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Opinion

MONDAY, AUGUST 28, 2017

INDUSTRY 4.0

Commerce minister Nirmala Sitharaman

Driven by the power of big data, high computing capacity, artificial intelligence and analytics, Industry 4.0 aims to digitise the manufacturing sector

Feel-good all very well, all eyes on new CEO

Nilekani's return brings temporary comfort, a lot depends on who the new CEO is and boardroom calm

NANDAN NILEKANI'S RETURN to Infosys as non-executive chairman will bring comfort to institutional investors and stem the slide in the stock price but only temporarily. For Infosys to regain its pre-eminence, it must find itself a good CEO and, more importantly, the founders must let the CEO do her or his job without interfering. Given his stature and connections, Nilekani should be in a good position to recruit a CEO. To be sure, prospective candidates will be wary of coming on board given the extremely shabby and totally undeserved treatment meted out to the previous CEO, Vishal Sikka, by NR Narayana Murthy. Nevertheless, since there is no doubt that many will aspire to the position, Nilekani may be able to convince one of them to join the company. From the perspective of shareholders, both small and large, the damage that has been done by the unseemly spat between Murthy and the board will be hard to undo in the near-term. The exit of Sikka, who was transforming the company to deal with new-age technologies and spaces and to focus more on products, will set the business back by about a year. The interim MD & CEO will have his hands full, because not only must he oversee all existing projects to keep them on track, he will also need to ensure the company doesn't lose any good clients even if it doesn't win any big accounts.

This would mean that until the new CEO is on board, no top executive is going to focus on the larger strategy and put in place the team that is going to execute it unless Nilekani intends to do that. Even if Nilekani does set the ball rolling, it could be a good six-eight months before the new CEO is hired and gets into the groove. No matter how competent and experienced a professional is, he or she will take time to settle down.

This is a very difficult time for the IT sector given the slowdown globally and the big leaps in technology. Infosys's performance was just beginning to get better under Sikka; his strategy of getting growth backed by attendant changes to the delivery model and continuing efforts at making sales more effective was appreciated by the Street. The comments from analysts on the conference call post his resignation showed how much they respected his ideas and believed in them. Indeed, it looked like Sikka was settling in nicely, and his exit is unfortunate since he was the first non-founder to occupy the top position. While the company may choose to withdraw the press release that the board issued to announce Sikka's resignation, attributing it to the assault from Murthy, and which notes that Murthy made "inappropriate demands", few will forget. Institutional shareholders must now keep their fingers crossed on there not being a repeat of the events of the past year or so. It will be interesting to see how many of them pare their holdings once the stock reverses some of its losses. Nilekani may be able to reassure them that all is well, but at the end of the day, only performance can drive the stock.

TRAI to be transparent

Whether IUC is halved not the issue, disclose the model

SINCE INTERCONNECT USAGE charges (IUC) comprise such a significant part of telco revenues—RJio ends up paying ₹6,000-7,000crore of IUC to other telcos every year and Bharti Airtel's FY17 pre-tax profits of around ₹7,700 crore would fall by around ₹2,300 crore if there was no IUC—it is not surprising the debate over slashing it, or getting rid of it altogether, is so shrill. RJio has, in fact, accused the incumbents of taking an extra ₹1 lakh crore from subscribers over the last five years through IUC. To that extent, Aditya Birla Group chairman KM Birla's letter to TRAI—it is going to come out with new IUC regulations later this week—tries to put some perspective on the issue. Since IUC, he points out, is based on the costs various operators incur in rolling out their networks, it is critical to have these details—but, he points out, in response to RJio's claim that its superior technology means it has lower costs than existing telcos, there is no audited account of RJio's costs and profits/losses. Also, as Birla points out, it is a fallacy to link IUC and telecom tariffs as is being done—between April 2009 and February 2015, he says, the IUC rate remained constant but consumer tariffs continued to decline. Even now, the 14 paise per minute IUC is not preventing RJio from offering free calls to subscribers—IUC is a commercial cost that operators incur, much like spectrum costs or licence fees.

So, rather than getting caught in the hyperbole over whether IUC is archaic or Bill and Keep (BAK)—the alternative being proposed—is progressive, TRAI would do well to focus on the facts and, more important, make its model public. Airtel's presentation to TRAI on IUC, for instance, talks of it spending over ₹40,000 crore in just buying voice spectrum—if you assume a 15% interest plus amortisation, based on the number of minutes an Airtel gets on its network, that means a 4.5 paise IUC needs to be allocated for spectrum costs alone; in 2015, however, TRAI had allocated only 0.79 paise for this in its IUC calculations. Not surprisingly, telcos have challenged even the earlier IUC regulations—the cases go all the way back to 2006. And when, in 2010, the appellate tribunal, TDSAT, had ruled against TRAI and said that it had to take telco capex costs into account while calculating the IUC, TRAI did not justify its numbers but instead, challenged the TDSAT's jurisdiction. If TRAI is so sure of the accuracy of its work, surely the last thing it should be doing is to hide behind a legal interpretation that prevents its decisions being challenged before TDSAT? A Transparent Regulatory Authority of India would allow TDSAT to quickly dispose off the old petitions and show its workings clearly to telcos.

ShrinkingFISH

Climate change will cause the size of many species of fish to fall by almost a third

FOR SOME TIME now, it has been clear that climate change—warming seas and melting snow cover in mountains, to be more precise—will lead to physiological change in living organisms as they adapt to the changed conditions. But how drastic will this be? Recent research by scientists at University of British Columbia in Canada has warned that fishes could shrink to two-thirds their current size by 2050 if oceans continue to warm at the current rate. Being cold-blooded animals, they can't regulate their body temperatures, and as the waters get warmer, their metabolism accelerates and the need for oxygen shoots up. Crucially, however, gills, that are used to absorb dissolved oxygen, don't grow at the same rate as the body—for instance, even as a cod's body weight increases by 100%, its gills would have grown (in surface area) by just 80%. A surge in oxygen demand, even as dissolved oxygen levels in water fall, will mean that larger fish species will get more strained for oxygen. This will force them to stop growing after sizes considerably smaller than the ones they reach right now, as the gills that already grow slower than the body can't keep up. The researchers believe that the effect will be faster and more starkly noticed in larger species.

