Breakthrough in dealing with snakebite

The sequencing of the genome of the Indian cobra could soon lead to improvements in the techniques used for producing anti-venom

TECH-ENABLED

DEVANGSHU DATTA

A group of 42 scientists, led by Somasekar Seshagiri, of the SciGenome Research Foundation, Bengaluru, have sequenced the genome of the Indian cobra, Naja naja. This could soon lead to improvements in the techniques used for producing anti-venom and it might lead to the creation of a broad spectrum anti-venom effective against multiple types of snake venom.

Snakebite causes 46,000 deaths a year in India and another 55,000-odd deaths elsewhere in the world. Perhaps another 500,000 people suffer pain, incapacitation and paralysis, and amputations. In India, the vast majority of bites are inflicted by the "big four" — the common krait, the cobra, the sawscaled viper and the Russell's viper. However, there are over 60 different venomous species in India.

Snake venom is a cocktail of proteins and peptides, secreted by venom glands. Venom components can be broadly classified as neurotoxic, cytotoxic, cardiotoxic or haemotoxic, and the composition varies both between, and within species. Neuro-venoms cause paralysis, cyto venoms break up cells, while cardio venoms can stop the heart. Haemo-venoms can also lead to asphyxiation, by combining with oxygen in the blood.

Anti-venom production is a difficult, laborious and expensive process and low volume in nature. First, the snake is "milked" by persuading it to bite meat suspended over collection jars. Then the venom is collected and small, non-lethal quantities injected into a horse. The horse fights off the effects by generating antibodies. Then, the anti venom is created by processing the horse's blood. This creates an anti-venom specific to the snake and that anti venom will also contain other antibodies specific to equine diseases. These are not only irrelevant for humans; they can trigger severe allergic reactions.

Broad spectrum anti-venom can be produced by combining several of these anti-venoms but it remains a hit or miss process where the venom may not work except on a very few specific snakes. This process was first used in the 1890s, and modern methods remain practically the same. One roadblock is the lack of venom in sufficient volumes to enable research.

The new paper in *Nature Genetics* (*https://www.nature.com/articles/s41588-019-0559-8*) claims to have decoded 95 per cent of the Naja naja genome across its 38 chromosomes, with a focus on the genome of the venom glands. The team used the gene expression data from as many as 14 different cobra tissues.

The paper says, "12,346 venom-gland-expressed genes constitute the 'venom-ome' and this includes 139 genes from 33 toxin families. Among the 139 toxin genes were 19 'venom-ome-specific toxins' (VSTs) that showed venom-gland-specific expression, and these probably encode the minimal core venom effector proteins." This was an especially tricky process. The researchers had to figure out which genes were expressed only in the venom glands to narrow down the search for key genes.

This group of 139 genes from 33 toxin families, and the 19 genes among this group specific to the cobra, are the most important when it comes to understanding venom creation, and in the production of anti venom. If these are synthesised, they could be used to, first, produce synthetic venom in large quantities and then, to create synthetic anti venom. Such a synthetic anti venom would also not contain equine antibodies that cause allergic reactions.

Recombinant DNA techniques that combine genetic material from several sources could help in synthesis. The genetic sequence for each of the toxins would be inserted into yeast or E. coli bacterium, to multiply and generate large quantities of isolated toxins. Then the individual toxins could be made to interact with human antibodies to see which ones are effective. Then this could be done with compounds of toxins etc.

This process is fiddly and laborious but it should eventually result in better anti venom, and broad spectrum anti venoms once other snake genomes are mapped. It should also lead to the development of modern lab processes, which can be scaled for volume without involving horses. While this will be expensive, WHO is targeting the halving of snakebite fatalities by 2030. So the money could be available.

The abstract also points out "the genome could serve as a reference for snake genomes, support evolutionary studies and enable venom-driven drug discovery". The methods used to identify venom-one specific genes could be deployed in decoding genomes of other snakes. The effects of snake venom are not well understood but there are several drugs made from active ingredients in venom. These are helpful in controlling blood pressure, breaking up clots etc. So this paper marks a major advance in the battle against "snakebite envenoming" which WHO now classifies as a neglected tropical disease.

CHINESE WHISPERS

Trainer Priyanka

After hitting the dusty trail to revive the comatose Congress, Priyanka Gandhi Vadra (*pictured*), general secretary in charge of Uttar Pradesh, is set to don the mantle of a political trainer. Vadra will preside over a training programme for party leaders. The four-day training camp will be held at the Gandhi pocket borough of Rae Bareli from January 16 to 19 with two days each dedicated for the Congress' district and city presidents from Eastern and Western UP, respectively. These camps aim at preparing the local party leaders to highlight burning issues like the Citizenship Amendment Act (CAA) effectively among the people and garner support ahead of the forthcoming polls in the state. The first phase of the programme was organised in November last year.

