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Landmarks in India's economic reforms: 2015 to 2025

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TEAM

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Landmarks in India's economic reforms: 2015 to 2025

Based on selected 'In-focus' writeups of
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Introduction

Introduction

The period 2015 to 2025 was characterized by major policy initiatives pertaining to monetary, fiscal and external sector reforms. These reforms included deep seated structural reforms with long-term implications as well as short term measures for addressing cyclical and unanticipated challenges such as the COVID-induced slowdown of the Indian economy. The underlying concern has been uplifting growth and reducing multidimensional poverty in India. The overarching objective of reforms and policy interventions has been to guide the Indian economy towards attaining a developed status popularly referred to as Viksit Bharat. Our In-focus writeups captured the reform initiatives as soon as they were announced and implemented. In the present e-volume, we have attempted to organize these In-focus writeups in the following broad groups:

Part 1: Growth, poverty reduction and economic policy

Part 2: Monetary and Banking reforms

Part 3: Fiscal policy and fiscal imbalance

Part 4: Coping with COVID: Policy responses

Part 5: External sector reforms

Part 6: Towards Viksit Bharat: Other underlying reforms

Part 1 includes five articles relating to a discussion of economic initiatives and reforms that directly addressed issues of growth and poverty reduction. In fact, the underlying objective of economic reforms of the NDA governments has been to ensure uplifting India's potential growth rate, which required various supply side reforms aimed at improving production efficiency and reducing unit costs. This was accompanied by further focusing on poverty reduction as an achievable objective rather than focusing on income inequality reduction. Furthermore, greater responsiveness was shown to the issue of multidimensional poverty vis-à-vis income-based poverty. In measuring poverty also, there was a recognition of the role played by various support and subsidization programs that helped deliver better health and education services at lower costs. When these policy interventions are taken into account, the impact on poverty reduction appears to be much larger than the more conventional approach to measuring poverty.

Part 2 contains articles based on In-focus writeups devoted to monetary and banking sectors of the economy. In fact, one of the first monetary reform initiatives of the NDA government related to the demonetization of high denomination currency notes way back in November 2016. This demonetization had both economic and strategic objectives in mind. The impact of demonetization attracted considerable attention as well as criticism. We have included three articles on this subject providing a comprehensive background to demonetization, its rationale and its impact.

Another dimension of monetary reforms related to bringing about a Monetary Policy Framework (MPF) that was to be implemented by a Monetary Policy Committee (MPC). We have traced the evolution of MPF and MPC and examined their roles in ensuring monetary and price stability in the economy. As per the framework, the RBI was mandated to target a CPI inflation rate below 6% by January 2016. CPI inflation target for 2016-17 and beyond was set at 4% with a tolerance range of +/-2%, implying an overall CPI inflation range of 2% to 6%. This target is to be reviewed once every five years. In order to implement this framework, the MPC was established in September 2016 by amending the RBI Act. According to the MPF, the RBI would fail to meet the target if the rate of inflation is more than 6% or less than 2% *for three successive quarters*. Further, in case of failure, the RBI is required to submit a report to the Central government detailing a) the reasons for failure, b) remedial actions to be taken and c) estimate of time period within which the target would be achieved. A review of this framework was undertaken in March 2021. The MPC concluded that it would be desirable to continue with the same framework for another five years until 31 March 2026, thereby indicating that the focus would be on containing CPI inflation in the range of 2-6% with an average target of 4%.

Another issue that became the subject of several policy interventions pertained to the non-performing assets (NPAs) of scheduled commercial banks. The existence of large NPAs makes

banks exceedingly cautious in their lending policies, slowing down credit and the overall growth. The GoI has to support the banks as a last resort to ensure that the banking system remains viable and trustworthy. Noting that the volume of NPAs was quite large, a number of Asset Reconstruction Companies (ARCs) were established so that they could take over distressed companies from the banks at a discount and convert debt to equity. They could then try to turn these companies around or sell them to prospective buyers or liquidate the assets. A greater use of ARCs is required rather than banks selling the NPAs directly.

Part 3 of this volume captures another major policy dimension of the economy relating to fiscal imbalances that called for fiscal responsibility legislations and related fiscal policy reforms. In the literature, the analytical and empirical background to the evolution of fiscal imbalances has been discussed in detail. There are varied international practices in this context. In India also, this subject has evolved over time. In fact, an extensive re-casting of the GoI's Fiscal Responsibility and Budget Management (FRBM) Act was undertaken in 2018 as a result of which several far-reaching changes were brought about in the GoI's FRBM Act which was originally introduced way back in 2003. The 2018 amendment to the GoI's FRBM Act had focused on specifying debt-GDP targets for the central government and for the combined account of central and state governments at 40% and 60% respectively. By implication, the debt-GDP target for the aggregate of states was kept at 20%. The fiscal deficit to GDP ratio for the central and state governments was kept at 3% each. In contrast to the 2003 Act, which had given primary importance to eliminating revenue deficit, the 2018 amendment did away with this target. In our In-focus writeups, we have taken a critical view of these reforms and highlighted the need for further changes in this fiscal responsibility framework. We have highlighted basic inconsistencies in the existing fiscal responsibility framework in India and suggested methods by which a consistent and effective approach to dealing with fiscal imbalances can be developed in the context both of growth and countercyclical policy. There is also a need to coordinate the fiscal policy framework with the monetary policy framework.

Major taxation reforms were also undertaken during the period under review. In particular, the GST was implemented in July 2017 and comprehensive reforms for the corporate income tax were undertaken in 2019.

Part 4 deals with a major economic crisis that was linked to the onset of COVID-19 in March 2020. In this context, we captured various economic dimensions of the COVID crisis, including the stimulus packages designed and implemented by the GoI from time to time. We took up the issue periodically as the pandemic spread out, although tackled effectively in due course, while causing major economic disruption in FY21 and beyond. India had to cope with a major contraction in this year. We had argued that there was an urgent need to re-prioritize budgeted expenditures in favor of health-related expenditures, including health infrastructure. In terms of rebooting the economy, India had to attract new manufacturing capacity requiring additional budgetary allocation. In fact, both revenue and expenditure side estimates of the central and state budgets had to be overhauled. We suggested that effective economic policy may require aligning the calendar of opening up of economic sectors with injections of fiscal stimulus while being supported by monetary policy initiatives and other industrial policy interventions.

Part 5 is devoted to analyzing various external sector reforms. In this context, we have three articles that deal with the high volatility of global crude prices, managing exchange rate and the exposure of the Indian economy to external sector imbalances. In the wake of the geopolitical developments including the Russia Ukraine conflict, major structural changes are taking place with respect to international trade and capital flows. These changes may have long-term effects on India and hence call for major adjustments in relation to sourcing and composition of imports as well as destination and composition of exports, supplemented by substantive policy support. India's external sector imbalances have persisted over a long period of time. The vulnerability of inflation, GDP growth, current account deficit, and fiscal deficit to global crude price shocks are well-recognized. In this backdrop, we undertook a review of trends in international trade and capital flows with a view to capture their changing contours, impacting India's medium to long-term growth performance. We also considered ways by which the exposure to cyclicality of global crude prices may be evened out for the domestic economic players. In this context, three feasible and desirable measures were suggested: (1) establishing an 'Oil Price Stabilization Fund', (2) expansion and

diversification of sources of oil and gas imports with a view to reducing average price of the Indian crude basket, and (3) accelerated efforts to switch to non-conventional energy sources.

