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Fiscal Dominance – A Theory of Everything in India

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Abstract

This article focuses on the different channels through which fiscal dominance of the central bank affects financial stability in India, notably through its effect on bank recapitalization and regulation, default closure norms, monetary policy decisions, bond market regulations, capital flow measures and central bank balance sheet. Fiscal dominance also has other side effects on the economy, such as crowding out of private sector investment, external sector fragility of corporate sector financing, financial fragility of firms reliant on market financing, and finally, poor transmission of monetary policy. The paper ends with recommendations on the steps a central bank can take to limit being fiscally dominated. This requires a firm commitment to long-term financial stability, which must be reflected in the central bank's objectives. The central bank must have autonomy over regulatory decisions, including for government-owned entities in the banking and financial sector. The central bank should adopt a mostly rules-based policy making approach rather than relying on excessive discretion. Finally, the central bank should be democratically accountable through transparency of actions and intent as well as an acknowledgement of limitations of its policy options.

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Keywords: Financial Stability, Fiscal Dominance, Central Bank Independence, Monetary Policy Transmission

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Introduction

During my term as a Deputy Governor at the Reserve Bank of India (23rd January 2017 to 23rd July 2019), several issues kept me up at nights:

1. Why are efforts at restoring financial stability seen as contradictory to pursuing growth even though all evidence points to financial stability being a necessary condition for long-run growth?
2. Why does the central bank, when it seeks to implement financial stability reforms fully and sustainably, always face an uphill battle with the entire system?
3. Is there a common undercurrent of resistance which makes it hard to achieve consensus on long-term structural reforms to the financial sector even if they make much economic sense?
4. Does the pursuit of growth in India focus mostly on credit-based stimulus in the short run and is this what causes efforts to restore financial stability to routinely stall?
5. What prevents the central bank from letting it go as far as price-setting in government bond markets is concerned?

I explain below that while there may be specific triggers for each example and setting that can explain the resistance to a particular financial stability reform, the uniform answer to all these questions lies in *fiscal dominance*, which I will position as *a theory of everything in India*.

Fiscal Dominance in India

In economics, "fiscal dominance" is traditionally defined as a state of the country in which large government debt and deficit (spending over and above revenues) prevent the monetary policy authority such as a central bank from meeting its mandated economic targets such as inflation, growth or employment. Instead, the central bank is kept primarily focused on ensuring that the government can roll over its debt and deficit, and, that the government does not default on its liabilities. For instance, the central bank becomes willing to accept excessively low levels of interest rate and high levels of monetisation by participating in primary and/or secondary market for government debt – put simply, printing a lot of money and handing it out cheap – even if inflation is, or risks being pushed, beyond reasonable thresholds; the central bank does so as it is focused not on inflation but on aiding the government borrowing program.

Such a state is by and large considered undesirable for the country as large-sized government debt and deficit tend to be driven by short-term populist pressures, whereas the central bank is mandated to achieve long-term stable objectives for the economy and the financial sector. Fiscal dominance of the central bank can thus be adverse on at least two counts: first, it prevents the central bank and thereby the economy from achieving its long-run stability goals; and, second, instead of the central bank being an independent regulatory institution that can serve a useful "checks and balances" role for government's excessive borrowing and spending programs, the latter are facilitated even more as the monetary policy decisions get fiscally dominated.

While this traditional notion of fiscal dominance is centred around *monetary policy*, I will generalise its application to potentially *all* financial sector policies and regulations. It has been my experience that fiscal dominance can induce the central bank (and even other regulators such as the securities exchange board) into adopting a range of suboptimal regulations for the financial sector that compromise stability and macro-prudential considerations.

At the outset, it should be clear that India is a likely candidate for the prevalence of fiscal dominance. However, to ensure we are on the same page, I will make the case, explaining along the way its relevance for external sector stability.

1. Indian government's fiscal deficit has always been rather large, at present among the top two in the G-20 nations, and by some consolidated measures, the highest. Much of the spending is incurred due to revenue expenditures (such as subsidies) and only a tiny share is attributable to capital expenditures (such as infrastructure development). The deficit composition is thus titled towards short-term economic support rather than towards expanding the economy's pie in the long term; therefore, the size of the fiscal deficit has the potential to accelerate swiftly while serving short-sighted objectives of the government when political compulsions arise. The deficit also depends heavily on tax revenues, thereby on economic growth and notably on oil excise taxes. The latter become harder for the government to pass onto consumers when oil prices rise, a significant vulnerability in the fiscal deficit of Indian government1.
2. In addition to the large fiscal deficit, India runs a current account deficit (imports exceed exports), which is also heavily dependent on the oil import bill. As a result, a part of India's consumption is regularly financed by the outside world. A coincident balance-of-payments outcome is the following. Among the three sectors of the economy – government, corporate and household – only the household sector in India is a saver net of consumption and investment. The net household savings have been steadily declining over the past several years, an important yet often ignored macroeconomic development. As a result, the dissaving by the Indian government – what it raises from others to meet its fiscal deficit – which has been rising, is now above the level of household savings.[2] Thus, the government is reliant at the margin on financing its deficit from the rest of the world. In turn, the corporate sector in India – which also dissaves – is also increasingly reliant on external financing.
3. These "twin deficits" – fiscal deficit and current account deficit – make India vulnerable to a "sudden stop" in which a deterioration in the quality of government or corporate balance-sheets, rising inflation (either due to domestic stimulus or oil price shock), Federal Reserve rate hikes and dollar absorption, or a surge in global risk-aversion, can trigger a withdrawal by foreign investors who have financed the external funding of the government and the corporate sector. The resulting fallout in the form of a sharply depreciating Indian rupee, a rise in oil import bill and inflation, further widening of the twin deficits, and the "death spiral" or loss of investor confidence that ensues, presents a substantial risk to India's financial stability. Such risk has materialised unexpectedly at least once a decade over the past thirty years with several minor hiccups in between. History tells us that we ignore this risk at our own peril.
4. One way that the government can try to address problems of large debt and deficit is not to undertake the tough structural adjustments in their level and composition, but instead do what is more expedient, which is to economically and financially repress the economy to fund its borrowings. The reason that such fiscal dominance has the potential to affect virtually *all* financial sector policies and regulations in India is that there are other important conflating factors. What is key to understanding the present Indian context is that there are strong remnants even today of the pre-1990 era of centralised economic structure and control, including over regulatory institutions such as the central bank. Implications are the following:
   - On the one hand, the over-arching presence of public sector banks, other large state-owned financial institutions (such as the Life Insurance Corporation of India) and state-owned

enterprises, creates the incentive that the government dominate the central bank and its financial sector policies to affect outcomes for the entities it owns and for its borrowing program. This skews the market terms against the private sector and distracts the central bank from its long-term policy goals.

- On the other hand, recognition that the government has incentives to influence policies such and that it is not at arm's length from the regulators, drives the private sector into hyper-active lobbying (read, an overdose of "consultations" with the government and regulators); this, in turn, induces an overall culture in the system of putting in place business-friendly policies that are pro-incumbents, at the cost of market-friendly policies that encourage creative destruction, asset reallocation, ease of doing business, and new entry.

Fiscal dominance in India is neither new nor unique to the period I served at the Reserve Bank.

Prior to the 2000's, the Reserve Bank used to participate in "automatic monetisation" of Indian government's deficits as it purchased directly the *ad hoc* Treasury bills. This form of fiscal dominance of the central bank's monetary policy was institutionally ruled out by the Fiscal Responsibility and Budget Management Act of 2003 that prevented the central bank from participating in the primary market for government securities.

Similarly, the Reserve Bank had in the 1990's imposed statutory liquidity requirements on banks of levels as high as 40% (and cash reserve ratio requirements at other times as high as 15%), effectively making government the preferred, if not the only, borrower of bank credit in the economy. Significant progress has been achieved in minimising such repression of the economy by substantially lowering these requirements since 2000's.

The progressive steps limiting fiscal dominance were undertaken in an economic environment of consolidating government debt and fiscal deficit trajectories, high economic growth, and rise in household financial savings. However, fiscal dominance has once again taken hold of the Indian economy as these conducive factors have gradually reversed. The most striking example is that a recent amendment of the Reserve Bank of India Act allows the central bank to re-enter the primary market for government debt under certain conditions, annulling the reform of 2003 and recreating investor expectations of deficit monetisation.

As I share my experience of fiscal dominance, I stress that its ramifications do reflect a legacy of the past, but importantly convey its potential to compromise financial stability in future.

In what ways does fiscal dominance affect India's financial stability?

I will lay out several channels through which I observed fiscal dominance affect India's financial stability. The list is by no means exhaustive and not all channels may always be active.

1. **Bank recapitalisation and regulation:** Since timely recognition of losses leads to an additional capital requirement for public sector banks which is typically met out of the government budget, the central bank finds itself pulled into regular negotiations with the government around adopting regulatory forbearance.[3] Such forbearance takes the form of relaxed standards for loan loss recognition, protracted schedules for provisioning against realised losses, postponement in switching to modern accounting standards that recognise losses in anticipation rather than only after defaults have materialised, etc.[4] In case of some asset classes such as loans to micro-, small- and medium-sized enterprises, the forbearance is not just a temporary reprieve of a few months,

which could be justified if the underlying issues were cyclical, but is steadily evolving into a near-permanent feature of bank regulation, preventing the recognition that underlying stress of this asset class is in fact structural in nature.

Given the repeating regulatory forbearances, most public sector banks remain short of true economic capital adequacy, even as their regulatory capital keeps being "managed" to look just about right. Rating agencies view such forbearances as "credit negative" for banks, highlighting that forbearances do not serve the purpose of ensuring financial stability. Worse, the compromised standards apply also to private sector banks, weakening their prudential regulation in the process and resulting in a race to the bottom. Overall, this is a rather unfortunate compromise of accounting integrity and capital adequacy of banking balance-sheets, a form of window-dressing to keep government's fiscal deficit available for alternate expenditures.

2. **Default disclosure norms:** It would seem that government's fiscal deficit should not have much to do with the disclosure of defaults by companies to their investors. Yet, in India it does! Most stock exchanges of the world or the securities regulations that govern them require that any materially relevant information must be disclosed by a firm with immediacy to investors who purchase the firm's publicly traded securities such as shares or bonds. From an investor's standpoint, a firm's default on a bank loan, in fact default on a promise to any counterparty, would constitute one of the most important materially relevant pieces of information. Its timely disclosure would improve market discipline, aid efficient allocation of capital in favour of better-performing firms, protect minority investors from being front-run by those privy to information about defaults, and help rating agencies provide more accurate credit assessments (or at the least, reduce their scope for engaging in ratings inflation).

   Despite clear recommendation by an independent committee and earnest efforts of the securities market regulator, India avoided providing timely default information to markets. The rationale is rather convoluted. If defaults are disclosed, then rating agencies would correct the ratings of defaulted entities. Downward rating migrations would increase the capital that banks must put up against such borrowers as they would need to be recognised as being truly of worse credit quality. This would increase the capital requirement of public sector banks and thereby the required budgetary allocation from the government. To rule out the latter, default disclosure to market investors was not required despite the regulatory push for the same.

   This is an extraordinary chain of calculations whereby the disclosure policy of stock exchanges around firm defaults was determined by fiscal dominance. The lack of timely default disclosure implies that even some of India's top-rated firms do not always make payments when due to their lending banks; similarly, many state-owned enterprises which are publicly listed and borrow in bond markets default regularly on required payments to their counterparties and yet are rated higher than safer private firms.

   It should not then come as a surprise that the aggregate loan loss ratio of credit intermediaries in India has been one of the highest in the world and loan recovery one of the lowest. Fiscal dominance of disclosure norms ensured that relevant parts of the financial system simply did not possess the knowledge as to when the process of accelerating and collecting payments from a borrower should start. It is some relief that the securities regulator has pushed through the requirement of immediate (within 24 hours) disclosure by a listed borrower failing to repay securities such as bonds; in case of loans from banks or other financial institutions, disclosure is required for delays in payment of more than 30 days. While this bodes well all around for the efficiency of credit ecosystem in India, single-day (rather than only 30-day) default disclosure norm – in line with global standards – would be the natural next step also for loan repayments.

3. **Monetary policy:** A convenient way to recapitalise public sector banks is by showering them with Treasury gains which arise on banking books when interest rates are cut, or expectations of future rate cuts bring down the yield curve and cause bond prices to rally. Given the desire to keep budgetary allocation for public sector banks' capital needs low, there is an implicit asymmetric pressure on the monetary policy authority's interest rate decisions: Rate cuts are preferred and inflation forecasting errors on the downside are okay (even welcome!), while rate hikes are particularly disliked along with inflation forecasting errors on the upside. Such asymmetric pressure can potentially induce deviations in monetary policy authority's objective and prevent it from attaining its mandated target of stable inflation. Of course, there is nothing wrong with rate cuts leading to Treasury gains on bank books; that this channel creates asymmetric pressure on the monetary authority to cut rates is what is rooted in fiscal dominance.

   A corollary to the fiscal dominance of interest-rate policy is the asymmetric use of liquidity tools by the central bank. Liquidity injections that transfer a stock of government bonds to the central bank balance-sheet are seen more favourably than liquidity absorptions in which the central bank supplies government bonds to the market. When undertaken in large quantities, liquidity injections improve bond prices and transfer treasury gains to banks, helping recapitalise public sector banks while simultaneously lowering the cost of rolling over government debt. This creates an incentive to get the liquidity policy to be fiscally dominated rather than keeping it unconstrained to achieve the objective of ensuring that short-term money market rates tug closely the policy repo rate set by the monetary policy authority. In fact, once sufficiently fiscally dominated, the liquidity policy can control most of the government bond yield curve and prices, rendering the rate-setting process of monetary policy authority effectively irrelevant. For example, the central bank's one arm can keep the policy rate unchanged due to inflation concerns, while its other arm can act fiscally dominated in moving all other rates.

   Similarly, fiscal dominance can imply that bank cash reserve requirement can become a tool to look to relax for backdoor heaping of profits onto banks for their recapitalisation. As such, the primary purpose of this requirement is prudential and developmental in nature: one, cash is the most robust defense against liquidity needs; and second, a cash requirement facilitates arbitrage as well as price-discovery in overnight inter-bank markets as banks are induced to actively manage their liquidity to meet the requirement.

4. **Market regulations:** In the eventuality that the monetary policy authority does manage to raise interest rates and if expectations of future rate hikes build up too (for instance, because inflation prints and measures of sustained "core" inflation are incontrovertibly hardening), then banks make losses on their Treasury positions, reversing the gains from rate cuts. Again, to reduce budgetary allocation of capital to public sector banks, the mark-to-market accounting treatment of government bonds by the central bank is nudged for being set as asymmetric: Treasury gains are transferred for most part as soon as bond prices rally; in striking contrast, Treasury losses are allowed to be recognised over several quarters. The result is another form of deep interference of fiscal deficit pressures on the accounting treatment of banking balance-sheets. Indeed, the central bank is often working the hardest to ensure that public sector banks can show profits and adequate capital to markets at quarter ends (rather than the bankers and the owners of banks bending over backwards to manage the interest rate risk they willingly took on).

More perversely, government bond yields could be hardening also due to the risk of fiscal slippage. This too leads to losses on bank Treasury positions. Therefore, regulatory forbearance in the form of asymmetric mark-to-market treatment of such losses weakens an important form of market discipline on fiscal slippage.

Furthermore, it can be difficult to generate interest in government bond auctions when investors face risks of rising deficits and borrowings by the government. In such a scenario, public sector banks and other government-owned entities in the financial sector can be, and are, required – through moral suasion – to buy up entire issue amounts in individual auctions at above-market prices. A natural financial regulation to respect the integrity of market auctions (prices and quantities) would impose concentration limits whereby no individual buyer can participate in an auction for greater than some threshold share. Such regulation, commonplace in Treasury auctions around the world, is not in place in India as it would be heavily contested by the government, creating another channel through which fiscal dominance affects bond market regulations. I must add that the Reserve Bank's continuing role as the debt manager for the Government of India only accentuates this channel.

5. **Capital flow measures:** As I explained earlier, government dissaving in India has in recent years exceeded the net savings of the rest of the economy, and hence, the government is increasingly reliant on external finance. By implication, capital management on the external sector front, which determines the extent of foreign debt flows that can enter the Indian economy and limits the short-term nature of such flows, becomes a regular bone of contention between the central bank and the government. While getting the central bank to monetise deficits and support bond markets remains the first line of fiscal dominance by the government, relaxing capital flow measures also represents an important line of such dominance.

   As such, capital flow measures are macro-prudential in nature, *i.e.*, aimed primarily at financial stability rather than at relaxing government's financing constraints. Hence, these measures must be calibrated as a long-run strategy that is fine-tuned in relation to the stock of foreign exchange reserves that the central bank has – and is likely to be able to maintain – on its balance-sheet to defend the currency against sudden outflows. The calibration should also meet the "stress test" at least as severe as the past experience of such outflows witnessed during sudden-stop episodes such as the global financial crisis during Sep-Dec 2008 and the "taper tantrum" of May-Aug 2013.

   In contrast, a short-term government focus on tiding over its next borrowing or budget hurdle can lead to preference for measures that make the external sector vulnerable. For instance, foreign-currency denominated sovereign bonds can be tempting to issue when global interest rates are low but would exacerbate the death spiral during a sudden-stop episode. Similarly, unless structural reforms are undertaken and fiscal consolidation credibly committed to, short-duration bonds may be the only feasible external source of funds during stress and therefore be preferred by the government, but such flows can promptly reverse should the stress worsen, aggravating the downward currency spiral.

   If a central bank concedes to such myopic preferences arising out of government borrowing constraints, it ends up setting macro-prudential capital flow measures that are fiscally dominated rather than aimed at ensuring external sector resilience.

6. **Central bank balance-sheet:** Finally, given India's external sector vulnerabilities, it is paramount that the central bank balance-sheet be perched on the highest hill (think of Chhatrapati Shivaji Maharaj's choice for locating his fortresses): it should remain untouched and unperturbed in the

midst of almost any macroeconomic storm. The Reserve Bank has undertaken in the past – and in future too may have to undertake – massive foreign currency operations. The Reserve Bank has also been a counterparty for providing insurance against currency risk while raising emergency external funds from otherwise unwilling financiers. For performing this critical function seamlessly, the central bank must be regarded as being a counterparty of the highest credit quality, the equivalent of a AAA+ rating and perhaps even better.[5] This necessitates that the central bank takes a long-run view of its balance-sheet resilience and saves from its annual earnings on a regular basis for the rainy day.

