The theories of Gell-Mann

The physicist who died last week is best known for his contribution to the theory of quarks, and his classification, Eightfold Way

TECH-ENABLED

DEVANGSHU DATTA

The pioneering particle physicist, Murray Gell-Mann (1929-2019) died last week. Gell-Mann is best known for his contribution to the theory of quarks, and his classification, Eightfold Way. Those names indicate the wide range of Dr Gell-Mann's interests.

The "Eightfold Way" is the less obscure reference, coming straight from Buddhist philosophy and the Eightfold Path of right thought, right action, and so on. The quark's etymology is more complicated. Sometime in 1964, Gell-Mann and Richard Feynman, his rock-star colleague at Caltech, were discussing Gell-Mann's idea that an unknown fundamental particle could explain experimental results, if these existed.

Feynman referred casually to these "imagined" particles as "quacks", while Gell-Mann thought of them as "Kworks", for some reason. The sound tickled Gell-Mann's memory, and he fished out a reference to "Three quarks for Muster Mark" in James Joyce's magnum opus Finnegan's Wake. Georg Zweig, who had independently developed a similar hypothesis, referred to these particles as "aces" but the odder name, quark, stuck.

The classification of the Eightfold Way came earlier, in 1961. Gell-Mann was looking to find some way of keeping track of many different subatomic particles. H was examining the hadrons, a group of 100-odd particles that had some similarity in strong nuclear interactions. He classified them into eight different groups, hence, the octo-name.

It was in 1964 that he postulated that hadron behaviours could be explained if each was composed by the merger of two or more fundamental particles. No such particle was known to exist, but the hypothesis worked as a mathematical explanation of hadron behaviour. This unknown particle later turned out to be the "quark". Gell-Mann went further in postulating the existence of "gluons", particles that "glue" hadrons together because gluons contain the strong nuclear force in analogy to the way that electrons contain electromagnetic force.

The existence of quarks was confirmed in 1968 by data derived at the Stanford Linear Accelerator Center. That led to Gell-Mann receiving the Nobel Prize in 1969. The theory of quarks and gluons has held up ever since in thousands of experiments at high-energy particle colliders where subatomic particles are smashed together at high speed.

Physicists now say there are six different types of quark, (each has an anti-matter counterpart). Gell-Mann is considered one of the founders of the theory of quantum chromodynamics, which details the ways in which strong nuclear interactions affect particles.

Gell-Mann was born in New York in 1929. After doing his graduation at Yale, he received his Phd at the Massachusetts Institute of Technology in 1951. He joined the California Institute of Technology, Pasadena, to give Caltech its proper name, in 1955 and taught there until 1993, as the emeritus professor holding the Robert Millikan chair. He also co-founded the Santa Fe Institute.

Thanks to Gell-Mann and his generation, we know that atomic particles are all either quarks, or leptons. Indeed, all matter is composed of quarks and leptons (with corresponding anti-matter particles). There are six quarks and six leptons. Leptons such as the electron, the muon and the neutrinos can exist in isolation and they don't experience strong nuclear interactions.

Quarks only exist in combination with other quarks. The taxonomy and nomenclature of types of quarks is also quirky, due to the influence of Gell-Mann. They exist in pairs called up/down, top/bottom and charm/strange. While leptons either have an integer charge (the electron is minus 1), or no charge at all, quarks have fractional charges. The sum of the fractional charges of several combined quarks create the integer charge of a particle like the proton. All quarks undergo strong interactions.

Quarks also have a "colour charge" as it's called and these are classified as red, green, and blue. This has nothing to do with colour as such. It is an analogy used by physicists (Feynman called them "idiot physicists") to describe strong nuclear interactions. Each colour charge is linked to the antimatter "anti-colour" charge carried by the equivalent antimatter quark.

Our understanding of how quarks interact started in the 1960s, with Gell-Mann's generation and the mathematical predictions often preceded the experimental verification by decades. The top quark was only found in the 1990s, more than 20 years after its existence had been predicted by theory.

The theories and hypotheses of Gell-Mann and the other particle physicists of 50 years ago, led directly to the Large Hadron Collider project, which discovered the Higgs Boson. There are plenty of hypothetical particles still out there, predicted in various hypotheses but not found. None of them have the exotic names that Gell-Mann and his followers coined.

CHINESE WHISPERS

Roadblock by police?

Police personnel in Vellore, 126 km from Chennai, last week blocked a stretch of a road, ostensibly for public good. They were protesting the fact that more often than not two-wheeler riders did not wear helmets and many a time they rode vehicles that did not have insurance. A senior police official picked up the microphone installed in his vehicle and advised people on the merits of insurance and dangers of helmet-less rides. He said in the very first month of taking charge he had to dispose of nearly 15 bodies, all victims of accidents involving two-wheelers. At the end of his speech, he had a warning — henceforth, every violator will pay a ₹250 fine and "spend" half a day at his police station.

