

## If the govt can't even free people from the EPFO...

Letting people migrate to NPS that gives better returns was an easy reform, but govt hasn't even delivered on this

**GIVEN THAT NOT** too many people were expected to lose their jobs due to this—as compared to, say, privatising Air India or BSNL—nor was any expenditure by government involved, most expected that then finance minister Arun Jaitley would be able to deliver on his promise, made in the 2015 budget, of freeing people from the clutches of the Employees Provident Fund Organisation (EPFO) and the Employee State Insurance Corporation (ESIC). After Jaitley said “it has been remarked that both EPF and ESI have hostages, rather than clients”, what he promised was quite simple. In the case of the EPFO, instead of working people being forced to invest their money here, they would be allowed to migrate to NPS, which gives better returns, is more flexible, and charges smaller commissions. And, as an alternative to the ESI, employees would be free to buy any regulated insurance product.

Both the EPFO and the ESI are very expensive, so any relief would have been welcome; at lower levels of income, as the Economic Survey documented in 2016-17, over 40% of salary levels were eaten up by EPFO/ESI contributions, and this has possibly contributed to the workers' preference for informal employment. Given that, until recently, the EPFO didn't even invest in equity, it was perhaps the world's most expensive debt mutual fund; and, while its returns are higher than those offered by bank fixed deposits, they are lower than the average returns offered by the NPS, even when you don't go in for NPS schemes that invest more in equity. As for the ESI, its costs are best brought out by the fact that its payout ratios are 35-50% versus 95-100% for most medical insurance products; as a result of high annual surpluses, its reserves have ballooned to over ₹75,000 crore, and it is even building medical colleges from this!

Despite the government wanting to push these reforms, however, the trade unions—in the case of EPFO—have been able to ensure that close to five years later, Jaitley's promise remains unfulfilled. Most trade unions, reportedly, even boycotted discussions on allowing a shift to NPS. Nor is it quite clear why the unions are opposed to it; it is true that if there is a large enough shift, trade union leaders will be in charge of a smaller EPFO corpus, but given they don't earn any money from it, their opposition makes less sense. The only other explanation is that the EPFO payouts—in terms of pension promises—are too generous, and are, right now, being mostly funded from the fact that more people join the EPFO than those who retire; once this changes, the EPFO may not be able to fund such generous pensions. In the case of the ESI, the opposition is easier to understand since those that benefit from this lucrative cash cow will lose out. What is worrying, though, is that if the government can't deliver on such a simple reform, how will it deliver on the more difficult ones? Despite talking of opening up the coal sector to private miners, for instance, no mines have been allotted to commercial miners; state-owned banks keep raising employee wages without much regard to whether they are even needed in today's tech-driven banking, and the much-needed hire-and-fire and other labour reforms continue to get delayed even though, once enacted, they will result in increased employment. For those looking for sweeping reforms, the EPFO-ESI failure is symbolic of the government's timidity.

## CACP is right

Open-ended procurement must go

**IF THE VISUALS** of rotting grains over the years had not made this clear, the Commission for Agricultural Costs and Prices (CACP) has recommended that the government review (read scrap) its open-ended grain procurement policy. As of October 1, against a buffer requirement of 30.8 million tonnes (mt) of wheat and rice, the total central pool stock, including stock in transit, stood at 64.2 mt—109% more than the requirement. With paddy procurement yet to happen, this quantity will shoot up. The government has taken steps to liquidate 15 mt of stocks, but hasn't met much success here. CACP, in its latest report for rabi season, has battled for direct procurement by private players, as envisaged under the Private Procurement Stockist Scheme. While the purpose of open-ended procurement was to provide support to farmers, given the MSP hikes, this seriously weighed down the government's finances. The Centre has made the Food Corporation of India shoulder this burden. Even as the economic cost of wheat increased 31.3% between FY14 and FY19, despite a 10-15% fall in the sale of subsidised grains, with no change in selling price via ration shops, the subsidy bill doubled from ₹92,000 crore in FY14 to ₹1,71,298 crore in FY19. This is the reason why long-term debt levels for FCI stand at ₹200,000 crore, with an additional ₹80,000 crore of short-term debt.