However, such preservation of central bank "capital" via transfer of its profits to future contingencies has seemed overly conservative to governments that have at times narrowly focused on filling up their bottomless pit of deficits year after year. There have also been successful demands in recent years for an "interim dividend" from the central bank, bypassing other arrangements such as Ways and Means Advances which limit the extent of interim monetisation of government deficits by the central bank. The result has been an erosion of central bank balance-sheet strength and an increasing compromise of the severity of stress scenarios it can withstand in future. Such fiscal dominance of central bank balance-sheet could perhaps be justified if the credit rating of the sovereign is of the highest quality and government bond markets benefit from foreign investors' flight to safety when the global scenario turns adverse. Neither of these conditions is met by the Indian economy at present. As a result, erosion of the central bank capital to pay dividends to the government is tantamount to a coercive monetisation of fiscal deficits.[6]

Indeed, many observers see the erosion of central bank balance-sheet strength as only an extension of the fiscal dominance of state-owned enterprises, whose cash flows appear to be heavily tunnelled to meet government deficits and whose balance-sheets are providing leverage-financed dividends *via* on-paper divestments of one state-owned unit to another. In the long run, it would be better if these state-owned enterprises deployed their cash flows to engage in capital expenditures, but this conflicts with the short-run government objective of maintaining high fiscal deficit to finance its populist revenue expenditures.

From fiscal dominance to crises and low productivity traps

Given the pervasive influence that fiscal dominance in India has on financial sector regulation and policies, it is a natural corollary that it poses significant risks to the country's long-run financial stability and growth.

Factors that make fiscal dominance a theory of everything in India imply that financial sector risk-absorption capacity and regulations that try to maintain it at a minimum prudential level are always stretched thin to meet the requirements of over-stretched government finances. They are like rubber bands being pulled so hard that they can snap unexpectedly!

These same factors drive the external sector towards fragility as the levels of government and corporate financing by foreign investors far exceed what would be necessary absent the domestic savings being drained out by government borrowing.

With such vulnerabilities, accidents can happen swiftly. For instance, if an external sector shock in the form of a significant oil-price rise coincides with the approaching of an election – when rise in government spending and increase in cash circulation create short-term stimulus and inflationary spike, then all hell can break loose for the macroeconomy.

Even outside such episodes, fiscally dominated economies feature poor efficiency of capital allocation by under-capitalised financial sector and favouring of incumbents over new entrants. In my view, these channels have slowed down India's transition from a rent-seeking economy to a value-creating one and translated into an overall loss of productivity and growth. If fiscal dominance remains unchecked in the wake of slowing growth, the outcome can in fact end up being a low-productivity trap for the economy.

Other side-effects of fiscal dominance

Factors underlying fiscal dominance have several other pernicious side-effects:

1. **Crowding out of the corporate sector**, not only of micro-, small- and medium-sized enterprises as banks stuff their balance-sheets with government bonds rather than lend to these enterprises, but also of highly-rated firms as investor appetite for safe bonds is more than met by government bonds widening the gap between bond yields of highly-rated firms and the government. Such crowding-out results in financial constraints and lower growth for the private sector.
2. **External sector fragility of corporate sector financing and investments,** as lack of domestic savings beyond government dissaving induces corporates to borrow abroad in substantial amounts, exposing them to the risk of sudden-stop withdrawals by foreign bond "tourists," in turn exposing the rest of the economy too to currency depreciations.
3. **Financial fragility of firms reliant on market financing,** as over-supply of government paper at typically longer durations of borrowing induces the private sector to borrow at shorter tenors, leading to rollover risk. This can have adverse financial stability implications, especially if non-bank financial companies first increase reliance on short-term debt in search of lower yields to pay and then are unable to roll it over.
4. **Poor transmission of monetary policy to the real economy,** given that government and corporate bond-market yield curve as well as bank deposit rates are determined under fiscal dominance not just by inflationary expectations and central bank policy rate decisions, but also by (i) quantity constraints imposed by the large supply of government paper, and (ii) administered interest rates on extra-budgetary resource mobilisation by the government (such as above-market rates offered by the Indian government on its borrowings through National Small Savings Funds). A central bank attempting to improve the transmission of its policy rate decisions by altering the quantity constraints, for example, by buying up or lending long-term against government paper, is effectively fiscally dominated and only ends up subsidising further fiscal slippage.

A Reform Agenda

In the rest of the article, I will present a two-pronged reform agenda as to how adverse effects of fiscal dominance on financial stability can be limited, first by undertaking institutional fiscal reforms, and second by the central bank adopting measures to limit being fiscally dominated.

Institutional reforms for India's fiscal management

It goes without saying that ideally, fiscal dominance must be addressed at its roots. Therefore, the heavy lifting for protecting the economy from fiscal dominance must come from those individuals within the government who value the quality of long-run outcomes for the economy. Such individuals, for example, bureaucrats with careers spanning government terms and economic advisors who are typically technocrats, can strive for:

- o A fiscal consolidation path to reasonable targets with prudent undertaking and management of spending programs;
- o Reorientation of expenditure towards items that have economically meaningful long-term multiplier effects such as education and infrastructure;
- o Objective monitoring of consolidated debt and deficit numbers by helping set up an independent, ideally bi-partisan, fiscal council (as already recommended by the Fiscal Responsibility and Budget Management Review Committee of 2016); and,
- o Improved disclosure standards for government expenditure and deficit that preclude obfuscation of numbers by accounting *jugaad* (tricks) such as moving expenditures from before to immediately after the accounting date and from "above the line" (on-balance-sheet) to "below the line" (off-balance-sheet or extra-budgetary); such improvement would pave way for a focus away from accounting sleight of hand towards fiscal management and disinvestments in a true economic sense.

The emergence of bureaucrats and technocrats in the government who take and stick to the farsighted view rather than seek to dominate financial sector policies is the need of the hour.

How the central bank can limit being fiscally dominated

Given my experience at the Reserve Bank, I will highlight in greater detail the steps that a central bank can undertake to limit being fiscally dominated:

1. **Firm commitment to long-term financial stability:** First and foremost, the central bank must take the overall stance that financial stability must be persevered for in its every decision and even in the face of imminent government pressures. The central bank objectives are inherently long-term in nature:
   - o As a banking regulator, the central bank oversees preserving the value of deposits from bank insolvency.
   - o As a monetary authority, the central bank oversees ensuring inflation does not erode economy's savings, facilitating financial inclusion of households over their holding primarily real assets such as gold and housing.
   - o As the economy's primary defense against external sector stress, the central bank is also in charge of managing the currency's excessive volatility and limiting imported inflation.

   These objectives can and must be interpreted to have a truly long-run dimension. In turn, such interpretation must be employed over and over to resist and defend pressures to compromise financial stability for short-run benefits of the government and other influential constituencies. Unfortunately, there are no short cuts to grow well sustainably. Restoring and maintaining financial stability must come first for the central bank.

2. **Independence and autonomy over regulatory decisions:** The central bank must be granted true independence in the letter of the law (*de jure*), and by implication, effective autonomy over its operations and regulatory decisions. Where the law itself renders the central bank independence

weak, central bank has a handicap to start with and is effectively (*de facto*) always under duress from the government. To this end,

- Appointments of top management and others governing the central bank must be undertaken in a timely manner and subject to an accountable process that limits the scope for opportunistic placements.
- Top management appointments must be for a term length that is at least as long as that of the government, ideally spanning government terms, and subject to termination only with cause and after a due process.
- Regulation should be ownership-neutral in that the central bank must be allowed by law to exercise the same powers over all regulated entities, whether they are state-owned or private.

Given the substantial presence of public-sector banks and government-owned entities in the financial sector, ownership-neutrality of regulation is an essential structural reform to move India towards establishing and maintaining financial stability on a durable basis.

3. **Adoption of policy rules over discretion:** The central bank should "tie itself to the mast" by adopting rule-based policymaking, *i.e.*, deploying specific tools for specific well-articulated objectives, so as to avoid the temptation to respond to the "calls of sirens." Without such discipline, there can be a mission creep into objectives, loss of focus in strategy to meet the objectives, and sidelining of long-run stability goals. In particular,

- Basel capital and liquidity norms should be upheld in their true and full spirit, rather than softened through regular forbearances for the financial sector; forbearances must be exceptional and subject to a "sunset clause" of no longer than six months and not become permanent dilutions of the norms.
- Prompt Corrective Action framework for banks must be adhered to, and even strengthened in terms of ownership-neutral actions over all regulated entities, including public sector banks and other government-owned finance companies.
- Default disclosure with immediacy for even one-day delay in meeting loan repayments needs to be mandated not only for publicly listed firms but also to a Public Credit Registry for all borrowers (public or private, in a phased manner by size). This would improve creditor discipline and quality of lending allocations.
- Asset Quality Reviews and Macro-prudential Stress Tests need to be conducted on an annual basis for the entire financial sector (banks as well as non-bank financial companies), preparing for their eventual role as the standard for capital requirements. It is not good enough that the financial sector survives stress; it must continue to function and intermediate well, for which it must maintain extra capital buffers in good times. Specialised supervisory cadre at the central bank could just be the medicine that doctors prescribe for such treatment.
- Flexible inflation targeting framework adopted in 2016 has been recognised by rating agencies and multilateral institutions as a critical structural reform of the Indian financial sector. It is meant to build inflation credibility with external investors and to dampen the impact of sudden stops which risk external sector stability. It is a folly, therefore, to think that the framework does not factor in financial stability. The framework needs to be persisted with so that inflation and inflation expectations are more durably anchored; savers can't be short-changed in favour of borrowers by switching the target index from consumer price inflation to wholesale price inflation the moment rate cuts can no longer be justified.

- Cash reserve ratio requirement for banks must be maintained for prudential purposes rather than be tinkered with as a way of undertaking sectoral credit allocation, the latter being a feature of the pre-1990s centralised economy that the Reserve Bank has long moved away from. The cash reserve ratio requirement in India is already at its historical low level; hence, the Chinese model of using it as a sectoral credit allocation tool is best not emulated in India, especially given the Chinese requirement is 4-5 times higher than that in India.
- Macro-prudential capital management needs to be kept on a well-telegraphed path, calibrated in relation to the central bank's stock of foreign exchange reserves that is likely to survive external sector stress. The long-standing wisdom at the Reserve Bank, articulated by its top management in 1990's and 2000's, of allowing foreign capital in a pecking order – from direct equity investment (the most preferred) to foreign-currency sovereign bond (the least preferred) – is well-founded given the fragility of various kinds of flows and financing instruments under a sudden-stop scenario.[7]
- Central bank balance-sheet strength must always be maintained at pristine quality by adopting the minimum standard of an effective AAA+ rating as the basis for any distribution to the government. A complete distribution of central bank profits to the government must be eschewed as under fiscal dominance, this sets a precedent which catalyses the setting up of committees to rewrite existing rules as soon as the distribution is partial and requires some provisioning of profits by the central bank for the rainy day.

4. **Leaning against the wind and playing the game of chicken:** Under extreme fiscal dominance, whichever point of accommodation the central bank agrees to today becomes the starting point for further compromise tomorrow. Hence,
   - The central bank must recognise this possibility in its policymaking by maintaining even higher standards of financial stability. This requires "leaning against the wind" in good times, for instance, by building buffers into the level of real interest rates, financial sector's capital and liquidity, and its own balance-sheet strength. Emerging risks at vulnerable banks and financial firms also need to be proactively managed rather than at the edge of the precipice.
   - The central bank must also defer pressures born out of government myopia by "playing the game of chicken."[8] The more readily the central bank is willing to compromise, the weaker is its bargaining and persuasive power with the government. The central bank must therefore learn to draw a line sometimes and say "No". Such obduracy can help shift the government focus to more serious ways of dealing with its debt and deficit problems, such as expenditure prioritization, disinvestments, and fixing governance at public sector banks.[9]
5. **Democratic accountability:** Central bank's adherence to rules must be demonstrated to the public at large to the extent possible and at least with some reasonable lag. While the preparation and dissemination of statutory reports go a long way in achieving this, even extraordinary measures – rather than just being a fiat privilege of the top management – must be supported with well-articulated reports on their desired outcomes and possible unintended consequences. This way, the case for sunset clauses on extraordinary measures can be laid out upfront and escalating expectations for their extension be managed in advance.

   Such accountability requirement would limit the scope of fiscal dominance over central bank policies: explicitly spelling out the underlying rationales for compromises would be difficult in many cases and simply hiding the truth under the rug would risk public embarrassment and possibly even opprobrium. Overall, transparency of actions and intent as well as an open acknowledgment of the limitations of the central bank and its tools in addressing issues beyond its scope and remit can lead to a more professional way of dealing with outside pressures instead of the present policy of striking back-door, and therefore, opaque, compromises. I stress that the central bank must do this in public interest to remain democratically accountable, and by so doing, reduce the risk of its fiscal dominance along the way.

6. **Providing and encouraging reason and voice:** The central bank has a unique position from where it can provide both a 35,000 feet view of the macroeconomy as well as a microscopic documentary on whether and how the plumbing of the financial sector is functioning or impaired. Indeed, it usually relies on extensive research and data to inform its policymaking. Such research should be freely and widely publicised, explaining on the one hand the reasons for adopting specific policies, and on the other, encouraging its downstream researchers to conduct incisive analysis and unearth new facts that can provide early warning signals of instability. The quality of such research inquiries can reach the highest standards only when it is subject to scrutiny of outside experts and is required to clear a minimum hurdle for public dissemination.

   Last but not the least, the central bank must use its voice and speak truth to the power by putting public interest before its personnel's career growth and promotions. Most take the factors driving fiscal dominance – a large-sized government debt and deficit – as given and operate without attempting to influence them; however, the central bank can and should use its role as the economy's institutional safeguard of financial stability to highlight the risks that fiscal dominance entails.

   Dissent and diversity of thinking, while seemingly confrontational, help lift the quality of debate and discussion for better aggregation of views and eventually superior decision-making. Conversely, discouraging dissent and diversity risks errors from system-wide group-think and cognitive capture; the central bank becomes a flock of birds with a feather; and, public discussion gravitates towards its predictable choices, as after all, most analysts, commentators and media get rewarded if they correctly forecast what the central bank will do rather than agonise painstakingly over what the central bank should do!

Conclusion: The right stance – Financial stability comes first

The long, punctuated history of financial crises and growth slowdowns across the world illustrates beyond reasonable doubt that lack of financial stability impairs long-run growth and external sector resilience of economies. It has also been documented that lack of financial stability is by and large not a matter of misfortune; it ends up being engineered as the long-run side-effect of short-term policies such as providing sustained debt-fuelled stimulus to the economy, repeatedly monetising in one guise or the other fiscal deficits of an extravagant sovereign, and perennially hiding the true losses on financial sector balance-sheets.

Given the vantage point of having been exposed to this economic history, I started at the Reserve Bank in January 2017 with a clear conviction: given that the non-performing loans to assets ratio of the banking sector was close to double-digits and at the top of the G-20 countries, India needed to focus first on restoring financial stability and thereby position itself in a sound structural position for sustainable economic growth. The former Federal Reserve Governor, Janet Yellen, famously noted in January 2009, while pressing for comprehensive reforms in the aftermath of the global financial crisis:

"A clear lesson of history is that a 'sine qua non' for sustained economic recovery following a financial crisis is a thoroughgoing repair of the financial system."

There is an important message therein for India. The historical strategy of levering up yet another asset class to grow when prior leverage boom has gone bust and its mess not yet cleaned up has repeatedly failed; this strategy has derailed the Indian economy's long-term growth plans; unsurprisingly, there is no asset class left to lever up and structural reforms are now critical.

It should be clear than that financial stability is not just a lofty term to be used to justify any and all extraordinary central banking or regulatory measures, typically quick-fix bandages that are patched on to the surface wounds when underlying imbalances materialise and begin to stifle growth. Such remedial measures are designed with much speed and often without careful deliberation, leaving behind as a consequence an inevitable trail of unintended outcomes that sow the seeds of future instability. At best, extraordinary measures should be deployed to buy some time to undertake deeper structural reforms. When the extraordinary measures themselves become the primary tool for providing financial stability, the economy simply ends up fighting one war after the other, each one set up by an incomplete victory over the past one.

Financial stability is in fact about taking *the right stance* for the economy ahead of time – maintaining its financial sector in robust health and with ample immunity so that the economy can grow well in a sustainable manner. This can be achieved by positioning the financial sector structurally in such a way that even the ordinary toolkit of central banking and regulatory actions has the desired impact on households, corporations, and micro-, small- and medium-sized enterprises. This reduces the reliance on extraordinary measures on a frequent basis. Reaching such a stable state requires, as I have argued throughout the book, that

- The financial sector remains mostly well-capitalised and the under-capitalised entities are promptly corrected to healthier state or quarantined to avoid further haemorrhaging;
- Defaults and losses are recognised, resolved and disclosed publicly in a timely manner;
- The transmission of monetary policy to the real economy is strengthened via the development of efficient viable markets and without undue regulatory interference in price-setting by markets;
- The external sector is always safeguarded; and,
- The right balance is struck between the government, the private sector, the markets, and the regulators, especially the central bank, so they work in sync with each other without being under the dominance of, or being crowded out, by the government.

Maintaining financial stability necessitates that regulators such as the central bank lean against the winds of fiscal dominance by sticking to well-designed rules for decision-making (such as inflation-targeting mandate for monetary policy, prompt corrective action for dealing with under-capitalised banks, Basel standards for bank capital and liquidity requirements, etc.). Exercise of excessive discretion only opens the door to an excessive accommodation of short-term political pressures.

Unfortunately, pandemic stress in the form of COVID-19 outbreak has struck just as financial instability clouds over parts of India's financial sector have gathered again. It should be clear then that to restore financial stability comprehensively, we can no longer keep kicking the can down the road. The right time to save for the rainy day is right now.

Notes

[1] The problem had been recognised by successive governments and the Fiscal Responsibility and Budget Management Act of 2003. However, the inability to enforce compliance to the Act's fiscal deficit targets within the stipulated timeframe reflects the strength of myopic preference of governments to spend relative to their long-term commitment to building fiscal credibility.

[2] Estimates of consolidated government borrowing – the "public sector borrowing requirement" – are in the range of 9-10% of Gross Domestic Product (GDP). Net household savings are estimated to be around 7% of GDP.

[3] It needs to be acknowledged here that the government practice of recapitalising banks with "recapitalisation bonds" rather than outright capital injection implies that as per extant fiscal accounting norms, only the interest expense on these bonds adds to the immediate fiscal deficit. However, regardless of the fiscal norms, there is an increase in government's debt as a result of the recapitalisation. More subtly, if banks are to create credit upon recapitalisation, they would need to generate liquidity against some of their other government bond holdings by selling them in secondary markets, a move that is akin to the government directly raising the liquidity by issuing new bonds and transferring it as capital injection to public sector banks.