Thanks to no thanks

In an unexpected gesture, the Delhi Police, which usually devise ways to block protests, offered a pick-and-drop service to Jawaharlal Nehru University (JNU) students for their protest march from Mandi House to the Shastri Bhawan this past week. The Central Delhi building houses the human resource development ministry. First, the police picked up students in multiple buses from JNU and dropped them till the protest assembling point. However, things returned to square one later in the evening, when the police beat up and detained students when they decided to march till the Rashtrapati Bhawan. But this time, the disgruntled students refused to take the police bus, which was stationed at Connaught Place, to go back to JNU.

Emotional plea

The promoter of one of India's oldest renewable energy companies and one that has landed in insolvency troubles petitioned the Prime Minister's Office (PMO) to assist him in a unique fashion, say sources. He is believed to have told the PMO that many promoters whose companies recently landed in trouble had fled the country and abandoned their companies to ill-fate. But he said as he did not have any personal asset and his company being his only investment, he would not run away. He is also learnt to have said that he would go down with his company but would not flee. This uneasy assurance, however, is veiled in a warning that he might be forced to take an extreme step if banks do not assist him. The pleas have had some impact; banks are trying to salvage the company, latest reports said.

Accept or not, privatisation is on

The writing on the wall says privatisation of banking is inevitable; how it is done is a matter of academic interest

BANKER'S TRUST

TAMAL BANDYOPADHYAY

Sometime in March 2018, Nandan Nilekani, co-founder and chairman of Infosys Ltd and founding chairman of the Unique Identification Authority of India (Aadhaar), had said the pace at which public sector banks (PSBs) were losing business had increased and that 10 years from now, they would hold 10 per cent market share.

Around the same time, Uday Kotak, executive vice-chairman and managing director of Kotak Mahindra Bank Ltd, had said that private sector banks' market share would go up significantly and equal that of public sector banks in the next five years. "The 70-30 ratio of public and private banks will move to a 50-50 ratio in the next five years," Kotak had said.

Nilekani expected the PSBs' market share to fall to 63 per cent by 2025. Pegging the pace at which the public sector banks have been losing their market share at 4 percentage points a year, he had said that in 10 years, this share would be very small and may eventually be reduced to something like 10 per cent.

In private, many public sector bankers at that time had called Nilekani a Cassandra while a few private bankers had dubbed him a soothsayer. But it seems that Nilekani got it wrong. The pace at which PSBs have been losing market share is even faster than what he had anticipated.

Let us look at the figures of advances, deposits and total assets in the banking system. To avoid reference to too many data points, I am clubbing private and foreign banks into one group as the idea is to find out how the market share of government-owned banks is shrinking. In the 1990s, before the Reserve Bank of India (RBI) gave licences to the first set of private banks to open shop, the PSBs had 90 per cent share of the banking market. In 2000, their share was a little over 80 per cent. By 2014, they held around three-fourths of the market share in deposits, advances and total assets.

There has been a dramatic slide in the past five years. This set of banks had 75.74 per cent share of advances of the banking industry in 2014. It dropped to 74.12 per cent in 2015 and by 2019, it was 61 per cent. This is about stock; if we analyse the incremental advances or the growth in advances every year, the PSBs' share is falling at a sharper pace. It was 73.45 per cent in 2014 and dropped to 23.75 per cent in 2019.

In sync with this, the government-owned banks' share in the overall assets has been sliding — from 72.6 per cent in 2014 to 61.22 per cent in 2019. Here, the fall in the incremental market share will look unreal for someone not familiar with the industry — from 72.6 per cent in 2014 to 9.51 per cent in 2019.

What about the pie of deposits? In 2014, PSBs had 77.2 per cent share of the banking industry's deposit portfolio. This has been progressively coming down. In 2019, it was 65.85 per cent. Despite enjoying an implicit sovereign guarantee, PSBs have not been able to compete with private banks to garner deposits. In 2014, 76.42 per cent of the incremental deposits flowed into the public sector banking industry; in 2019, it was 20.48 per cent.

The latest RBI publication on trends and progress in Indian banking says private banks have attracted 77 per cent of the incremental term deposits. The reason attributed to this is higher interest rates offered by them. This could be one reason. The other, and probably the more plausible, explanation could be that most public sector banks are suffering from an existential crisis in the new banking world, disrupted by technology. Large private banks such as HDFC Bank Ltd, ICICI Bank Ltd, Axis Bank Ltd are not offering higher interest rates to woo the depositors but, armed with technology, they are offering personalised and structured liability products, scoring over their counterparts in the public sector. State Bank of India and Bank of Baroda are the possible exceptions among PSBs. They are changing their ways of customer connect, using technology, but most others are watching the erosion in market share helplessly.