A record of sorts

Ekkadu Srinivasan Lakshmi Narasimhan, governor of Andhra Pradesh and Telangana, holds a unique record. He is the only governor to have administered oath to five chief ministers in nine years — a strike rate of one every other year. After he took over as governor of Andhra Pradesh, he administrated his first oath of office to Kiran Kumar Reddy of the Congress and then to Chandrababu Naidu. Then in 2015 when Andhra Pradesh was divided and Telangana carved out, he administrated oath to its first chief minister, K Chandrasekar Rao (KCR). He re-administered oath to KCR last year too. The most recent one was for Jagan Mohan Reddy, whose party won a majority of the seats in the Andhra Pradesh assembly and became chief minister last month.

Mamata's riposte

Days after she was greeted by belligerent cries of "Jai Shri Ram" in Bhatpara and Naihati — which fall in the Barrackpore stronghold of newly elected BJP parliamentarian Arjun Singh, who had crossed over from the Trinamul Congress before the general election — West Bengal Chief Minister Mamata Banerjee *(pictured)* has come up with a riposte. She has requested women and young people in the state to set up Banga Janani Vahinis and Jai Hind Vahinis to counter "outside" influence in the state. She appealed to the people of the state that henceforth they must say "Jai Hind" when they greet people and appealed to her party colleagues to say "Jai Bangla" when answering official calls.

Rate cut for sure: Now or in August?

The RBI would do well to frontload rate cut as growth is faltering and inflation well within target

BANKER'S TRUST

TAMAL BANDYOPADHYAY

Last Friday, hours after India got its newest Finance Minister Nirmala Sitharaman, a ministry of statistics and programme implementation release revealed that India is no longer the world's fastest growing large economy. The economic growth in the last quarter of 2019, ending March, dropped to 5.8 per cent, the lowest in the past 20 quarters. This also pulled down the annual growth in India's gross domestic product (GDP) to 6.8 per cent, the slowest in the Modi 1.0 regime.

To add to the woes, the first periodic labour force survey of the government, released on the same day, showed the unemployment rate at a 45-year high of 6.1 per cent in 2017-18 (July-June).

What will the two-monetary policy old Reserve Bank of India (RBI) Governor Shaktikanta Das do on June 6? Will he go for yet another rate cut?

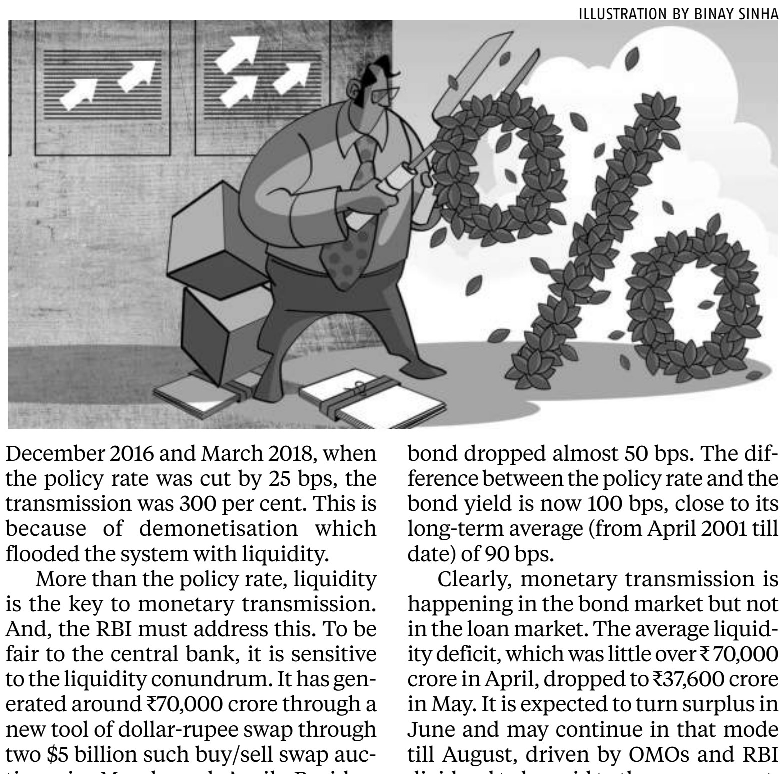
Of course, it's no longer a governor's policy. An independent monetary policy committee (MPC) will deliberate on this but Das, who heads the six-member panel, has a critical role to play and he makes no bones about his bias for growth. In the past two MPC meetings in February and April, the policy rate was cut by 25 basis points (bps) each, to 6 per cent. One bps is a hundredth of a percentage point. Should we see it coming down to 5.75 per cent or even 5.5 per cent?

Or, say, even 5.65 per cent as Das, at the recent IMF-World Bank spring meeting, made it clear that he does not believe that the unit of 25 bps is sacrosanct — it's just a convention; it could be 10 or 35 bps, tailored to suit the dynamics of the economic situation.

There are, of course, reasons why the MPC should hold its horses and wait for its next meeting in August by when the Union Budget will be presented (it's on July 5) and we will get a clear sense of the fiscal deficit estimates of the current financial year. In 2019, the fiscal deficit was 3.39 per cent of GDP, well within the revised estimate of 3.4 per cent. Also, the trajectory of the monsoon will be clear by that time. India's weather office has predicted a normal monsoon.