This will have serious consequences not just for the marine ecosystem as large predatory fish species will be less able to control prey species populations in the seas, but also for the fishing industry as well. Take tuna, for example. A large fish, it also swims very fast, thereby consuming oxygen at a faster beat than most other similar-sized fish species. Given how important it is as a commercial fish, shrinking size will lead to even further over-fishing—it is already caught in unsustainable numbers—and thereby a quicker wipe-out of the species. With most of the shrinking likely to happen in tropical and mid-latitude waters, large fishes, the researchers say, are likely to shift towards the poles. This will affect distribution in the tropical waters, which signals an ominous imbalance for the ecosystem and the economy.

FROM PLATE TO PLOUGH

ADDITIONAL INVESTMENT NEEDED TO REALISE THIS WORKS OUT TO A WHOPPING ₹6.4 LAKH CR, AT 2011-12 PRICES. THIS DOES NOT INCLUDE SPENDS ON AGRI-LOGISTICS & COLD CHAINS

Chasing a dream: Doubling farmers' income by 2022

ASHOK GULATI & SIRAJ HUSSAIN

Gulati is Infosys Chair professor for agriculture, and Hussain, former agriculture secretary (GoI), is a visiting senior fellow, ICRIER

THE PRIME MINISTER, in his Independence Day speech, referred to farmers 12 times. He mentioned several specific achievements in agriculture, from soil health cards given to 9 crore farmers to enhanced crop insurance scheme, from completion of 99 projects under Pradhan Mantri Krishi Sinchayi Yojana by 2019 to encouraging FDI in food-processing and handholding farmers, from supply of inputs to marketing of produce. Finally, the PM concluded by saying, *"Together, we will build such an India where farmers can sleep without worry. By 2022, they will earn double of what they are earning today".*

The first time that the PM shared his dream of doubling farmers' income (DFI) was in Bareilly, at a *kisan* rally on February 28, 2016. Then, the finance minister's budget speech mentioned it on February 29, 2016. Thereafter, it attracted attention of policy makers, economists and, most importantly, the farmers. Initially, it was not clear if the government intends to double the real income or the nominal income of farmers. However, now it is evident that the government's aim is to double the real income, as spelled out in recent reports of the Committee on Doubling Farmers' Income (CDFI).

On April 13, 2016, the government set up a committee under Ashok Dalwai, then additional secretary in ministry of agriculture, to prepare a report on DFI. The committee seems to have prepared the report in 14 volumes out of which four volumes, containing 718 pages, have been uploaded on the website of the ministry on August 14, 2017. All 14 volumes may cross more than 2,000 pages, and more than 300 recommendations! It would be the litmus test for the PM to read the full report and make sense of it for policy action. It has a mine of information, which can be very useful for a PhD student; but there are several inconsistencies, too, leaving the readers baffled, and reminded of Albert Einstein's famous quote, *"If you can't explain it **simply**, you don't understand it well enough."*

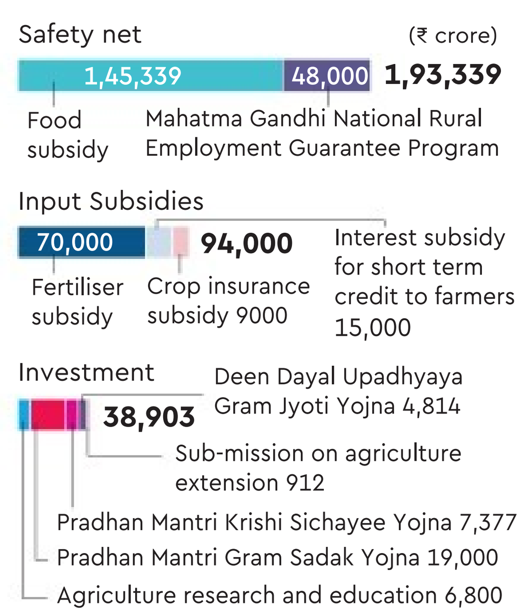
In any case, some of the key highlights of the report and its limitations can be summarised as follows. The report works on three areas: productivity gains, reduction in cost of cultivation, and remunerative prices. The strategic framework has four concerns: sustainable agri-production, monetisation of farmers' produce, re-strengthening extension services, and recognising agriculture as an enterprise. The report also uses an econometric model to work out how much investment is needed in agriculture, irrigation, rural roads, rural energy and rural development to attain 10.41% annual growth in real incomes for DFI by 2022-23 over base of 2015-16. The point of note is that farmers' real incomes have increased by only 3.5% per annum between 2002-03 and 2012-13. So, DFI means three times higher effort and resources. ***Additional investment needed** to realise this works out to a whopping ₹6,40,000 crore, at 2011-12 prices.* And this does not include investments in agri-logistics, cold chains, etc. Eighty percent of this investment has to come from the government. The investments in, and for agriculture, need to rise by 22% per annum in real terms if the dream of DFI is to be realised.