Similar helplessness by state-owned enterprises is seen in the telecom and aviation sectors. In the life insurance industry, Life Insurance Corporation of India (LIC) is putting up a brave fight but private entities are grabbing the incremental market share at a fast pace. In the past five years, their share in new business premium has been rising at a 20 per cent compounded annual growth rate, double that of LIC. For the so-called weighted received premium (WRP), the first year's premium and 10 per cent of single premiums, the private life insurers have outperformed LIC in the past four years. Between 2014 and 2019, their market share in individual WRP has grown from 38 per cent to 58 per cent.

Between 1993 and 2014, India got 14 new banks (not all of them survived). Since then, two universal banks, 10 small finance banks and a few payments banks have come up. They have contributed to the fall in the market share of PSBs. However, the real reason behind the sudden drop in businesses since 2015 has been the Indian banking regulator's massive clean-up drive. The surge in bad loans is forcing banks to provide more for such loans, leading to losses and they do not have enough capital for a healthy balance sheet growth.

The stock market is aware of this story. The share of PSBs in the ₹24.5 trillion market capitalisation of the Indian banking industry is 22.31 per cent. Three private banks individually have more market capitalisation than the country's largest lender, which is holding on to roughly 20 per cent market share in assets.

One may call this phenomenon privatisation by stealth. Nilekani had pitched for the privatisation of PSBs before their value is eroded by "creeping privatisation". The options before us are clear: We may keep our eyes closed and allow creeping privatisation or bite the bullet and draw up plans for privatisation. If that is done now, the sale of the government stake will fetch money; a delay will see erosion in whatever value is left in these banks. Either way, privatisation is inevitable —how it is done is of academic interest.

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INSIGHT

Because it's your money, not mine

The next time you invest with a fund house do inquire if the portfolio manager has skin in the game

JIGAR MISTRY

In his book *Skin in the Game*, Nassim Taleb writes, "Don't tell me what you think, just tell me what's in your portfolio." To me, these words ring truer today than any time in the past few years.

As 2020 starts on a tentative note under the cloud of geopolitical uncertainties, it is not very surprising how the double-digit index returns in 2019 has failed to bring wide-spread cheer. Over CY2018-19, the top-5 companies in the BSE500 Index have cumulatively returned 57 per cent (not annualised) and the bottom 200 companies have almost halved. That fact that a select few in the index have completely polarised the market performance is not new (many commentators have written about it); what, however, is new is how such a performance has impacted the behaviour of many market participants and how the absence of skin in the game (to borrow from Taleb) is accentuating the problem.

The reasons the past two years were unique (previous market rallies were not this concentrated) could be many, including that a large part of the $14 billion foreign investment in India could have been passively managed; they simply bought what was part of the index they tracked.

The circle initially starts with a decent premise — "a good business, run by competent management, is a good investment, if it is offered at a decent price". In years where there is a flight to safety, it's indeed a great investment strategy. Many active fund managers start buying into the theme. More people believing in this theory results in higher market capitalisation, which in turn leads to inclusion in several indices tracked by large passive funds.

Now passive funds command a larger share of incremental investments and their investment catapults the stock even higher. So far so good. The problem starts when active fund managers daftly tweak their investment strategy ever so slightly to "a good business, run by a competitive management, is a good investment at any price ."

This modified investment strategy seems to be in vogue these days. The problem is, historical evidence is completely to the contrary. If one compares the rolling 10-years' returns (for the past seven years) of BSE Sensex, BSE Midcap and BSE Smallcap, the difference in annualised returns is under two percentage points, which essentially implies that the returns mean revert. A large underperformance of one index is made good over the long term; the only debate is, when.

And yet, many asset management companies choose to launch new funds based on an investment strategy that is "in vogue" and many asset managers choose to keep investing based on the strategy that has been profitable over the recent past. To some extent, the "recency bias" (one where a person easily remembers something that has happened recently compared to something that may have occurred a while ago) can be blamed for such behaviour.

To a great extent, however, I would pin the blame on the lack of investment mangers' skin in the game. The way the investment industry is currently structured, the management company either gets a fixed fee for managing assets (regardless of investors generating a positive or negative return) or they get a carry (large upside if positive returns are generated, no downside in case of negative returns). This, to me, is tantamount to investors writing a free option to their investment managers, which in turn, promotes large scale risk-taking.