Part 6 covers the emerging challenges and opportunities that emanate from the fast-developing new technologies, including AI and robotics. In this part, we capture various other critical aspects of the Indian economy, including its formalization and digitalization and the need for investing in human resources that could help India utilize its unfolding demographic dividend.

Part – 1

Growth, poverty reduction and economic policy

Chapter 2

Reflecting on the economic initiatives of NDA's first year (June 2015)

Abstract

In 2015, the NDA government started laying down the foundations of comprehensive economic reforms for the future while keeping in mind the global economic developments. In particular, there was a global economic slowdown which had an adverse impact on India's export prospects. At the same time, global crude prices eased a little, thereby reducing unit cost for Indian producers. In this year, main policy initiatives related to:

1. Industrial growth: Make in India
2. Infrastructure: Coal and Telecommunications auctions and related policy framework; High speed trains, Road connectivity through Bharatmala and other schemes, Housing for All, AMRUT, Smart cities, Digital India
3. Inclusive growth: Jan Dhan Yojana, Pension and Accident Insurance Schemes, Skill India
4. Fiscal initiatives: GST new constitution amendment bill, Revised fiscal responsibility path
5. Socio economic policies: Namami Gange, Swachh Bharat

These initiatives had a far-reaching and underlying structural impact on the economy.

Introduction

During the first year (26 May 2014-25 May 2015) of its functioning, the NDA Government at the GoI got the opportunity to present two full year budgets, and came up with several economic initiatives. One year is too short a period to evaluate the success of these initiatives. However, we may examine the potential of these initiatives to deliver over the coming few years. Are these part of a well-thought-out and interlinked elements of an over-arching economic strategy or just stand-alone ministerial initiatives? The key objective, against which these initiatives may be evaluated, is "achieving higher non-inflationary, inclusive, sustainable growth". The empirical perspective within which these initiatives must deliver has also changed in several critical ways. First, the global economy shows signs of settling in a long period of slow-down. Consequently, pressure on crude and other mineral prices has eased. India both benefits and loses from these trends. The loss is due to the lowering of growth of Indian exports and the gain arises from the lowering of pressure on inflation that arises from high crude oil prices. We may look at these economic initiatives in the following broad categories — industrial growth, infrastructure, inclusiveness, fiscal, and socio-economic.

Table 2.1: Key economic initiatives of the NDA Government

Broad category	Initiative
Industrial growth	Make in India
Infrastructure	Coal and Telecommunications auctions and related policy framework; High speed trains, Road connectivity through Bharatmala and other schemes, Housing for All, AMRUT, Smart cities, Digital India
Inclusive Growth	Jan Dhan, Pension and Accident Insurance Schemes, Skill India
Fiscal Initiatives	GST new constitution amendment bill, Revised fiscal responsibility path
Socio-economic	Namami Gange, Swachh Bharat

Industrial growth

The fulcrum of NDA's industrial growth initiative is "Make in India". It was designed to facilitate investment, foster innovation, enhance skill development, and protect intellectual property. Twenty-five sectors were identified as focus sectors. Make in India clearly stated that the new government sees "manufacturing" as the key driver of growth and employment in India. India's share of industry in general and manufacturing in particular, is much lower as compared with many other developing countries, particularly China (World Bank). In recent history, no economic power has been successful without a large and powerful manufacturing sector.

The initial success of this campaign, in terms of actual investment, has been limited, although several potential investors, both domestic and external, have shown interest. Make in India faces several constraints. First, the current global growth prospects and the demand for Indian exports are weak. Second, the manufacturing sector is capital intensive, but our saving and investment ratios are quite low in comparison to our own peak performance in the past. Pre-emptying these savings for the manufacturing sector may require drawing these away from the services sector. Third, there is an excess of manufacturing capacity in the world and even if we succeed in attracting investment, it may be difficult to compete with western economies who have access to better technology or China, which has better infrastructure. There are no signs of any sudden upsurge in investment in India focused on manufacturing. Given these constraints, "Make in India" may bear fruit in the medium to long term, provided it is not pursued at the cost of services. A pre-condition for the success of "Make in India" is investing in infrastructure, which may make Indian industry more competitive.

Infrastructure initiatives

This sector has received justifiable and promising attention from the NDA Government. Some of the important initiatives relate to mining and power, rail and surface transport, telecommunications, urbanization and digitization. Reforms in the mining and power sector have got off to a promising start with the coal and spectrum auctions.

The power sector appears to have been turned around from a deficient supply situation to a deficient demand situation. The thrust on renewable energy appears to have taken off with news of several new launches relating to solar energy. Real success may come only when the finances of the state level power utilities are in better shape.

In the rail and road sectors, although several new projects have been announced, there is no clear financing plan. Tax revenues remain sluggish. Adherence to fiscal deficit targets results in a severe resource crunch. There is a need to prioritize new initiatives and projects. The erstwhile PPP model has also failed and disinvestment has been slow to take off.

Fiscal initiatives

Two key fiscal initiatives are first to reiterate commitment to fiscal consolidations with minor modifications of adjustment path and reintroduction of the GST constitution amendment bill in Parliament. In trying to overcome opposition of some states to GST, the central government may have sullied the basic design of GST by introducing a 1% tax on inter-state supplies, thereby, attempting to create fiscal barriers on inter-state trade, compromising the very promise of GST to usher in a genuine barrier-free all India market. There is still no clarity on the standard rate to be adopted.

While the Government has accepted the recommendations of the Fourteenth Finance Commission to increase states' share in the divisible pool of central taxes and abolishing the distinction between plan and non-plan expenditures and plan and non-plan grants, it has made no effort to restructure the central ministries dealing with state subjects in the wake of their reduced responsibility and has continued with the plan and non-plan distinction in its own expenditures notwithstanding the well-documented inefficiencies of such a distinction.

Most tax-related measures have been only administrative in nature and have not given the required comfort to international investors.

Inclusive growth

The pension scheme and the accident insurance schemes are successful schemes that have limited cost implications for the GoI. Any significant impact on inclusiveness can only come with the success of the Skill India initiative and consequent absorption of the trained people in the productive sectors of the economy. This can be assessed only over a much longer period of time.

Path corrections and future potential

Several path corrections are required. There has to be a strategy to place the individual ministry-level initiatives in an overarching framework complemented by a cogent financing strategy. Whereas these schemes cannot be financed at the same time, they need to be sequenced according to priorities and potential impact. Remedial measures to correct some of the long-standing concerns of the Indian economy need to be initiated without further delay. One of these is abolition of the plan/non-plan distinction, which faultily assumes that creation of new assets is somehow better than maintenance of old ones. Second, as a logical outcome of the recommendations of the Fourteenth Finance Commission, the responsibility of the Central Government on state and concurrent matters must be recast. Third, in a spirit of genuine cooperative federalism, the central government must bring on board state governments to undertake ambitious capital expenditure programs focused on infrastructure to boost investment demand and reduce infrastructure deficiency. For many state governments, there is scope of increasing fiscal deficit without breaching permissible limits, particularly in the wake of the extra room over and above the 3% of GSDP limit provided by the Fourteenth Finance Commission. Fourth, there is considerable scope for

finetuning the GST framework. The provision for the 1% additional tax may be given up and the central government may come up with its own authentic estimate of the revenue neutral rate. Clearly, a high rate of GST may be detrimental, particularly for the services sector, which has been the fulcrum of India's growth success so far. Fifth, India's long-term economic strategy needs to be spelled out addressing how the twin-edged demographic dividend combining both a promise and a challenge can be handled, how development can be financed when the tax-GDP ratio continues to stagnate, and how exports can be reinvigorated while the global economy remains caught up in a long-term slowdown.