Most importantly, the effect of the past two rate cuts has not been seen as yet. In other words, monetary transmission is not happening. Going by data, in the January-May 2019 period, we have seen the weakest transmission in recent times. Taking the loan rate of State Bank of India, the nation's largest lender, as benchmark, the transmission is just 20 per cent (50 bps policy rate cut versus 10 bps loan rate cut). In the April-December 2018 period, when the policy rate was hiked by 50 bps, the transmission was 70 per cent. Between December 2016 and March 2018, when the policy rate was cut by 25 bps, the transmission was 300 per cent. This is because of demonetisation which flooded the system with liquidity.

ILLUSTRATION BY BINAY SINHA



More than the policy rate, liquidity is the key to monetary transmission. And, the RBI must address this. To be fair to the central bank, it is sensitive to the liquidity conundrum. It has generated around ₹70,000 crore through a new tool of dollar-rupee swap through two $5 billion such buy/sell swap auctions in March and April. Besides, ₹25,000 crore has been pumped in through bond buying under the so-called open market operations (OMO) and another ₹12,500 crore OMO is slated after the policy meeting.

As a result of all these, the 10-year bond yield dropped to 7.03 per cent on Friday, its 18-month low. Of course, expectations of a rate cut and the drop in crude oil prices to $64.97 a barrel contributed to this. Incidentally, the 10-year US Treasury yield too declined sharply last week to its lowest level since September 2017. Since the rate cut in February, the 10-year yield of Indian bond dropped almost 50 bps. The difference between the policy rate and the bond yield is now 100 bps, close to its long-term average (from April 2001 till date) of 90 bps.

Clearly, monetary transmission is happening in the bond market but not in the loan market. The average liquidity deficit, which was little over ₹70,000 crore in April, dropped to ₹37,600 crore in May. It is expected to turn surplus in June and may continue in that mode till August, driven by OMOs and RBI dividend to be paid to the government.

But even then there is no guarantee that banks will bring down their rates and start giving loans. They have developed risk aversion because of the state of affairs in the non-banking finance industry where many companies are suffering from acute asset-liability mismatches; they are starved of liquidity.

To address this, the RBI last week tweaked the securitisation norms for the NBFCs and extended the period of "dispensation". Such companies are now permitted to securitise loans of at least five-year maturity after holding them for six months on their books. In November 2018, when RBI first permitted this, it had kept the holding period for at least a year. And, the dispensation which was to be valid till May, has been extended now to December. The relaxation in minimum holding period will particularly benefit the housing finance companies as the tenure of mortgage loans is typically more than five years. They can raise more funds through the securitisation route.

For the policy, the RBI has two choices before it.

One, holding on till August but making a clear statement that it will ensure surplus liquidity in the system through all tools available to it. This has to be accompanied by a change the stance of the policy, from neutral to accommodative.

Second, instead of waiting for the Budget, the trajectory of the monsoon and monetary transmission, the RBI could frontload both rate cut and liquidity injection. It can be done as even though the retail inflation inched up marginally to 2.9 per cent in April, the so-called core or non-food, non-oil manufacturing inflation fell sharply. The March index of industrial production was disappointing — contracting for the third successive month and falling 0.1 per cent year-on-year. There are enough indications of a broad-based slowdown. Since inflation is well within the 4 per cent (with a 2 per cent band on either side) target of the MPC, I will not be surprised if the RBI goes for a rate cut now and not wait till August.

Will it be 35 bps, Mr Das?

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AS I SEE IT

A verdict against PLU

For now all that we have been left with is our defiance. Is it enough?

KARAN THAPAR

I may hardly visit the place but I'm proud to be considered a member of the Khan Market Gang. I shall wear it as a badge of honour. In fact, I might even consider attaching the initials KMG to my name. In Britain that would stand for Knight of the Order of St Michael and St George! But, levity apart — yet what else have we left except humour? — I can see that this electoral result is a verdict against people like me. By the way, that includes many of you.

One of the outcomes that's most striking is this was a vote against entitlement, privilege and dynastic succession. By some estimates, of the 38 candidates with dynastic connections 25 were defeated. They come from parties such as the Congress, the Samajwadi Party, the Rashtriya Janata Dal, the Rashtriya Lok Dal, the Janata Dal (United) and the Telangana Rashtra Samithi. That geographically covers the entire country. Only dynasts with connections to Modi's Bharatiya Janata Party (BJP) — or the Dravida Munnetra Kazhagam, for reasons I cannot fully understand — won. At least for now, Modi's shield is sufficient protection from the electoral bombardment against entitlement and dynasty. But for how long?

For the rest of us the message is clear. We grew up with the comfortable assumption that because of our birth and lineage, education or upbringing, family contacts and influence, we owned this country and could run it as we want. We were, or so we thought, the natural ruling class. Yet we didn't realise this was deeply resented. That antipathy may have been subterranean but it was seething. Narendra Modi recognised it and tapped into it. It's now given him over 300 seats in the Lok Sabha.