[4] There may also be other political considerations in government preference for regulatory forbearance such as favouring incumbent defaulted borrowers who by virtue of not being classified as non-performing enjoy continued asset control and "extend and pretend" loans from banks.

[5] Note that central banks are typically not rated by credit rating agencies. However, subjecting the central bank balance-sheet to stress scenarios and examining its equity capital in such scenarios relative to its liabilities can provide a simulated likelihood of default, and, in turn, an effective credit rating, for the central bank. Counterparties often "cap" their internal central bank rating to that of the sovereign; this practice only reinforces my point that central bank balance-sheet must be managed independently from that of the government so that the effective central bank rating can pierce through the sovereign rating, which would be desirable in times of external sector stress.

[6] One exception to this is if the government uses the dividend to extinguish the central bank holdings of government bonds, whereby it reduces its future debt payments. This, however, has not been the manner in which the dividend from the central bank has been deployed by the government.

[7] The complete pecking order can be stated as: (i) direct equity investment (the most preferred); (ii) portfolio equity flows; (iii) portfolio flows in domestic-currency long-term corporate and government bonds; (iv) long-term external commercial borrowings of corporates which are foreign-currency denominated; (v) portfolio flows in domestic-currency short-term corporate and government bonds; (vi) short-term external commercial borrowings, and, finally, (vii) foreign-currency sovereign bond (the least preferred).

[8] In a strategic (game-theoretic) sense, fiscal dominance implies that the government moves first, making a take-it-or-leave-it offer to the regulators, essentially tying them down to its preferred sequential choices. In reality, the outcomes are better described as an alternating bargaining game between the government and the regulators.

[9] Such obduracy was one of the many hallmarks of the late Federal Reserve Governor Paul Volcker (1927-2019), in arresting double-digit inflation in the United States, and once arrested, in keeping inflation at bay by refusing to compromise monetary policy for cheaper funding of President Ronald Reagan's expansionary manifesto. In the end, Paul Volcker's stance prevented the United States government from undertaking massive tax cuts and incurring significant fiscal slippage, and thereby stabilised the government's long-term bond yields.

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Seven Governance Issues Raised by COVID

Bibek Debroy*

Abstract

Covid-19 has caught India, like the rest of the world, unawares. Given its geographical area, population and level of development, India has handled the pandemic remarkably well. Nevertheless, the pandemic provides an opportunity to identify measures to improve the state of preparedness for future crises. This paper underlines Constitutional and governance issues to prepare the country for such emergencies in the future.

To ensure more accurate data on mortality rates and their attribution to the pandemic, the paper underlines the need to improve the Civil Registration System. Another issue relates to the confusion arising from the faulty detection of cases when Rapid Antigen Tests (RAT) and RT-PCR tests do not provide consistent results. This has required the ICMR to issue a press release to reconfirm in the case of negative reports in symptomatic patients when RAT is used. The paper also emphasises the need to link fiscal transfers under the National Health Mission to performances in terms of specified deliverables by the States. Another issue is the need to amend the Constitution to place 'Public Health' in the Concurrent List to enable more significant role for the Union government in fighting pandemics like COVID-19. The paper also argues for the creation of a separate local body list in the Seventh Schedule and ensure legal consistency in the assignment across different levels of government in the country. Given the important role of the Union government, 'Management of Disasters and Emergencies, natural or manmade' should be an item included in the Concurrent List of the Seventh Schedule as recommended by the Second Administrative Reforms Commission. This enables congruency and cohesion in dealing with disasters between different levels of government.

JEL: I10, I18, H12, H77

Keywords: Covid-19, Public Health, Disaster Management, Fiscal Transfers.

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Introduction

Covid-19 caught the entire world, not just India, unawares. With India's population, it is not surprising that the number of infections should be high. In 1968, there was an exhibition of Andy Warhol's works at Moderna Museet in Stockholm. On that occasion, Andy Warhol remarked, "In the future, everyone will be world-famous for 15 minutes." Covid-19, with its uncertainty, brought fleeting and dubious fame to several people, for more than fifteen minutes. Between 18th March and 21st March 2020, Dr Ramanan Laxminarayan, Director of the Center for Disease Dynamics, Economics and Policy projected that India would have 700 to 800 million infections and 2 to 2.5 million dead (Laxminarayan 2020) (India Today 2020). This projection was at one end of the extreme. At the other extreme, a model presented by a Member of Niti Aayog projected there would be no new cases after 16th May 2020 (Koshy 2020). Both extremes, the excessively pessimistic and the excessively optimistic, were wrong and the fame lasted no more than the fleeting fifteen minutes. In the jargon used by economists, there is a difference between risk and uncertainty. In the case of risk, the probabilities of events are known. In the case of uncertainty, probabilities are unknown, and this makes decision-making difficult. Uncertainty also makes modelling difficult, and in the absence of data, values of variables imported from other countries often lead and have led, to fallacious results. In that state of uncertainty, the Union government imposed a lockdown on 25th March 2020. In various phases, the lockdown lasted till 31st May 2020, and given the need to revive livelihoods and the economy, there has been a staggered process of un-lockdown from 1st June 2020.

There are different metrics to evaluate the spread of the pandemic in India. At the time of writing, by any reasonable extrapolation, India will become the country with the largest number of cases in the world. Normalised by population, cases and deaths are low. The case fatality rate, at the time of writing, is 1.63%, as published by the Ministry of Health and Family Welfare, India. The first national serosurvey (conducted in April and May 2020) showed that the infection fatality rate is between 0.5% and 0.6%, lower than in Europe and the USA. "The findings of the first national population-based serosurvey indicated that 0.73 per cent of adults in India were exposed to SARS-CoV-2 infection, amounting to 6.4 million infections in total by early May 2020. The seroprevalence ranged between 0.62 and 1.03 per cent across the four strata of districts" (2020). The intention of this essay is not to get into such metrics. Instead, the intention is to flag certain governance issues raised by Covid.

Governance Issues

First, a pandemic is about mortality and morbidity, capturing the requisite data on both and evolving suitable policy responses. If general data on deaths are inaccurate, specific data on Covid-related deaths are also likely to be deficient. Vital statistics mean data on births, death, marriages and divorces. Today, in most countries in the world, including India, this is done through a civil registration system (CRS). The legislative support for this is provided through the Registration of Births and Deaths Act of 1969, which requires mandatory registration of births and deaths.[1]

The law clearly identifies responsibility for registration and specifies penalties for violation. CRS is akin to a complete population census. There has been a sample registration system (SRS) since 1969 to validate the CRS and test its efficacy. "As per the annual report of CRS for 2015, the number of registered deaths reached 6.27 million in 2015 as against an estimated 8.25 million deaths (an estimated three-fourths of all deaths)" (Krishnan and Das 2019). 25% of deaths were simply not registered, and we did not count them. Of course, death registration has improved over time, but not as much as birth registration has. In 2018, compared to 2015, the level of death registration increased to 86%, but in a State like Bihar, the registration level was still 34.6%, while in Jharkhand, it was 54.9% (2020). Given this, in all States, does one expect all Covid-related deaths to be reported and registered? That sounds unlikely.

Second, reporting and registering death is one thing. Ascribing the cause of death is another. There is a process for medical certification of cause of death (MCCD). The latest report, published in 2020, reports figures for 2018 (Report on Medical Certification of Cause of Death 2020). There is an international classification of diseases (ICD) and MCCD must conform with this, empowered by the Registration of Births and Deaths Act of 1969, mentioned earlier. With an urban lens, one often tends to assume that certification of cause of death is universal. As a quote from the 2020 report will illustrate, it is anything but that. "The MCCD under Civil Registration System has been implemented in the States/UTs in a phased manner to provide data on cause of death. However, it has so far been implemented in only certain hospitals, generally in urban areas which are selected by the Chief Registrar of Births & Deaths. Thus, the scheme covers mostly those deaths, which occur in medical institutions located in urban areas. The coverage under the scheme in terms of percentage level of medical certification as well as the type of hospitals covered has not been uniform across the States/UTs. Some of the States have notified only teaching and specialised hospitals under it, whereas, in others, only district hospitals and Primary Health Centres (PHCs) have been brought under its ambit." Therefore, medical certification of cause of death is hardly universal, a point worth remembering when one talks about deaths ascribed to Covid. For the entire country, out of deaths that are registered, only 21.1% are medically certified and the figure is 4.6% in Jharkhand and 5.1% in UP. One should not presume that this is only because of deaths in non-institutional settings. There is also the wrong attribution by physicians. Physicians and medical workers who certify the cause of death are not necessarily familiar with the 14,000 codes for various diseases under ICD. For example, in the 2018 report, 13.1% of total medically certified deaths were classified as "symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified". The eighth highest cause of death in India is something that cannot be pinned down. Consequently, in cross-country rankings of the quality of vital statistics and CRS, India does not perform that well.[2] By no means is this a problem caused by Covid. However, Covid flags the inadequacies very starkly.

Third, in connection with Covid, ICMR (Indian Council of Medical Research) has various advisories and protocols, on testing and other matters. How binding are these on States? For example, on 22nd April 2020, ICMR wrote to the Chief Secretaries of all States (Toteja 2020). "I am writing to you, with respect to issues raised by a few states about rapid antibody tests. In its advisory dated 17th April 2020, ICMR had laid down the scope, purpose and usage of the rapid antibody tests. ICMR has always emphasised that the confirmatory test for diagnosis of COVID-19 infection is RT-PCR test of the throat and/or nasal swab, which detects virus at an early stage. I would again reiterate that rapid antibody tests are largely to be used as a tool for surveillance with respect to formation of antibody in persons exposed to the virus. .... We have been given to understand that many States have procured such kits and on State's request, ICMR has also arranged and made available rapid antibody test kits with the clear understanding that these tests cannot replace the RT-PCR tests to diagnose the COVID-19 cases....ln view of this, States are advised to follow the prescribed protocol for these tests and use it for the purposes for which these are meant. It is reiterated that to contain Corona Virus infection, RT-PCR tests must be continued vigorously as the principal diagnostic tests." The implication is that this was not being done. The issue goes beyond the false negative of a rapid antigen test (RAT). On 10th September 2020, Union Health Ministry urged States to follow the prescribed protocol. "Union Health Ministry has noted that in some large States, symptomatic negative cases tested by Rapid Antigen Tests (RAT) are not being followed up by RT-PCT testing. The Guidelines of ICMR as well as the Union Health Ministry clearly state that the following two specific categories of persons must necessarily be retested through RT-PCR tests: (1) All symptomatic (fever or cough or breathlessness) negative cases of Rapid Antigen Tests (RAT). (2) Asymptomatic negative cases of RAT that develop symptoms within 2 to 3 days of being tested negative. In this background, the Union Health Ministry and ICMR have jointly written to all the States/UTs and urged them to ensure that the all symptomatic negative cases of RAT are mandatorily retested using the RT-PCR test. This is necessary to ensure that such symptomatic negative cases do not remain untested and do not spread the disease among their contacts. This will also ensure early detection and isolation/hospitalisation of such false negatives. It has also been reiterated in the joint letter that while the RAT is being used to increase access and availability of testing in the field, RT-PCR remains the gold standard of COVID tests. The Union Health Ministry has also urged the States/UTs to urgently establish a monitoring mechanism in every district (a designated officer or a team) and at the State level to follow up such cases. These teams shall analyse details of RAT conducted daily in the Districts and State and ensure that there are no delays in retesting of all symptomatic negative cases. The aim of States/UTs should be to ensure that no potentially positive case is missed out. They have also been advised to undertake an analysis on a regular basis to monitor the incidence of positives during the RT-PCR tests conducted as a follow up." Had this not become a pervasive problem, there would have been no reason for a press release in the public domain.

Fourth, there is a Seventh Schedule in the Constitution, which sets out three Lists – Union List, State List and Concurrent List. In the Seventh Schedule, in the State List, Entry Number 6 mentions "public health and sanitation; hospitals and dispensaries", while Entry Number 10 mentions "burials and burial grounds; cremations and cremation grounds". The health issues we have mentioned are squarely in the State List. They are not even in the Concurrent List. The only exception is Entry Number 30 in the Concurrent List, "vital statistics including registration of births and deaths". With this structure of the Seventh Schedule and with health in the State List, what degrees of freedom does Union Government possess? Since health features in the State List, should the Union Government spend on health? The answer is not axiomatic, because the untied share in the divisible pool of taxes devolved to States through Finance Commissions is meant to be spent on items, such as health, that are in the State List. The obvious counter is that health is important. Therefore, the Union government should spend on health, regardless of what State governments do. There are of course trade-offs and competing claims on scarce financial resources. Ignoring those, it is because health is important that one has Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana (PMJJAY). NHA (National Health Authority) implements this flagship health insurance/assurance scheme.[3]

It is because health is important that one has Centrally sponsored schemes like National Health Mission (NHM), with part funding by the Union government. Had it not been for PMJAY and NHM, health outcomes would have been worse. As a counter-factual, the adverse implications of Covid would have been worse. However, to link it to the specific question, if there is Union Government funding, it should naturally be expected that Union government fund flows should be specifically linked to deliverables by States. The result-based funding of NHM does contemplate this, partially. "In 2018-19 this initiative received a big boost when the Mission Steering Group of National Health Mission under the Chairmanship of Health Minister decided to increase the Performance based incentive/penalty from 10% to 20% of the NHM budget. This sent a clear message to all the States that good performance would be monitored, acknowledged and rewarded. This meant that while 80% of the resource envelope earmarked for the State would be assuredly available, 20% of the resource envelope would depend on State's performance on agreed conditionalities. The States which do not fulfil the criteria could lose up to 20% of funding under NHM" (Health System Strengthening – Conditionality Report of States, 2018-19 2019). Ideally, the performance-based share should be much higher than 20%.

Of what is this 20% a function? There are seven indicators, with differing weights, as indicated in the table below. There is no indicator in this list that measures and quantifies registration of deaths and certification of causes of deaths. The cited Niti Aayog composite health index has 23 indicators. Registration of births is one of these indicators. However, registration of deaths, not to mention the status of MCCD, finds no mention in this evaluation. At the very least, Covid should focus some overdue attention on the quality of death statistics. Various countries, not just the more advanced ones, have developed tools for monitoring the quality of mortality statistics.[4] Such tools can, and should, be used to validate the quality of mortality statistics collected by States and linked to any Union government funding on health.

Table 1: Showing the indictors of performance under National Health Mission

SL No.	Indicators	Weightage
1	Improving Incremental performance based on the NITI Aayog Report	40
2	Operationalizing Health and Wellness Centres (HWC)	20
3	Implementing Human Resource Information System (HRIS)	15
4	Grading of District Hospitals*	10
5	Mental Health Services in Districts as per framework	5
6	Screening of 30+ population for Non-Communicable Diseases	5
7	Rating of PHCs (both Urban and rural) on their functionality	5

Fifth, the fourth point is based on the assumption that the Seventh Schedule remains as it stands, with health squarely in the State List. Though the basic structure of the Constitution cannot be changed, amendments can occur and the Seventh Schedule has also been amended since 1950, though only in marginal aspects. The Seventh Schedule, and indeed the entire Constitution is part of a historical evolution process. In so far as Union-State relationships are concerned, the Constitution draws its legacy from the Government of India Act of 1935 and its precursor, the Government of India Act of 1919. As Union-State relationships evolve, and they have changed quite a bit because of GST and because of dismantling Planning Commission's role in devolution of funds, logically, the Seventh Schedule should also be examined. Such changes in entries have been proposed, for instance, for public order, police and agriculture, all three of which are in the State List. Recently, a comprehensive exercise was undertaken by Vidhi, on revamping the Seventh Schedule (Sohini Chatterjee n.d.). Covid is a public health issue. But as of today, nothing on public health is in the Union List. From the State List, we have entry 6 (public health and sanitation; hospitals and dispensaries, entry 9 (relief of the disabled and unemployable) and entry 10 (burials and burial grounds; cremations and cremation grounds). From the Concurrent List, we have entry 16 (Lunacy and mental deficiency, including places for the reception or treatment of lunatics and mental deficient), entry 18 (adulteration of foodstuffs and other goods), entry 19 (drugs and poisons) and entry 29 (Prevention of the extension from one State to another of infectious or contagious diseases or pests affecting men, animals or plants). Given a situation like Covid, would we like the Union government to do something? Assuming we do, beyond entry 29, on inter-State spread, the Seventh Schedule of the Constitution confers no powers on Union government to act.

Sixth, from an epidemic, Covid has moved to the pandemic stage and there are scale differences between an epidemic and a pandemic. However, let us use the two words synonymously. The relevant piece of legislation is old. It is the Epidemic Diseases Act of 1897. Since people are often unaware of the minute details of statutes, it is necessary to quote Section 2 of the Epidemic Diseases Act. “(1) When at any time the State Government is satisfied that the State or any part thereof is visited by, or threatened with, an outbreak of any dangerous epidemic disease, the State Government, if it thinks that the ordinary provisions of the law for the time being in force are insufficient for the purpose, may take, or require or empower any person to take, such measures and, by public notice, prescribe such temporary regulations to be observed by the public or by any person or class of persons as it shall deem necessary to prevent the outbreak of such disease or the spread thereof, and may determine in what manner and by whom any expenses incurred (including compensation if any) shall be defrayed. (2) In particular and without prejudice to the generality of the foregoing provisions, the State Government may take measures and prescribe regulations for the inspection of persons travelling by railway or otherwise, and the segregation, in hospital, temporary accommodation or otherwise, of persons suspected by the inspecting officer of being infected with any such disease.” Notwithstanding ICMR, Union Health Ministry and NHM, the right and responsibility for acting against something like COVID vests with States alone. Union government’s right and responsibility is limited to Section 2A of the Epidemic Diseases Act. “When the Central Government is satisfied that India or any part thereof is visited by, or threatened with, an outbreak of any dangerous epidemic disease and that the ordinary provisions of the law for the time being in force are insufficient to prevent the outbreak of such disease or the spread thereof, the Central Government may take measures and prescribe regulations for the inspection of any ship or vessel leaving or arriving at any port in the territories to which this Act extends and for such detention thereof, or of any person intending to sail therein, or arriving thereby, as may be necessary.” Except for action taken at the border (seaports and airports), there is nothing that Union government can do. This can hardly be satisfactory.