Chapter 3

Uplifting growth: Unraveling India's current economic policy dilemma (October 2017)

Abstract

By 2017, India's growth in terms of both GDP and GVA had steadily fallen since 4QFY16. In 1QFY18, GDP growth stood at only 5.7%, 3.3% points below that in 4QFY16. This led to a lively debate as to what policy option(s) may be best for uplifting growth. Some suggested a fiscal stimulus, some recommended a monetary stimulus, while others advocated supply-side policies. In this chapter, we attempted to look at the available policy options in the light of the factors that constrained policy effectiveness. A desired direction of uplifting growth was to ensure that it was non-inflationary and employment promoting. Our suggestions included (1) prudent management of exchange rate, (2) accelerated reforms to implement GST, (3) reliance on fiscal stimulus while ensuring that the fiscal deficit remains within sustainable limits, and (4) supplementing fiscal stimulus with monetary stimulus to push private investment.

Introduction

India's growth in terms of both GDP and GVA has steadily fallen since 4QFY16. In 1QFY18, GDP growth stood at only 5.7%, 3.3% points below that in 4QFY16. There is a lively current debate as to what policy option(s) may be best for uplifting growth. Some suggest a fiscal stimulus, some recommend a monetary stimulus, while others advocate supply-side policies. In this write-up, we attempt to look at the available policy options in the light of the factors that constrain policy effectiveness. A desired direction of uplifting growth is to ensure that it is non-inflationary and employment promoting.

Drivers of growth: Causes of growth erosion

From the demand side, there are four aggregate drivers of growth: GFCE, PFCE, GCF and net exports. Looking at growth data, we can study their relative role in driving growth. Also, comparing peak growth in a previous quarter with current growth, we see which segment has been responsible for the erosion of growth. The relative contribution of each segment of demand to the overall growth depends on two factors: (i) relative share of the segment in GDP and (ii) segment-wise growth[1].

Table 3.1: Components of demand: Relative share and contribution to growth

Quarter	GFCE	PFCE	GCF	EX	IM	NE*	SD	Total
Share in GDP (%)								
4QFY16	7.5	56.6	34.9	20.2	20.2	0.0	1.0	**100.0**
1QFY17	11.3	53.6	34.7	20.2	21.1	-0.9	1.3	**100.0**
2QFY17	12.8	53.8	33.0	20.4	21.2	-0.8	1.2	**100.0**
3QFY17	10.6	58.6	32.9	19.9	20.6	-0.8	-1.3	**100.0**
4QFY17	9.4	57.3	32.1	21.0	21.3	-0.3	1.6	**100.0**
1QFY18	12.6	54.0	35.6	19.4	22.6	-3.3	1.1	**100.0**
1QFY18–4QFY16	**5.0**	**-2.6**	**0.7**	**-0.9**	**2.4**	**-3.2**	**0.1**	**0.0**
1QFY18–1QFY17	**1.2**	**0.5**	**0.9**	**-0.9**	**1.5**	**-2.4**	**-0.2**	**0.0**
Contribution to GDP growth (% points)								
4QFY16	0.2	6.5	1.8	-0.4	0.8	0.5	0.0	**9.0**
1QFY17	1.7	4.5	2.3	0.4	0.1	0.5	-1.2	**7.9**
2QFY17	1.9	4.3	0.7	0.3	0.9	1.2	-0.6	**7.5**
3QFY17	2.0	6.3	0.4	0.8	-0.5	0.4	-2.0	**7.0**
4QFY17	2.4	4.2	-0.8	2.1	-2.4	-0.3	0.7	**6.1**
1QFY18	1.9	3.6	2.9	0.2	-2.8	-2.6	-0.2	**5.7**
1QFY18–4QFY16	**1.8**	**-3.0**	**1.1**	**0.6**	**-3.6**	**-3.1**	**-0.2**	**-3.3**
1QFY18–1QFY17	**0.2**	**-0.9**	**0.6**	**-0.2**	**-2.9**	**-3.1**	**1.0**	**-2.2**

Source (Basic Data): MOSPI
Notes: EX: Exports, IM: Imports,
*NE: Net exports = Exports−Imports, SD: Statistical discrepancy, GCF: Gross capital formation
Contribution of growth of imports is pre-multiplied by (-) 1 such that a positive value indicates a positive contribution to growth and a negative value indicates erosion of growth.

In order to determine the relative contribution of these four components to the growth erosion that the Indian economy suffered, we may compare component-wise contributions to growth in 4QFY16 with those in 1QFY18. However, it may be argued that there is seasonality in growth and therefore it may be appropriate to compare the same quarters across years. Thus, we compare 1QFY18 with 1QFY17 although we have also given a comparison of 4QFY16 with 1QFY18.

The fall in overall GDP growth during the period from 1QFY17 to 1QFY18 is 2.2% points as shown in Table 3.1. This can be explained by two factors: (a) change in the contribution of net exports (-3.1% points) and (b) change in the contribution of PFCE (-0.9% points). These adverse impacts were

[1] Relative contribution to GDP growth in period t (% points) = Relative share of the sector in GDP in period *t-1* (%) * Sectoral growth in period *t* (%)

partially neutralized by a positive change in the contributions of GFCE (0.2% points) and GCF (0.6% points). Thus, the main reason for the fall in growth in 1QFY18 is the fall in the contribution of net exports to overall GDP growth. This can further be decomposed into the contributions of exports and imports separately as shown in Table 5. Of these, it is the rise in imports that caused the larger negative impact than the fall in exports.

From a longer term and structural perspective, the steady fall in the share of PFCE in GDP quarter after quarter is a cause of concern. It was 56.6% in 4QFY16 and it fell to 54% in 1QFY18 when measured at constant 2011–12 prices. In nominal terms also, there was a fall in its share from 59.1% in 4QFY16 to 57.3% in 1QFY18. In terms of overall investment measured by GCF, its share in real terms marginally increased from 34.9% in 4QFY16 to 35.6% in 1QFY18. In nominal terms, its share increased from 32.1% to 32.5% during this period. The cause of concern in case of GCF is not in the overall investment but with respect to its decomposition in terms of investment in fixed capital formation, valuables and inventories. It is the investment in fixed capital formation that has fallen. During 1QFY17 to 1QFY18, the share of GFCF fell by 1.2% points of GDP while that of investment in valuables increased by 2.2% points. In real terms, the share of GCF in GDP did not fall over this period. It is the composition of investment that is tilted in favor of valuables, particularly during 4QFY17 and 1QFY18, at the cost of investment in fixed assets, which clearly is a matter of concern as it does not add to the country's productive capacity (Table 3.2). There was a surge in imports of gold in this period. Many people consider this surge as due first to demonetization and later to the anticipation of GST, which has a relatively higher rate of tax on gold.