While CACP suggestion of reviewing open-ended procurement and shifting towards private procurement to correct market inefficiencies is worth serious consideration, these measures still don't address the more significant issue. As long as the government continues with MSP as its primary tool for farm support, kindling private players' interest in procurement of grains will prove difficult since no private trader will be willing to procure grains at a price higher than the market price, which is usually the case with MSP. Apart from quality issues with grains, the MSP regime also hinders liquidation of stocks through export since it will trigger violations of WTO norms. Given how MSP benefits only a small pool of farmers from a handful of states while distorting agricultural production in favour of a few crops, the government will be meaningfully supporting farmers if it were to give per-acre support. Along with the quasi-universal basic income scheme, PM Kisan, and the insurance scheme, PM Fasal Bima Yojana, a per-acre support will mean the farmer will be able to make choices based on market requirement, rather than producing to benefit from an open-ended grain procurement policy. This will also, perhaps, mean judicious use of resources, if the choice of crop shifts from a water-intensive one to one more suited to water availability in a region; the success of Punjab's experiment with water and DBT shows how well the plan can work. While MSP guarantees that farmers grow only certain kinds of crops, and subsidies on fertiliser and electricity mean indiscriminate use of these resources, a fixed per-acre support scheme will help cut down wastage. More important, it shall also address demand-side constraints. FCI can still maintain its buffer stock, but the PDS can be disbanded, as a NITI Aayog study shows that people tend to graduate to a higher quality of grains once they are allowed freedom and flexibility to choose.

## MissingSENSE

Twitter's new policy on political ads quite odd, seems sanctimonious rather than effective

**TWITTER CEO JACK** Dorsey announced the decision to ban all political ads from the platform globally, starting November 22. Dorsey cited the challenges, such as “unchecked misleading information, and deep fakes...at increasing velocity, sophistication, and overwhelming scale,” that such ads on the internet pose to civic discourse. Claiming that “paying to increase the reach of political speech has significant ramifications that today's democratic infrastructure may not be prepared to handle,” he added that the reach of a political message “should be earned, not bought.” Twitter intends, therefore, to allow political messages from private users as long as its spread is dependent not on payments, but user engagement. While Dorsey's assertions have earned him both appreciation and flak from opposite ends of the political spectrum in the US—the debate on social media's responsibility to check the veracity of the content is all the rage in the country at the moment—the justifications offered for the move fail to hold up to close scrutiny, and, thus, make Twitter's stance seem a holier-than-thou pontification, especially in the light of Facebook's decision not to fact-check ads by politicians.

First, to claim that advertisements, political or otherwise, contribute to the spread of misinformation goes against the founding logic of advertisements—these are meant to influence. Given that paid content on Twitter is already marked as ‘promoted’, it would follow that consumer discretion is advised. Second, if the aim is to check the spread of “fake news,” why have commercial ads been left out of the purview of this decision? After all, they could spread as much, if not more, misinformation as political ads. Third, and most important, Twitter's decision to censor content raises, once again, the question of whether the social media platform is a public forum or an editorially-driven company akin to a publishing house—Dorsey's claims that this is not censorship, but selective banning of a certain category of ads is an editorial decision.



### IN PARTNERSHIP

Union defence minister Rajnath Singh

India has a long tradition of partnering with fellow nations, while pursuing our own aspirations for growth. We look forward to enrich them further through the SCO for ... development and progress

### ● DEVICES & DRUGS

IT IS IMPERATIVE TO HAVE A SEPARATE LAW AS DEVICES ARE ENGINEERING ITEMS AND NOT DRUGS. HENCE, CONTINUED ATTEMPTS TO REGULATE DEVICES AS DRUGS IS ILLOGICAL AND INCORRECT

