, and the first answer will be: The impact of the trade war launched by the Trump administration against China



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and, more generally, the way it has weaponised trade — creating uncertainties, which are paralysing many investment decisions.

The second answer will be the impact of geopolitical and political risk almost everywhere around the world, whether it is the mind-boggling whirlwind of developments about Brexit, with the prospects of a deal between London and Brussels changing almost on an hourly basis; or the daily questions about the contents of the latest rambling tweets of Donald Trump and their potential impact on markets; or the next developments in the impeachment process now in full swing in Washington; or the impact of the \$7.5 billion of tariffs that the US will impose on its imports from the EU as a result of the WTO ruling about the European complaint on American unfair subsidies to Boeing. But don't hold your breath as the WTO is also expected to rule on a similar complaint from Boeing about unfair subsidies to Airbus, and the EU will be entitled to raise tariffs on some American exports. And then, of course, there are the risks of new disruptions of oil production in the Gulf, after the drone attacks that cut the Saudi oil output by half in September.

However, there are some basic economic reasons to the present downturn: We are obviously seeing in the US the end of the longest cycle of expansion in modern history, which was prolonged by the tax reform of the Trump administration, acting as a fiscal stimulus whose impact is now fading away. China, for its part, has reached a stage in its economic rise where double-digit growth cannot be expected anymore. As the country shifts to a new economic model based more on technological innovation, domestic consumption and environment preservation, real growth rates of

where the randomised trials were done, and when, before they can be successfully applied.

Third, at the macro-level the fastest and quickest way out of poverty is still through higher growth, investment and productive employment on a large scale. According to World Bank data, there was a sharp fall in extreme poverty (under \$1.9 per capita PPP) over the last two decades from nearly 30 per cent to under 10 per cent. This was also the period when growth in emerging markets and developing economies (EMDEs), where most of the extreme poverty lived, accelerated. Table 1 shows that the reduction in extreme poverty was much sharper between 1999 and 2015 than between 1981 and 1999. The sharply differential rates of reduction in China, India and Sub-Saharan Africa (SSA) can be largely explained by the differential in growth rates. The much maligned "trickle down" theory, therefore, contains a solid substratum of truth.

This is also evident in the strong correlation between per capita incomes — the lagged effect of past growth — and the incidence of extreme poverty, which stood at 43.9 per cent in low income, 13.9 per cent in lower middle, and just 1.7 per cent and 0.7 per cent, respectively, in upper-middle income and high-income countries in 2015.

Table 2, however, indicates that the evidence for "trickle down" is stronger for high income and upper-middle income countries than it is for lower-middle income and low-income countries. Although Vietnam and India are not very far apart in per capita income, extreme poverty in Vietnam is not only far lower, but is also lower than in upper-middle-income Brazil. Indeed, even low-income Nepal has a lower incidence of extreme poverty than lower-middle-income India.

Such large variations in the incidence of extreme poverty indicate that the linkage between growth/per capita incomes and extreme poverty breaks down in lower-middle income and low-income countries. Policy interventions, including those of the kind attempted by the Nobel laureates, can make a big difference in such countries.

The focus in high-income and upper-middle income countries shifts from extreme poverty to social poverty and inequality. While extreme poverty globally declined from 35.9 per cent in 1990 to 10 per cent in 2015, social poverty defined as \$5.5 per capita (World Bank) declined far more modestly from 67 per cent to 46 per cent. Half the world therefore remains poor in the commonsensical meaning of the term. A rising tide of growth lifts all boats, but unequally. Since the bar for extreme poverty is low, it falls sharply with sustained levels of high growth and increase in per capita incomes. Rapid growth, however, has the potential to sharply increase inequality. Since targeted policy interventions are required in such countries for the alleviation of social poverty and inequality, is there a case for extending the randomised control trial (experimental work) to such countries as well?

The three caveats discussed above in no manner diminish the pioneering work done by Banerjee, Duflo and Kremer. It is non-trivial, and their recognition as pioneers by the Nobel Committee is richly merited. These caveats have, moreover, been directly or indirectly acknowledged by the researchers themselves. Such interventions can significantly improve the lives of the poorest, and a case can be made for similar interventions for the social poor, but they do not constitute a silver bullet that can eradicate poverty. We need to remain circumspect in applying the results of randomised control trials across space and time and continue the focus on macro-level policy interventions that improve the overall environment for rapid growth, investment and productive employment.

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around 5 per cent might become the norm. So, don't count on China to play the role it has played over the last 20 years as the global growth driver of last resort. Or, at least, not to the same extent.

Germany is confronted with the need to review an economic model that has been relying too much on exports, on an automotive industry now struggling to move away from fossil fuels and on wage compression. There is now a belated wake-up on the urgency to revisit the concept of mandatory balanced budgets to update an infrastructure which is crumbling not only when it comes to roads and bridges but also with respect to IT, and to devote more resources to fighting climate change. Germany is way behind in terms of meeting its stated objectives of CO2 emissions reduction.

So, it is not surprising that the possibility of a recession in 2020 is part of the scenarios developed in many corporations, financial institutions and ministries around the world. A major concern is that if such a possibility were to materialise, we will be, globally, in a much weaker position to address it. The fact is that the margin of maneuver for using monetary policy to stimulate activity is now extremely thin as quantitative easing for the euro-zone and for Japan is definitely in a phase of fast diminishing returns, and in other countries very low — or even negative — interest rates do not allow for much of an impact in using them as a tool. Add to that the fact that low interest rates in the last few years have led to a high increase in corporate and national debt all over the world.

The last lever left will be fiscal policy measures to stimulate economic activity. But then the challenge will be to calibrate these measures to avoid the excesses of the past, and to select initiatives that will be able to bring quick results.

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was the CBS journalist Peggy Noonan, whose speech written to mourn the seven astronauts who died when the Challenger space shuttle exploded in January 1986 is ranked among the most admired in the 20th century. Mr Montefiore describes the best speechwriters as "literary ventriloquists" who can mould themselves to suit the requirements of the speaker, but are also able to invent a new persona if needed.

As with any anthology, this selection represents Mr Montefiore's subjective choice. As many as 58 of the 78 speeches are by Westerners speaking in English. Is this a case of author's bias? Or has the non-Western world lacked good orators through history?

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