It brings back memories of the peak of the mid-cap mania as recently as in 2017. Investment managers kept adding small- and mid-cap companies to investors' portfolios until those indices tanked in 2018, by which time, investors had lost half their investments and investment managers recorded "zero" fees for that particular year. Then comes a new investment style, and we begin all over again.

I believe, the solution to this problem is mandating investment managers to park a large part of their liquid equity investments in the funds they run. The idea behind skin in the game is primarily about symmetry — if you stand to gain from the upside, you should be compelled to pay for the downside as well. If people with fiduciary responsibilities (like a portfolio manager) had skin in the game, they would behave more rationally, rather than just going with the flow. Skin in the game makes boring activities less boring, like checking the safety door of the aircraft which is about to fly with you as a passenger.

Let me end it by quoting Taleb again: "If your private life conflicts with your intellectual opinion, it cancels your intellectual ideas, not your private life." The next time you invest with a fund house do inquire if the portfolio manager's skin is in the game.

The author is a co-founder of Buoyant Capital; tweets @BuoyantCap

LETTERS

Mamata's game plan

As a major face of the Opposition protests against the Citizenship Amendment Act (CAA), the decision of West Bengal Chief minister Mamata Banerjee (*pictured*) to skip the meeting convened by Congress President Sonia Gandhi on January 13 to discuss the Opposition's future strategy is unfortunate. However, one cannot rush to conclude it as a major crack within the ranks of the Opposition. Since the compulsion of state politics is at times at variance with the national narrative, the moves of Banerjee, who had hitherto positioned herself as a relentless crusader against the CAA, needs to be interpreted as her wider political strategy of not allowing her major political opponents -- the Left and the Congress -- to capture the anti-BJP space in her home state.

Building a united front against the CAA and other controversial decisions of the BJP-led government by itself is a big challenge considering the discernible wider state-level contradictions and the reality of regional parties prioritising their local electoral interests over larger ideological concerns. Overcoming this inherent challenge in forging a united front at the national level requires a pragmatic approach from all the major Opposition players..

M Jeyaram Tamil Nadu

Some respite... at last

The Supreme Court's verdict on the prolonged internet and communication blackout and the indefinite restrictions on movement imposed under Section 144 of the Code of Criminal Procedure came as a whiff of fresh air. It marked a welcome deviation from the pattern of a slew of judgments delivered in recent days. It is sure to restore some of the lost credibility to the country's top court. It was proof that left to itself, the apex court is capable of pronouncing fair, impeccable and stellar judgments.

Implicit in the present verdict are the paramountcy of civil liberties and the precedence they should get over political exigencies. The suspension of internet impacted the role of media in the dissemination of information. In any case, the verdict will bring some reprieve to the residents of Kashmir whose day-to-day life suffered due to the internet shutdown and the imposition of curfew. The alienation of the Muslim majority valley still remains to be addressed; it can be addressed only by fulfilling their legitimate aspirations.

G David Milton Tamil Nadu

Avoid reckless lending

This is further to your editorial "Opening up mining" (December 10). Global free market economies demand open competition rather than excess restriction in commodity movement. Despite the change in the government's policy stance from protection to market competition some of the activities — in this case mining — is still bound by trade restrictions with limited market exposure. There is a slowdown in the economy and it can be put back on track only when market movement is stimulated and made competitive. Importing commodities that are already available in surplus is akin to wasteful expenditure. In this context, the introduction of "no end use" in the mining sector will encourage foreign investment and partially dissuade foreign investors from leaving the country. It will, in turn, promote product quality.

Nevertheless, the government's authority should not be totally compromised. For this, a stance of aggression mixed with caution has to be pursued. Additionally, the growth in non-performing assets in public sector banks should not be considered a deterrent in financing mining activity. But stress thus should be laid on meaningful rather than reckless lending.

C Gopinath Nair Kerala

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HAMBONE

Business Standard
Volume XXIV Number 107
MUMBAI | MONDAY, 13 JANUARY 2020

Net freedom

SC constraints on govt actions are welcome

In a major pronouncement, the Supreme Court has declared that any action by an official of the state that shuts down the internet in any part of India must be temporary, and adhere to the doctrine of proportionality. In Anuradha Bhasin vs Union of India, the apex court last week noted that freedom of speech and the right to carry on trade or business were provided protection by Article 19(1) of the Constitution, and that the internet was a crucial method by which these rights were exercised. In the past, the Kerala High Court had also declared that access to the internet was necessary to exercise the right to education and the right to privacy. In other words, there is now ample judicial precedent to indicate that cutting off access to the internet is effectively prohibiting the exercise of fundamental rights and, therefore, is subject to the same stringent limits of state power. In India, such rights are not absolute, but can only be curtailed within strict constitutional parameters.