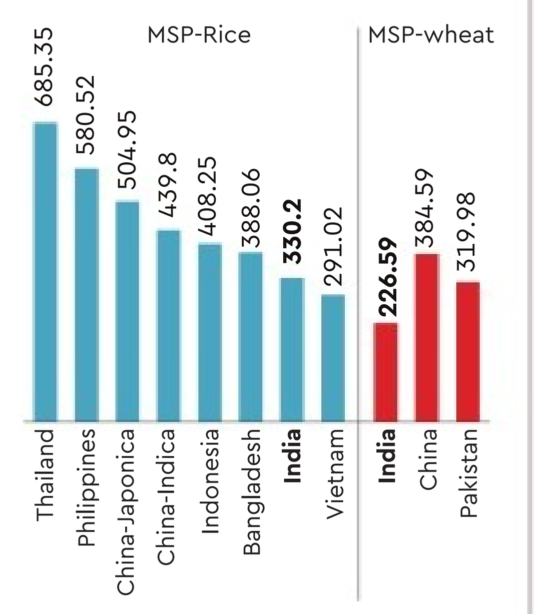
But the report is totally silent on how, and from where, these resources will be generated. In a climate of loan waivers, subsidies, and welfare programmes that dominate the budget (as the accompanying graphic shows), the likely reality is that investments are going to shrink further.

Even if one makes the heroic assumption that so much investment will be somehow made, the question that still needs answering is how much agri-production will increase as a result of this, and where that increased production will be absorbed. We have seen that when production increases somewhat significantly, prices crash, as happened this year in several states for onions, potatoes, pulses and oilseeds. If domestic consumption can't absorb increased outputs, can we export in global markets competitively? None of these fundamental questions have been addressed in the report. Instead, we have a laundry-list of hundreds of recommendations, ranging from implementation of APLM Act to e-NAM to negotiable warehouse system to price deficiency payments to re-organising KVKs, and so on and so forth, and, finally, setting up a secretariat for DFI! Looking at all these as preconditions for DFI, one is reminded of famous Hindi idiom, *"Na nau man tel hoga, na Radha nachegi"*. In essence, it translates as, "If the sky falls, we shall catch larks."

Does it mean that DFI will remain a pipe-dream by 2022? Most likely, though not necessarily. In order to take this dream nearer to reality, one may look at Chinese experience during 1978-84, when it doubled farmers' real incomes in six years and reduced poverty by half! (India took 18 years, from 1993 to 2011, to cut poverty by half). China focused primarily on incentives for farmers by moving from the commune system to household responsibility system in land, and ensured higher prices for farmers. Chinese prices for farmers have remained way above what India gives to its farmers. Just to cite one example, China's MSP for wheat in 2014-15 was $385/tonne against India's $226/tonne. Similar differences exist for other crops. This was on top of $22 billion of input subsidies.

The upshot of this example is that India needs to focus on incentives for farmers, and much else will follow. Unfortunately, our policy is biased in favour of consumers and that inadvertently makes it anti-farmer. If the Modi government can reform that by using income policy to protect the poor, and free up prices for farmers, allow private trade to stock and operate freely and have unhindered exports, India can raise farmers' incomes significantly, if not double by 2022.





Silicon Valley won't deliver next-gen cars

The plausible manufacturers of autonomous vehicles are the big automakers—and they aren't in any hurry

CONOR SEN

Bloomberg

SELF-DRIVING CARS are the future, we're told. But ... who's going to build them? Probably not Waymo, the autonomous vehicle technology subdivision of Google's parent company, Alphabet Inc. Waymo CEO John Krafcik said in December: "We are a self-driving-technology company. We've been really clear that we're not a car company." Alphabet had profits of nearly $20 billion in 2016, and represents perhaps the best business model on the planet, with a quasi-monopoly on search and digital advertising, but its ambitions in the auto industry are more modest than they appeared a few years ago.

It doesn't look like it will be Apple either. Initially determined to build its own vehicle, the company now is focusing on the software and hardware necessary to get a self-driving car on the road. Apple is the most profitable technology company in the world, with over $45 billion in profits in its most recent fiscal year. The company has $150 billion in net cash. Nobody has deeper pockets to invest in an endeavour like this, and yet, it is not.

Uber continues to burn cash, needs to find a new CEO, and might have more internal drama than any other company in America. It is hard to see this hot mess finding the capital and the focus to pivot from the existing business to producing automobiles at scale.

Tesla remains Silicon Valley's one hope for a self-driving car. Next year, the company is aiming to produce 500,000 Model 3s, which have self-driving technology. But whether it is able to produce that many cars, whether demand is sustainable, and whether it can be profitable remains to be seen. Even then, a sedan that starts at $35,000 and can run up to $59,000 after options covers only a niche of the auto market.

If an outsider is going to disrupt the automobile industry as transportation moves into a self-driving future, it needs three things: easy access to large amounts of capital, sophisticated technological capabilities, and desire. Silicon Valley has the first two in spades but seemingly lacks the third. This shows how the industry has morphed over the past several years.

> **If an outsider is going to disrupt the automobile industry for a self-driving future, it needs access to large amounts of capital, technological capability, and desire. Silicon Valley has the first two in spades, but seemingly lacks the third**

What started out as an industry driven by innovation is increasingly one infatuated by toll collection. In Apple's case, the Steve Jobs era was defined by transformational products, creating new product categories. The Tim Cook era is defined more by operational perfection, maintaining a world-class supply chain, and ensuring that Apple collects a highly profitable toll every time consumers trade in for a new, slightly better version of the iPhone.

Google and Facebook, the digital advertising giants, want to collect a toll every time you run a search, watch a YouTube video or spend a few minutes on social media. They may spend some money on futuristic "moonshots", but their business model is collecting tolls.

Uber's still burning cash, but it's clear what its ambitions are: to monopolise ground-transportation ridesharing and to get a cut of every fare.

Apple, Google, Facebook and Uber have all made reasonable business decisions. Tolls are where the juicy profits are. Apple is far more profitable than Foxconn, one of its suppliers that actually produces the iPhones consumers buy. Google and Facebook are far more profitable than the content and media companies putting in the work and taking risks on articles and videos that may or may not ever get clicked on. And operating a transportation network that takes a cut of every fare but doesn't have to own or produce vehicles or pay drivers salaries and benefits sounds like a pretty sweet deal too, if anyone can pull it off.

But someone's going to have to invest in the machinery and plants to produce the vehicles in a self-driving world. At the moment, the most likely candidates are companies not much more motivated than Silicon Valley: large incumbent auto manufacturers like Toyota, Ford and General Motors. The future of transportation will arrive whenever they decide to build it.