Table 3.2: Components of investment — share in GDP and relative contribution at 2011–12 prices

Quarters	GFCF	CIS	Valuables	GCF
Share in GDP (%)				
4QFY16	30.8	2.4	1.6	34.9
1QFY17	31.0	2.5	1.2	34.7
2QFY17	29.4	2.4	1.2	33.0
3QFY17	29.5	2.3	1.2	32.9
4QFY17	28.5	2.4	1.3	32.1
1QFY18	29.8	2.4	3.4	35.6
1QFY18–4QFY16	**-1.0**	**-0.1**	**1.8**	**0.7**
1QFY18–1QFY17	**-1.2**	**-0.1**	**2.2**	**0.9**
Contribution to GDP growth (% points)				
4QFY16	1.3	0.8	-0.2	1.8
1QFY17	2.3	0.2	-0.2	2.3
2QFY17	0.9	0.1	-0.4	0.7
3QFY17	0.5	0.1	-0.3	0.4
4QFY17	-0.6	0.1	-0.2	-0.8
1QFY18	0.5	0.0	2.4	2.9
1QFY18–4QFY16	**-0.8**	**-0.7**	**2.6**	**1.1**
1QFY18–1QFY17	**-1.8**	**-0.2**	**2.6**	**0.6**

Source (Basic Data): MOSPI

A similar analysis from the supply side indicates that it is the fall in the contribution of manufacturing by (-) 1.7% points and that of financial services by (-) 0.2% points that was responsible for a decline of 2% points in real GVA growth from 1QFY17 to 1QFY18. These two sectors alone accounted for most of the decline in GVA growth. These sectors also had the largest share in GVA along with sectors such as transport and storage. Thus, policy focus from the output side may concentrate on these two sectors.

In view of these features of India's growth profile, we have identified the immediate problem as that of increase in imports relative to exports and the long-term problem as that of falling PFCE and

falling investment in fixed assets. The fall in PFCE is not by itself a problem if this fall is made up by a corresponding increase in investment particularly in fixed capital formation.

Policy options: The policy wheel

The available policy instruments can be divided into two broad categories: those that affect the demand side of the economy and those that affect the supply side. This dichotomy is not watertight. There are also some policy instruments that are primarily demand side policies but with some supply side implications and others that are mainly supply side policies but with demand side effects. Demand side policies affect components of aggregate demand such as consumption, investment and net exports. Supply side policies aim at increasing the productivity of factors of production. Many supply side policies can be non-economic also such as those related to the regulatory and legal environment. In economic policy literature, it is well known that demand side policies have short-term effects on the economy and those effects wear off in a few years. Supply side policies, on the other hand, take more time to show their effects but their positive effects last much longer.

Current policy focus: Supply side thrust

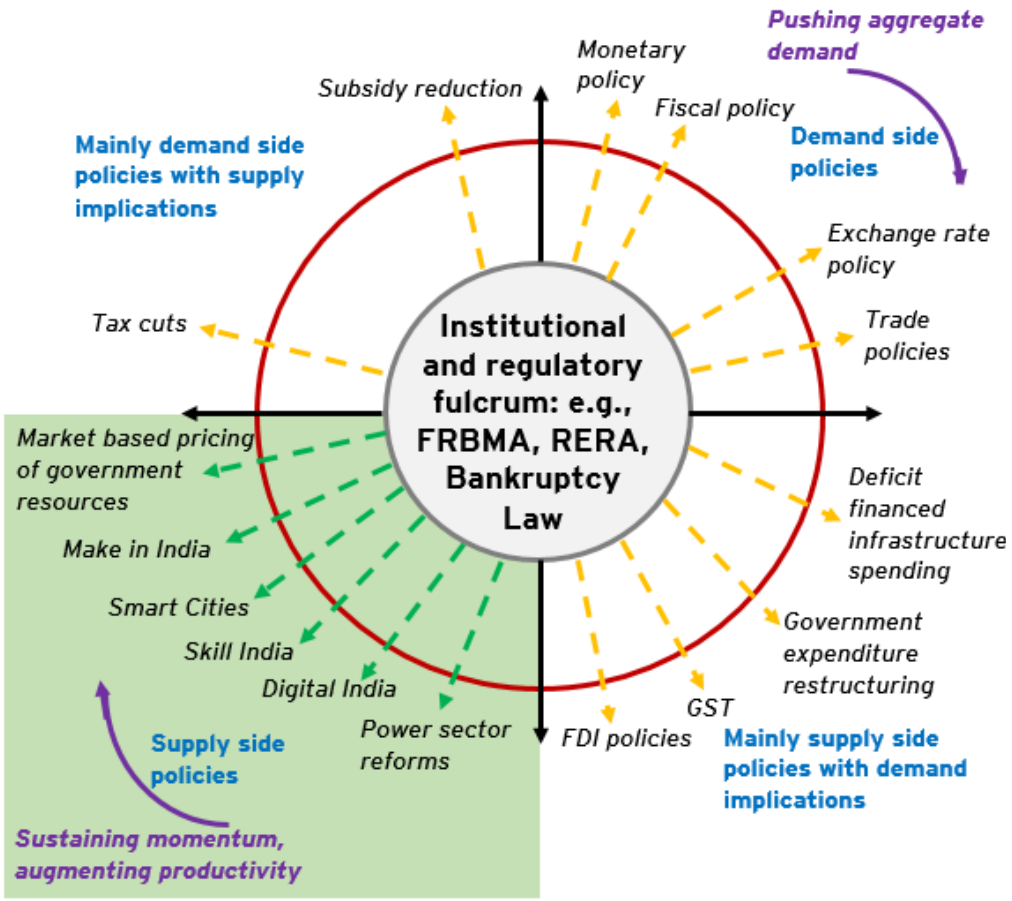
Policies that increase the productivity of resources in the economy are referred to as supply side policies. GST, for example, is very largely a supply side policy reform as it aims to improve the productive efficiency of the economy by better resource allocation, removal of inter-jurisdiction fiscal barriers and bringing in supply chain efficiencies. Improved regulatory policies including the new bankruptcy law, the FRBMA in its current or potentially modified form and RERA are examples of the institutional and regulatory fulcrum of the Policy Wheel (Chart 3.1).

The focus of the present Government has very largely been on supply side policies. But these may not be enough to push the economy out of the slowdown. As shown in the Policy Wheel, most of the policy initiatives are located in the south-west quadrant (shaded).

Some policies can have both supply and demand side implications. Thus, the Government's capital expenditure on infrastructure adds to demand but infrastructure improves productivity of other resources. Demand and supply side policies are not mutually exclusive. They can be pursued together. Demand side policies get the wheels of the economy moving by giving it a quick push. Supply side policies sustain the momentum of the wheels and help produce long-term beneficial results.

India's GST, because of its detailed rate differentiation and heavy IT compliance load, could not immediately take off as a tool for bringing supply side efficiency in the economy. Its main advantage is still a fiscal barrier-free, all-India common market. Now that the GST is firmly in place, there is a need to reform it quickly to maximize its efficiency-improving effect. The main reforms are needed in four directions: (a) reducing the rate differentiation leading to a GST rate structure with at best three core rates, (b) reducing the compliance burden by reducing the number of forms to be filled in and the number of returns to be filed, (c) making exports genuinely zero-rated and avoiding the possibility of blocking due input tax credit for long periods and (d) including sectors currently excluded from GST (e.g., petroleum, real estate and electricity). Some reforms in these directions have been initiated recently. But we still have to cover considerable distance to make GST a true instrument of bringing efficiency in the economy.

Chart 3.1: The policy wheel



Source: EY analysis

Role of demand-side polices

Fiscal and monetary stimuli are both examples of demand-side policies. In theory, demand stimulus should work effectively in the presence of unemployed resources. However, the effectiveness of any stimulus is constrained because of the existence of unutilized capacity. To be effective, the stimulus may need to be very large so as to substantially reduce the unutilized capacity in the system.