This is a new India even though it was always there. But it was neither recognised nor acknowledged. Now its voice and attitudes, its definition of Indian-ness, its style and behaviour, including its prejudices, have come to the fore and could become the established norm. This also means that people like us — once upon a time PLU was such a comforting short form — find ourselves relegated to a forgotten or left-behind minority. To put it hurtfully but, I suspect, truthfully, we've ended up on the wrong side of history.

Two other aspects of the electoral verdict are connected with this loud blast of the Indian trumpet against entitlement. First, this vote was a personal endorsement of Narendra Modi. With enormous faith and trust, my countrymen have voted for one man to be our Prime Minister. He brought the BJP back to power not the other way round.

What clearer proof can there be than the message from Madhya Pradesh, Chhattisgarh and Rajasthan? In these three states in December, the BJP was bundled out. That was a vote against the party. This time, when Lok Sabha MPs were being elected and, therefore, Narendra Modi's future lay in the balance, they voted unanimously for him. He won every seat in Rajasthan, all but one in Madhya Pradesh and just two short of a full house in Chhattisgarh.

Modi's BJP has 303 seats, his allies 50 more. That's a two-thirds majority. At the state level, he either controls or is part of 17 governments. When Indira Gandhi had similar power they called her Empress of India. Now we have a new Emperor.

The other striking aspect of the vote is the message it conveys of how our countrymen view their identity. Right across northern and western India and in large parts of the east too they seem to have accepted the Hindutva concept of India as an essentially Hindu country and turned their backs on the Nehruvian view that we're a nation of multiple religions, castes, ethnicities and cultures. It's only when you cross the Vindhyas that you find the older form of secularism flourishing. But, again, for how long? The fortress of Karnataka has been breached and there are holes in the walls of Telangana. With time, I fear, Kerala, Andhra and Tamil Nadu could submit.

So, as a proud member of the Khan Market Gang, I have to admit Modi has changed my country. For now all that we have been left with is our defiance. Is it enough? Only if this is a wave that will eventually recede. If not, like Atlantis we could be drowned forever.

Why are Indian growth rates so volatile?

ASHIMA GOYAL

Since the global financial crisis (GFC), India's GDP growth has become highly volatile. Periods of higher growth are disappointingly short. A sharp recovery following over-stimulus after the GFC collapsed in 2011 and in the over-reaction that followed macroeconomic policy became too tight. Double deficits and high inflation did require adjustment. But the focus shifted only to structural reforms, which were expected to make possible sustainable high growth. But the disappointing yo-yo pattern continues for eight years now, suggesting that structural reforms alone are inadequate — counter-cyclical macroeconomic policy also has to be enabled.

This year GDP growth has fallen to 6.8 per cent, the lowest in five years. That growth in each successive quarter is lower than the one before, reaching 5.8 per cent in Q4 FY19 (January-March 2018-19), indicates a deepening slowdown. This is not pre-election jitters, which will reverse by itself.

The disaggregated picture confirms policy neglect. After a slump in end 2016, manufacturing revived in Q2FY18 with a sharp jump from -1.7 in the previous quarter to 7.1. A rise in private investment by the end of the year, for the first time since a brief spurt in 2014 led to hopes that the turnaround could be sustainable. The output of intermediate goods such as cement and steel grew with the government's push in housing and infrastructure. But manufacturing growth crashed from 12.2 in Q1FY19 to 6.9 in Q2FY19. This was the quarter in which problems at IL&FS led to a contraction of credit from NBFCs. The growth in construction, trade and hotels all slowed down in that quarter. But policy rates were actually rising in this period, although the target CPI headline also collapsed to 2.2 in Q2FY19. Real interest rates reached 4 per cent. Recently released data from the high frequency NSSO employment survey shows unemployment increased in Q3FY19, but there was no response from macroeconomic policy. The first rate cut of 25 basis points came only in February 2019. Under this onslaught, growth in private investment reversed in Q4FY19.

The fiscal stance was also tightening. A 1 per cent fall in tax growth in 2018-19 compared to the previous year needed a 4.8 per cent fall in government expenditure to meet even the relaxed deficit target of 3.4 per cent of GDP. This fall was not compensated by the rise in private consumption growth of 0.7 and of investment by 0.7. This was the drag from fiscal consolidation. It appears government expenditure crowds in more private expenditure than a cut in taxes does.

US president Trump's trade wars had set in a global slowdown, to which also policy did not respond. Data for the current period, as well as earlier episodes, shows a clear causal sequence. First domestic demand revives, then exports and finally investment. Although world demand recovered in 2017, Indian export growth remained slack. It revived somewhat in Q2FY19 after manufacturing growth did so, only to slow again in Q4FY19 as manufacturing growth had already slowed, as had world demand. World demand alone was inadequate to revive Indian exports. It appears domestic demand that improves manufacturing growth also helps raise export growth.