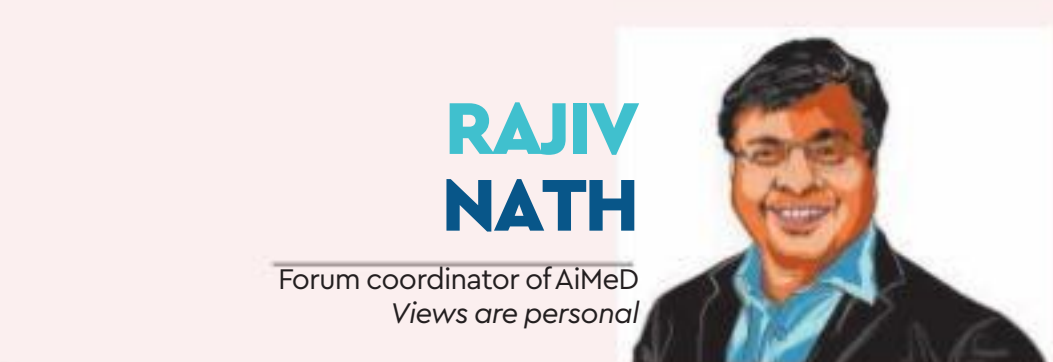
# Medical devices need their own law

**THIRTY YEARS HAVE** gone by since the first medical device was regulated as a drug. A comprehensive regulatory framework is nearly in sight with the Draft Medical Devices (Safety, Effectiveness & Innovation) Bill from NITI Aayog to be shortly proposed as a separate law.

India currently imports 80-90% of medical devices, of which the vast majority is unregulated for quality and safety. While many of these products may have regulatory certifications in other countries, the reality is that a considerable number of them are being exported from countries that do not regulate their exports. The medical devices market in India is over \$15 billion (₹105,000 crore) and projected to grow to \$50 billion by 2025, and is the fourth-largest in Asia.

Our policymakers in the health ministry were surprisingly undecided, and seemed to be in no urgency to usher in a ‘Patient Safety Medical Devices Law’ to protect patients, even after the recent ICIJ implant files or J&J incident, or the most recent ban on Trans-vaginal Pelvic Mesh by USFDA. As Ministry of Health & Family Welfare (MoH&FW) had been surprisingly very reluctant to draft a separate law, and CDSCO has a conflict of interest to empower itself, the industry watchers are waiting with anxiety the details of the draft Medical Devices Bill that NITI Aayog is reportedly working upon in consultation with other stakeholder departments and ministries to address the regulatory vacuum & the national patient safety concerns.

Devices do need to be regulated, but the two draft and two final notifications recently issued by MoH&FW on October 18, have indicated notifying all medical devices that are engineering products as ‘medicines’ under the Drugs & Cosmetics Act from December 2019, but the roadmap being defined in cover note from the under-secretary



Views are personal

does not entail migrating these to a separate ‘Medical Devices Act’ in due course (as being drafted by NITI Aayog), and seems to be an independent parallel action. This is causing huge confusions and apprehensions amongst domestic manufacturers, especially of medical electronics, as while one notification talks about a reasonable transition period of 3-4 years, another notification to regulate ultrasound equipment gives only one year, and there's no mention of a separate Act. At present, only 24 out of over 6,000 medical devices are regulated by being notified as drugs.

It is imperative to have a separate law as devices are engineering items and not medicines—an X-ray machine, by no stretch of the imagination, can be called a drug, and, so, continued attempts to regulate devices as drugs are illogical and incorrect, unless assured that it is a temporary measure. A beginning was made to correct the anomalous situation with the introduction of the Medical Device Rules in 2018. These Rules have risk-proportionate controls correlating to the risk classification of devices. Similarly, the law and penal provisions need to be risk-proportional, as you can't have the same penalty for a manufacturing failure of a pair of spectacles as for a contact lens, or for an intra-ocular lens. Patient safety is more complex with devices where the same are a shared responsibility of the manufacturer, medical practitioners, product user,

and the regulator. The Drugs Act itself needs reforms as it does not uniformly and equitably regulate quality from state-to-state in the absence of a national singular regulatory authority, and there is no point in replicating this limitation for devices too. The recent J&J episode showed the limitations of the Drugs Act, and the Drugs Controller was initially seen to be handicapped to discipline overseas manufacturers.