Exchange rate management can also be considered as a demand side tool as it affects imports and exports. The RBI's policy in managing the exchange rate is to minimize volatility but not interfere with the underlying trend. However, there is no ex-ante determination by the RBI as to what this underlying trend is likely to be. In determining such a trend, the rate of inflation in India relative to that in India's major trading partners is an important consideration. As India's inflation rate has come down, it was expected that the rate of depreciation of the Indian rupee may also come down on a trend basis. However, since India's inflation rate is still higher than that in the US and in other developed economies (IMF WEO October 2017), the underlying trend movement should still lead to depreciation of the Indian rupee but the rate of depreciation should be much lower now than earlier. Any departure from this expected underlying trend can only be explained by the role played by transitory factors, which lead to large capital movements, including expectations. It is these factors that led to the appreciation of the Indian rupee against the US dollar since February 2017. In August 2017, the average exchange rate was US$1=INR64.0 as compared to US$1=INR68.1 in January 2017. This was one of the reasons for the surge in import growth during this period.

Policy intervention: A suggested approach

We suggest a four-pronged policy intervention broadly in the following sequence.

- **Exchange rate management**: Although the RBI did attempt to curb the trend of appreciation of the Indian rupee, its intervention could have been even stronger. The buying of US dollar so as to constrain the appreciation of the rupee leads to accumulation of foreign exchange reserves. This is a problem since foreign exchange reserves are part of the monetary base and if these are allowed to expand, money supply may increase, leading to pressure on prices. The only way that this can be neutralized is to sterilize or manage a part of the foreign exchange reserves through special sovereign funds, just as China has been doing. Any continued tendency of the Indian rupee to appreciate may need to be effectively countered by the RBI.

  We consider that a feasible intervention to uplift the contribution of net exports to GDP may yield immediate results. As such, ***as the first step***, policy may aim at reducing demand for non-oil imports by managing exchange rate such that it shows a gentle rate of depreciation (around 2%–3% per annum). This may require accumulation of additional foreign exchange reserves that may be managed so as not to have an adverse impact on domestic inflation. Depreciation of the Indian rupee (or at least a curb on its appreciation) is also expected to encourage exports.

- **Accelerated GST reforms**: The ***second intervention*** may focus on accelerated GST reforms so as to make it an effective efficiency-augmenting vehicle for the Indian economy. As exporters overcome the problem of input tax credit being blocked, exports may pick up and net exports may begin to contribute positively to growth. This may be further facilitated by the positive outlook of global growth.

- **Fiscal stimulus within deficit limit**: Private investment may not improve as long as excess unutilized capacity exists. Until that time, it is government investment that has to provide the investment push. As a ***third step***, the Central Government may provide this push by also taking on board the state governments as well as public enterprises. Given the limits on borrowing under the FRBMA, the Government may create additional fiscal space through an effective disinvestment strategy and expenditure restructuring, particularly on reducing expenditure on salaries and establishment, particularly in ministries and department dealing with state subjects. The multiplier effects of this simultaneous push may help reduce excess capacity.

Monetary stimulus: ***Finally***, when capacity utilization improves, monetary stimulus can be introduced to push private investment. This is likely to be effective when the extent of NPAs has also come down.

Chapter 4

Eliminating extreme poverty in India: Role of growth and fiscal policy interventions (April 2019)

Abstract

Poverty reduction in India has been a major concern of planners and policymakers. The measurement of poverty started way back in the early 1970s. Since then, based on periodic national sample surveys, poverty in terms of its headcount ratio and other related measures was estimated by the erstwhile Planning Commission. The methodology of measuring poverty has evolved over time. Critical in the measurement of poverty is the concept of a poverty line. Poverty line is a monetary threshold, below which the income level of a "poor" individual or household falls. Over time, the incidence of poverty in India has significantly reduced. Policymakers in India are now considering a final assault on poverty. The World Bank's goal of reducing extreme poverty calls for bringing down the poverty headcount ratio to less than 3% by 2030.

This chapter argues that while designing poverty alleviating policies in India, the following considerations may be of paramount importance: 1) rural and urban poor are concentrated in a limited number of states, 2) some of the states with a higher incidence of urban poverty, are also the ones with relatively higher income, 3) the normal growth process may by itself reduce incidence of poverty but the poverty alleviation impact can be increased by targeted income transfer programs as well as well-designed subsidy and taxation regimes.

Introduction

Poverty reduction in India has been a major concern of planners and policymakers. The measurement of poverty started way back in the early 70s. Since then, based on periodic national sample surveys, poverty in terms of its headcount ratio and other related measures, was estimated by the erstwhile Planning Commission. The methodology of measuring poverty has evolved over time. Critical in the measurement of poverty is the concept of a poverty line. Poverty line is a monetary threshold, below which the income level of a "poor" individual or household falls.

Over time, the incidence of poverty in India has significantly reduced. Policymakers in India are now considering a final assault on poverty such that it can be brought to a level which can take India to a group of countries, where poverty can be considered as effectively eliminated. The World Bank's goal of reducing extreme poverty[2] calls for bringing down the poverty headcount ratio[3] to less than 3%[4] by 2030.

The normal process of growth by itself reduces the poverty headcount ratio. However, due to issues of unequal distribution of income as a result of growth, the impact of growth on poverty reduction is positive but may not be proportionate. It can be accelerated by devising policies which can make normal growth to be more equalizing and hence more poverty-reducing. As a last resort, poverty may be directly attacked by introducing an income transfer program whereby for all or selected segments of poor households, an income transfer is made such that the selected poor households are lifted above the poverty line.

Role, definition and measurement of poverty lines: Official poverty lines in India have been revised and updated time and again

Poverty lines can differ according to rural and urban areas and according to states. Measurement of the poverty line in India has been linked to calorific norms. The measurement starts by defining the consumption expenditure required to ensure that the food intake delivers the minimum required calorific value which may differ for rural and urban areas. Thus, calorific norms are translated into expenditure on food items. The expenditure on food items is then mapped onto a corresponding total expenditure covering both food and non-food items.

The last available official estimates of the poverty line relate to 2011 and 2011-12, both by the erstwhile Planning Commission. These poverty line estimates can be referred to as Tendulkar Committee and Rangarajan Committee estimates respectively. There was a controversy caused by the definition of the poverty line by the Tendulkar Committee. In fact, the Tendulkar Committee had used an all-India urban poverty line as the reference to derive the state level rural and urban poverty lines. Prior to this, two separate poverty lines for rural and urban areas were being estimated. The Tendulkar Committee had also decided not to use the available official calorie norms which were used in all poverty estimations since 1979.

In the context of 1999 national sample survey, a controversy had sprung up with reference to the recall periods used in the questionnaires based on which the expenditure data was compiled. In particular, there are three recall periods used, namely seven days, 30 days and 365 days. The 365 days recall period refers to durable goods. For non-durable goods, both seven days and 30 days recall periods have been used. Based on the analysis of questionnaires, Deaton and Dreze (2002)[5] amongst others, argued that the earlier sample surveys were based on uniform recall period for non-durable goods whereas the 1999-00 survey used mixed recall periods implying that questions of seven day recalls and 30 days recalls were put together, leading to higher expenditure estimates. This particularly affected food items. In later surveys, questions with different recall

[2] Extreme poverty is defined by World Bank as consumption (or income) less than US$1.90 a day in 2011 purchasing power parity (PPP)
[3] The Head count ratio (HCR) is the proportion of a population that exists, or lives, below the poverty line.
[4] World Bank. 2018. Poverty and Shared Prosperity 2018: Piecing Together the Poverty Puzzle. Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0 IGO
[5] Deaton, A., & Dreze, J. (2002). Poverty and inequality in India: a re-examination. *Economic and political weekly*, 3729-3748.

periods were kept in separate questionnaires so that three sets of estimates relating to uniform recall period, mixed recall period and mixed modified recall period (MMRP) can be obtained. The Rangarajan committee has used the MMRP based estimates of consumption expenditure.