The context for the court's action is the months-long shutdown by the state of telecommunications networks in Kashmir, particularly access to the mobile internet. This has effectively rendered the erstwhile state incommunicado, cutting off individuals from their livelihoods and family members from each other. This shutdown followed the revocation of Article 370 and the bifurcation of the state, which happened alongside the detention of a large number of mainstream political leaders. The court has, unfortunately, not acted speedily enough to address the Union government's actions in Kashmir, and even now it has not given full relief to the people of the Valley, who have been denied their rights since August 4 of last year. However, it has at least opened the door for a review of this specific shutdown and made future shutdowns more difficult. It has also said that the competent authority under the 2017 IT Rules is the Union home secretary and, thus, unless confirmed by this authority any orders for a shutdown will cease to apply in 24 hours. The court's views are welcome because there have been multiple internet shutdowns in various parts of India, and the number and duration of these have been growing. India is among the jurisdictions with the highest number of such shutdowns, according to international researchers.

Unfortunately, local authorities have decided that part of their powers under Section 144 of the Criminal Procedure Code is the ability to turn off the mobile internet in their areas. In many places, questions about the reasoning behind this decision have been brushed off with the standard "national security" or "law and order" argument. The court has said that challenges to shutdowns have suffered because the authorities have failed to provide proper transparency regarding those decisions. This has meant that the test of proportionality is impossible to apply, which is a violation of the Indians' fundamental rights. It has thus ordered that their reasoning be made public, be subject to proper review, and be re-examined every seven days. The court could perhaps have gone further and ensured the review committee, as in many other democracies, is composed of members of other branches of government and not just bureaucrats representing the executive.

Brexit: Miles to go

The harder part of the negotiations begins

The global media's obsession with a crisis in that redundant and dysfunctional institution called the British royal family has obscured a far more consequential development for that country and the future of Europe. On the day the headlines reverberated with two marginal royals declaring independence from the House of Windsor, the newly elected House of Commons approved, almost unnoticed, Boris Johnson's version of the Brexit withdrawal deal. Bar unanticipated objections from the House of Lords, the United Kingdom will leave the European Union (EU) on January 31. Now, the more challenging part of the negotiations begins — the nitty gritty of the UK's future relationship with the EU. Apart from new trade arrangements, these talks will include agreements on security and data sharing; aviation standards; supplies of electricity; and regulation of medicines. Under the timetable, all of this has to be agreed upon by December 31. In February, EU ministers will meet in Brussels to agree to a negotiating agenda, implying that EU-UK talks will begin early March. In June, another summit is expected to decide to finalise the new trade relationship by 2020-end and November is the last possible date for this agreement. Considering that it has taken three and a half years and two governments just to get an agreement on the terms on which the EU and UK will part, a nine-month timetable to finalise a far more consequential deal looks unrealistic. Given the implications for its own future, the EU is unlikely to be inclined to hasten matters either.

During this transition period, the UK will exist in limbo: EU laws will continue to apply to the UK; citizens and businesses will experience no change; the UK will lose its voting rights in Brussels but will be free to negotiate trade deals with other countries. This is hardly helpful for businesses. According to Bloomberg Economics, Brexit has cost the UK $170 billion and economic growth has halved to 1 per cent. Continuing uncertainty is unlikely to reverse this trend, especially with global growth expected to stay sluggish. Accelerating the economy is not the only issue confronting Prime Minister Boris Johnson as he gets down to governing after securing a commanding 80-seat majority in Parliament. Stiff political challenges too lie ahead, not least of which is ensuring the unity of the UK.

If the negotiations with the EU are postponed past the December 31 deadline — and the rules allow only one postponement — the UK will see for the first time in centuries a border between Britain and Northern Ireland, which will remain in the EU regulatory system just like its southern neighbour, the Republic of Ireland. Apart from the complex procedures and paperwork this will entail for corporations with operations in both Northern Ireland and the rest of the UK, the withdrawal deal offers encouragement to long dormant impulses for Irish union — which, ironically, UK entry into the EU had suppressed. The centrifugal forces are already in evidence, especially in Scotland, a staunch Remainer bloc, where a nationalist party made major gains in December's elections. The prospects of multiple independence referendums in both these territories remain high, therefore, unless Mr Johnson is able to achieve a deal on time and to everyone's satisfaction. The stakes for the UK just got immeasurably higher.