Medical devices have failed to attract investors to put up factories. Why? Can a competent builder from Mumbai, experienced enough to make a 90-storey building, risk starting the construction of a 70-storey one in Gurgaon if the building by-laws there don't permit construction of over 36 floors, only under hearsay that said by-laws are under amendment, or will he wait?

Similarly, medical devices manufacturers need to know the legal requirements in a predictable manner. This will attract overseas and Indian investments. Presently, investors shy away from an unpredictable, incomplete, and incorrect regulatory environment. In the absence of regulations, domestic manufacturing suffers as a surgeon is unsure of trying an unregulated device from a start-up on a live patient.

Policymakers, while needing to view devices and drugs differently, must also ensure these are of high quality, and are safe, and must consider regulating devices under the ministry of health, as is done for food. Food is not regulated under the Drugs Act or by DCGI, or the CDSCO, but has FSSAI with a chairman and CEO. While many of the manufacturers of the 24 categories of already notified devices are okay with being regulated under a familiar CDSCO, but wish it to be revamped, with a medical devices specific division and appropriately needed competent staffing, a vast majority of the manufacturers of devices that are currently not regulated prefer a separate regulatory body as reportedly envisioned in the NITI Aayog draft Bill.

The government should stick to the earlier four-step assurance given to the industry by the MoH&FW in 2016—starting with the Medical Devices Rules (MDR), initially experimenting with a few electronic devices under the MDR, the MDR to be amended as per experience gained after six months of introduction, and the simultaneous

drafting of a Medical Device Bill to be reviewed stakeholders, and passed by Parliament, and the MDR to be tweaked accordingly in order for it to migrate to an eventual Medical Devices Law.

If we are serious about placing India as a top global medical devices manufacturing hub, then one needs to understand that piecemeal reforms will not work, and continuing to attempt to regulate devices as drugs under the Drugs Act without an assurance of migrating to a separate legislation, will do more harm than good to Make in India campaign.

### LETTERS TO THE EDITOR

#### Phone surveillance

It is paradoxical and ambiguous that the Modi government has asked the social media giant, Facebook-owned Whatsapp to explain Israeli spyware breach of users' privacy, and at the same time kept a studied silence on the Israeli firm NSO Group's stated position that it does not carry out snooping programmes without authorisation from governments. The revelation that Indian human rights activists and journalists 'connected' to the Bhima Koregaon case were mainly targeted does not put the government out of the picture. It is understandable that the government denies engaging or benefiting from spyware and professes commitment to the protection of privacy of Indian citizens for public consumption. Just by raking up 'bugging incidents' during the UPA regime the government cannot wriggle out of giving a clear answer. The Congress now makes a hue and cry. But the surveillance programme launched by the UPA government in 2013 marked the beginning of tapping into citizens' e-mails and phone calls by its arms. Anyway, it is now not a question of the opposition making political capital out of the spygate, but an all-important matter of protecting the constitutionally guaranteed right to privacy. The names of the victims of snooping such as Anand Teltumbde, Seema Azad, Shalini Gera, Ashish Gupta, Shubhanshu Choudhary, Bela Bhatia, Nihalsing Rathod and Degree Prasad Chouhan who operate outside the government's orbit defending the weak and vulnerable lend added political significance to the disclosed phone surveillance. The most disturbing question is whether any false evidence was planted into their devices to implicate them in criminal cases. — G David Milton, Maruthancode

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## The world's oceans need a bailout

Oceans may seem unimportant to many, but they are an irreplaceable part of the living planet. Letting them die out of neglect and lack of coordination is not an option

### NOAH SMITH

Bloomberg



**MOST ENVIRONMENTAL PROBLEMS** are concentrated in the area where the pollution is produced. This is good, because it is a lot easier for a single city or country to deal with an environmental challenge than it is for the international community.