Consequently, regardless of the Union government’s template on lockdown or un-lockdown, States possess the legal right to have their own templates, which can be at variance with what the Union government proposes. This adds to the clutter, legally speaking. Many public goods and services are delivered at the local level, not at the level of Union or State governments. A valid argument has been advanced about India’s governance being excessively centralised. Therefore, a revamped Seventh Schedule should have a Local Body List. To that end, but still falling short of it, the 74th Constitutional amendment in 1992 introduced a Twelfth Schedule, mentioning powers, authority and responsibilities of municipalities. Entry 6 in that List reads, “public health sanitation, conservancy and solid waste management”. Legally speaking, who decides on lockdown or un-lockdown? Will it be Union government? Will it be State government? Will it be the municipal government? Will it be the District Magistrate, invoking, and subsequently not invoking, Section 144 of the Code of Criminal Procedure? This does not contradict the requirement of zeroing in on geographical areas where infections are high, such as containment zones, and not generalising based on red States or red Districts. The point that is being made is a more fundamental one, about a lack of legal consistency in powers granted to different layers of government. The one country argument should not be only for purposes of indirect taxes like GST but should equally apply to situations of national emergency.

This is not a new issue. It is worth quoting from the Constituent Assembly Debates in September 1949.[5] To quote H. V. Kamath, “While commending my amendment seeking to transfer public health, sanitation, hospitals and dispensaries to the Concurrent List, I should like to state that public health has been the Cinderella of portfolios in the Cabinet of our country. During the British Regime, it was especially so, very sadly neglected and not much provided for: as a result of which the health of the nation has fallen to C-3 standards, it is the object of our government today to raise the health of the nation from C-3 to A-I standard. If this were the aim of our government, we could not do better than make public health a Concurrent subject... I know, from my experience of certain provinces, that the health schemes that are launched by provincial Governments while commendable as regards their good intentions-, fail to achieve the desired consummation, because of the lack of direction and coordination from the Centre." Brajeshwar Prasad endorsed this view. "I do not understand the opposition of provincial ministers in this respect. If they feel that they are in a position to deal with all problems of public health and sanitation, if they are of the opinion that hospitals and dispensaries can be run on efficient lines without the help and co-operation of the Government of India, they are welcome to hold their opinions....If you go to a general hospital you will see that flies and bugs are multiplying, that the clothes of the nurses are dirty, that phenyl and medicines are not available and the patients are not treated well. There is utter neglect and deterioration in efficiency. Therefore, I feel that public health, sanitation, hospitals and dispensaries should be included in List I." It is impossible not to empathise with these views. Undoubtedly, the fear of excessive centralisation should not apply to situations like a national epidemic.

To take a related example, entry 81 in the Union List reads, "inter-State migration; inter-State quarantine". In the course of Covid, a problem faced was that of inter-State migrants. The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act has acted since 1979. Among other things, this specified the responsibility of the contractor. "(a) to furnish such particulars and in such form as may be prescribed, to the specified authority in the State from which an inter-State migrant workman is recruited and in the State in which such workman is employed, within fifteen days from the date of recruitment, or, as the case may be, the date of employment, and where any change occurs in any of the particulars so furnished, such change shall be notified to the specified authorities of both the States; (b) to issue to every inter-State migrant workman, a pass book affixed with a passport size photograph of the workman and indicating in Hindi and English languages, and where the language of the workman is not Hindi or English, also in the language of the workman, - (i) the name and place of the establishment wherein the workman is employed; (ii) the period of employment; (iii) the proposed rates and modes of payment of wages; (iv) the displacement allowance payable; (v) the return fare payable to the workman on the expiry of the period of his employment and in such contingencies as may be prescribed and in such other contingencies as may be specified in the contract of employment; (vi) deductions made; and (vii) such other particulars as may be prescribed". Under the Seventh Schedule, the responsibility is with the Union government, but implementation and enforcement vests with the States. Had the intent of the legislation been enforced, there would have been a register of migrant workers, with portability of welfare benefits for returning migrants. Nevertheless, the statute was not enforced.

Seventh, in fairness, one should mention the Disaster Management Act of 2005. Covid is a disaster and there can always be other natural and man-made disasters. As a reaction to Covid, Union Home and Health Ministries have invoked the Disaster Management Act. Under the legislation, there must be national plans, State plans, and even district plans to handle disasters. Though all States and union territories have disaster management plans now, in addition to the national one, the quality of these leaves a lot to be desired, and most districts still do not have district-level disaster management plans. Therefore, in the unfortunate event of the country facing another disaster, natural or man-made, the country is still not adequately prepared. One reason for that may be legal. Any piece of legislation must obtain support from the Constitution. Does the Constitution have an entry on disasters? Under what provision was the Disaster Management Act therefore passed? The Report of Rajya Sabha's Standing Committee tells us, "The proposed legislation is relatable to Entry 23 (Social Security and Social Insurance) in the Concurrent List of the Constitution. This will have the advantage that it will permit the States also to have their own legislation on disaster management" (One Hundred and Fifteenth Report on The Disaster Management Bill 2005). Legislation on disasters under the umbrella description of social security and social insurance cannot possibly sound right.

It is worth quoting from the third report of the Second Administrative Reforms Commission (2006): "Parliament has enacted the Disaster Management Act, 2005 by invoking entry 23 namely 'Social security and social insurance, employment and unemployment' in the Concurrent List even though all aspects of crisis management cannot be said to be covered by this entry. Similarly, some States have also passed laws governing disaster management... Disaster management encompasses all activities including preparedness, early warning systems, rescue, relief and rehabilitation. The term disaster includes natural calamities, health-related disasters (epidemics), industrial disasters and disasters caused by hostile elements such as terrorists. There are already various entries in the three lists, which deal with some aspect or other of disaster management. 'Public order' finds a place in the State List, as does Public Health. Entries 14 and 17 in the State List deal with Agriculture and Water respectively. Environment and Social Security are included in the Concurrent List. Atomic energy and Railways are part of the Union List. In addition, after the 73rd and 74th amendments, all civic powers have been delegated to local bodies. Due to the cross-cutting nature of activities that constitute disaster management and the vertical and horizontal linkages required which involve coordination between the Union, State and local governments on the one hand and a host of government departments and agencies on the other; setting up of a broadly uniform institutional framework at all levels is of paramount importance. The legislative underpinning for such a framework would need to ensure congruence and coherence with regard to the division of labour and responsibilities among the agencies at the Union, State and other levels. This could best be achieved if the subject of Disaster Management is placed in the Concurrent List of the Constitution. Unlike in other cases of proposals for inclusion in the Concurrent List, State Governments may also welcome this, as this will also enable them to have legislation without ambiguity regarding the entry." Hence, there was the recommendation that "A new entry, "Management of Disasters and Emergencies, natural or man-made", may be included in List III (Concurrent List) of the Seventh Schedule of the Constitution." It is impossible to disagree with this, though our view, articulated in this essay, is that there should be a comprehensive review of the Seventh Schedule.

Conclusion

Covid, emanating from outside, caught India unawares, as it did the rest of the world. It was an exogenous shock and Union, State and local governments, and citizens, have coped as best as they can. By any indicator, given India's geographical area, population and level of development, India has handled the pandemic remarkably well. At the time of writing, we are still in the midst of the pandemic and the tapering off and subsequent economic recovery are both somewhat uncertain. However, Covid also provides a trigger for the country to evaluate its state of preparedness for future crises, health-related or otherwise. This essay has highlighted seven legal and governance issues that bear examination.

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Notes

[1] There have been convincing arguments, and a Bill, for mandatory registration of marriages, but that has not yet become law.
[2] See, for example, Mikkelsen et al (A global assessment of civil registration and vital statistics systems: monitoring data quality and progress 2015)
[3] https://pmjay.gov.in/
[4] Analysis of National Causes of Death for Action (ANACONDA), developed at the University of Melbourne, is an example of this.
[5] These quotes from the Constituent Assembly debates are taken from https://indiankanoon.org/doc/282475/

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Towards Reforming the Education System in India

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Abstract

Education is a major determinant of human resource development which enables people to get better insights into the complex world they inhabit, enabling them to harness and experience their potential capabilities. This paper scrutinises the performance of the entire gamut of the education sector of India. To weigh this performance with some yardstick, the study makes a comparison of India's performance with that of other BRICS countries. The study focuses on governance structure, quality of educational standards, and inequality issues, and addresses the issues relating to increasing prominence of privatization at all levels of education and its consequences on efficiency and equity in educational facilities. Overall, the study stresses the importance of "more and better education" including high levels of technical knowledge and skill formation. It highlights the possible impact of the COVID-19 pandemic on the education sector in India. Finally, it identifies the emerging challenges in higher education and suggests reforms for achieving efficiency with equity which is the sine qua non for building a better and advanced society.

JEL: I20, I24, I28

Key Words: Education Sector, Governance, Quality, Inequality, BRICS, COVID-19.

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I. Introduction

Education is a key component and major determinant of human resource development. It enables social transformation and economic well-being both at individual and national levels. According to Noble Laureate Amartya Sen, education is both a constituent and instrument of well-being. "Universal primary education" was one of the eight UN Millennium Development Goals (MDGs); and "quality education" is the fourth in the seventeen Sustainable Development Goals (SDGs) adopted by the UN in 2015– successor to the MDGs. The SDG for education aims to (i) provide equal access to affordable vocational training, (ii) eliminate gender disparities in education, and (iii) achieve universal access to quality higher education. India has been a signatory to these UN efforts to bring about concerted socio-economic improvements in its member societies.

It is widely recognised that the progress of a country depends on the quality of its manpower in terms of knowledge, skills, competencies, and related attributes. Skill development and knowledge enhancement of the workforce are vital for promoting economic growth. Education has positive externalities as well. People using new technology and methods can spread the same to others around them.

The relationship between educational inequality and economic equality is interactive and mutually reinforcing. Persons from wealthier sections of society have access to better schools and higher educational institutions, while those from the deprived sections settle for lower quality of education. In the process, educational inequality widens resulting in the preponderance of poorly educated persons in low paying jobs and better educated persons in highly paying jobs. It is argued that equal educational opportunities can neutralize adverse consequences of family circumstances and help in reducing the inequalities (OECD, 2012). According to the Nobel Laureate Stiglitz, the existing educational system is one of the major institutions perpetuating inequality, especially in less developed countries.

Policies focussing on equity in education can promote inter-generational improvement in earnings and reduce income inequalities. For developing countries, expanding quality education and reducing inequality in education have been major challenges.

How is India confronting these challenges? The next section dwells upon this issue further.

II School Education

The Department of Education was set up under the Central Ministry to expand educational facilities after India's independence. Since 1960, the focus on access has been gradually moving towards improved quality. Consistent with this vision, the National Policy on Education was formulated in 1968. The 1990s saw several policy initiatives and programmes, following 'The World Declaration in Education for All', adopted in 1990 by the international community including India. Programmes such as *Operation Black Board* for improving primary education and *District Primary Education Programme* were introduced.[1]

In 2000-01, the country launched the major programme, *Sarva Shiksha Abhiyan* (SSA), for universalising elementary education, improving elementary education and reducing gender and social gaps. Thereafter, a constitutional amendment was passed by the Parliament in 2002 making education a Fundamental Right of every child in the age group 6-14 years. This culminated in the launch of the Right to Education (RTE) Act 2009, which has been in operation since 2010 and which provides free and compulsory education to children in the age group 6-14 years.[2]

The most recent Draft Education Policy suggests mainstreaming pre-primary education in the age group of 3-6 years by extending the RTE Act 2009 (Government of India, 2019a).This is a very positive measure since it is believed that a major part of the brain develops before 6 years of age, helping to induce children to continue education.

Literacy

The literacy rate in India improved from 52 per cent in 1991 to 74 per cent in 2011 and the gap between male and female literacy rates is on the decline since 1981 (Figure 1).

However, it is worth noting that India lags other BRICS countries in terms of literacy rates. The adult literacy rate in India was lower than that of Brazil, China, Russia and South Africa (Table 1). Further, India also lags in mean years of schooling. Thus, there is a huge challenge in bridging this gap.

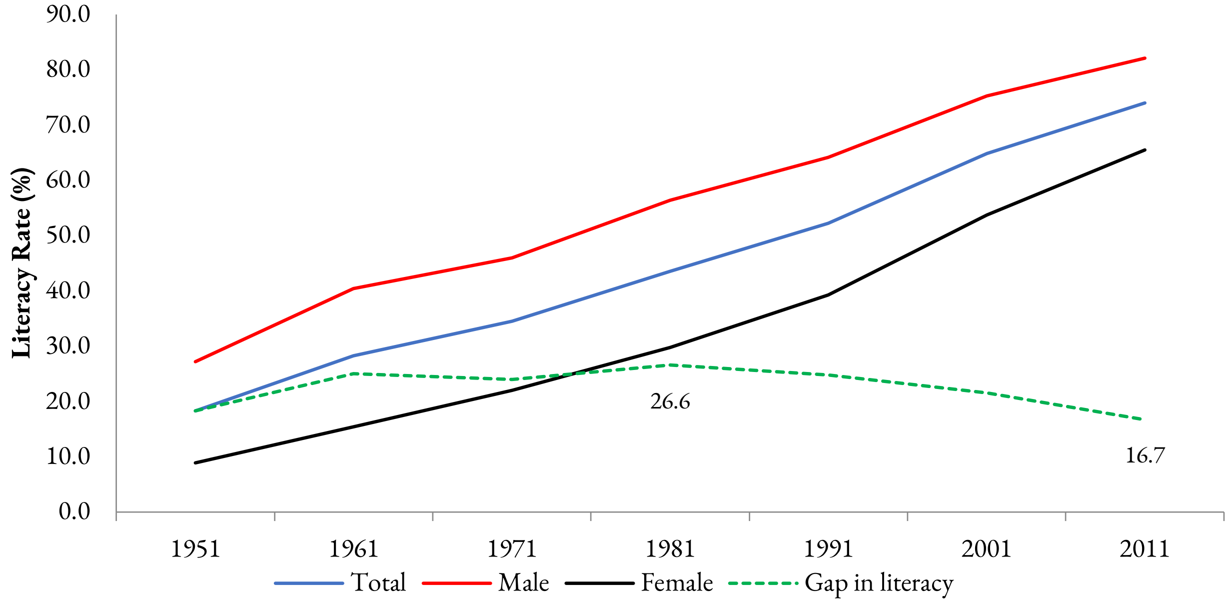
Table 1: Social Sector Development Indicators in BRICS

Indicator	Brazil	Russia	India	China	South Africa
Adult Literacy Rate (Male), 15 year+ (%) 2010-19	93	100	82	98	88
Male population with at least Secondary Education, % (ages 25 and older), 2010-18	57.7	95.7	63.5	83.0	78.2
Gross Tertiary Enrolment Ratio, 2013-18	51.3	81.9	28.1	50.6	22.4
Pupil-Teacher Ratio in secondary education, 2018	17	--	29	13	28
Public Expenditure on Education as a % of GDP, 2017	6.2	3.8	3.0	--	6.1
Researchers in R&D per million people, 2010–18	888	2822	253	1225	492
Expenditure on R&D as a % of GDP, 2010–18	1.26	1.11	0.6	2.15	0.82
High-technology Exports as a % of Manufactured Exports, 2018	13.0	11.0	9.0	31.4	5.3

Source: World Development Indicators, World Bank, 2020; UNDP (Human Development Report 2019)

Much depends on how India can improve the performance of economically weaker states such as Bihar, Jharkhand, Uttar Pradesh, and Madhya Pradesh where literacy rates are relatively low. At the same time, it is interesting and worth observing that north-eastern states, other than Assam, could achieve high levels of literacy though their per capita GSDP is low; this could be attributed to the initiatives of voluntary and religious organisations operating in that region.

Figure 1: Literacy Rate in India and Gender Gap in Literacy (%)



Source: Census of India

Elementary Education

In India, there has been a substantial quantitative expansion of school education in both the public and private sectors. One key accomplishment has been the presence of a school in every village. The number of primary schools increased from 5.6 million in 1990-91 to 8.5 million in 2014-15, whereas upper primary schools increased from 1.5 million to 4.3 million(Government of India, 2016a).

The near universal enrolment of children of school-going age has been achieved and the rural-urban differences and gender gaps have been narrowing.[3] SSA 2001 and RTE ACT in 2009 have resulted in phenomenal improvements in educational performance. Schemes such as 'mid-day meal' and targeting eight years of compulsory education helped enrolments and reduced drop-out rates. The Gross Enrolment Ratio (GER) in primary education increased from 83.8 in1990-91 to about 100 in 2014-15 and GER in upper primary increased from 66.7 to 91.2 during the same period. For a nation of a billion plus population, these have been significant accomplishments. However, field studies concerning primary education have revealed discrimination on lines of caste, community, and gender despite enacting the RTE ACT and rising GER.

Yet, one must not lose sight of the fact those aspirational levels of even the lower income groups have improved and do struggle to earn some extra incomes to provide for better private education for their children. At the same time, central and state governments are making earnest attempts to improve the standards of education in Government schools.

Secondary School Education

Several studies emphasise the importance of secondary education in developing countries for the following reasons: i) demand for secondary education has been growing fast due to significant expansion of primary education, which has since become universal; ii) economic growth requires highly skilled manpower, which is more in the domain of secondary rather than primary education; and iii) it serves as a vital foundation to promote communication and analytical capabilities and critical thinking. In this context, it is worth noting that the early expansion of secondary education and public investment in secondary education benefited East Asia (Birdsall, Campos, Kim, Corden, & MacDonald, 1993). The increase in public spending in most of Latin America, as well as in Korea, Malaysia and to a lesser extent in Thailand, appears to have generated a 'quantity effect' (a more egalitarian distribution of human capital and a drop in the ratio of skilled to unskilled wages) which helped in equalising the wage distribution (Cornia, 2014).

Though India launched the *Rashtriya Madhyamik Shiksha Abhiyan* (RMSA) in March 2009 as a centrally sponsored scheme for improving access and quality of secondary education, the country was at a huge disadvantage with regard to pupil-teacher ratio in comparison to Brazil and China in 2018 (Table 1). It was also at a disadvantage in terms of male population with at least secondary education in the ages 25 years and older (Table1).

Though vocationalisation of education was enunciated in the National Policy of Education (1986), and the Central Government has been giving grants to states to implement the programme, vocational training has not been included in the higher secondary curriculum. The rate of vocational training barely increased between 2004-05 and 2011-12. This reflects low skills of the Indian manpower.

Skills in demand must form an integral part of the general education curriculum. The funds available under Corporate Social Responsibility (CSR) can be utilised for skill development.

Quality of Education

Lack of quality education at primary and secondary levels, especially in government schools, is the basic malady that persists in India today. The Annual Survey of Education Report (ASER, 2018) shows that only 42.2 per cent of children in Standard V in government schools in rural areas can read just standard II level text and about 22.7 per cent can do only simple divisions whereas the corresponding figures in private rural schools are 65.1 and 40.0 percent, respectively.

Infrastructure is grossly inadequate in government schools in rural areas. According to the Report of the Committee for Evolution of the New Education Policy (2016), teacher absenteeism, which was estimated at over 25 per cent every day, has been one of the main reasons for the poor quality of student learning outcomes (Government of India, 2016b).