ILLUSTRATION: AJAY MOHANTY

Worry about the trend, not the cycle

Our institutional capacity to support trend growth has not stayed the pace

SNAKES & LADDERS

AJAY SHAH

It is useful to decompose macroeconomic outcomes into long-term trends vs. short-term business cycle fluctuations. In the Indian story, there was a decline in trend growth in about 2011-12. Layered on top of this, we have had a decline in business cycle conditions. These two phenomena are playing out together today. The conventional tools of macroeconomic policy are feeble in India, in the best of times, and cannot make a difference to the decline in trend growth. The most important question in Indian economics is that of understanding, and reversing, the decline in trend growth.

Gross Domestic Product (GDP) measurement in India has many problems. We can learn a lot from firm data. The CMIE database now sees about 50,000 firms, and this portrays a good slice of the modern sector. We focus on the most important component of the economy, the private non-financial firms. There was a period of high trend growth from 1990-91 to 2011-12, and after that the trend growth rate went down.

Let's start at sales growth. For the period from 1990-91 to 2011-12, sales growth averaged 16.4 per cent (nominal) per year. In the following seven years, growth dropped to 10.5 per cent (nominal) per year. Turning to investment, the good measure is the percentage growth of net fixed assets. This had an average growth rate of 17.4 per cent (nominal) for the period from 1990-91 to 2011-12, and a lower growth rate of 10.3 per cent (nominal) in the following seven years. This is an important change in trend growth.

Layered on top of long-term trend growth is the phenomenon of business cycle fluctuations. These are short booms and busts, the perennial cycle of fluctuations of inventory-investment-profitability that blow through the firms. Our here-and-now problem is the decline in business cycle conditions that began in late 2018.

Business cycle fluctuations can be tamed to some extent through traditional tools of macroeconomic policy, i.e. fiscal and monetary policy. Many of us are brought up on international textbooks of macroeconomics, and we tend to jump to the conclusion that the tools of macro policy are available and effective in fighting business cycle fluctuations.

However, in the Indian situation, we should be more limited in our aspirations. In India, fiscal policy is not organised in a way that helps in stabilisation. With the emergence of inflation targeting in 2015, for the first time, monetary policy has started becoming useful in business cycle stabilisation. When the Reserve Bank of India (RBI) pursues the objective of a 4 per cent CPI (consumer price index) inflation rate, this will, in and of itself, generate increases and decreases of the policy rate in a way that counteracts business cycle fluctuations. At the same time, we have an underdeveloped financial system, so the RBI's potency is limited.

We should do inflation-targeting right, but we should know that its potency in India is limited, and we should know that fiscal policy in India is not participating in macroeconomic stabilisation. As a consequence, stabilisation through macro policy, as it happens in textbooks, does not particularly happen in India. We need not despair. The nice thing about every business cycle downturn is that left to itself, it will heal. The long history of business cycle fluctuations in India is reassuring in this respect; downturns of the past healed even though macro policy was ineffective and confused.

The bigger problem that we should worry about is the decline in trend growth. The most important question in Indian economics is: Why did we get high trend growth from 1990 to 2011? Why did trend growth go down after 2011? To the extent that we are able to understand this problem, and change course based on a sound intellectual understanding, this could be rather important.

In this, we should resist simplistic notions of cause and effect. There is the danger of giving credit to the July 1991 Budget speech for the boom that began in 1990-91, and there is the danger of burdening Pranab Mukherjee for the end of this boom in 2011-12. But social phenomena of this scale resist simple explanations. Changes in trend growth come about through the cumulation of historical forces and human actions over many years.

The foundations of the 1991-2011 boom were laid, in many ways, from the change in course of economic policy, away from Indian socialism, which began in 1977, when the Janata Party took charge. A large number of actions took place from 1977 to 1991, and the July 1991 Budget speech was the final trigger for the dramatic change in trend growth.

In similar fashion, the end of this growth episode did not happen through actions in 2011-12. Once Indian GDP enlarged greatly, the institutions were inadequate in dealing with a bigger and more complex economy. A sophisticated private economy requires capabilities in the criminal justice system, dispute resolution, the judiciary, economic regulation, and the tax system. It requires an ethos of public policy that is defined around economic freedom and political freedom. However, we limped to a $2-trillion GDP in 2014, holding an institutional capacity that was frankly designed for the $0.2 trillion GDP of 1982.

Over the years, the mismatch between the requirements of the private sector versus the capabilities of the institutions got steadily worse. This growing mismatch added up to the demise of that growth episode in 2011-12.