Since India is dependent on oil imports, there are limits to depreciation as a strategy to increase exports. The oil bill rises. Maintaining domestic demand is essential to keep factories humming. As they achieve economies of scale, they also export. The squeeze on domestic demand since 2011 and the appreciation — as relatively higher Indian interest rates attracted more foreign capital — hurt Indian industry as well as investment and turned us into a consumption and import-led economy. Increasing imports of consumption goods have also widened the current account deficit of the balance of payments in recent years.

Although the government took immediate steps to turn around IL&FS in September 2019 RBI measures to address the spillovers to the financial sector, to other industry — to consumption, investment and growth were inadequate. No lender of last resort facility was made available to NBFCs and strangely market liquidity itself was actually allowed to tighten, so that market rates rose and NBFCs found it difficult to refinance loans, aggravating distress.

All this arose from the monetarist-market fundamentalist view that dominated macroeconomic policy-making. In this view, macroeconomic stimulus cannot affect employment, markets left largely to themselves achieve the best outcome, structural reforms only aim is to unfetter markets. Rescuing financial institutions and firms leads to moral hazard and wastes resources in zombies. Weak entities are best allowed to die. It assumes a unique full employment equilibrium without allowing for the persistent losses from continued growth below potential, and falling potential, that India has had to bear since 2011.

This view bound the government in a straightjacket FRBM that does not allow it to stimulate the economy in a slowdown. India adopted flexible inflation targeting but the MPC implemented it strictly, and did not use the space it had available to stimulate the economy, although government supply-side action reduced inflation.

Now that inflation is in the target band and growth has slowed much below potential it must act fast with rate cuts using available space. The one year ahead real rate is at 2.5 when the neutral real rate is one. Increasing the share of durable liquidity can improve transmission and reduce market rates as can special packages for NBFCs.

Else the monetary-fiscal framework must be changed to allow a better counter-cyclical balance. Imposing more unnecessary growth sacrifice can lead to a political backlash.

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Faltering growth

Challenges mount for new finance minister

New Union Finance Minister Nirmala Sitharaman will have to hit the ground running because there is little doubt that the Indian economy is slowing markedly. There have now been three successive quarters of a slowdown. According to the data released by the Central Statistics Office on Friday, gross domestic product, or GDP, grew by only 5.8 per cent in the last quarter of 2018-19, between January and March. This is considerably less than was expected. After 8 per cent growth in the first quarter of 2018-19, the economy then posted growth of 7 per cent in the second quarter, between July and September of 2018, and 6.6 per cent in the third quarter, between October and December. This is clearly a broad-based slowdown. The National Statistical Office also cut its full-year growth estimate for 2018-19 from the estimated 7 per cent earlier to 6.8 per cent. The data suggested a broader slowdown cutting across sectors, confirming the fear that the current downturn is structural rather than cyclical. The last month for which the data was released, April 2019, showed that the rate of growth in the eight "core" infrastructure sectors was still slowing, down to 2.6 per cent as against 4.9 per cent.

Low growth in the last quarter of 2018-19 means the government can no longer claim that India is the fastest-growing large economy in the world — which was in any case a tag that concealed as much as it revealed, because many peer economies were in fact doing better than India. The new government thus has many challenges before it on the economic front. The official data showed last week that the unemployment rate in 2017-18 was 6.1 per cent, though officials contended that the data isn't comparable with that of past years. There were many other indicators of a slowdown. In April, the manufacturing and services PMI, at 51.6 and 51, expanded at their slowest pace since August and September 2018, respectively. The capital goods segment of the Index of Industrial Production also contracted for the third consecutive month in April. On Saturday, India's largest carmaker, Maruti Suzuki, reported a 22 per cent decline in sales in May — the lowest in seven years.

There are multiple sources of the current slowdown. One of these is the problem of overcapacity, which causes the private sector to go slow on investment, a major source of growth. Investment has also been retarded by questions about the flow of finance through the non-banking financial sector, which has not recovered from the shock to the system delivered by the default of Infrastructure Leasing & Financial Services on some of its debt. The government will have to prioritise cleaning up this sector in order to restore the flow of funds, since the sector had become a crucial source of debt finance for corporate India. A more open attitude to the world will also be necessary. Without a focus on exports, India will continue to suffer from questions of overcapacity. There is insufficient demand in India to justify a sharp increase in its productive capacity. Only becoming a location for exports to the rest of the world will be able to address the overcapacity problem. Exports have largely been muted through the government's previous term. Ms Sitharaman will have to step up and renew the structural reform process if Indian competitiveness and exports growth are to salvage the growth story.

Truce in telecom

But profitability is still some way off

For the fourth quarter of financial year 2018-19, the most keenly watched metric in the results of the telecom service provider companies, was their average revenue per user (Arpu). It rose to ₹123 for Bharti Airtel and ₹104 for Vodafone Idea, but fell to ₹126 for Reliance Jio. Arpu is defined as the revenue of the operator divided by its subscriber base. A decline means each new subscriber is adding less to the revenue of the company. So while the company will keep on adding to its capital cost at the same rate to service the new subscriber, the returns from those would be lower. The Arpu numbers indicate after a bruising war between the three companies, which account for over 87 per cent of the wireless subscriber base in the country, a truce is in the offing. Not because the companies have asked for it but because the market dynamics are pushing the three towards it.