There are two huge exceptions to this. The first is global warming, which (as the name implies) affects everyone. The second is the world's oceans, most of which are not claimed as the territory of any nation or the property of any individual. For this reason, they suffer from what economists call the tragedy of the commons. Each actor has an incentive to consume as much of the oceans' bounty as they can, since they know that if they don't, someone else will. The inevitable result is that unless something is done, the world's seas—home to more than half of the planet's life—will be irrevocably despoiled.

The most immediate global oceanic threat comes from overfishing. As early as 2011, it was estimated that 90% of fisheries were either fully exploited or overexploited.

By some estimates, the number of fish in the oceans has declined by half since 1970. This represents a loss of biodiversity, as well as a threat to a major source of protein consumed by humans. One culprit is the subsidies that countries—most of them in East Asia—give to their fishing fleets. Beyond ending these subsidies, the main weapon against overfishing is catch shares, a cap-and-trade programme for fisheries that has been successful at restoring the health of many fisheries in the US.

Another problem is plastic. In developed countries, almost all plastic goes to landfills (which has its own environmental issues), but in some developing countries it gets littered or tossed into

open dumps, where about eight million tonnes a year makes its way into rivers and from there into the ocean.

Once in the oceans, the plastic tends to collect in huge garbage patches, where it contaminates the water and harms wildlife. Some of it eventually washes up on beaches, despoiling natural beauty.

Other threats to marine life include chemical runoff from shores and noise pollution from ships.

Then there is carbon, perhaps the biggest problem of all. Climate change is heating the oceans, destroying coral reefs and other ecosystems. But, the oceans also absorb about 30% of the carbon that humans emit. While that helps to slow down global warming, the carbon combines with water to make carbonic acid. As one might expect, the acidification tends to be bad for sea life.

From a conservation standpoint, the wholesale destruction of ocean life is an immense tragedy. But to most humans, it represents little direct threat. If most or all of the animals in the seas die, humanity can fall back on aquaculture for our sushi and salmon filets.

Meanwhile, marine pollution doesn't directly affect our daily lives like pollution of air, rivers and groundwater does. In other words, it is unsurprising that people view the oceans as a convenient dumping ground. The uncounted marine creatures that choke to death on plastic or perish in heated acidic waters remain out of sight and out of mind.

But, if we intend to be responsible

stewards of this planet, we can't let this happen. In addition to potentially causing wrenching problems on land somewhere down the line, the death of Earth's oceans would be an unforgivable moral stain upon the human species.

Stopping this, however, will require international action. Rich countries already bury most of their plastic trash, and the US has made headway in preventing overfishing. Carbon emissions, meanwhile, are a global phenomenon. Saving the oceans thus, means changing the behaviour of developing countries such as China, as well as rich East Asian countries like

Japan and Taiwan, which have less rigorous conservation standards.

The US and other countries that care about the health of the oceans can do several things to spur the biggest offenders to change. First, trade policy can be rewritten to take ocean damage into account—the US should be able to apply tariffs on goods from countries that overfish and dump plastic into the seas. Second, the US should use the UN and other international organisations to coordinate international policies and standards to save marine life. Finally, the US should use a variety of measures to help developing countries switch to carbon-free energy sources.

The oceans may seem unimportant to many, but they are an irreplaceable part of the living planet. Letting them die out of neglect and lack of coordination is not an option.

*This column does not necessarily reflect the opinion of the editorial board or Bloomberg LP and its owners*





ILLUSTRATION: ROHNIT PHORE

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OVER THE BARREL

# The future of business

The fourth industrial revolution prefaces a world of deepening distrust towards the established systems and processes of governance in politics and business. This sentiment is evident from the spate of protest movements across the world.

INDIAN BUSINESS IS in trouble. Its markets have shrunk; credit flows have choked; competition has squeezed margins, and technology has disrupted conventional business processes. *Jugaad* has limited upside potential.

What should business do? There is no catch-all answer. Every company will have to craft its own specific roadmap. But to progress down this path, all companies will have to pass common milestones. As despite the changes that have wrought the business landscape over the past 150 years or so, these milestones are the markers that confirm if a company is headed in the right direction. The answer lies, therefore, in keeping sight of these milestones even as the company twists and turns to meet specific challenges.