The Rangarajan Committee derived the food component of the poverty line consumption basket by referring to the simultaneous satisfaction of all three nutrient norms[6] taking into account public provision of a range of public goods and services aimed at the amelioration of the diseases facing the population. The Rangarajan Committee used NSSOs estimates and not the NAS estimates for consumption expenditure since the latter led to higher estimates of consumption. Spatial and temporal variation in prices were captured in defining the state level and rural-urban poverty levels. Thus, the Rangarajan Committee poverty estimate refers to normative levels of nourishment, clothing, house rent, conveyance and education and a behaviorally determined level of other non-food expenses. The Rangarajan Committee recommended that their estimated poverty line may be updated by using the Fischer index in future.

Table 4.1: Poverty Line estimates by various committees (INR per capita/month)

	Rural			Urban		
Years	Lkd	Tnd	Rang	Lkd	Tnd	Rang
1973-74	49.6			56.8		
1977-78	56.8			70.3		
1983	89.5			115.7		
1987-88	115.2			162.2		
1993-94	205.8			281.4		
1999-00	327.6			454.1		
2004-05	356.3	446.7		538.6	578.8	
2009-10		673.0	801		860.0	1198.0
2011-12		816.0	972		1000.0	1147.0

Source: NITI Aayog; Rangarajan Committee Report 2014
Note: Lkd – Lakdawala Committee, Tnd - Tendulkar Committee and Rang - Rangarajan Committee

Table 4.1 provides a comparative profile of poverty lines as they moved over the years across different studies. In the earlier period covering 1973-74 to 2004-05, the poverty line estimates are based largely on the Lakdawala methodology. This was revised upwards, both for rural and urban areas, in the Tendulkar study for 2004-05. The Committee provided poverty estimates according to these lines for 2004-05, 2009-10 and 2011-12. When these estimates were released in March 2013, a controversy erupted centering on the criticism that Tendulkar Committee's poverty lines are much below than what is required. Consequently, the Rangarajan committee was constituted to review the poverty estimates. It further uplifted the poverty line for 2009-10 and 2011-12. Thus, these three poverty lines are such that Lakdawala poverty line is lower than that of the Tendulkar Committee which in turn is lower than that of Rangarajan Committee.

Reduction in poverty headcount ratio: Poverty headcount ratio has declined significantly in India over time

The longest-period picture for India based on defining poverty line using a comparable methodology is that based on the Lakdawala methodology. By the year 2004-05, poverty headcount ratio had been reduced from 56.4 in 1973-74 to 28.3 in rural areas, that is by 27.9% points. Over the same period, the urban poverty headcount ratio reduced from 49.0 to 25.7, that is, by 14.3% points. Thus, reduction in rural poverty was much faster than that in urban poverty. Part of this could be due to migration of the poor from rural to urban areas.

[6] Nutrient norms relating to energy, protein and fat (Planning Commission. (2014). Report of the expert group to review the methodology for measurement of poverty. Government of India, New Delhi.)

Table 4.2: Assessment of headcount ratio in rural areas as per Lakdawala, Tendulkar and Rangarajan Committees

Years	No. of intervening years	Rural						Urban					
		Headcount ratio			Average annual reduction (% points)			Headcount ratio			Average annual reduction (% points)		
		Lkd	Tnd	Rang	Lkd	Tnd	Rang	Lkd	Tnd	Rang	Lkd	Tnd	Rang
1973-74		56.4						49.0					
1977-78	4	53.1			-0.8			45.2			-0.9		
1983	6	45.7			-1.2			40.8			-0.7		
1987-88	4	39.1			-1.6			38.2			-0.6		
1993-94	6	37.3	50.1		-0.3			32.4	31.8		-1.0		
1999-00	6	27.1	45.95		-1.7			23.6	28.8		-1.5		
2004-05	5	28.3	41.8		0.2	-0.8		25.7	25.7		0.4	-0.6	
2009-10	5		33.8	39.6		-1.6			20.9	35.1		-1.0	
2011-12	2		25.7	30.9		-4.1	-4.4		13.7	26.4		-3.6	-4.4

Source: NITI Aayog; Rangarajan Committee Report 2014

For 2004-05, two estimates based respectively on Lakdawala Committee and Tendulkar Committee are available. Rural poverty was estimated at 41.8 by Tendulkar method as compared to 28.3 in the Lakdawala methodology. In the case of urban poverty, there was no difference in the poverty estimates in these two studies. Starting from this level, in the Tendulkar methodology, poverty headcount ratio for rural areas fell very fast to a level of 25.7 in 2011-12, that is a fall by a margin of 16.1% points. For the urban areas also, the headcount ratio fell from 25.7 to 13.7, that is, a fall of 12% points. The Rangarajan Committee gives poverty estimates for only two years namely, 2009-10 and 2011-12. Compared to Tendulkar Committee, the poverty estimates provided by this Committee show a higher headcount ratio in the rural areas at 30.9. In the case of urban areas also, the poverty headcount ratio was estimated at a higher level of 26.4 as compared to the earlier estimate of 13.7, that is, a difference of 12.7% points. Each time the poverty line is uplifted, a larger number of poor appear below the poverty line.

Thus, the poverty headcount ratio is sensitive to the choice of the poverty line. **Charts 4.1 and 4.2** show the relative position of the poverty headcount ratio according to different poverty lines: poverty lines defined by Lakdawala, Tendulkar and Rangarajan Committees. In all cases, poverty headcount ratio is uplifted for an initial year and then it starts to come down as expected. However, in order to get a consistent picture of poverty reduction over time, it may be more useful to get a consistent set of poverty lines over different years.

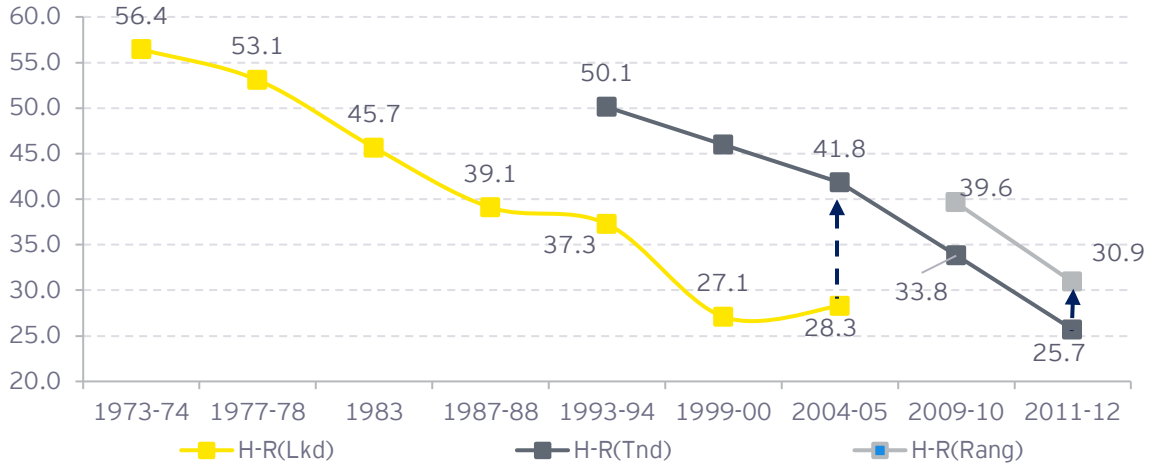
Such a picture can be constructed by using internationally defined poverty lines. Broadly, two alternatives are available, the international $1.9 and $3.2[7] per capita per day, defined in 2011 PPP terms. This can be used to provide comparable estimates for different years using two steps: a) conversion of these 2011 (real) poverty lines measured in PPP terms to corresponding estimates of poverty lines expressed in international dollar (nominal) measured in PPP terms[8]. In the second step, these are converted into local currency (INR). For this purpose, the conversion ratios are given by the World Bank[9].