It has been estimated that in Andhra Pradesh, about 85 per cent of the scheduled caste children study in government secondary schools. The Centre for Economic and Social Studies (CESS) case study on ninth grade children in 15 schools with varying management systems across three districts of Andhra Pradesh shows that the average test scores in mathematics and English in residential schools managed by Social Welfare Departments, which are meant exclusively for the scheduled caste children, were the lowest (Vepa & Raghupati, 2018). It is unfortunate that the existing affirmative action for the poor and disadvantaged has been perpetuating the inequality of opportunity.

Privatisation and Unequal Opportunity

The percentage of students in government primary schools declined from 73 in 2007 to 62 in 2014-15; in upper-primary from 70 to 66; and in secondary from 61 to 56. On the other hand, at the primary level, the percentage of children in private unaided schools increased from 13 to 30; in upper primary from 9 to 23 and in secondary from 8 to 25 over the same period. Clearly, there is increasing privatisation of school education.

Private schools are more likely to exist in villages where teachers' absenteeism in public schools is high (Kramer et.al, 2005). A Public Report on Basic Education (PROBE report) attributes the increasing popularity of private schools to the breakdown of government schools as compared to parents' ability to pay. It is not that the pay of teachers is lower in government schools. Also, job security is higher in government schools.

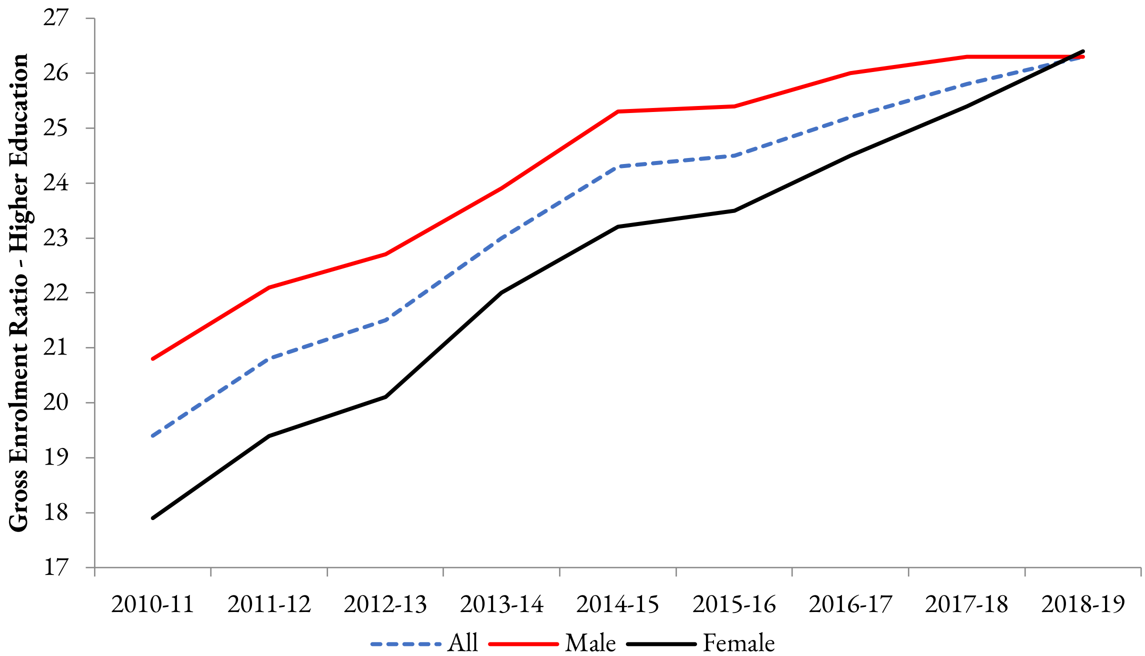
The 71st Round of NSSO Survey found that about four-fifths of rural students and one-third of urban students at the primary level were attending government institutions in 2014. As per the survey, per person per annum expenditure incurred by a household at the primary level during a session in private unaided institutions was several times higher than the expenditure in government institutions. Thus, private educational institutions are not accessible to the children of the lower income and marginalised groups. This contributes to inequality *in opportunity* when they enter the job market as adults. As a result, they are excluded from assessing in the gains of the growth process. Moreover, it marginalises the role of education as a public good.

III Higher Education

In India, there has been a significant expansion of higher education over the past 60 years: the number of universities and deemed universities increased from 30 to 845, and colleges from 750 to about 40,000.

Total enrolment in higher education has been estimated to be 33 million. The GER has shown significant improvement, i.e., from 19 per cent in 2010-11 to 26.3 per cent most recently. Yet, it is lower compared to some of the BRICS countries other than South Africa (Table 1) and Western Countries (US: 89, Canada: 88). The target is to raise GER to 30 per cent by now and keep the upward march.

Figure 2: Gross Enrolment Ratio of Higher Education in India (18-23 yrs.)



Source: Government of India, MHRD (2019b)

At the All India level, the gender gap has narrowed down over time (Figure 2). In 2018-19, while there was no gender gap in the gross enrolment rate at the national level, it was worse in Andhra Pradesh, Bihar, Gujarat, Maharashtra, Odisha and Tripura (Table 3). It is worth noting that in the Southern States of Goa, Kerala and Pondicherry and North Western States of Punjab, Haryana and Himachal Pradesh, higher education seems to be more advantageous for females as the gross enrolment ratio in higher education for them was far higher. Southern States had also better pupil-teacher ratio (Table 4).

Privatization

There has been a rapid increase in privatisation of higher education in India. State universities are passing through a period of stunted growth and uncertain future. The void created by them is being filled by the private deemed to be universities, and more recently, by private universities. Initially, the Ministry of Human Resource Development (MHRD), on the recommendations by the UGC, has accorded deemed to be university status to leading institutions like the Tata Institute of Fundamental Research, Mumbai, Gokhale Institute of Politics and Economics, Pune and a few others.

In the year 2000, with the UGC liberalising the guidelines for granting deemed university status, many private institutions got deemed to be university status. As the MHRD stopped granting permission to any new institutions since 2009, private universities were launched under the State Private University Act. As per the Central and State Acts, private universities and deemed to be universities should not be profit-making institutions. They must be registered as societies or trusts under relevant Acts.

Among the Regular and Deemed universities, about 45 per cent of the universities (384) are privately managed. Further, 78 per cent of colleges are privately managed, while 64 per cent are private unaided colleges. Thus, private players account for more than 60 per cent of the total institutions and of total enrolment.

Rajasthan followed by Gujarat, Madhya Pradesh and Uttar Pradesh have the largest number of private universities that outnumber the public universities (Table 2). It is a puzzle that the number of private and public universities is the largest in economically weaker states of Rajasthan, Uttar Pradesh, and Madhya Pradesh (Table 2). Yet their GER and pupil-teacher ratios are worse. It is worth examining how privatisation is impacting higher education in these states.

Table 2: Number of Universities by Type in Major States, and Union Territories of Goa and Pondicherry (2018-19)

Sl. No	State/UTs	Central University	Deemed University-			State University		Total
			Government	Government Aided	Private	Public	Private	
1	Andhra Pradesh	1	1		4	22	3	31
2	Assam	2				10	6	18
3	Bihar	4	1			17	4	26
4	Chhattisgarh	1				13	9	23
5	Goa					1		1
6	Gujarat	1	1	1	1	28	34	66
7	Haryana	1	3		3	16	22	45
8	Himachal Pradesh	1				4	17	22
9	Jammu and Kashmir	2				9		11
10	Jharkhand	1			1	10	9	21
11	Karnataka	1	4		11	28	16	60
12	Kerala	1	2		1	13		17
13	Madhya Pradesh	2	1			22	31	56
14	Maharashtra	1	7	2	12	22	11	55
15	Odisha	1			2	15	4	22
16	Puducherry	1			1			2
17	Punjab	1	1		1	9	15	27
18	Rajasthan	1			8	23	45	77
19	Tamil Nadu	2		2	26	21		51
20	Telangana	3			2	15		20
21	Uttar Pradesh	4	2	3	4	27	28	68
22	Uttarakhand	1	1	1	1	10	17	31
23	West Bengal	1			1	25	10	37
	India	46	34	10	80	371	304	845

Note: These figures do not include one Central Open University, 127 Institute of National Importance, five Institutes under State University Act, 14 State Open Universities, and one State Private Open University.

Source: Government of India, Ministry of Human Resource Development, (2019b)

Quality of Higher Education

The quality of higher education leaves much to be desired. For instance, a National Association of Software and Service Companies (NASSCOM) Survey (2011) reported that only 25 per cent of the graduates working in the IT sector have the required skills. Moreover, there is a significant imbalance between supply and demand in the higher education sector. Of the total intake capacity of 1.6 million seats in 3,365 engineering colleges in India, half have remained vacant in 2016. Many IT companies were compelled to recruit diploma holders and general stream graduates and give them rigorous training, incurring thereby huge costs. There is also an associated problem of lack of quality teachers as the market has been driving out some of the best talents from academic pursuits to IT industry and other greener pastures abroad. This has accentuated the problem for the next generation.

The quality of education imparted, and research produced in Indian universities are far below the standards in developed countries and in some developing countries like China as well. None of the Indian universities including Indian Institute of Science and IITs, figured among the top 100 universities list of the Times Higher Education World University Rankings 2018; two universities of China could find a place among the top 25 universities. It is reported that in 2010, India's share in the world's scientific output was 3.5 per cent while that of China was 11.7 per cent[4].

India is often referred to as the big place next to USA, for computer sciences. But the figures on research are abysmally low. Only 2.4 per cent of global research in computer sciences in 2010 was from India while the share was higher in three emerging economies - China (15%), South Korea (6.3%) and Taiwan (5.7%).

A few private institutions are undertaking significant educational innovations and experiments. However, this does not mean that all private institutions are necessarily good. Several are highly commercial and exploitative, even though they are labelled as "not for profit" institutions[5]. Moreover, the private sector in higher education has not promoted research.

Internationalisation of courses is taking place in private universities. There has been considerable expansion of high level professional and technical courses to meet the needs of industry for engineering and other graduates. Primarily students belonging to advanced socio-economic groups are found in these courses. The issue of equal access to all social groups remains unaddressed.

The Indian Government at various points expressed the intention of spending 6 per cent of the GNP (Centre + States) on the education sector. However, the Centre and state's share on spending has gone up to about 2.8 to 3.0 per cent of GDP during the years 2016-17 to 2018-19 [Govt. of India's Economic Survey 2018-19 (Volume 2), p.257]. Public spending on R&D in India was 0.82 per cent of the GDP while that of China was 2.02 per cent.

IV Emerging Challenges in Higher Education

The demand for higher education is likely to increase considerably due to the rise in the population in the age group of 17-23 years. Moreover, the perception among the economically weaker communities that higher education is the pathway to upward mobility, may also contribute to the growing demand. Overall, demand would not be a constraint for the expansion of higher education.

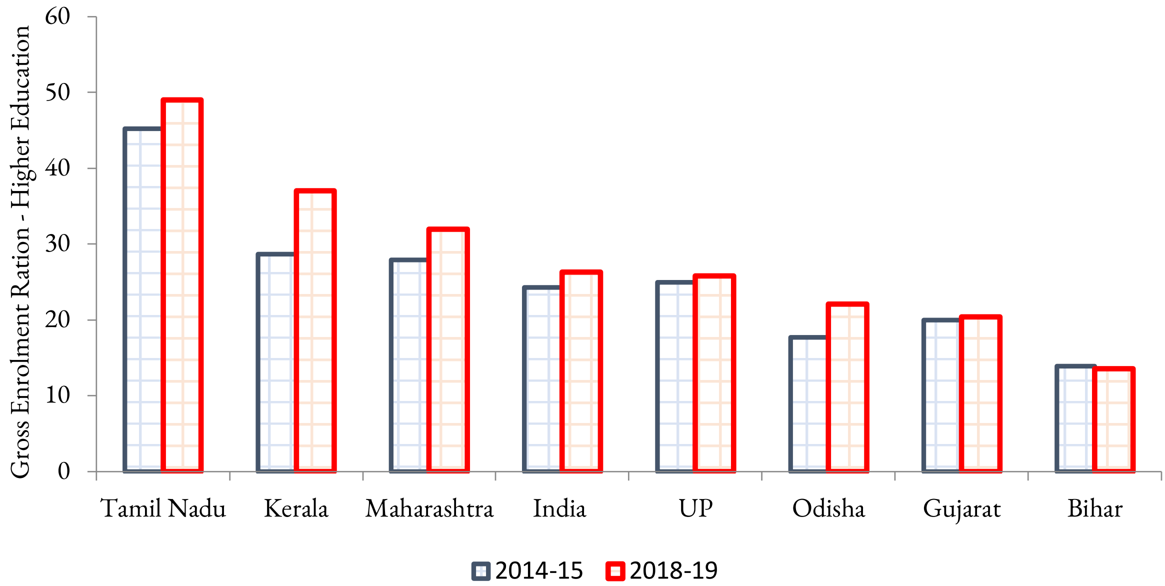
However, the supply side constraints are severe, though higher education policy aims to improve the enrolment rate and eliminate social and gender gaps. The supply constraints are associated with poor college densities and shortage of qualified faculty. Colleges and universities, particularly in state managed institutions, are ill-equipped with infrastructure facilities. There has also been a spurt in the number of colleges and universities without proper planning. Moreover, the governance of State Universities leaves much to be desired. This sad is reflected in the very low ranking of Indian universities in world university rankings.

The equity issue is also a challenge. This is reflected in the inequalities between income and social groups, rural and urban areas and across states. In 2014, the GER of the top decile was about seven times of that of the bottom decile(Thorat & Khan, 2017). In 2017-18, GER was 25.8 for all social groups whereas it was lower at 21.8 for SCs and 15.9 for STs. What is more glaring are the inter-state variations in

GER. In 2018-19, the GER was lower in economically weaker states at 13.6 in Bihar, 19.1 in Jharkhand and 18.6 in Chhattisgarh as compared to those in better performing states with 49.0 in Tamil Nadu, 46.4 in Puducherry and 39.6 in Himachal Pradesh (Table 3 and Figure 3).

There is significant variation in the pupil-teacher ratio in universities and colleges in regular mode; in 2018-19, it was higher in Bihar (66), Jharkhand (73) and Uttar Pradesh (55) as compared to Puducherry (15), Kerala (16), Andhra Pradesh (18),Telangana(18) and Tamil Nadu(18). (Table 4). Even in states with a lower pupil-teacher ratio, it was higher than the desirable norm of 10. It remains a challenge to reduce the pupil-teacher ratio from the high figure of 29 and to reduce the inter-state variations.

Figure 3: Gross Enrolment Ratio in Higher Education in Major States and All India



Source: Government of India, MHRD (2019b)

Table 3: Gross Enrolment Ratio in Higher Education (18-23 yrs.) in India (2018-19)

Sl. No	State	Male	Female	Both
1	Andaman and Nicobar Islands	20.3	26.1	23.2
2	Andhra Pradesh	35.8	29.0	32.4
3	Arunachal Pradesh	29.9	29.5	29.7
4	Assam	19.1	18.3	18.7
5	Bihar	15.1	12.0	13.6
6	Chandigarh	41.6	63.9	50.6
7	Chhattisgarh	18.1	19.2	18.6
8	Dadra and Nagar Haveli	7.4	12.6	9.3
9	Daman and Diu	4.2	9.8	5.5
10	Delhi	43.2	50.0	46.3
11	Goa	26.4	35.0	30.1
12	Gujarat	22.0	18.7	20.4
13	Haryana	26.5	32.4	29.2
14	Himachal Pradesh	34.7	44.9	39.6
15	Jammu and Kashmir	29.6	32.2	30.9
16	Jharkhand	19.5	18.7	19.1
17	Karnataka	28.2	29.4	28.8
18	Kerala	30.8	43.2	37.0
19	Lakshadweep	3.4	11.6	7.4
20	Madhya Pradesh	21.8	21.2	21.5
21	Maharashtra	33.5	30.3	32.0
22	Manipur	33.6	33.8	33.7
23	Meghalaya	23.8	27.7	25.8
24	Mizoram	26.5	24.8	25.7
25	Nagaland	17.8	19.7	18.7
26	Odisha	24.2	20.0	22.1
27	Puducherry	41.7	51.6	46.4
28	Punjab	25.5	34.3	29.5
29	Rajasthan	23.1	23.0	23.0
30	Sikkim	54.0	53.9	53.9
31	Tamil Nadu	49.8	48.3	49.0
32	Telangana	35.8	36.5	36.2
33	Tripura	21.1	17.4	19.2
34	Uttar Pradesh	24.2	27.5	25.8
35	Uttarakhand	39.2	39.1	39.1
36	West Bengal	20.0	18.7	19.3
	All India	26.3	26.4	26.3

Source: Government of India, Ministry of Human Resource Development, (2019b)

Table 4: Pupil -Teacher Ratio in Universities and Colleges under Regular Mode (2018-19)

Sl. No	State	Pupil-Teacher Ratio
1	Andaman and Nicobar Islands	17
2	Andhra Pradesh	18
3	Arunachal Pradesh	45
4	Assam	31
5	Bihar	66
6	Chandigarh	38
7	Chhattisgarh	27
8	Dadra and Nagar Haveli	29
9	Daman and Diu	14
10	Delhi	29
11	Goa	17
12	Gujarat	32
13	Haryana	30
14	Himachal Pradesh	36
15	Jammu and Kashmir	35
16	Jharkhand	73
17	Karnataka	17
18	Kerala	16
20	Madhya Pradesh	37
21	Maharashtra	28
22	Manipur	25
23	Meghalaya	37
24	Mizoram	18
25	Nagaland	22
26	Odisha	32
27	Puducherry	15
28	Punjab	24
29	Rajasthan	36
30	Sikkim	44
31	Tamil Nadu	18
32	Telangana	18
33	Tripura	36
34	Uttar Pradesh	55
35	Uttarakhand	40
36	West Bengal	38
	All India	29

Source: Government of India, Ministry of Human Resource Development, (2019b)

V Coping with Covid-19 and Other Shocks

The outbreak of novel corona virus disease (Covid-19), and its rapid transmission worldwide, has caused serious implications for educational institutions due to lockdown. Educational institutions remain closed to avoid the risk of contracting the virus. The situation is more complex for students who are in the process of completing their final year examination. Many Universities propose to cancel the final examinations and instead, give final results based on class performances or other ad hoc criteria. This will cause disruptions in the lives of students and their academic careers. Besides, the lockdown system would not only impact the learning process of the students but also lead to a cut in household expenditure on education owing to sharp reduction in incomes following sharp reductions in business activities amongst the self-employed and loss of employment amongst the regular full-time workers and more so amongst the contract and part-time labourers. Students of primary and secondary schools are not only missing opportunities for learning, but also have lost access to free meals under mid-day meal programme during this time (though some states have made some alternate arrangements delivering at home).