So what are these markers that have

remained a constant even as the business context has changed?

Let me answer this question by engaging in a historical flight of fancy.

Imagine a gathering of the business titans of the Western World in the Alpine village of Davos in January 1914. A gathering that includes people like John D Rockefeller, the richest man in the world who built the Standard Oil conglomerate by leveraging railroads and mangle code to integrate discrete economic activities into a seamless and cost-efficient supply chain, and secure economies of scale; Andrew Carnegie, who built a steel empire using innovative processes to produce the best quality steel at the lowest cost; Henry Ford, who positioned workers along the assembly line for mass production and quality control; the CEOs of the German companies Bayer and

BASF, who between them controlled almost 80% of the global trade in chemical and pharmaceutical products. Imagine these successful men leading panel discussions to review the reasons for their success. They would all emphasise the fundamentals of quality, cost control, economies of scale, innovation, leadership and principled governance.

The gathering is, of course, a flight of fancy. But the messages are not. These were the factors that allowed businessmen to master the paradigmatic changes of the first (vide steam power and telegraph) and second (vide electricity, mass production and mobility) industrial revolutions. And, that too, notwithstanding the drumbeats of conflict that resounded across the European subcontinent.

There is a French saying which translated into English reads “the more things change, the more they remain the same.” The saying can be differently interpreted, but for business it means that whilst the contours of the business landscape may change, the fundamentals for corporate success will remain constant. The business models will, however, have to be adapted to reflect this altered reality.

A cast back on the response of Indian business to the Third Industrial Revolution (vide computers and IT) suggests that most Indian businessmen lost sight of this fundamental verity. They did not appreciate the full extent of the impact of the forces of globalisation, liberalisation and IT on the business landscape and further did not alter, therefore, their “*licence raj*” business models of relationship governance and *jugaad*. They were unable, in consequence, to counter the intensified competitive pressures and lost their market ranking. A list of the top-20 Indian companies by market cap in 1990 compared to a similar list in 2019, is revealing. Few companies figure on both lists. The first list is dominated by family-promoted enterprises; the second by IT, finance and MNC majors. Many on the first list no longer even exist. This mistake should not be repeated.

The current market environment of the “Fourth Industrial revolution” (so termed by Klaus Schwab, the founder of the WEF) is very different from that of the first three industrial revolutions. It prefaces a world of “ubiquitous mobility, internet of things, artificial intelligence, gene sequencing and nano technology.” It also prefaces a world of deepening distrust towards the established systems and processes of governance in politics

and business. This sentiment is evident from the spate of protest movements across the world.

The NGO “extinction rebellion” issued a call, for instance, to the public to compel governments to act more forcefully to contain carbon emissions. Six million people, mostly young and from across the world, responded and blockaded roads and airports.

Thus, the protests in Hong Kong against the extradition orders issued by the Chinese government continue despite the strong arm tactics of the Chinese police.

Hence, the unprecedentedly large demonstrations in Santiago, Chile against the policy to hike the prices of metro tickets; violent protests in Lebanon against tax on WhatsApp messaging, and last year, the yellow vest movement in France, protesting the rise in fuel prices and cost of living.

These are just a few examples of social convulsion. One could cite many more. But the point is that there is a strong undercurrent of dissatisfaction, and public outbursts of anger are being triggered by the slightest spark. This dissatisfaction is directed not just against the government. It is also targeted against business. They too are regarded as contributors to the existing unjust social order.

The challenge for Indian business is, therefore, to create a business model that responds not only to the emergent challenges of “digital, biological and physical” breakthroughs, but also the challenge of societal anger. It is to create a model that narrows if not bridges the social trust deficit.

This is a difficult challenge, a step towards meeting it would be to redesign the CSR strategy. Currently, the bulk of CSR funds are directed towards time-bound, measurable projects like schools, health clinics, toilets, etc. These are important and impactful initiatives. They do not, however, address the root causes of social disaffection (viz social injustice, illiberalism, corruption, pollution, etc). To do so, businesses may have to allocate a higher proportion of their CSR budget towards longer term, hard to measure, livelihood and sustainability “programmes”. This will push businesses beyond their remit and competence, but that is the point. To succeed in the face of disruptive change, companies will have to discard old models, think out of the box and, yet, not lose sight of enduring fundamentals.