[7] The International Poverty Line has a value of international $1.90 2011 PPP terms and the lower middle income class poverty line has a value of international $3.20 2011 PPP terms; an international dollar would buy in the cited country a comparable amount of goods and services a US$ would buy in the United States

[8] PPP conversion factor for 2011 is the ratio of PFCE measured in terms of current international $ PPP to PFCE measured in 2011 constant international $ PPP

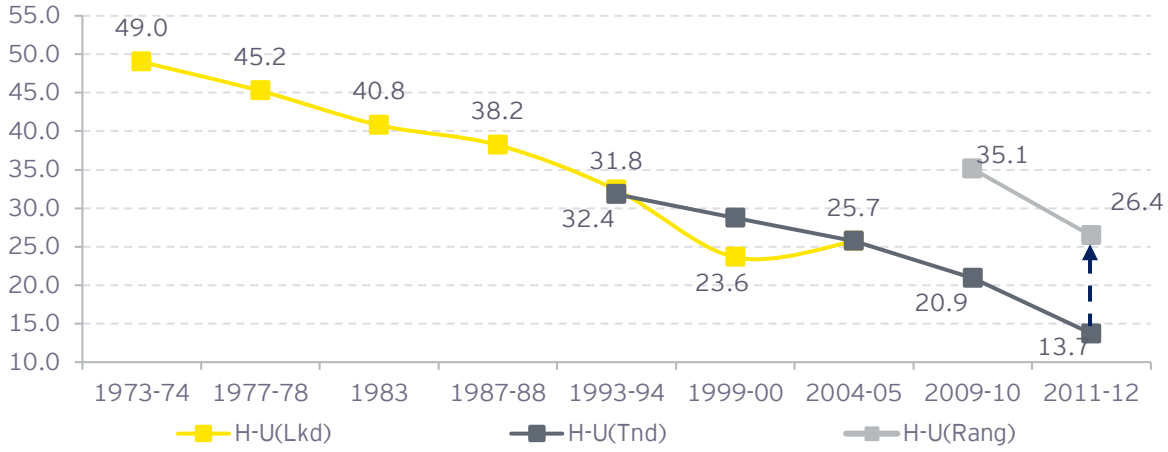
[9] Private consumption - local currency unit per international $

Chart 4.1: Poverty headcount ratio in rural areas



Source (Basic data): NITI Aayog; Rangarajan Committee Report 2014, World Bank; EY estimates

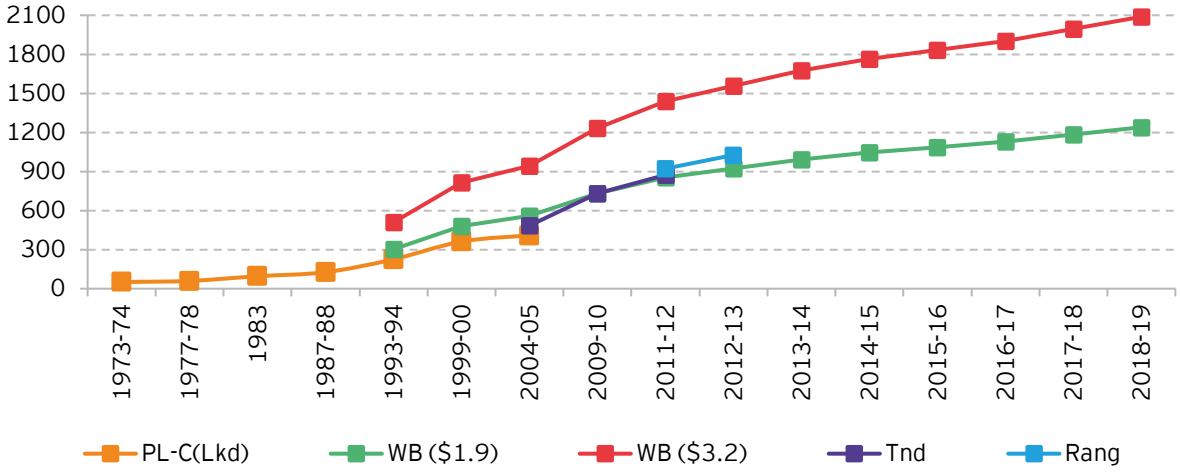
Chart 4.2 Poverty headcount ratio in urban areas



Source (Basic data): NITI Aayog; Rangarajan Committee Report 2014, World Bank; EY estimates

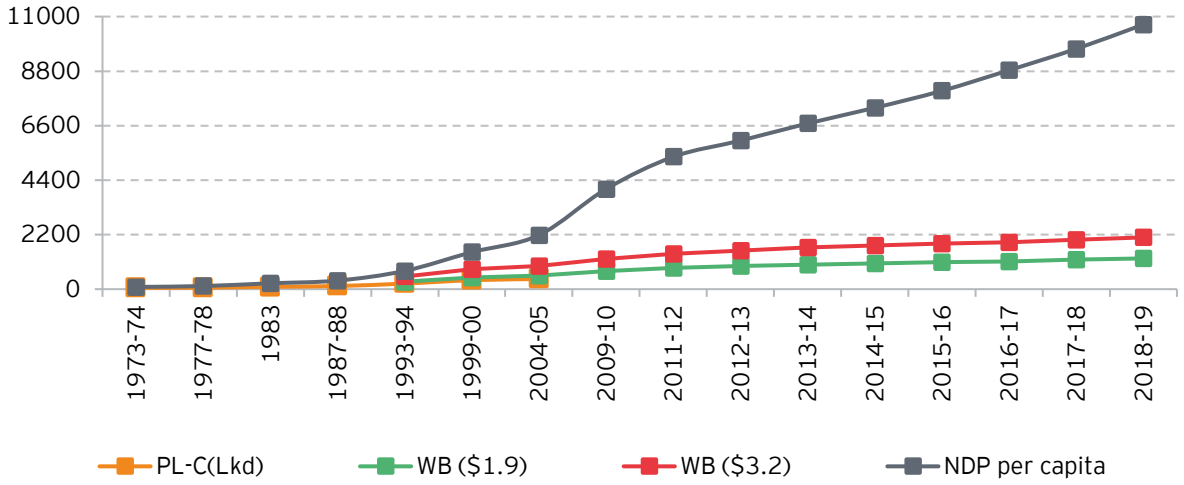
This dataset is available from the early 1990s. This long series can then be related to the mean per capita income of different years in India (**Chart 4.4**). It can be seen that the poverty line whether measured at international $1.9 or $3.2 becomes a smaller and smaller fraction of mean per capita Net Domestic Product (NDP). This means that due to the normal growth process, the incidence of poverty in India may reduce drastically as mean per capita NDP becomes a higher and higher multiple of the poverty line. This is shown in **Table 4.3**.