Some initiatives are being taken to minimise the disruption in school education. Online learning techniques are being adopted to complete the curricula; these methods are proving incredibly popular. However, only a handful of elite schools, particularly in the private sector, have been able to adopt online teaching methods. Most of their counterpart private and government schools, on the other hand, are completely shut-down for not having access to e-learning infrastructure. If this situation continues to persist, it may lead to educational inequality.

It is a challenge to track the impact of Covid-19 shock on education. Young Lives, an international longitudinal study of child development in a panel sample of 12,000 children in Ethiopia, India, Peru and Vietnam over 15 years, is conducting a phone survey to provide rapid new research and insights into Covid-19 impacts in these countries. The International Institute for Applied Systems Analysis (IIASA), an independent research institute, has national member organizations in Africa, America, Asia and Europe. It has 22 member countries representing 71% of the world's economy and 63% of the world's population. COVID-19. These studies will have policy insights for minimising risks from Covid-19, if it or any such pandemic occurs again in the future.

A positive contribution of Covid-19 is that it has led educational institutions across the world to adopt online teaching courses, entrance tests, online examinations, and assignments through email. It should form a component of school curriculum in India as well. Technology penetration in school education can be utilised as an instrument for the reduction of school dropouts and enhancement of quality education. It is a good opportunity to strengthen the internet connectivity across rural India and increase wider access to education. Institutes like, Indian Institute of Science, Tata Institute of Fundamental Research, IITs, IIMs and Indira Gandhi Open University, have infrastructures to connect students through internet. For a vast country like India, the existing infrastructure is not adequate. As per 2017-18 National Sample Survey, only14.9 of rural households and 42 per cent of urban households have access to internet. To adapt to this system, adequate awareness is needed among the users. Capacity building among students is needed. It is essential to note that the transformation of education due to online teaching should not lead to educational inequality. India should develop an adequate and efficient infrastructure for online education like some of the advanced countries. Government support is needed for eliminating existing digital divide.

VI Concluding Observations

How do we achieve equality without sacrificing quality? How do we develop and regulate the private sector without curbing its creativity? These are some of the key challenges in reforming the higher education system.

The primary condition for high quality education is an environment conducive to academic pursuits. It can be ensured only by improving governance. Universities should enjoy a greater degree of autonomy. There is a need to minimise regulation. It is unfortunate that due to corruption, favouritism, and inefficiency, as also due to political objectives, relatively less competent are at the helm of the universities and research institutions.

Universities should be led by Vice-Chancellors with vision. Proper selection of teachers, the promotion of peer culture and a fair system of incentives and deterrents are equally important. Those selected on merit are more likely to contribute to the growth of the institutions in comparison to those who might enter from the back door.

It is high time that the country takes a critical look at the recruitment and promotion practices of top-ranking universities and tries to create premier institutions with identical practices. The UGC Regulation 2018, which gives more weightage to research performance and quality publications for faculty recruitment, if implemented in true spirit, will go a long way in improving standards of teaching and education. Generous research funding should be made available to research proposals certified by two eminent persons with at least one from a reputed foreign university which ranks high on the Times Ranking. This acts as a catalyst to provide a fillip to patents and India's share in world research output.

The contribution of the private sector to R&D in India is negligible[6]. What is worse, with the decline in the quality of faculty in many of the state universities, research has received a major setback and research-led-teaching leaves much to be desired. However, there has been an increase in the number of doctorate degrees awarded by the State universities. These degrees are of unknown quality. Regulations mandate course work and publication during the pursuit of Ph.D. Much depends on implementation.

The foundation for quality higher education lies in quality school education. The enactment of the Right to Education Act, 2009 is a progressive measure to improve school education. Its efficacy also depends on the political will of the Chief Ministers and motivations of the bureaucrats. When these are in deficit, active civil society can emerge as a pressure group. To achieve the goal of 'Education for All', decentralisation and convergence of school education has been emphasised with greater participation of Panchayat Raj Institutions and community. Undoubtedly, this is a pathway for achieving quality education for all. However, the implementation falls short. The active role played by Parent-Teacher Associations (PTAs) in the governance of primary and secondary schools in Kerala is worth emulating.

Randomised experiments show that students in small-size classes perform better than those in regular class sizes; and further, those in regular classes with aides perform better than students in regular classes (Krueger & Lindahl, 1999). Their impact tends to be larger for students belonging to disadvantaged social backgrounds. Reducing the class size in the early school years appears to have long-run effects, especially in terms of reducing inequalities in performance and access to higher education (Carneiro & Heckman, 2003).

Randomised experiments conducted in the Government schools of Mumbai and Vadodara using remedial education programmes to a group of lagging children were effective. Remedial programmes utilised the services of young women belonging to the same community, and initially these women received training for two weeks. The remedial classes had a significant impact on the performance of the lagging children (Benerjee, et.al. 2003). Some of these experiments can be replicated at scale.

Finally, one possible way to improve the standards of higher education in a state is to start one university of excellence under state legislation. Such university equipped with good infrastructure (library, labs, equipment and playing field) would offer undergraduate and post-graduate programmes in selected subject(s), recruits highly qualified faculty with good research capabilities. Jadavpur University, which ranked high among Indian universities on *Times* Higher Education World University Rankings 2018, stands testimony to this idea.

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Notes

[1]For a lucid presentation of the developments during the 1990s and 2000s, see Rao and Sedwal(2017).
[2]The expenditure on implementing the RTE Act 2009 was in the beginning shared in the ratio of 75:25 between the Central and State Governments and gradually changed to 50:50.
[3]Though gender gap has narrowed down in quantitative terms, it may still exist in terms of quality.
[4]In a weekly column in The Hindu, January 20, 2019, Anklesaria SwaminathanAiyer mentions that China has decent colleges in almost all provinces; and in 2008, it launched a Thousand Talent Scheme to attract top-quality overseas Chinese academics by providing with World Class facilities and salaries.
[5]The former Prime Minister, Dr. Manmohan Singh, in his inaugural address delivered on the occasion of 17th Annual Conference of Indian Association of Social Science Institutions (IASSI) in 2017 observed, "The new private providers which have come up are mostly 'for profit' institutions (and are not like previous non-profit, charitable private institutions). The profit motive may affect quality because of cost cutting imperatives. At the same time, it must, be admitted that some of the private providers have maintained high quality, but this is not the case with most of them".
[6]Globally, the private sector supports around 40-45 per cent of scientific research, while in India the entire burden is to be borne by the government.

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A COVID-19 Vaccine Deployment Strategy for India

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Abstract

Deploying COVID-19 vaccines once they are available is going to be an unprecedented administrative and logistical challenge. This paper proposes a plan to vaccinate 80% of India's population by December 2021. We envision this process to be divided into four main stages viz., estimating the need, securing vaccine supply, distributing the vaccines, and post-market surveillance. Broadly, we suggest that essential workers be prioritised for vaccination in the first phase followed by everyone else. We recommend that the government issue a model contract to build manufacturer trust and incentivise ramping up manufacturing capacity. Vaccines can be priced as per market rates with the government subsidising the cost to necessary recipients to ensure equitable access. Along with public private partnerships and open markets, the government must leverage administrative capacities of Election Commission of India to roll out a nationwide vaccination drive for maximising vaccine coverage. Finally, we recommend post-market vaccine surveillance strategies to obtain data on adverse events and tweak vaccine deployments, when necessary.

JEL: H51, I18

Keywords: COVID-19, Vaccine, Election Commission of India, Essential-first, Vaccine Surveillance

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Introduction

Vaccination is only rivalled by clean water in reducing the infectious disease burden (Plotkin an Plotkin 2018, 1-15). For COVID-19, there seems to be no feasible alternative to a vaccine for mitigating the economic and social impact. The disease has afflicted over 6 million and taken over 102,000 lives in India as of October 5, 2020 (Worldometer, 2020). A slew of lockdowns and social distancing measures imposed by union and state governments have been ineffective in stemming the spread of the disease. With no known treatment option, a massive vaccination drive to confer herd immunity is a promising path to return to normalcy.

The alternative to mass vaccination is to build herd immunity via natural spread of the disease. However, to achieve herd immunity, about 70% of India's population would have to be infected by COVID-19 (WHO, 2020). With a presumed mortality rate of 1.5%, the death toll to reach herd immunity would be about an unacceptably high loss of 15 million lives (Mint, 2020). Early planning for a smooth rollout of vaccination is therefore essential.

Across the world, over 180 COVID-19 vaccine candidates are currently in various phases of clinical trials (Krammer 2020, 1-12). The urgency of the situation has accelerated vaccine research and shortened the development process from over a decade to a matter of few months (Hanney et al, 2020, 61). A number of vaccines are expected to be approved for commercial use in the coming months.

In preparation, several countries are currently finalising and communicating their vaccine deployment plans. The European Commission has released a strategy that centres around advance purchase agreements to secure supply (European Commission, 2020). Australia's vaccine strategy banks on multilateral and bilateral collaborations to boost indigenous manufacturing capacities (Department of Health, Australian Government, 2020). United States has been funding development of various vaccine candidates under Operation Warp Speed and has released plans of rapidly deploying the vaccine with the logistical support of Department of Defense and guidance of the CDC (US Department of Health and Human Services, 2020).

Procuring adequate vaccine quantities and safely deploying the vaccine to India's population of over 1.3 billion people is an unprecedented administrative and logistical challenge. On the demand-side, assuming that vaccinating 80 per cent of India's population will achieve herd immunity, a billion people need to be vaccinated. Most of the current vaccine candidates require two doses per individual adding layer of complexity, the need to track the interval between two doses and communicate it to the recipients (Bonifield 2020). For reference, India's current Universal Immunisation Programme (UIP) caters to nearly 27 million infants and 30 million pregnant women annually free of cost (World Health Organisation, 2013). Thus, the COVID-19 vaccine needs to reach one billion people — nearly 16 times the annual recipients under UIP. Even India's well-oiled and successful UIP machinery, in its current state, will be inadequate to carry out the COVID-19 vaccination exercise within a short time period. Innovative administrative mechanisms are needed to ensure timely and efficient delivery of the vaccine.

On the supply-side, it is unlikely that the two billion doses India needs will be available immediately upon approval of (a single or even a combination) of vaccine(s). Thus, vaccine distribution will have to be phased to match the available supply.

Additionally, vaccine deployment will need to account for several challenges such as transport and storage capacities, need for trained people to take recipient consent, a way to monitor who has received the vaccine, which vaccine has been administered, and track adverse reactions, if any.

Hence, an all-India rollout needs advanced planning to ensure infrastructure is set up, capacities are built, and recipients are prepared, even as we await approval of the vaccine after clinical trials.

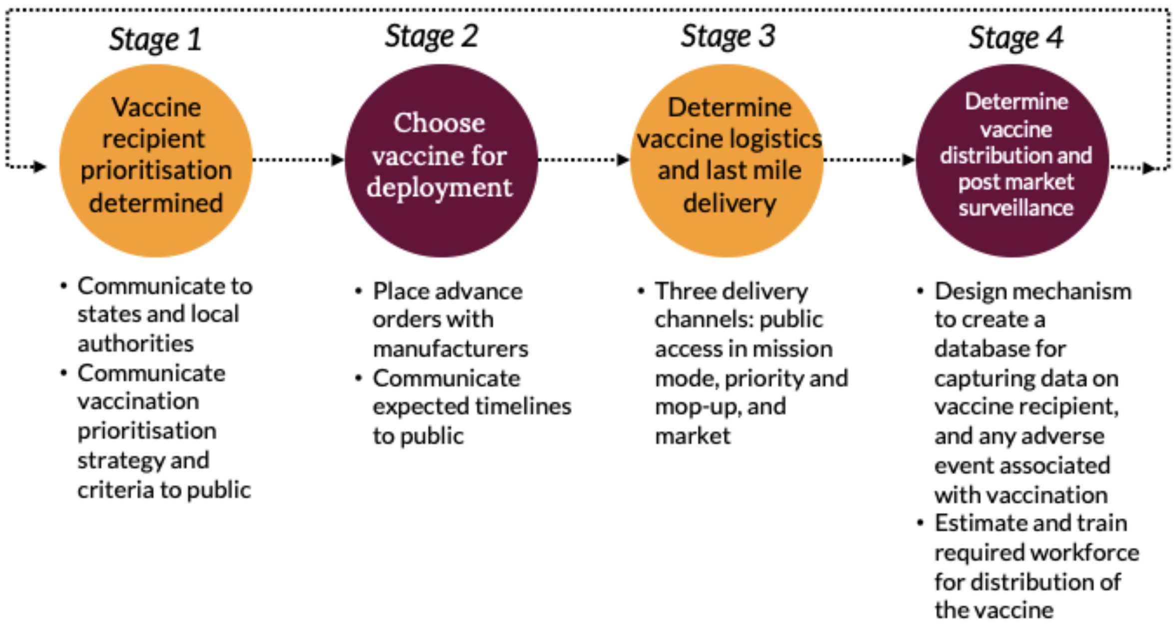
Our Proposal

Given the scale and the stakes involved, India needs to take some decisive steps now to ensure its people are vaccinated in a timely manner. We recommend that India should vaccinate eighty percent of its population by December 2021, at an estimated cost of ₹50,000 crores - ₹2,50,000 crores.

Hitting the ambitious target of eighty percent within the short time can ensure that herd immunity is achieved through the vaccination exercise, with far lower mortality than otherwise. Much is still unknown about the duration of the vaccine conferred immunity. Herd immunity works only when a large subset of the population is concurrently immune to the disease. As an example, if the vaccine-conferred immunity lasts one year but vaccine distribution takes three years, the objective of achieving herd immunity cannot be met. Therefore, it is critical that vaccination be implemented in as short a time frame as possible.

We split the design of vaccination exercise into a four-stage process: estimating vaccine demand, securing supply, choosing delivery channels and conducting post-market surveillance (Figure 1). The following sections of the paper detail each of these steps.

Figure 1: A 4-stage strategy for deploying COVID-19 vaccine in India



For each stage, we provide frameworks for decision making. As more information about the vaccines cleared by clinical trials surfaces, these steps might undergo changes. In any case, we envision the eventual deployment to be a continuous process, accounting for real-time information and finetuning the strategy in response.

Stage 1: Estimate Need

Assuming a two-dose regimen, we estimate that India would need two billion doses to vaccinate 80% of its population. Currently, India does not have domestic capacity to manufacture such a large requirement. Further, manufacture of COVID-19 vaccine cannot come at the expense of already existing vaccines, due to the public health impact of disruption in supply of such vaccines. Additionally, as a major contributor to global vaccine supply, Indian vaccine manufacturers have global COVID-19 vaccine commitments to balance along with domestic vaccine demand. These factors combined will put a heavy burden on India's vaccine manufacturers.

In the face of a supply crunch, we recommend that India prioritise vaccine recipients in the initial stages to ensure that critical sub-populations are covered first. However, prioritisation strategy cannot be a substitute for poor capacity. It is a temporary arrangement till increased production capacity meets vaccine demand. As more vaccine candidates get regulatory approvals, the supply-demand gap will shrink. Once critical sub-populations are vaccinated, we recommend no further prioritisation. In our view, randomisation is the best way to achieve an equitable distribution of the vaccine.

Identifying critical sub-populations

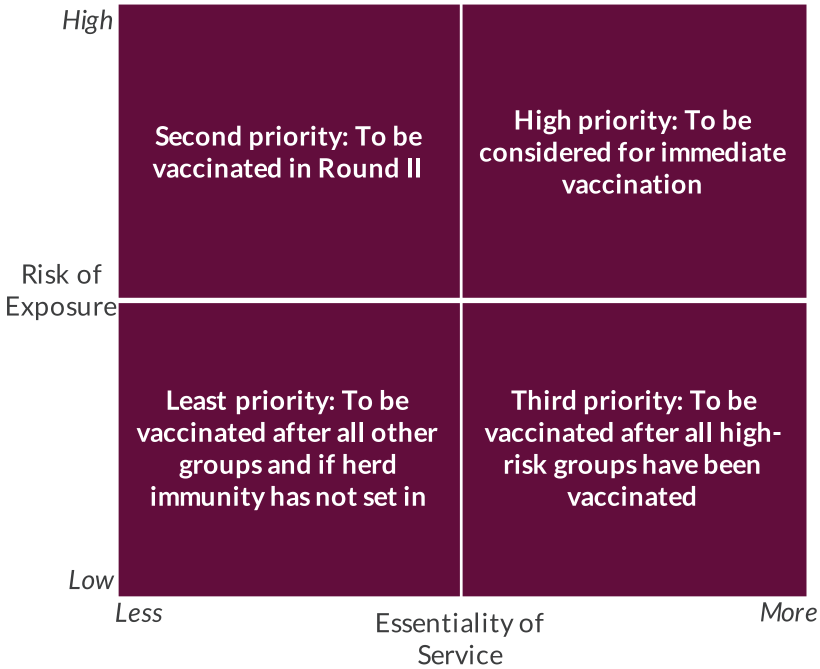
The limited supply raises concerns on how vaccines can be allocated in an equitable manner. A decision on prioritisation can be guided by principles of respect, equity and reciprocity (World Health Organisation, 2020). *Respect* involves recognising all individuals as having equal status and that individuals not be denied vaccine for any reason, e.g., due to lack of monetary capacity or documentation. The principle of *equity* suggests that vaccine distribution be based on disease risk, and those with highest risk should receive it first. The principle of *reciprocity* dictates that those groups whose occupations expose them to significant risks but are necessary for the benefit of society receive the vaccine first.

Prioritisation can be done through two broad approaches: essential-first and demography-first. We believe that an essential-first approach is well-suited for India. This section first describes both approaches, compares them, and reasons out the need for an essential-first approach.

1. Essential-first Approach

The essential-first approach categorises individuals based on the essentiality of their occupation in the functioning of the society and the risk of exposure to COVID-19. Based on this approach, individuals engaged in occupations of utmost importance to society and who have a high degree of exposure to COVID-19 as a result of their occupation are accorded highest priority for vaccination (top right quadrant in Figure 2).

Figure 2: Essential-first prioritisation strategy



This will include those who are at the forefront of managing the pandemic (healthcare workers, sanitation workers, etc.) and those who work to ensure business continuity of routine services (utility workers, logistics workers, police, etc.) These workers have been the backbone of India's response to COVID-19 and will be responsible for sustained running of services essential to the economy and society through the pandemic. This group consists of an estimated 30-50 million people[1].

This group will be followed by those services which are not essential for society but provide high risk of exposure to COVID-19 (top-left quadrant). This could include barbers, mall workers, etc.