OECD BEPS

## A new dawn

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OECD proposes ‘Unified approach’ for taxing digital multinationals

THE ONGOING OECD project to overhaul the global tax laws (popularly referred to as OECD’s BEPS 2.0 project) witnessed an important development earlier this month when the OECD Secretariat released a public consultation document proposing a ‘Unified approach’ to achieve the stated objectives. While there are three different proposals being discussed and debated by the OECD BEPS Inclusive Framework (BEPS IF), the Unified approach incorporates elements from all three proposals and is intended to facilitate further negotiations among the 120+ member countries, with the aim of achieving a political agreement by the first half of 2020. The key aim of the proposal is to allocate more taxing rights to market/consumer jurisdictions in a way that goes beyond the existing profit/tax allocation rules, which are based on physical presence and arm’s-length principles (ALP). While countries such as the US, given their high consumption of traditional economy goods and services, have been strongly advocating that the new rules should apply to all businesses (including traditional businesses) and not be limited only to the new age businesses/business models, the Unified approach proposed intends to cover only highly digitalised business models as well as non-digitalised businesses that are consumer-facing.

The Unified approach proposes a three-tier mechanism for allocating profits to the market jurisdictions. The first step is to determine the ‘deemed’ non-routine profits of the multinational using a formulaic or fractional apportionment and allocating a portion of such non-routine profits to all market jurisdictions using suitable allocation keys (referred to as ‘Amount A’ in the proposal). The next step is to attribute a fixed remuneration for the baseline marketing or distribution functions that are performed by the multinational in the market jurisdiction (referred to as ‘Amount B’)

Net-importing countries like India, with their high consumer base, are likely to benefit from the new proposed rules

While the G-20 has welcomed these efforts, it would be interesting to see how the fine print evolves. India’s oft-repeated position has been that the new rules should be unambiguous, enabling seamless implementation, thereby providing tax certainty. In this context, the likelihood of India advocating for adoption of a straight-jacket formula, in line with the draft profit attribution rules released by India in April 2019, cannot be ruled out.

Another interesting aspect to look out for would be the fate of the ‘equalisation levy’ that was introduced by some countries, including India, as an interim measure to make digital companies pay taxes in market jurisdictions, once these new rules are formalised. While the levy is not creditable against taxes payable by multinationals in home jurisdictions and hence adds to their overall costs, it may still find preference amongst multinationals given the ease and simplicity of undertaking compliances and potentially less litigation.

Net-importing countries like India, with their high consumer base, are likely to benefit from the new proposed rules. Nevertheless, it would be important to check the impact on Indian headquartered multinationals and unicorns. Potential tax revenues foregone in this space would be an important aspect to be considered by Indian policymakers.

It is important that the new rules are forward looking, fair and relatively simple to implement. Also, as has been acknowledged by the OECD that while the Unified approach has been released for public comments, further work is required on several fronts including quantification of the profits, elimination of double taxation, and other related implementation and administrative issues.

(With contribution from Saitej R Kuchimanchi, senior tax professional, EY)

IT IS EXCELLENT that Delhi CM Arvind Kejriwal has announced that roads in the national capital would be redesigned to minimise traffic congestion (FE, Oct 18).

Kejriwal announced that in the first phase, 45km along nine roads would be redesigned, at a cost of ₹8-10 crores per km.

But, one must be aware that all “common-sensical” ideas about urban road design are wrong. Sometimes, building more bypasses and flyovers and bridges actually increases traffic congestion. This is termed the ‘Braess Paradox’.

In the 1960s, this was empirically observed in Germany and South Korea. And, it was observed in Manhattan, that sometimes, shutting down connecting roads actually speeded up traffic flows.