That the war began when Reliance Jio entered the market with deep pockets is now well known. The future is of importance. To improve their Arpus, both Airtel and Vodafone have shed plain vanilla customers who do not add much to their revenue. The data with the Telecom Regulatory Authority of India shows a contraction in subscriber numbers, both wireless and wireline, in March. In a worrying sign, the wireless monthly growth rate declined 1.85 per cent. The trend was visible earlier too, as subscriber additions had begun to taper off with urban markets shunning dual SIM cards and the data taking the centre stage. The outcome of all this is that both revenue market shares and Arpus of telecom service providers are gravitating closer to each other. So any move to cut prices by any telco will only bleed all. Airtel and Vodafone have already introduced variations on minimum recharge plans for their customers, confirming this trend. While Jio is yet to respond, the declining Arpu has sent out a signal as to which way the market is headed. These are early days, but the effort to drive profitability, rather than customer addition, could lead to a rise in revenue growth for the industry in the financial year 2020, reversing the current graph.

That said, profitability is still some way off for most operators. This will be a worry as their capital expenditure is still a drag on the performance of the industry. Call drops are coming in for regular criticism, while the network speed in the country is one of the lowest in Asia, both adversely impacting the ease of doing business — a focus area of the government. It may not be right to assume that spectrum for data and voice is in short supply. In fact, a study shows about a third of it lies unused and one of the reasons for this is underinvestment by telecom companies. Quite like the chicken and egg situation, the revenues of the incumbent telcos are not supporting the scale of investments required. Even the disruptor, Jio, has not really managed to change the national picture. The new government needs to think through this chain carefully instead of rushing to auction high-priced spectrum for 5G services.

ILLUSTRATION: BINAY SINHA

The strategy and the tactics

We need a conceptual framework for economic strategy, alongside the practical problems of building government organisations

SNAKES & LADDERS

AJAY SHAH

We now start on the next five years of economic policy. Building state capacity, where organisations diagnose problems and act in response, is required. Alongside this, a consistent intellectual framework of economic policy is required. This helps in long-term planning. State effectiveness is enhanced by rules rather than discretion, as has been seen so clearly with monetary policy. The presence of a framework improves the coherence of practical actions by unrelated arms of government. The framework improves coherence across time, establishes expectations, and reduces policy uncertainty.

Economic policy now has a five-year horizon. As was the case in 2014 and 2015, this will encourage long-range projects. The three biggest achievements of the previous period were the goods and services tax, inflation targeting, and the bankruptcy code, and all three began early. In similar fashion, a few transformative projects should kick off in 2019-20.

A key barrier that is faced in India is that of state capacity. An ideal government organisation is one that is able to perceive the world every day, understand the problems that are faced, identify root cause solutions, debate alternative solutions so as to find the lowest coercion option, and effectively implement the chosen solution. Whether it is tax policy, tax administration, food safety, air quality, or the Delhi-Mumbai Industrial Corridor, the basic challenge that is faced is that of establishing such organisational capability.

Building organisations that engage in such rational diagnosis and problem-solving is the need of the hour. Alongside this, one more thing is required: A conceptual framework of the strategy of economic policy. What is the role of the Indian state in a market economy? What is the institutional machinery that is sought to be constructed? What is the desired destination, of institutions and state intervention, which will come about over time? In the 1990s, there was clarity about what was being done. Conditions have changed considerably since then, which calls for a fresh search for a conceptual framework.

Such a conceptual framework matters in many ways. At the simplest, it establishes the long-run goals of economic policy. It guides policy planning in the many situations where the data is weak, and there is the risk of actions being excessively shaped by practical political compulsions. Going beyond these, there are three big aspects where the framework matters.

The first big idea is rules rather than discretion. This is the paradoxical idea that state effectiveness is actually enhanced by taking away day-to-day discretion. As an example, in the olden days, monetary policy was all discretion. Central banks could do as they liked, in response to a variety of political and economic considerations. Monetary policy has become more effective because central banks have tied their hands with inflation targets. Now, the Reserve Bank of India (RBI) is obliged to act in ways that deliver consumer price index (CPI) inflation of 4 per cent. Private persons know how the RBI will behave at future dates when faced with certain scenarios. The potency of monetary policy has gone up by ruling out discretionary actions.

In the field of macroeconomics and finance, the monetary policy framework is in good shape, and the task ahead lies in pouring concrete on the inflation target. In 1992-2011, there was a conceptual framework around financial markets and internationalisation. Comparable policy frameworks are now required for fiscal policy and financial policy.

The second big idea is that of coherence across a large number of government agencies. This coordination will work better when there is a shared conceptual framework.