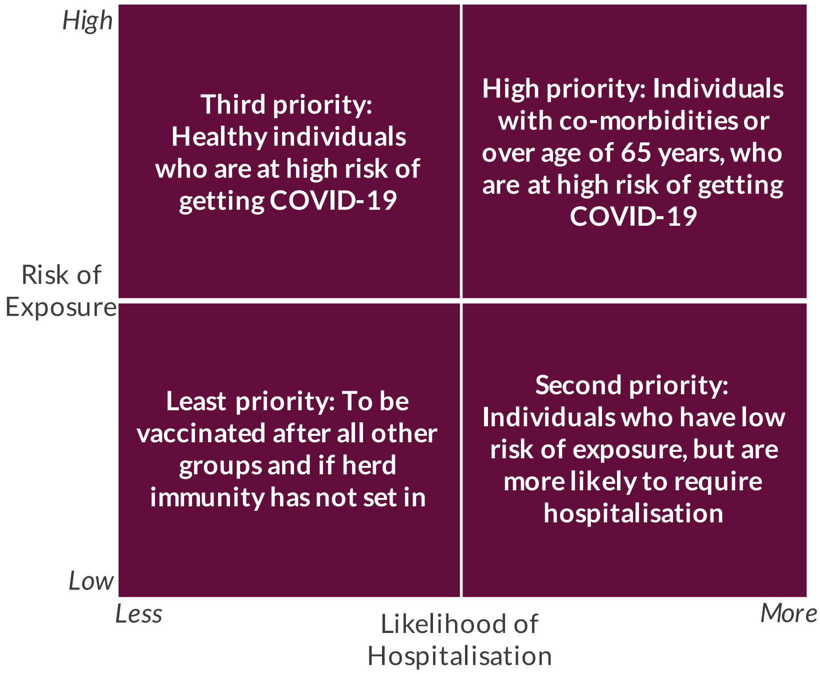
After these groups, workers in other services sectors can be vaccinated through a mass government programme which will take the vaccine to the people regardless of their ability to pay, occupation or location.

This approach minimises COVID-19 infection risk for service professionals and maintain business continuity of services essential to the economy and society.

2. Demography-first approach

This strategy categorises individuals based on their risk of exposure to COVID-19 and the probability of requiring hospitalisation. This approach prioritises individuals over 65 years or with co-morbidities to get the vaccine first, followed by randomisation (Figure 3). Data shows that this demography is particularly vulnerable (higher proportion of severe symptoms and higher mortality) and therefore, this approach is likely to reduce mortality rate in the near-term. Use of this approach is subject to availability of vaccine(s) that have been approved for use in this age group.

Figure 3: Demography-first prioritisation strategy



Comparing the two strategies

Both the prioritisation strategies have their merits and disadvantages (summarised in Table 1). The essential-first strategy enables the management of the pandemic and continuity of essential societal functions. However, it leaves at risk individuals that are most susceptible to severe disease.

Table 1: Comparison for the two prioritisation strategies

Strategy	Advantages	Disadvantages
Essential-First	Easy to identify individuals through existing occupational IDs Keep essential economic and health functions running Smaller population target group to begin vaccine roll out with	Unlikely to cause immediate reduction in mortality rates Those over 65 years of age may not be covered Those in the unorganised sector might be difficult to cover
Demography-First	Reduction in mortality rate Likely reduction in hospitalisation rate	Huge population to target in first phase Uncertainty of whether the vaccine will work in target population

The demography-first strategy is aimed at reducing mortality rate. However, there are two issues with this approach. First, the immune system weakens with age and hence, vaccination programs historically include individuals in a younger age group where the effectiveness of the vaccine has been satisfactorily demonstrated. Second, prioritising based on demography would require the vaccination of a 120-200 million people in the first phase[2]. Moreover, mortality rate in the highest-priority population in the demography-first strategy can be addressed by other means, including extra public awareness campaigns for such individuals to follow masks, social distancing, recommended/ mandatory isolation, and so on. Further, as a large proportion of individuals in this group are unlikely to be in professions that require frequent interaction with others, their risk of catching the disease, which is already lower, can be further reduced by such means.

Out of the two approaches, the essential-first strategy is most aligned with the three principles of respect, equity and reciprocity. Frontline workers, whose jobs are essential for society's daily functions but expose them to COVID-19 should be the first recipients of the vaccine. Therefore, we recommend using the essential-first strategy for prioritising vaccine recipients to identify individuals for immediate vaccination.

Stage 2: Secure Supply

There are three different locally developed vaccines under clinical trials in India – COVAXIN (Bharat Biotech- ICMR), CoviShield (Serum Institute- ICMR) and ZyCov-D(Zydus Cadilla (ICMR 2020). However, other vaccines such as those from Oxford University and Moderna Inc. are in advanced stages of trials in other countries and may be approved for commercial use sooner. Therefore, it is imperative that the Indian government and companies strike licensing partnerships with such firms to manufacture the vaccine for use in India.

India currently produces nearly 120 million doses of vaccines per month (Business Today 2020, Panacea Biote 2020, Newsbytes 2020, Mint 2020). This capacity is being used for manufacturing a variety of vaccines targeting different diseases for domestic use as well global supply. This capacity cannot be entirely converted to producing COVID-19 vaccines, as the drop in availability of other vaccines would eventually result in increased burden of those diseases. A vaccine for COVID-19 cannot come at the expense of another disease outbreak in the future. Hence an increase in vaccine manufacturing capacity is imperative to meet the vaccine demand.

Securing vaccine supply would include regulatory approval of vaccines for use in India, tying up with vaccine research institutions and increasing manufacturing capacities to align with demand requirements.

Choosing a Vaccine

The first step would be to choose one (or more) vaccines for use in India. The choice can be based on several criteria:

One, the cost. Current reports suggest that the Moderna vaccine (Mason 2020) may cost about INR 1,125 per dose, while the Oxford vaccine may be available at a cheaper cost of INR 225. A possible trade-off to make is to wait longer for a cheaper vaccine, but the social and economic costs of waiting may be too high.

Two, reliability of clinical trial data. If clinical trial data from India is not available, it will be important to assess the quality control mechanisms used in creating the clinical trial data. India should accelerate domestic regulatory approvals for vaccine candidates that have reliable data and have received such approvals in other parts of the world.

Three, dosage requirement. Single dose vaccines are preferable and would make tracking of vaccine recipients easier.

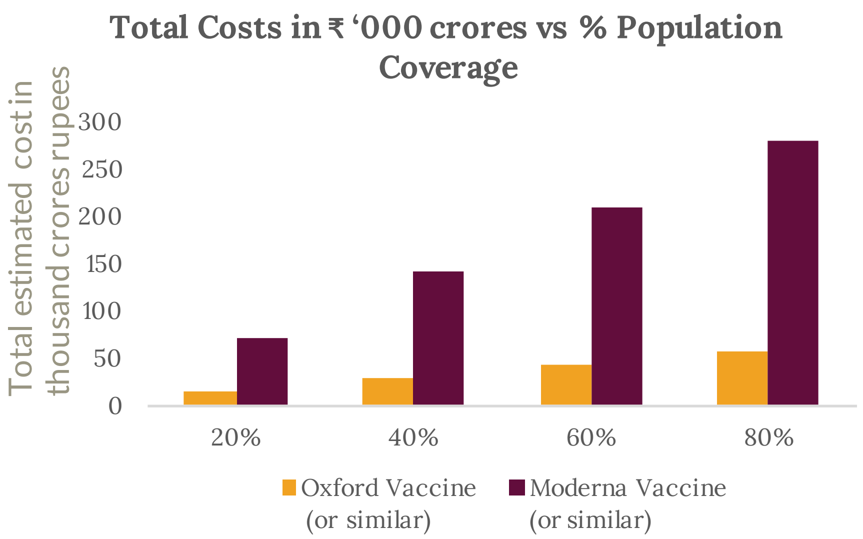
Four, supply chain requirements. For example, nucleic acid-based vaccines would require cold chains of extremely low temperatures and deploying them across the country would not be feasible.

Finally, delivery method – injectable or nasal. Delivering injectable vaccines would require development of a trained workforce.

Estimating Supply Costs

We expect the cost of the vaccine to immunise 80% of India's population would be between ₹50,000 crores (assuming Oxford or similar vaccine) to ₹2,50,000 crores (assuming Moderna or similar vaccine), depending on the vaccine chosen[3].

Figure 4: Estimated costs for vaccine deployment



Making it easy for vaccine manufacturers to access technology and ramp up capacity

India needs to invest rapidly in creating additional manufacturing capacity to cater to domestic and global demand for COVID-19 vaccine. We suggest the following actions to incentivise a rapid ramp-up of manufacturing capacity:

One, strike vaccine technology agreements and attract foreign vaccine companies. As of now, a limited set of private players have entered into manufacturing and/or distribution agreements with firms that are engaged in COVID-19 vaccine clinical trials. These include Serum Institute of India (partnering with AstraZeneca) and Dr Reddy's Laboratories (for Russia's Sputnik V vaccine). We recommend more such private party agreements as well as agreement directly between the Government of India and R&D firms developing vaccine candidates. This can help increase the volume as well as variety of COVID-19 vaccines being produced in India and the likelihood that a viable vaccine is available at the earliest. Additionally, the Government of India can also incentivise foreign companies to set up manufacturing facilities locally. India certainly has the expertise to set up low-cost, high-quality manufacturing facilities and we can leverage this capability to attract foreign companies.

Two, incentivise Indian vaccine research. Vaccine research is an expensive and risky endeavour. Vaccines developed within India, using viral strains found in India and trialled on Indian population are likely to be better suited for our need. Hence, India should set up measures to incentivise indigenous vaccine research. These measures could include investing in building more Biosafety Level 2/3 facilities, facilitating partnerships between research institutions/start-ups, clinical trial units, and vaccine manufacturers.

Three, facilitate vaccine manufacturing. Setting up vaccine manufacturing unit is also a cost-intensive and heavily regulated activity. We recommend that the government speed up regulatory processes for new manufacturing set ups and aid in procurement of imported machinery and raw materials. To offset the cost burden on the manufacturer, the government should defer utility payments and clear tax refunds and reimbursements immediately. Further, the government should refrain from price caps on COVID-19 vaccines to attract investment in the vaccine manufacturing business.

We recommend the Government of India release a transparent, model contract for vaccine procurement at the earliest opportunity to build manufacturer and public trust. The model contract should include guarantee of certain market access (e.g., minimum revenue or order size) to the manufacturer. It should also put in place mechanisms for dispute resolution, such as compulsory arbitration and address access rights to vaccine outcome data. The model contract should set terms for manufacturing partnerships with Indian vaccine manufacturers and for technology transfer (e.g., limited term IP license of the vaccine for India, to expire at end of pandemic; terms for follow-on IP) We envisage these to be tripartite contracts that involve domestic or R&D firms , with the Government of India playing the role of either buyer or guarantor on behalf of the Indian manufacturer. A transparent contract with advanced purchase guarantee will de-risk Indian manufacturers forging license partnerships with vaccine research institutions.

Pricing the Vaccine

There are various ways for the government to intervene in the vaccine pricing. One way is to do nothing and let market forces determine the price. The advantage of this approach is that more vaccines would be incentivised to be brought into the market leading to competitive pricing. Households would bear the entire cost of the vaccine, which would lead to inequitable distribution and exclusion. Without any government intervention, it would be difficult to achieve herd immunity at practical prices.

Another way is for government to bear all costs of the vaccine, effectively making it zero price for Indian residents. Vaccination is a public good and therefore, it would seem appropriate that the government pays for it. However, this approach can distort the market and increase chances of pilferage and corruption. Moreover, there is a significant opportunity cost for the money the government will spend on vaccinating everyone, including those who can afford the vaccine.

Therefore, we recommend the approach of allowing market price for the vaccine plus a direct benefit transfer for those who are unable to afford the vaccine. This approach will lower the immediate cost of roll out, target subsidy to the needy and well-off households pay fair share. This will lower the burden on government funding while ensuring those who cannot afford the vaccine, can get access to it.

Stage 3: Distributing the Vaccine

This stage involves distributing the secured vaccine supplies (as discussed in *Stage 2*) to the recipients (as designed in *Stage 1*). Distribution at India's scale is a non-trivial planning and management challenge. Solving it requires the ability to quickly mobilise a nation-wide decentralised administrative machinery in a phased manner.

Given the scale, several countries are exploring innovative solutions to tackle this challenge. A UK newspaper claims that the armed forces could be rallied in to distribute the vaccine (Birmingham Live 2020). A US think-tank has proposed that governments should establish nearly 7,300 community vaccination clinics and recruit medical experts, celebrities, and community leaders for a vaccination campaign (Spiro 2020).

Learning from these solutions, there are five important considerations that are relevant for the Indian context.

One, multiplicity of incoming vaccines. It is likely that there will be multiple vaccine candidates that might receive final approvals from the regulatory agencies for distribution. These vaccines will differ in terms of effectiveness, production costs, and logistics requirements. These differences mean that it might not be possible for a government-run distribution channel to procure and distribute all approved vaccines. Distribution of vaccines that are approved but not procured by the government can be permitted to be distributed by private players to meet the overall vaccination target of 80% population by 2021.

Two, scarcity of available doses in the initial stages. The number of doses available initially is likely to be far less than the 80% population target. Postponing distribution until the nearly 2 billion doses are secured will be counterproductive. The utility of the vaccine will diminish over time. Thus, the distribution process needs to happen in several phases instead of a one-time mega campaign.

Three, equity. The recipients should not be denied access to a vaccine due to their inability to pay for it or their place of residence. This calls for a government-run distribution channel that brings vaccines close to where people are.

Four, positive externalities. Vaccination benefits even those who are not vaccinated. Hence, it is important to vaccinate as many people as possible as early as possible. This calls for a mission-mode nation-wide distribution channel.

Five, multiple dosage. Most vaccines will require administration of multiple doses after a specific time interval. This means that the distribution channels will require activation at least twice or thrice after a specified time interval.

Based on these considerations, we propose that distributing vaccines in India be done using three distribution channels, each addressing a specific need.

Channel 1: Public Access in Mission Mode

This is a government-owned, government-run distribution channel deployed in bursts in different geographies to cover a large section of India's population in a short period of time. The vaccine chosen to be distributed through this channel is likely to be cost effective, easy to transport and administer. After placing a large order, the government will need to plan and execute deployment as vaccine doses are delivered.

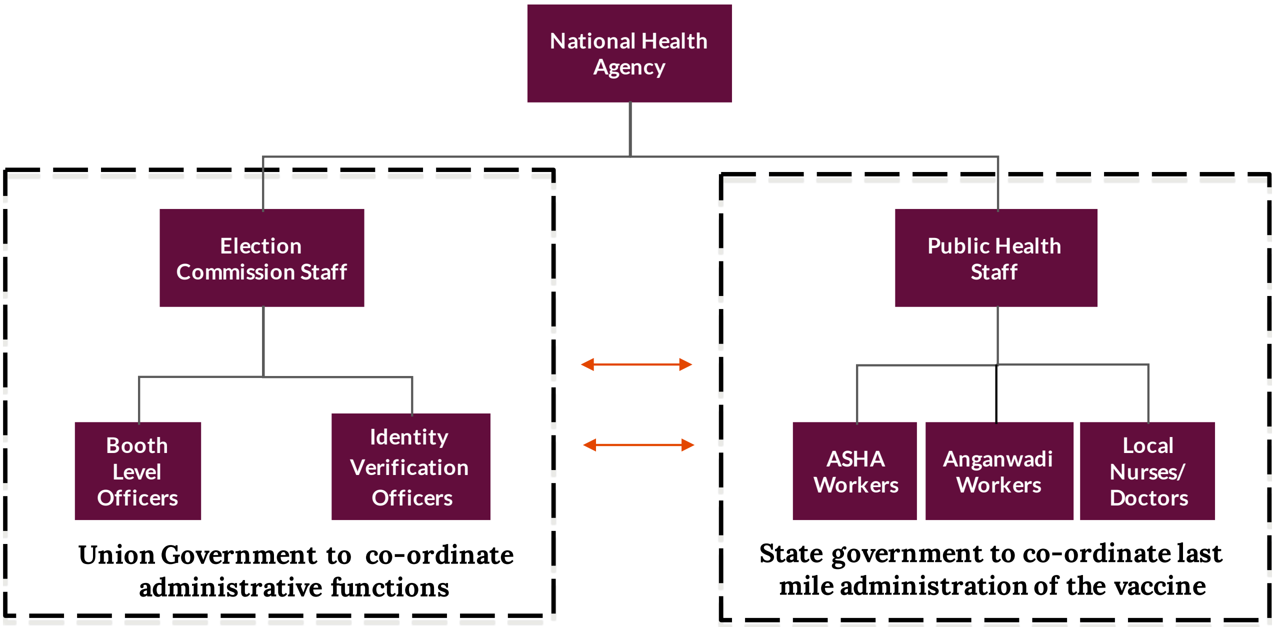
This channel demands extensive planning, logistics, and human power. Given the time and capacity constraints, we believe it is better to utilise an existing government mechanism instead of relying on building an entirely new one. With the UIP used to administering only one-sixteenth of the population per year, we explored solutions outside state health departments.

India routinely carries out one task of the same scale and similar complexity fairly regularly — the general election(Pai 2020). We propose that this channel run like a general election utilising the Election Commission of India's (ECI) tried and tested administrative setup to reach all corners of India in a mission-mode programme.

To manage the planning and execution under this channel, we propose an organisation structure (Figure 5) that draws upon the administrative expertise of the ECI, combined with the public health delivery expertise of state public health departments. This structure would be co-ordinated by the

National Health Agency (NHA), housed within the Ministry of Health and Family Welfare, Government of India.

Figure 5: Organisation structure to oversee and deliver COVID-19 vaccine



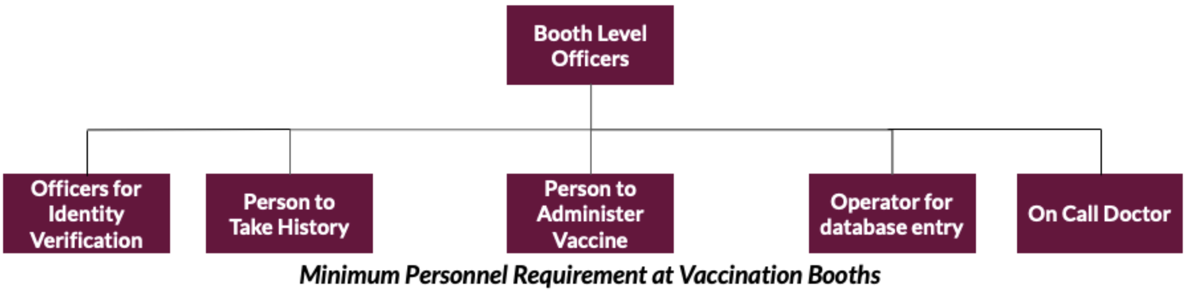
The use of ECI for overseeing administrative functions of a vaccine campaign will likely require legal action to amend the scope of the ECI beyond its current mandate. We recommend urgent examination of the legal pathways for such repurposing, including for example, promulgating an ordinance that enables ECI to be repurposed for vaccination and subsequent passing of a law as per parliamentary procedure.