There was a tension between hope and experience in the eyes of private persons through this growth episode. There were many, many infirmities in the working of the institutions in that period. Private persons were, however, willing to suspend their disbelief, and were caught up with the idea that while things are bad today, they are moving in the right direction, and occasionally when the government springs a disaster, there will be recourse and problems will be solved. This package of beliefs added up to the decision to commit to India, to build a business in India, to invest financial capital in India. What changed by 2011-12 was the loss of this optimism.

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Migration is the issue here

DOWN TO EARTH

SUNITA NARAIN

It is not possible to be neutral in these times. I believe the Citizenship (Amendment) Act (CAA), 2019, which fast-tracks Indian citizenship to immigrants of certain religions, is deeply flawed. Not only is it against the secular nature of the country, it completely misses addressing the massive issue of human migration. Migration is not just about foreigners entering India illegally; not even just about Indians immigrating — often illegally. It is also about internal migration.

When people move to cities and countries, there is tension between "insiders" and "outsiders". We need a response to this. The CAA takes all this and makes it into a simple issue of providing citizenship based on religion to fix the historical injustice of partition — creation of India and Pakistan and Bangladesh on the basis of religion. It is selective, parochial, and unjust. Worse, it will divide us along "insider" and "outsider" lines and spread hatred. The question is: When will this end? Or will it only grow and spread like cancer?

It should not surprise anyone that in Assam — where more of these people are expected to gain citizenship in the immediate future — the anger is not about the selective nature of the CAA. In Assam, people do not want outsiders — Hindu, Muslim, or Jain — because they will take away their lands and their livelihoods, and threaten their cultural identity. Their fight is for their already scarce and contested resources. But it is also about their identity. This is where the issue becomes so complex.

The fact is immigrants are already defining politics in most parts of the world. In Europe, there is the image of the invasion of hordes of "boat people"; in the US, President Donald Trump has made the "wall" his mission to keep out outsiders. In these insecure times, such anger and fear are growing and fuelling hateful, polarised politics.

And this, when, according to the World Migration Report 2020 — published by the Geneva-based International Organization for Migration (IOM) — only some 3.5 per cent of the world's population migrated from one country to another in 2019. But this is growing faster than anticipated. This is because in the past two years, the report notes, there have been major migration and displacement events. The violent conflict from Syria to South Sudan has driven people out of their countries, looking for refuge and safety. Then there is extreme violence or there is severe economic and political instability, and now there is the added push because climate change is increasing natural disasters and forcing people to leave their homes permanently.

All this means that 272 million people globally joined the ranks of international migrants, two-thirds of whom were migrant labourers.

According to this assessment, India has the world's largest number of migrants living abroad — some 17.5 million. The IOM does not account for internal migration. Add this and you know Indians are moving from village to city and to a new country only for work and livelihood. People are leaving because there is no option or they want more options. In June last year, when six-year-old Gurupreet Kaur died of heat stroke and dehydration in the Arizona desert, her parents left Punjab and were making their way as illegal migrants to the US. There is no war in Punjab that would drive them to take this extreme step. But Gurupreet's parents told the media they were "desperate" — they wanted a better life for themselves and for their children.

Now with climate change, the number of distressed and displaced will increase. The IOM classifies this migration as "new displacement" — over 60 per cent of these were triggered by weather-related disasters — from storms to floods and droughts. In the Horn of Africa, there were close to 800,000 people displaced by drought. In 2018, the Philippines had the largest number of new disaster displacement — intensification of tropical cyclones.

And remember, climate-change impacts are the tipping points as the poor are already living on the margins. Increased inequality is adding to stress; rural economies are dying. Weather-related events will drive people to the point of no return — they will join the hordes of migrants. We know this from the number of illegal settlements in our cities today.

So, what then should be done? First, it is clear that we need strategies to build local economies so that people do not have to leave. In the famine of the 1970s in Maharashtra, a unique but forgotten man, V S Page, came up with an employment-guarantee scheme. Professionals in Mumbai paid a tax to provide a floor to poverty in rural areas. Surely, we can do much more today.

But secondly, and most importantly, we must not build a divisive agenda on migration. There will be no end once we start counting the outsider. The fact is that the same World Migration Report points out that in 2019, India received roughly $80 billion as foreign remittance — the highest in the world. This is what we need to remember. Not numbers, but people.

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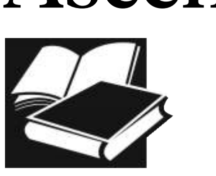
Ascent of a techno-sceptic



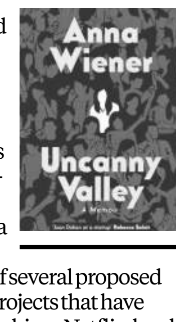
BOOK REVIEW

LAUREN OYLER

At first, I didn't understand why I was asked to review *Uncanny Valley*, Anna Wiener's memoir about working for Bay Area start-ups in the 2010s. Ms Wiener reports on technology for *The New Yorker*; I've only written about technology to say that I think social media is very bad. I'm much more interested in metafiction than metadata, not least because I'm confident I can explain what metafiction is.