As an example, through the 1990s, all arms of the state knew that the Indian fear of engagement with the world, of hostility to the world, was a throwback to India's post-colonial insecurities. All policy decisions, ranging from customs duty cuts to the nuclear deal, were made in a way that increased India's integration into the world economy. Actions taken by numerous elements of government were coherent because they all drew on the same conceptual framework. It would have been more complicated if each element of the state made its own tactical decisions.

The third and most valuable aspect of a consistent conceptual framework is the way it reshapes the expectations of the private sector. When private firms evaluate making the long-term commitment that is implicit in private investment, policy risk is a key concern. Establishing, and living by, a coherent conceptual framework helps reduce this risk. If state organisations have full discretion in making policy decisions in the future, then there is greater uncertainty about the future. A consistent conceptual framework brings coherence across time.

As an example, from 1991 onwards, the private sector knew that barriers to foreign direct investment and imports will only go down. There was no big bang reform, but year after year, the barriers were going to be gradually and steadily lowered, and new barriers were not going to go up. These concepts had an enormous impact upon private firms that planned for 10 years, based on the certainty that imports and foreign competitors were inexorably coming in. This was the foundation of the big productivity gains by firms from 1997 to 2004.

In similar fashion, long-term thinking in tax policy is required in order to enable the long-range investment projects of firms. If tax policy fluctuates every year, in a discretionary way, then there is greater uncertainty, and private investment is harder to plan. From this point of view, the best path for the government will be to promise, in 2019, the major contours of tax policy of the five Budgets that are coming. These commitments, about future changes in tax policy, will improve certainty for private firms and spur investment today.

To conclude, policymakers have to be pragmatic, responding to everyday problems. But alongside this, there is a need for a coherent strategy in economic policy. This requires articulating and then living by certain big ideas. This helps create coherence across space and time, and reduces policy risk.

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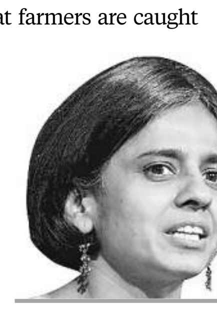
Environmental matters for government



DOWN TO EARTH

SUNITA NARAIN

The results of election 2019 are in and the old government is the new one. What should be its environment and development agenda?

One, most importantly, is the agrarian crisis — it is real and urgent. The fact is farming is increasingly an unremunerative business, putting millions of people at the risk of no work, real distress, and leaving them with no option but to join the ever-growing league of illegal settlers in urban areas. This business is further battered by cruel turns and twists of unseasonal weather and the fact that farmers are caught between the pincer of surpluses of produce, which drive down prices, and scarcity, which allows for imports to thrive.

In the past five years, the government has worked on two key aspects — one, to provide insurance support to farmers buffeted by crop losses and, two, to provide development assistance to meet basic needs — housing, toilets, and gas cylinders for the poorest households. But much more needs to be done to ensure that farmers' input cost is not higher than the price of their produce; that they have water-irrigation systems that allow for increased production; and that crops are not allowed to be marauded by stray cattle and wild animals. The insurance scheme must move towards real cash in the hands of farmers to withstand the vagaries of our climate-risked times.

There is the desperate need for change in policies for forestry. In the past five years, government policies on this matter have been as good as nothing. There is absolutely no clarity about how forestry must provide livelihood support to poor tribals. On the one hand, the government has issued rules to make bamboo a variety of grass and allowed for its cultivation; it has also improved price support for minor forest produce. But on the other hand, it has issued a draft forest policy that would put forestry and its business solely in the hands and control of the department; it has done nothing to implement and indeed build upon the Forest Rights Act, 2006, so that poor communities can benefit from the resources they live upon.

It is also a fact that this government, like the previous ones, have not openly disturbed the wildlife conservation mandate. It has continued to make the right noises about protection of animals even as it has done more (like all governments) to open up pristine forests for roads, mining or hydel projects. All said, forestry and its development for livelihood security and for conservation have hardly been government priority. But this is the agenda for change.

Then comes the issue of local pollution — water and air — which is toxic and has huge health impacts. There is no doubt that air pollution crisis is urgent and visible; in the past few years, the government has acted by improving the quality of fuel and has advanced vehicle technology standards and provided subsidy to equipment for farmers so that they don't burn crops. But all these actions are too little, too late. The government wants clean air but wants to get this by doing nothing terribly inconvenient. There is no mandate for transforming mobility; or restraining private cars; or for ensuring that clean fuel is available and affordable.

Most importantly, it has done nothing to make pollution-control stringent. We need effective deterrence. But in the past five years, the rot in our environmental institutions has deepened. Today, most officials of our environment departments and pollution control boards genuinely believe that it is not their job to control pollution but to protect industrial interests. They have little capacity, no oversight, and certainly no leadership. The only push they get is through court action, which is seemingly against the will and want of the government of the day. This has to change if we want our right to a clean environment because it matters to our health.

The agenda for rivers, water pollution and water scarcity has been lost at the altar of toilet building and river beautification. It is for this reason that we are witnessing droughts in large parts of the country. Just because it did not play out in the 2019 elections does not mean it is non-existent. It will continue to eat away at the innards of our country and destroy the development dividend as every drought and every flood pushes back people into more poverty and destitution.