LETTERS TO THE EDITOR

Who is to blame for the bad-loans mess?

Apropos of the report "Viral Acharya blames RBI's forbearance schemes for NPAs" (*FE*, August 24), RBI Deputy Governor rightly concedes that "forbearance schemes" were partly to blame for the bad-loan mess, and suggests a counter-cyclical approach to avoid its repeat in future. However, besides forbearance schemes, we must also admit that part of the mess was also on account of non-seriousness displayed by the then chief of RBI, Raghuram Rajan. Rajan was not interested in solving the mess of NPAs in the banks, but was more interested in giving lectures and airing his views on topics other than finance or economy. Any person who is in the chair wants to impose his or her own ideas. Now, the government wants consolidation of banks. Look at the state of SBI post merger.

— SC Aggarwal, Australia

Privacy verdict

A Constitution bench of the Supreme Court has judged the Right to Privacy a Fundamental Right, but is is yet early to understand the impact of this judgment on the ongoing spree of the government in linking Aadhaar with almost every service that it provides and doesn't provide. This is being done obviously to plug leakages and ensure transparency. The steps have yielded encouraging results already. The linking is bound to provide the government an effective tool to manage day-to-day affairs and check unfair practices. It would be interesting to see if the Supreme Court has blocked the transparency efforts of the government or not.

— Jai Prakash Gupta, Ambala

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INFLATION-TARGETING

Should RBI revisit its inflation anchor?

Volatile food prices have exposed the risks inherent in targeting headline CPI inflation

RENU KOHLI
New Delhi-based economist

EVER SINCE THE RESERVE Bank of India (RBI) switched over to flexible inflation targeting (FIT)—informally from January 2014 and formally in June 2016—inflation has witnessed a dramatic collapse. Headline CPI, the new inflation anchor, declined sharply from 8.6% in January 2014 to 1.5% in June 2017, below the lower band of the medium-term target (4±2%).

In the historical context of the 28-odd countries that follow inflation targeting (IT) since its introduction in 1989, this scale of achievement is remarkable. One should reckon that most countries switched over to IT regimes only after inflation had stabilised at lower levels, Israel being the rare exception that used IT as a shock policy instrument (e.g. Bank of England handbook 29, 2012). India followed a similar path fraught with risks. It is time we commend RBI and its monetary policy committee (MPC) for spearheading this success. And for those of us who opposed its implementation, it is a moment for reflection.

And yet we observe a general disquiet, some aggressive criticisms on three specific points: i) inflation has been consistently undershooting RBI's forecasts; ii) lower inflation is structural; and iii) the output gap is large, needing monetary policy support. Thus, the core concern is that RBI's policy rate has been relatively, or even significantly, tighter than warranted, hampering a short-term recovery.

We must flag that many of these critics have been either vocal or tacit supporters of FIT adopted by RBI, or at best maintained an ambivalent silence. Their criticisms are not against the IT regime *per se* or its operative principles, but directed against RBI's inflation forecast errors and the failure of MPC members to gauge the reality. They seemed dismayed by a five-member majority sticking to their positions, the only comfort being Dr. Ravindra Dholakia, the lone member who joined their bandwagon, seriously contesting RBI's projections and significantly differing from the views of fellow members. Who is wrong?

Since criticisms are directed at the practitioners, RBI and MPC members, and not at FIT's operative principles, it may be fruitful to examine these to arrive at some judgement as to what extent the members may be at fault. Now, the simplest operative principle of IT is represented by a function familiar as the Taylor Rule, which says the practitioner, the central bank or an institution like the MPC, should take a prior call on the following: i) real neutral rate, and ii) reaction coefficients to inflation and output gap, and transparently communicate these to the market. It should focus upon robust inflation and output projections based upon a nominal inflation target and potential output estimates to arrive at the respective gaps. Once this is done, the equation itself works out the nominal policy rate. Even to this date, Professor Taylor believes if too much discretion is allowed to creep in, the outcome could turn out suboptimal.

But almost all central banks practising some form of inflation targeting strongly disagree. Ben Bernanke, former chairman, US Federal Reserve, asserted that members could not be robots, i.e., purely rule-based; they should have the discretion to take calls on both reaction coefficients based on the merit of the situation and vary the real rate accordingly (Cf. Bernanke's Brookings lecture, 2015). Thus, IT regimes in practice are characterised as 'constrained discretion', combining elements of both 'rule' and 'discretion'. Central banks that adopted flexible IT regime, targeting a band rather than a point inflation target, as in India have given themselves a little more operational headroom.

So, what are the rules? Price stability is the principal objective, not subsumed to growth; inflation forecast to be forward-looking, incorporating inflationary expectations; transparency in communicating the rationale for variation in the real rate; and some form of accountability to win public credibility. The objective is to anchor consumers' inflationary expectations toward the medium-term target and stabilise market expectations for the future interest rate path by minimising elements of surprise.

These elements are non-negotiable, and the MPC should not be seen to be ducking these rules. However, while operating within these constraints the MPC does have discretion on finer nuances of model projections for inflation and the output gap; it can take a view on their relative weights to arrive at a policy rate. For example, as Mr. Bernanke revealed, the US Fed had been leaning towards the output gap by assigning a higher coefficient of 1.0 against 0.5 suggested by Taylor rule. It is within these realms that one must judge RBI and the MPC members.