Dietrich Braess, a mathematician at Ruhr University in Germany, came up with an explanation in 1968 based on Game Theory, of why building connecting roads and bypasses sometimes increased average commuting times. Every commuter tries to optimise his commute in terms of transit time, cost, and convenience. But attempts at optimisation by each individual do not necessarily result in optimum solutions for the community as a whole.

In 1990, two British traffic experts, Martin JH Mogridge and David Lewis, found that as more roads were built in southern England, more traffic emerged to congest these new roads. They formulated an engineering model called the Lewis-Mogridge

## The right way

Traffic infrastructure design is a subject which should be left to experts, without interference by lay-people like politicians and bureaucrats

RAVI VS PRASAD

An alumnus of Carnegie Mellon University and IIT-Kanpur

Position, stating: “Speed gains from some new roads can disappear within weeks. Sometimes, new roads help to reduce traffic jams, but in most cases, the congestion is only shifted to another junction”.

This can be seen in the instances of the Barapulla, Dhawla Kuan flyover, the Noida DND and the NH8 (Mahipalpur-Gurugram).

In recent years, leading international traffic researchers, such as Anthony Downs, John Michael Thomson, Arthur Cecil Pigou, and Frank Knight, found that: “Improvements in the road network can make congestion worse if the improvements make public transport more inconvenient.... The equilibrium speed of car traffic on a road network is determined by the average door-to-door speed of equivalent

journeys taken by public transport...”

In Indian cities, this means that the equilibrium speed across the city is determined by the time it would take to complete the identical route door to door using public transport solely.

Google maps and Twitter updates and broadcasts of traffic conditions on FM Radio often make traffic congestion worse.

Similar to Parkinson’s Law in Management, that work expands to fill the time available for its completion, Anthony Downs formulated the “Iron Law of Traffic Congestion”, that “traffic expands to meet the road space available”. This was observed in Australia and New Zealand.

But heavy dependence on public transport alone can be counterproductive, as



has been observed in Japan, where commuter trains are overcrowded, while roads are empty. In Delhi, bottlenecks are starting to develop around the metro stations, especially the parking lots.

It is excellent that the Kejriwal government and Uber have together recognised that there needs to be an integrated transport policy combining public and private transport in an optimum manner, and that the bottlenecks are often in the “Last Mile”. The Public Transport option on the Uber app will display the fastest and cheapest routes.

In fact, insights into avoiding traffic congestion can come from studying ants. Scientists at the University of Toulouse and the University of Arizona and Uni-

versity of Adelaide found: “Traffic jams are ubiquitous in human society where individuals are pursuing their own personal objectives... That’s one reason why just widening highways doesn’t reduce human traffic congestion—there’s an inherent conflict of interest between what benefits us personally and what benefits us collectively, so the result is 30% longer commute times...”

Studying movements of vehicles and humans walking and ants across bridges, the researchers concluded: When humans are walking or driving, the flow of traffic usually begins to slow when the bridge occupancy reaches 40%. Ants, on the other hand, show no signs of slowing, even when the bridge occupancy reached 80%. Indi-

vidual ants quickly adjusted their behaviour in a manner designed to benefit all the ants as a whole.

There is a very delicate mathematically-determined balance between public transport and private transport. Blindly building more connecting roads, bypasses, and flyovers in the naïve belief that these will ease traffic congestion, only serves to make a few selected contractors very rich.

Actual traffic patterns in Indian conditions need to be measured accurately, and then proposed roads, metro routes, and bus routes need to be carefully modelled and simulated on supercomputers, before these roads and flyovers are actually built or remodelled.

The very same solution which might be brilliantly successful along the Ring Road from AIIMS to Ashram (included in Kejriwal’s first phase) might turn out to be a total disaster along the Ring Road stretch from Naraina to Pitampura. The terrible experience of the BRT in South Delhi ought to serve as a warning.

Traffic infrastructure design is a subject which should be left to experts, without interference by lay-people like politicians and bureaucrats. The expertise to perform such modelling exists in the Indian Institutes of Technology and some institutes specialising in urban planning. Contractors keep exerting pressure to build more flyovers and add buses, which might not necessarily ease traffic congestion, as might be naively believed by the public.