The ECI conducted the last general election in 2019 over seven phases, covering constituencies across states in every phase. Similarly, depending on the available supply of vaccine doses and the administrative capacity required, the ECI can plan to cover all districts of India in multiple phases.

Staffing a Vaccination Booth

We recommend setting up vaccination booths within each target geography with a well-documented set of procedures and appropriate personnel. Within each vaccination booth', we envision that at least six officers be stationed as shown in the figure below.

Figure 6: Staffing vaccine booths



In our view, the process of vaccination should include identity verification of each individual, vaccinating the individual, and generating a proof of vaccination (one for each dose) for the individual.

Identity verification and generating the proof can be carried out by, an ECI appointed officer (ECI routinely does this during elections) will be responsible for verifying the identity of each vaccine recipient and marking their fingernail with election ink (thus generating the proof) once the individual has been vaccinated.

Vaccine delivery will be done by trained personnel appointed by state health departments. Vaccine providers should be adequately trained to ensure they can discuss any issues with recipients and take informed consent. We recommend the booth staff involved in the consent process receive Good Clinical Practice Training.

Successful deployment of the vaccine will depend on gaining informed consent of the vaccine recipients. This will involve educating the intended recipients of the risks and benefits of taking the vaccine, as well as risks and benefits of having their data entered in a database.

Additionally, the booth also needs an on-call doctor, in case of medical emergencies. Outside the booth, security personnel would be required to ensure smooth functioning.

The process flow for every recipient will be as follows: obtaining recipient consent (including verifying eligibility, in case there are negative indicators for a vaccine), the actual vaccination protocol, and safe disposal of used injections and/or other biohazardous material.

We recommend pilot studies to validate the protocol above (and tweak as necessary), and a training for the staff for each booth. We anticipate that trained staff at a booth can implement this protocol at the rate of 15-20 minutes per recipient. In running the booths, social distancing measures would be enforced.

Channel 2: Priority and Mop-up

This channel is imagined as a hub-spoke distribution model where the government procures the vaccines and distribution is done by a variety of private and public agencies such as private hospitals, primary health centres, and the armed forces medical corps. The government can contract out distribution district-wise to these agencies. The terms of the contract can include the coverage goals, standard specifications, and cost reimbursement conditions.

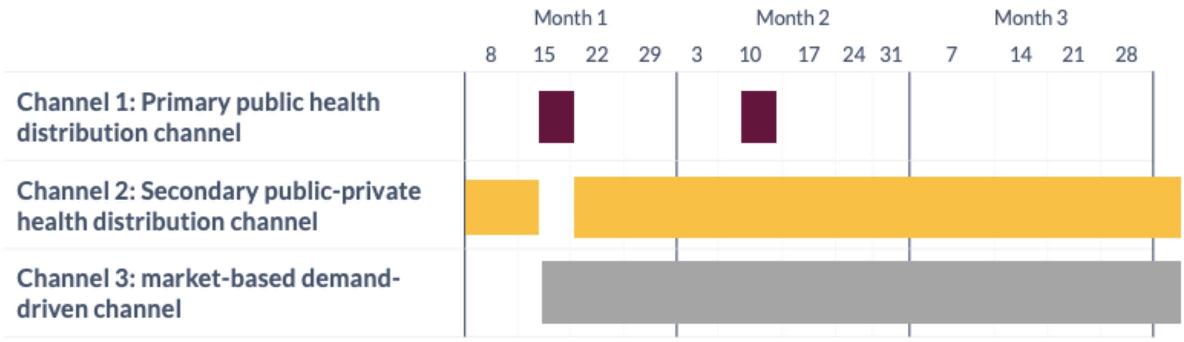
This channel can be deployed for two purposes. One, it can be used to administer vaccines only to the prioritised group identified through the *essential-first* framework as described in *Stage 1* once the initial supply of vaccines is secured. Two, it can be deployed district-wise to cover the population that may be left uncovered under Channel 1 after the booth in a district has been dismantled.

Channel 3: A market-based demand-driven distribution channel

The third channel is a demand-driven channel run by private hospitals, pharmacies and medical practitioners. This channel is useful for supplementing Channels 1 and 2. As the secured supply increases, the government can allow people the choice to get vaccinated at private medical centres. This is similar to vaccinating children at private clinics and hospitals outside the government-run UIP.

The Gantt chart below illustrates how these three channels will operate in tandem.

Figure 7: A representative timeline showing vaccine delivery options in a district



As soon as vaccine supplies are secured for all high priority groups, distribution to the essential-first group should be carried out using *Channel 2*. Once additional vaccine doses become available, *Channel 1* is pressed into action to run a vaccination campaign that covers many residents of a district in a short time period. If a second dose is needed, this channel can be reactivated for another short burst. *Channel 3* can be allowed to function as soon as the essential-first group has been vaccinated. Once *Channel 1* completes its initial campaign, *Channel 2* can cover those missed by *Channel 1.*

Stage 4: Post-market surveillance

The vaccine roll-out will need to be monitored to ensure correct number of doses are given to each individual, detect any adverse events and assess efficiency of the vaccine. If the vaccine recipient status of an individual is not tracked, it is possible that individuals are inadvertently administered excess doses. The health risks of taking higher than recommended (and clinically trialled) dose of the vaccine are unknown. If the vaccine is found to ineffective or faulty after it has been administered, a need can arise to reach the correct vaccine recipients and take corrective action. Aggregated, anonymised data based can also contribute to determining vaccine performance for each type of vaccine. This necessitates the formation of a database to document vaccine recipients, vaccine dose and adverse events.

We propose this database be housed in the NHA and be used for the specific purpose of post-market surveillance for this particular vaccine. The database can be seeded to use Aadhaar or any other national identifier as an enabler to establish individual identity but is isolated and independent of other databases. Aadhaar may be the preferred identifier because of its penetration. However, the use of Aadhaar must meet the three-point test of necessity, legality, and proportionality.

We envisage that the database would store data, for each individual, that includes vaccine dose received (name of vaccine and lot number), date of vaccination, recipient id, any co-morbid conditions and information regarding any adverse events that occur.

The database implementation should be in compliance with "privacy by design" principles and with a built-in purpose limitation that limits the use of the database to reach pre-defined objectives of assessing vaccine efficiency and adverse events. We suggest that the database establish mechanisms of anonymisation using Aadhaar's tokenisation method. Finally, the database should have a defined sunset period with guaranteed data destruction at the earliest one of the following end points: end of the public health emergency in India, end of post-market surveillance as warranted by the vaccine or five years from start date.

Public engagement beginning immediately would be a key determinant for educating the Indian public. We recommend that the chosen vaccine deployment strategy, including timelines for deployment and prioritisation criteria be communicated beforehand. The benefits and possible risks of the vaccine should also be communicated through mass media and published at vaccination booths. Simplified vaccine trial data along with the regulatory approvals the vaccine has received should also be published.

Determining a vaccine deployment strategy will not be a linear process. With uncertainties in many aspects such as vaccine availability, vaccine types, cooperation by the population, etc., we anticipate that one or more of the 4 stages as described would need tweaking. For example, a lower number of actual vaccinations may be acceptable for reaching herd immunity if the vaccine is delayed and a larger share of the population has experienced an infection prior to vaccination. Additionally, cold-chain considerations might restrict vaccination booth locations; manufacturing and logistical constraints may introduce delays; and so on. It is therefore anticipated and recommended that the framework described herein be tweaked during the rollout. As deployment progresses, data from vaccine performance, approval of new vaccines, changes in vaccine storage conditions, etc. should be used to alter the deployment strategy.

Conclusion

Rapid and wide scale deployment of a COVID-19 vaccine is a challenging task of unprecedented proportion. However, with a clear strategy and phased, decentralised delivery, it should be possible to vaccinate 80% of India's population by December 2021. This would require investment and urgent action from the Indian government, participation of the private sector and clear engagement with the public. India's capabilities of producing low-cost, reliable vaccines should be leveraged. Further, India should use its already set processes in overseeing the administrative functions, invest in training health workers, and set up a robust and transparent post-market surveillance capability for monitoring vaccine performance.

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Notes

[1] This is a rough estimate based on available figures for health workers (roughly 2 million - 1.2 million in urban areas and 0.8 million in rural areas including doctors, dentists and nurses. (Data from 2016 - https://www.who.int/hrh/resources/16058health_workforce_India.pdf), sanitation workers (5 million workers, data from 2018 - https://qz.com/india/1254258/sanitation-workers-a-five-million-people-large-blind-spot-in-india/), logistics workers (nearly 17 million in 2015; https://timesofindia.indiatimes.com/india/28-4-million-skilled-workforce-needed-in-Logistics-sector-by-2022/articleshow/47513316.cms), state police force (0.2 million, https://bprd.nic.in/WriteReadData/userfiles/file/202001301028101694907BPRDData2019-19forweb-2.pdf). We thus estimate there will be at least 30 million recipients in the high priority list and up to 50 million accounting for increase in number of people working in these jobs over the past few years.

[2] About 6% of India's population is estimated to be above 65 years of age. This accounts for 80 million individuals. Co-morbidities such as diabetes (estimated 77 million afflicted individuals) and hypertension (estimated 207 million afflicted individuals; https://www.nature.com/articles/s41371-018-0117-3). Given that diabetes and hypertension are also age-related, there is bound to be some overlap with elderly individuals and those with co-morbidities. Hence, we take the conservative estimate that if we want to target elderly and those with co-morbidities, we will have to target about 20% of the intended population.

[3] This cost has been calculated assuming India's population is 130 crores and every individual would require 2 doses of the vaccine. The price of the oxford vaccine is assumed to be INR 225 per dose and Moderna vaccines is priced at INR 1125 per dose. The costs include distribution costs, assumed to be ~20% of the price of the vaccine. However, these costs do not account for expenditure on building new vaccine manufacturing capacity. This is essential, since at our current production capacity manufacturing 2 billion doses will take 20 months and diversion of capacity from production of other vaccines.

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Agenda for Transforming the Lumbering Elephant to a Charging Tiger

Book Review of *India Unlimited: Reclaiming the Lost Glory* by Arvind Panagariya

M Govinda Rao*

India Unlimited: Reclaiming the Lost Glory (published as *New India: Reclaiming the Lost Glory* by the Oxford University Press for rest of the world), is yet another White Horse (meaning a balance of wisdom and power) from the stable of Arvind Panagariya. The first part of his academic life was spent in working on theory of international trade and his foray into Indian economic policy discussion in a systematic manner began with his seminal work, *India, the Emerging Giant* in 2008. The first book was comprehensive in its coverage of the economy and went into great lengths to unravel the pitfalls of inward looking policies and unravelled the great potential that awaits the economy when liberalisation and openness policies are pursued. In the next book on Indian policy treatise (with his illustrious collaborator, Jagdish Bhagwati), *India's Tryst with Destiny*, he systematically showed that growth as the single most important instrument to alleviate poverty. In the new book, *India Unlimited: Reclaiming the Lost Glory* provides comprehensive reform proposals to achieve sustained rapid growth for two to three decades to transform itself into a modern industrial, urban economy and competitive from the traditional agrarian economy. The book is an evolution in his thinking bears evidence to his experience as a policy maker as the first Vice Chairman of the NITI Aayog.

The motivation for the book is to identify the constraints on growth and advance policy reforms reclaim the lost glory. Panagariya recounts Angus Maddison's estimates that by 1700 AD India claimed almost a fifth of world's GDP, but by the time the British left the shores of India after 200 years of rule, India's share had shrunk to 4.2 per cent. Even by 1973, as India continued to grow slower than rest of the world, its share shrunk to 3.1 per cent. However, after the reforms were initiated in 1991, the growth acceleration helped it to marginally recovered to 5.4 per cent by 2001. The story is similar to that of China which had 33 per cent of world GDP in 1820, to 4.6 per cent in 1973, but rose much faster than India to claim 12.3 per cent of the share in world GDP in 2001. After recounting the glorious past and stagnation during the British Raj, the author refers to the chequered growth in the first four decades after Independence and the period of rapid growth after liberalisation to highlight what worked and what didn't. Reclaiming the lost glory requires accelerating the growth and sustaining it for two-three decades and creating productive jobs to the vast workforce with limited skills. This requires upgrading the skills and transforming the traditional agricultural and rural economy to a modern urban and industrial economy.

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The book recounts the lessons from the East Asian Miracle Economies in demonstrating the importance of leveraging the world markets by adopting export led growth strategy. This requires the India industry to be competitive which can be achieved only through right set of reforms. While the book gives credit to the reforms undertaken by the Narasimha Rao government in 1991 which was continued and deepened by the Vajpayee government, it is critical of the socialisation of policies by the subsequent government, particularly during the second UPA government tenure. It highlights the policy mistakes of the UPA government which includes policy paralysis, socialisation of policies with the introduction and expansion of programmes like MGNREGA, food security act, right to education act, retrospective taxation and abandonment of fiscal discipline. Thus, the emphasis of the book is on accelerating growth as a strategy of alleviating poverty.

Unsurprisingly, the book highlights the various reform initiatives of the Modi government and these include, key reforms of Modi government enactment of Insolvency and Bankruptcy Act (IBC) , introduction of direct benefit transfers, implementation of Goods and Services Tax, assault on corruption through measures like demonetisation of high denomination notes, speeding up environmental clearances, introduction of fixed labour contracts and greater flexibility in employment, higher education reform with greater autonomy to well ranked universities, inflation targeting regime in monetary policy, stricter rules governing defaults by bank borrowers, creation of digital platforms using UPI, near universalisation of toilets in rural households. Indeed, the list is impressive though, some of the reforms are still a work in progress like implementation of bankruptcy reforms, some of the wrong policies of the past are yet to be reversed (retrospective taxation) some have seen some reversal (bankruptcy reforms and rules governing defaults by bank borrowers) and in respect of demonetisation, there are many who disagree to consider it as a reform.

The book brings out the malice in the economy – the existence of widespread under employment and low productivity employment in all sectors of economy -agriculture, industry and services. It argues the imperativeness to move the low productive workforce from agriculture to expanding employment opportunities in industry and services which must be made more productive and expanding. The only way for this is to create environment for many more medium and large firms to emerge, especially in employment intensive sectors such as apparel, footwear, furniture and other light manufactures. It convincingly argues for removing the excessive protection for the small firms and the need to enable them to grow into more productive medium and large industries to improve the quality and take on global competition. Acceleration in growth and creation of quality employment opportunities require the country to gain a larger share of world market which entails export competitiveness.

The main thrust of the book is in identifying reform areas. In fact, 8 out of 13 chapters of the book are devoted to discussing various reforms needed to transform the economy from traditional, rural economy to modern urban economy with expanded industry and services sectors providing quality employment to absorb the labour from low productive agricultural sector. The reform package provided is comprehensive and include trade liberalisation, trade facilitation, labour and land reforms, urban development, development of securities market, banking reform, improvements in governance and a miscellaneous set of reforms such as privatisation, consolidation of rural subsidies into a single cash transfer, scaling down the Food Corporation of India and a set of macroeconomic reforms.

The list of recommended reforms is substantial and comprehensive. In agriculture, the recommended reforms include replacement of food subsidy (minimum support price and procurement through Food Corporation of India) with direct cash transfers, APMC reforms, removal of restrictions on the use genetically modified seeds, transparent land leasing laws and the end of MGNREGA. These reforms are to be carried out as a package and not piecemeal. On industry, manufacturing must be made into a major engine of growth and employment, and large firms are crucial for the successfully operating in the global marketplace. This requires a change in the mindset. 'Small is not always beautiful' because they suffer from low productivity, poor quality and lack of standardisation. They should evolve themselves into medium and large industries and the constraints on this evolution must be removed. This requires ending decades of reservation in one form or another, reform of labour laws, numerous procedure related issues for large businesses, reform of minimum wage laws, ensuring ease of land acquisition and focus on export orientation.

The author laments that the Indian policy makers have not been able to fully shed their love affair with import substitution despite clear evidence of its failure. He cautions, "...If India is to relaunch itself into the 8 per cent-plus growth trajectory... the policy makers must disabuse themselves of the import substitution ideology" (p.118). It also highlights the need to avoid love for strong rupee because overvalued exchange rate works as a tax on exports. To impart export orientation, in addition to the above the book recommends that the tariff levels should be set at a uniform rate for industrial products within a span of 3 years. The revenue neutral (customs revenue) uniform rate would be 7 per cent and alternatively, the rate could be set at a uniform 10 per cent. In addition, it is necessary to ensure that all domestic indirect taxes are reimbursed on exports and there must be active trade facilitation. The most important is the recommendation to integrate India with global supply chains and become worlds manufacturing hub is to set up a few (not more than half a dozen) Autonomous Employment Zones (AEZs) comparable to Shenzhen in China located close to deep dredged ports in places like Gujarat or Andhra Pradesh. These should cover an area more than 500 sq. kilometres. These zones should be given virtually all powers to frame rules of economic engagement and ensure a flexible environment with respect to labour and land laws and allow flexibility in changing relocation of the factories, including labour and land laws and administration of customs. There are also recommendations on governance reforms and urban land ceiling and regulations and banking reforms.

It is often said, "crisis is the mother of reforms". At a time when the country is facing the unprecedented economic crisis caused by coronavirus pandemic and the contraction in the economy at 29 per cent in the first quarter of the fiscal is the worse than any other large emerging economy, it makes eminent sense for the government to implement the package of reform proposals put forward in the book. The government has already introduced series of reforms in the farm sector including the amendment of Essential Commodities Act, APMC reforms, enabling leasing of land and contract farming. It has also introduced legislation abolishing the Medical Council of India and setting up National medical Commission. The problem is that when the special interest groups or 'distributional coalitions' as Mancur Olson called them, are deeply entrenched in the system, reforms is not easy to implement in letter and spirit. The reforms identified in the book are extremely important and must be pursued with vigour to take the country to a higher growth trajectory and the time is opportune to initiate them. The policy makers in the country will do well to heed the reform recommendations. The book is a must read for all those who are interested in Indian economic policy.

***India Unlimited: Reclaiming the Lost Glory*, by Arvind Panagariya, Harper Collins Publishers India, Noida, 2020. Pages (i-xiii) and 370. Rs. 438 (Hardcover); Kindle Edition: Rs. 381.71.**

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