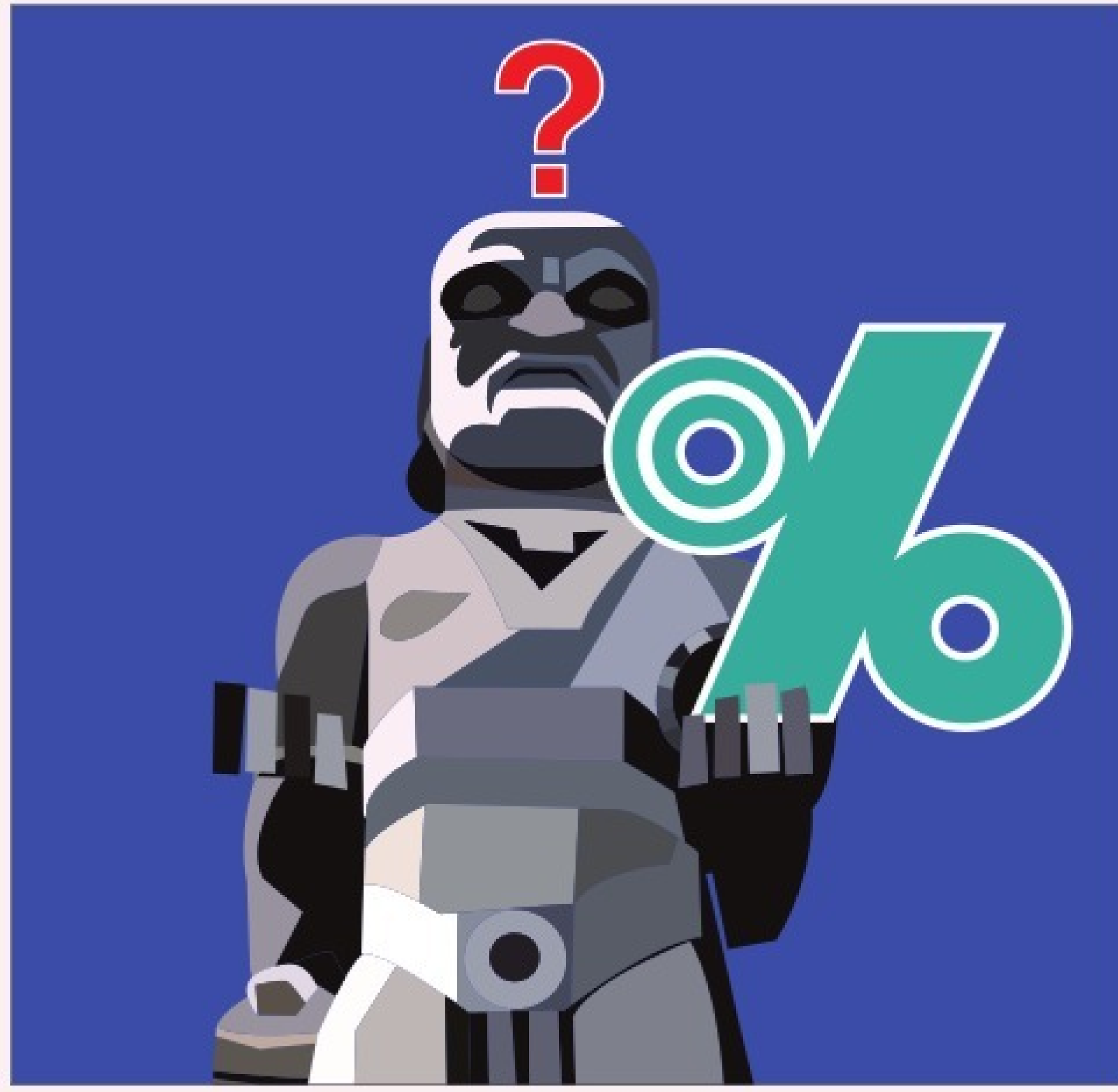
Output gap, the bone of contention

Critics argue that the ex-post real rate turned out much higher than ex-ante as actual inflation was consistently undershooting RBI's projections, thus hurting growth. *The Economic Survey, Vol II,* points out these errors have persisted over 14 quarters with the margin increasing over time. But did that affect growth as captured by a widening, negative output gap?

A close observation of RBI's output gap chart indicates a relatively large negative output gap since FY13:Q1 that closed by FY16Q1; in fact, some of the filters showed a small positive output gap sustaining over the next five quarters. The gap, which turned negative thereafter, reversed its direction again in FY17Q4 and is now expected to further close as GVA growth is projected accelerating to 7.3% in FY18 (for reference, we copy/paste the first chart in the accompanying graphic from RBI's *Monetary Policy Report,* April 2017: pg 29). It was evident that actual output had been closer to potential, relatively stable. Thus, the unintended tightening could have positively contributed to a sharp fall in inflation without much output sacrifice. The average sacrifice ratio over FY16, FY17 and FY18 could well turn out to be closer to zero. Then why are the critics worried?

Recall at this point that India is the rare exception in terms of trying to switchover to FIT regime when both inflation and inflationary expectations were running high. RBI was thus simply sticking to its operational rule, i.e., if the estimated output gap was closer to potential, the balance must tilt towards inflation, especially if inflationary expectations are to be anchored over business cycles. Where was the fault with RBI or the MPC?

We have no doubts that consistently big inflation forecast errors can increase market uncertainties, dent the framework's credibility. But in an ex-post analysis, it appears critics are disproportionately focused



upon inflation forecast errors. The heart of the dispute should instead lie in errors in estimations of potential output and the output gap. As potential output is an unobserved variable, its estimation should have been open to rigorous scrutiny. But the MPC that instituted in October 2016 appears to have concurred with RBI, steadily maintaining the output gap was small and closing gradually over the next few quarters. It was only in June 2017 that Dr. Dholakia broke away from this consensus to claim the negative output gap had been persistent and expanded in recent quarters.

Wherein lies the truth?

To be fair to RBI and its staff, they have been sharing their methodology and estimates with public. Like many other central banks, they use several filters to estimate potential output. These filters deploy different statistical techniques generally associated with isolating the trend in time-series GDP data. RBI transparently acknowledges impediments to these econometric estimations, viz. limited data points, new base year from 2011-12 and no backcast series consistent with the new GDP methodology. What else could they have done?