You can argue that this is not the agenda for the Central government. People will vote with their feet on the ground and vote on these issues when the next assembly poll comes along. But I disagree. These are national issues. The government, especially one which has been voted in with such an overwhelming majority has to take the lead — it has to provide the leadership to take all of us to a more inclusive and sustainable future. People have made a deliberate choice to vote against change, not because they don't need change but because they trust that this government can deliver the change they want. Then deliver it must. Nothing less. Nothing else.

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How a dynast destroyed Syria

BOOK REVIEW

PATRICK COCKBURN

Bashar al-Assad assassinated!" shouted a man as he cycled past Manaf Tlass, an exiled Syrian general once a member of Assad's inner circle, as he sat in an outdoor cafe in Paris in 2017. A childhood friend of the Syrian president's, Tlass had fled Syria five years earlier, denouncing the government that he expected to fall at any moment. The cyclist's cry may have suggested that this outcome was finally at hand, but Tlass greeted the news with a pained smile. "That's Ali, the guy I buy my newspapers from. He tells me this every time I see him," he explained to Sam Dagher, the author of *Assad or We Burn the Country*.

Tlass, the main insider source for this account of the Assad family's half century in power, was one of many who underestimated the regime's strength after the start of the Arab Spring uprising in Syria in 2011. Foreign governments assumed that Assad was on his way out and overconfidently discussed the best place for him to go — Africa or South America — after he had stepped down. Secretary of State Hillary Clinton assured more than 100 foreign ministers assembled in Paris in the summer of 2012 that there was "a steady inexorable march toward ending the regime."

The march turned out to be in the other direction: Assad and his regime gradually reasserted their grip and today hold most of the country, aside from the scantily inhabited northeast, ruled by Kurdish-led forces backed by the US, and the large enclave around Idlib in the northwest held by Al Qaeda-type groups.

The regime was never quite as weak as it appeared to the outside world: Utterly ruthless, it was prepared to kill anybody who got in its way, had a cohesive leadership united by kinship and kept the loyalty of core units of the army and Mukhabarat (secret police), which were often led by members of the Alawite sect, approximately two million strong, who saw themselves as battling not only to keep power but for their very existence.

The means used by the regime to defeat its enemies had not changed much since Hafez al-Assad, an Alawite air force general, seized power in 1970. Dagher describes in detail the crushing of an uprising in the Sunni city of Hama in 1982 by indiscriminate bombardment and mass executions. The militarization of opposition to Bashar al-Assad's regime actually worked in the government's favour because it had superior forces, leaving Syrians with a stark choice between the Assad clan and an insurgency that came to be dominated by Sunni Arab religious extremists.

The book's subtitle is "How One Family's Lust for Power Destroyed Syria," but Dagher overemphasises the degree to which the Assads differed from other dictators in the region. Their hated rival, Saddam Hussein, ruled Iraq in much the same way as they ruled Syria, coup-proofing his regime through multiple forms of allegiance and repression, drawing on loyalties of clan, sect and party, distributing patronage and setting up competing security forces. The popular uprisings of 2011 failed in Syria, but they also failed almost everywhere else in the Middle East, leaving Syria, Libya and Yemen to be ravaged by ceaseless warfare and producing even more repressive autocracies than before in Egypt and Bahrain.

Dagher is open about his detestation of the Assad family and all their works, which he observed at close hand for two years as the only Western reporter stationed permanently in Damascus. He was briefly held by pro-regime militiamen in an underground prison and was summarily expelled by the Mukhabarat in 2014. This gives his description of events a credibility lacking in many other accounts. But there is also a tension between his tendency to blame everything on the Assads and seeing them as the consequence of religious and social hatreds.

Traditional religious animosities, exacerbated by mounting social inequality, always shaped events. The centre of Damascus filled with luxury shops and boutique hotels, but it, along with other Syrian cities, was ringed by what became known as "the misery belts," inhabited by people fleeing poverty and drought in the countryside. "Hafez ruled Syria through a pact with the impoverished Sunni countryside," Manaf Tlass said. "Sure, everyone was trampled on, but at least their basics were taken care of." This pact lapsed under Bashar al-Assad as the inner circle of the regime gained great wealth in an orgy of crony capitalism. It was to be the ignored rural and slum-dwelling Sunni who were to form the hard core of the insurgency.

Once armed action had replaced peaceful protests from about the end of 2011 and the beginning of 2012, the initiative passed to outside powers. The regime and the insurgents both needed money, weapons and, at a slightly later date, foreign fighters; these could come only from abroad. A fatal paradox for the Arab Spring in Syria (and the rest of the region) was that the main financial backers of a movement that had begun by demanding freedom and democracy should then become dependent on Saudi Arabia, Qatar and the United Arab Emirates, which were resolutely antidemocratic and sectarian, and the last absolute monarchies on earth.

ASSAD OR WE BURN THE COUNTRY: How One Family's Lust for Power Destroyed Syria
Sam Dagher
Little Brown, 592 pages, ₹1,573