But when I started reading, I realised that former liberal arts majors who halfheartedly resist the app-enabled future are the intended audience for this book. Ms Wiener was, and maybe still is, one of us; far from seeking to disabuse civic-minded techno-sceptics of our views, she is here to fill out our worst-case scenarios with shrewd insight and literary detail. It isn't that those of us with skill sets as soft as our hearts don't need to know what's going on in "the ecosystem," as those "high on the fumes of world-historical potential" call Silicon Valley. It's more that everything over there is as absurdly wrong as we imagine. "Tone = DOOM," I wrote in the margins, and that was before an up-and-coming CEO introduces Ms Wiener, a new hire, to his favourite dictatorially motivational phrase: "Down for the Cause" (DFTC).

Is it weird that a CEO can be considered up-and-coming? Yes, but of course everything about the new nearly normal is weird, and Ms Wiener is a droll yet gentle guide. *Uncanny Valley* begins across the country, where 25-year-old Ms Wiener is a low-paid assistant at a small New York literary agency, "oblivious to Silicon Valley, and contentedly so." "I did not know that it was nearly impossible to use the internet at all without enriching the online superstore or its founder," she writes. "I only knew that I was expected to loathe both, and I did — loudly, at any opportunity, and with righteous indignation."



UNCANNY VALLEY
A Memoir
Author: Anna Wiener
Publisher: MCD/Farrar, Straus & Giroux
Price: $27

She comes across an article about an e-reading start-up promising "to bring a revolution to book publishing" — one of several proposed "Netflix for books" projects that have thankfully failed to achieve Netflix-level success. Despite suspecting "a lot of fine print," she finds herself intrigued as much by the possibility of a not-so-bleak future for the publishing industry as by the prospect of making more than $30,000 a year (no benefits). After a "series of ambiguous and casual interviews," she accepts a three-month trial position, to the consternation of her publishing friends, who see the e-book start-up as the enemy.

Ms Wiener frequently emphasises that, at the time, she didn't realise all these buoyant 25-year-olds in performance outerwear were leading mankind down a treacherous path. She also sort of does know all along. Luckily, the tech industry controls the means of production for excuses to justify a fascination with its shiny surfaces and twisted logic. She reads the blogs. "It was easier," she writes, "to fabricate a romantic narrative than admit I was ambitious — that I wanted my life to pick up momentum, go faster." Even two-thirds of the way through the book, when Ms Wiener, by now established in San Francisco, is poised to "scale" by taking a customer-support job at a cutesily branded "open source start-up" she has not yet realised her "personal pathology" is a widespread affliction. An "entire culture had been seduced" by "ambitious, aggressive, arrogant young men from America's soft suburbs."

Back in New York, when her trial period at the e-book start-up ends, she's not asked to continue. Nevertheless, her bosses help her find a new job out West, on the customer-support team of a data-analytics start-up founded by college dropouts that is hyped in tech-world parlance as "a rocket ship" and "the next unicorn." She finds the analytics start-up's bizarre interview questions infuriating ("'How would you describe the internet to a medieval farmer?' asked the sales engineer, opening and closing the pearl snaps on his shirt, sticking his hand thoughtfully down the back of his own waistband").

Yet for every "rationalist" she also meets an earnest, talented person who is almost certainly not evil, maybe. On "a microblogging platform," she picks a fight with a start-up founder whom she sees arguing that books should be shorter so people can learn faster; in response, he invites her to lunch. They become unlikely friends, and he becomes "one of the youngest self-made billionaires." Another friend, a software developer, claims to have leaked a set of documents that served as "an indictment of undemocratic activity perpetrated by the very rich." So much around her is heady and amazing, and not only because she takes MDMA sometimes.

The real strength of *Uncanny Valley* comes from Ms Wiener's careful parsing of the complex motivations and implications that fortify this new surreality at every level, from the individual body to the body politic. By the end of the book, she shows that technologists are not interested in "systems" thinking only because it can fix what's broken; they are "settling into newfound political power," with armies of trolls now serving as foot soldiers in what founders call a "war" for market share.

Being skilled at deconstruction is a disadvantage for a customer-support specialist hoping to find "meaning" in her work, and for a millennial who values moving through the world with a clear sense of right and wrong. For a writer, though, it's a pickaxe, and we're living through a gold rush, as they might say in San Francisco.