Could RBI have attempted an alternative production function model? Perhaps they do and share with the MPC, but there is nothing in the public domain. What we do know is that in the absence of credible unemployment statistics, such models can hardly be relied upon for high frequency policy action. Neither do we have any robust estimates of natural rate of unemployment to estimate potential output, nor high-frequency unemployment data to estimate changes in output over a business cycle. The Labour Bureau's quarterly employment survey and the CMIE's large sample unemployment survey are yet to gain policy credibility.

Then how do we substantiate the output gap is large and increasing? Dr. Dholakia invokes often-cited high-frequency lead indicators such as stagnant capacity utilisation, falling manufacturing purchasing managers' index (PMI), slowing exports and investment demand, and weakening industrial outlook survey to buttress his case. But these indications were not new; their misalignment with CSO's new GDP data has long been a matter of intense debate. Nor does their recent trend depict any marked change to invite special attention. At best these could provide grounds for some qualitative fine-tuning, but they lack the rigour and precision to contradict results of econometric model estimates that are inbuilt into the soul of the IT framework.

Food price volatility breeds market uncertainty

RBI may be seeking comfort from the fact that a higher real rate, though unintended, has not affected growth as output has remained close to its estimated potential. It might also be pleading helplessness for keeping the real rate high as inflationary expectations still remain high. But consistent and large errors in headline CPI inflation projections could have dented its credibility, increased market uncertainty.

A closer examination shows these errors are largely attributed to errors in projecting food inflation as core inflation has been relatively stable, slowing gradually only in recent months. But minimising these errors is easier said than done. The model must pick up seasonal upticks in food prices while accounting for a downward drift in trend attributable to supply side improvements. The model errors get pronounced and are very difficult to track when variations are caused by sharp corrections in a few items, e.g. vegetables or pulses! These errors appear compounded this summer because food inflation defied its seasonal uptick and plunged deep into negative territory when most models predicted some degree of mean-reversion. Problems could intensify further if the impact of demonetisation turns out be more prolonged than the baseline "V" or "U" shaped recovery assumptions.

Is low food price inflation structural? *The Economic Survey, Vol. II* makes the case from a standpoint of lower international oil and food prices, concluding import parity prices will likely remain stable. For RBI to buy into this narrative would be betting against global food price and exchange rate movements! A sharp rise in international cereal prices in July 2017 only underscores such risks. Durable price corrections would depend solely upon productivity enhancing policy measures. Could RBI isolate a single food item where government policy has led to sustained productivity gains and output stabilisation?

RBI's admission it was unsure if inflation declines were structural or transitory further accentuates uncertainty. To worsen matters, the change in direction of inflation expectations raises doubts about its reliability. The Patel committee report (page 16) was emphatic that shocks to food and fuel inflation within the CPI basket have the largest and most persistent impact on overall inflation expectations, a strong reason why it recommended targeting headline CPI and not CPI-core inflation. How does RBI account for a counter intuitive turn in direction at a time when food inflation has been falling sharply over ten months?

RBI's palpable lack of confidence was revealed in the June, 2017 policy statement, where it preferred to go with a range forecast of 2.0-3.5% in H1 and 3.5-4.5% in H2 of FY18, rather than a point projection. What comfort would markets take if the range is as high as 100-150 bps? Its guidance in August appeared more ambivalent, overwhelmed by several unknowns.

The FIT frame work has been in operation for more than three years coinciding with a period when international oil, food and metal prices collapsed to multi-year lows. Yet, RBI has failed to come to terms with food price volatility and the associated unpredictability of inflation and inflationary expectations. It is time it should revisit its inflation anchor and assess if targeting CPI-core inflation could have brought in more stability and credibility to the FIT regime.

Blame the framework, not its practitioner

If critics are upset about an inflexible MPC, then do not blame its practitioners, Dr. Urjit Patel and his co-members who have to work within the FIT framework's operating principles. Instead blame Dr. Patel, the report writer who designed and prescribed the framework. If Dr. Dholakia is convinced that CPI food price inflation would converge to CPI-core inflation, then why not make a case for making CPI-core as the point inflation anchor with medium-term target at 4%? That would minimise projection errors and stabilise market expectations while removing the band altogether.

Further, if Dr. Dholakia is making a case for a large negative output gap that cannot be captured in any econometric model, would he be comfortable using WPI-core as close proxy for manufacturing sector demand constraints? In the past, we had flagged that WPI-core inflation as a proxy for producer price inflation needs to be factored in while taking a call on the real rate. Our contention was that persistent divergence between the GDP deflator and CPI inflation could potentially lead to a sub-optimal outcome because the real rate for producers remained much higher than for consumers, a key factor in slowing down investment. In fact, the IT regime's theoretical framework strongly backs the GDP deflator as the true inflation in an economy; CPI inflation figures only as an operational proxy to condition consumers' expectations that go into wage negotiations as also its high frequency availability. Bringing in WPI-core inflation through a simple and transparent design structure within the IT framework could respond to producers' concerns.

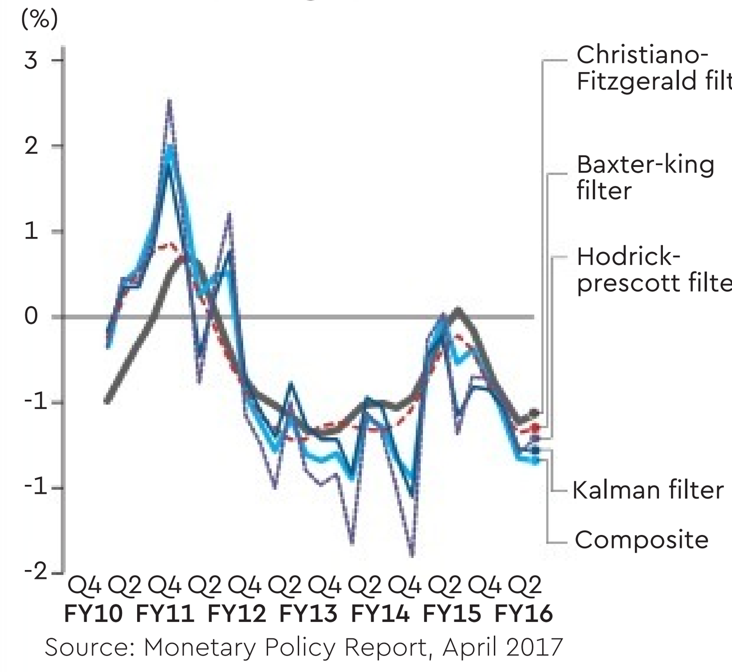
Here are our suggestions:

(i) In the base case scenario when both inflation and output gap are closer to zero and WPI-core converging with CPI-core we are in an ideal world because the GDP deflator will not significantly deviate from CPI-core. The real rate then should be primarily decided by the deviation of inflation expectations from the 4% medium term target;

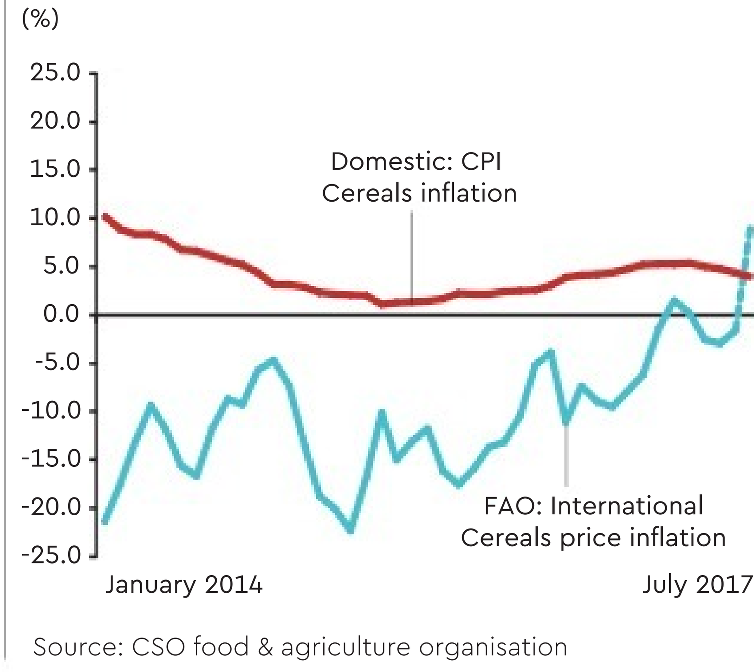
(ii) When WPI-core is projected above CPI-core, the real rate could be higher than the base-level real rate by the extent of the diversion, even going above 1.75%; and

(iii) When WPI-core is projected lower than CPI-core, the converse should happen. That is, the real rate should go below the base-level real rate, even turning negative if the divergence becomes too large.

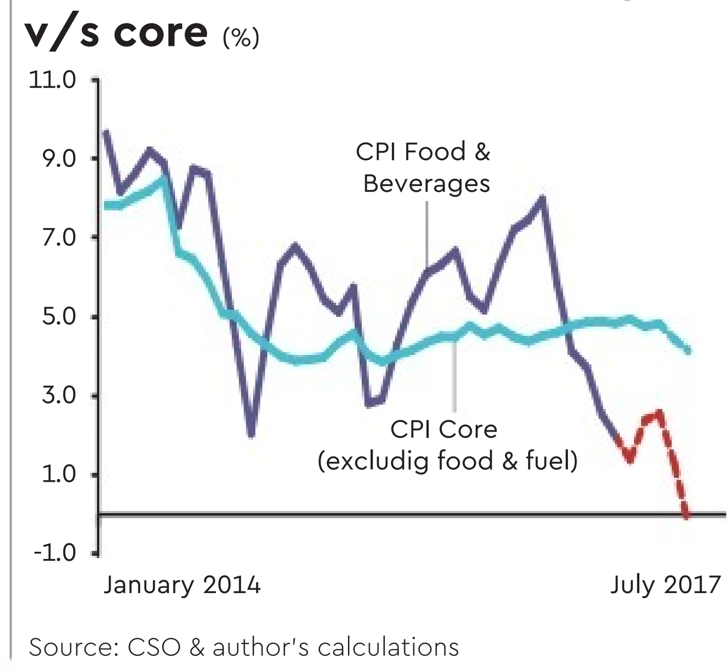
The above would certainly appear like an Indian version of the IT framework, but could give manufacturing the much required space to breathe and come alive.



Source: Monetary Policy Report, April 2017



Source: CSO food & agriculture organisation



Source: CSO & author's calculations

CORONARY STENTS

New pricing policy: a boon or bane?

A positive effect of this cap could be an increase in the use of indigenously manufactured stents

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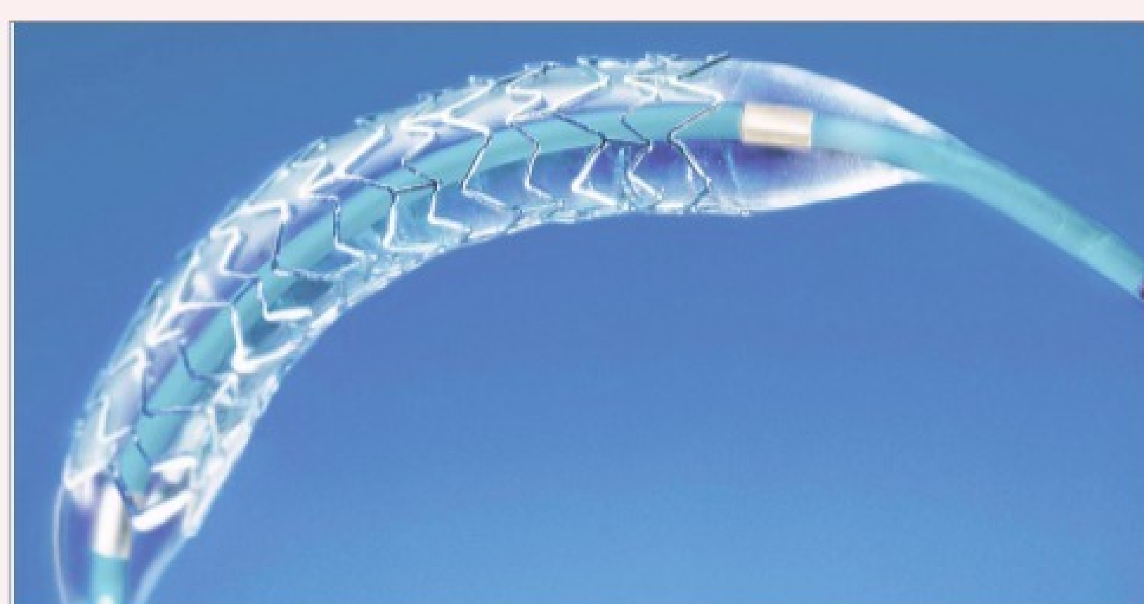
CARDIOVASCULAR DISEASES (CVD) account for nearly 25% of deaths between the ages of 25 and 70 years in India. Large prospective studies have shown age-standardised CVD mortality rates of up to 225-500 per 100,000 in men and 225-399 per 100,000 in women. These figures appear to be an underestimation given that a large number still remain undetected. The number of interventional cardiologists in the country is estimated to be 3-5 per million population, in contrast to 50-70 per million population in the US. The number of cardiac catheterisation laboratories in India was estimated to be 960 in 2016. Keeping the burden of the disease in mind, the facilities and infrastructure for invasive treatment modalities in India are inadequate.

Despite these shortcomings, the number of percutaneous coronary interventions (PCI) performed is increasing steadily at an annual growth rate of 6%. The total number of PCI procedures carried out in 2016 was 495,000, with an estimated number of 594,000 stents used (1.2 per procedure). Of the stents implanted, 80% were drug-eluting stents (DES), with over 60% of these being manufactured by MNCs. These companies typically go through a supply chain mechanism controlled by the distributors who manage the procurement and storage, and also keep them in hospitals as a consignment. The stents are billed to the hospitals as per the usage. The hospitals then add their profit share and bill the patients accordingly.

This leads to a big gap between the buying price and the selling price to the patient, especially in privately owned and corporate hospitals, leading to a large escalation in the final price to the patient. The average retail price of a bare metal stent (BMS) used to be Rs 45,000 ($670) while DES were priced at Rs 120,000 ($1,800), generating profit margins that ranged from 270% to 1,000%.

In the absence of an organised insurance system, and barring six out of 26 states and some central government health schemes, up to 40% of patients pay out of their pockets for medical expenses and that includes coronary stents. Nobody seriously challenged this practice until recently when a lawyer from New Delhi who had to pay for the PCI treatment of his father noted this exorbitant pricing and took up the case with the judiciary and the government. The case forced the authorities to list the stents in the National List of Essential Medicines (NLEM) in 2016 and, later that year, stents were included in the first Schedule of the Drug Price Control Orders. Finally, in February 2017, after the economics of the prevailing supply chain system had been studied, the prices of stents were capped at Rs 7,260 ($110) for BMS and Rs 29,600 ($440) for DES. This pricing is being strictly enforced. The suppliers have been barred from taking back stocks. This ruling has resulted in a vigorous debate. The political party in power is taking credit for this move—credit that should go to the lawyer who championed the issue and followed it up till notification came through.



There is no doubt that the patients requiring stent implantation will benefit vastly, even more so those paying out of their own pockets. With multi-vessel stenting becoming cheaper, more patients can afford multi-vessel PCI with complete revascularisation, which has typically been more expensive when compared with coronary artery by-pass grafting (CABG). There is little doubt that, with the shrinking profit margins on the stents, hospital management will invariably hike the cost of procedure to compensate, neutralising the benefits intended to be passed on to the patients. Adding to the issue, the reuse of hardware, which was a common practice in India, has also been stopped recently. This will add to the woes of the hospitals, especially the privately-run ones.

MNCs, which have around 60% share of the market, are planning not to bring in the new-generation products in the future. This move may affect the outcomes of procedures in times to come and deprive the operators of the benefits of newer-generation stents, especially in complex lesions. Another problem that can be foreseen is the drastic cut in funding from the big companies for academic activities. These consist of live demonstration courses, industry grants for investigator-sponsored studies and sponsoring cardiologists for attending international and national meetings. This practice has been widely prevalent despite the Medical Council of India's rulings in the last few years.

One positive effect of this pricing cap is likely to be an increase in the use of indigenously manufactured stents that currently have a market share of less than 40%. There are at least three Indian companies that have a substantial share of this. It is, therefore, time for these companies to prove to the cardiologists and patients the equivalent safety and efficacy of their products when compared with products from MNCs that would have undergone vigorous testing in adequately powered clinical trials. There is a perception in the minds of cardiologists—which gets passed on to the patients—that imported stents are superior. There should be a mandate on the Indian companies to show that their product is not inferior to other proven stents by sponsoring studies in order to have outcome data in registries and randomised trials with adequate numbers and publications in peer-reviewed journals. Special emphasis needs to be placed on diabetic patients who constitute around one-third of the total PCI population in our country. We have the experience and expertise of conducting and publishing such studies. Currently there is a study in progress, called TALENT, comparing an Indian DES with the international best-selling cobalt-chromium fluoropolymer everolimus-eluting stent (XIENCE; Abbott Vascular, Santa Clara, CA, USA) in an all-comers population. Finally, India, with a growing market and a huge magnitude of ischaemic heart disease, cannot be neglected by MNCs which are facing a shrinking market in the industrialised world. A way will be found by them as per the doctrine of "survival of the fittest."