Chart 4.3: Poverty lines by different committees (INR/month)



Source (Basic data): CSO, World Bank, NITI Aayog, Rangarajan Committee Report 2014; EY estimates

Chart 4.4: NDP per capita and poverty lines by Lakdawala committee, World Bank (INR/month)



Source (Basic data): CSO, World Bank, NITI Aayog, Rangarajan Committee Report 2014; EY estimates

Analysts have used a number of factors to predict or interpolate poverty headcount ratio using elaborate regression equations, but in most cases the growth rate, in one form or the other, appears to be an important determinant of the rate of reduction in the poverty headcount ratio. Table 5 shows that starting from 41.1 in 1993-94, the poverty line as percentage of mean per capita income falls to just about 11% with respect to the poverty line defined by international $1.9 measured in 2011 PPP terms. Table 5 also shows that the Lakdawala poverty lines were relatively lower than the international poverty lines. The poverty line estimates of the Tendulkar Committee were nearly equal to the international estimates. The poverty lines as per the Rangarajan Committee however, were higher than the international benchmark.

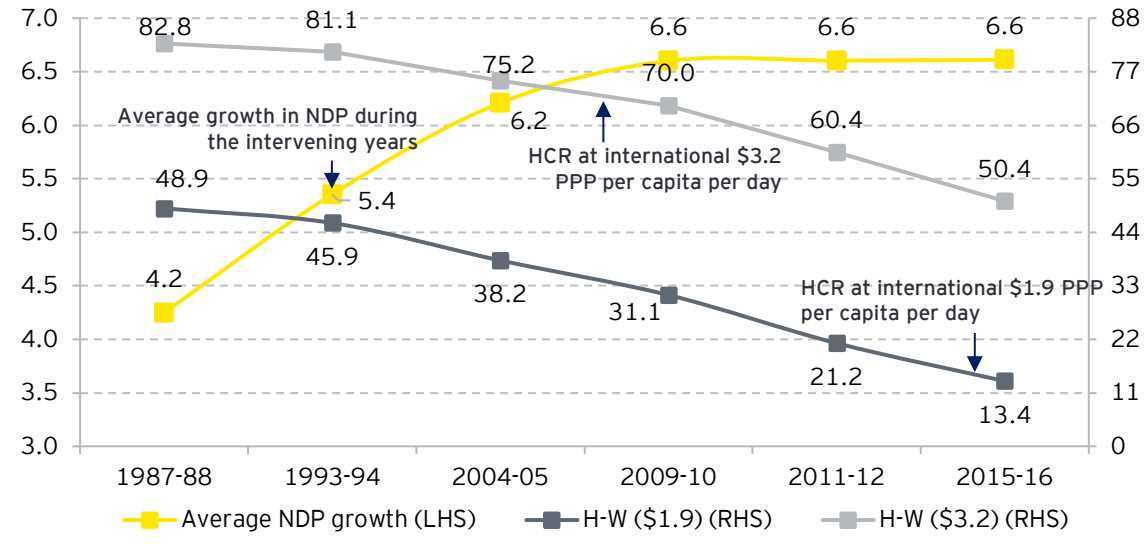
Table 4.3: Poverty line as a share of nominal per capita NDP

Year	National poverty line as a ratio of international poverty line (INR equivalent of WB poverty line of $1.9 p.c.)			Poverty line as a ratio of nominal per capita NDP			Headcount ratio			
	Lkd	Tnd	Rang	Lkd	Tnd	Rang	WB $1.9	WB $3.2	WB $1.9	WB $3.2
1973-74				56.7						
1977-78				47.3					61.6	88.1
1983				40.3					54.8	85.5
1987-88				36.7					48.9	82.8
1993-94	74.5			30.6			41.1	69.2	45.9	81.1
1999-00	75.0			24.3			32.4	54.5		
2004-05	72.9	86.5		18.7	22.2		25.7	43.3	38.2	75.2
2009-10		99.9	126.1		18.1	22.8	18.1	30.5	31.1	70.0
2011-12		102.3	120.3		16.4	19.2	16.0	26.9	21.2	60.4
2012-13							15.4	26.0		
2013-14							14.9	25.1		
2014-15							14.3	24.1		
2015-16							13.6	22.9	13.4	50.4
2016-17							12.8	21.5		
2017-18							12.2	20.6		
2018-19							11.6	19.6		

Source: World Bank, NITI Aayog, Rangarajan Committee Report 2014;

Chart 4.5 shows that as the growth rate increases, the poverty headcount ratio falls. Here growth is taken as the average annual growth in the net domestic product over the period between two years for which the headcount ratio is given. The chart indicates a clear inverse relationship between growth and headcount ratio. We can also see that the fall in the poverty headcount ratio becomes quite noticeable as the rate of growth in the relevant periods keeps increasing.

Chart 4.5: Average real NDP growth and average reduction in poverty headcount ratio in rural areas (Lakdawala)



Source (Basic data): NITI Aayog; Rangarajan Committee Report 2014, World Bank; EY estimates

Abolishing extreme poverty in India: The world poverty clock indicates that extreme poverty in India may be abolished by November 2019

According to the UN sustainable development goals, the first goal out of the 17 goals relates to ending "poverty in all its forms everywhere". In particular, bringing extreme poverty below a level of 3% of population is considered to be equivalent to abolition of poverty[10], where extreme poverty is defined as "living on less than international $1.9 a day measured in 2011 purchasing power parity prices."

The world poverty clock provides an online platform for monthly monitoring of the progress in reaching this goal with respect to individual countries. The background methodological framework for the world poverty clock is given in Cuaresma (2018)[10]. It provides the progress on eradication of extreme poverty under the business-as-usual assumptions provided by specific scenarios called Shared Socio-economic Pathways (SSP 2). The methodology builds a relationship of poverty reduction with population and average per capita income[11]. This study notes that empirical evidence indicates that increase in the income level of the poor tends to be proportional to increase in average income per capita (Dollar and Kraay, 2002, Dollar et al., 2016)[12].

According to this clock, which gives month-wise projections, India would be able to eliminate extreme poverty by November 2019, that is, in seven months from now. Even then, by end-October 2019, there would be 41.9 million people who would still be below the threshold of international $1.9 although this would amount only to 3% of total population. The details are given in **Table 4.4** below.

Table 4.4: Estimated people living in extreme poverty in India as per world poverty clock

Month/Year	Estimated		
	No. of people living in extreme poverty (million)	% of total population	Total population (million)
Jan-2016	90.2	6.8	1,323
Jan-2017	75.4	5.6	1,339
Jan-2018	62.5	4.6	1,355
Jan-2019	50.1	3.7	1,371
Oct-2019	41.9	3.0	1,383

Source: World Poverty Clock website; https://worldpoverty.io/index.html

Using fiscal instruments for combating poverty: Fiscal instruments and improving state-wise focus may be effective strategies for combating poverty

Market prices do not adequately reflect the purchasing power of the incomes of the poor households because of the prevalence of several subsidies and indirect tax concessions that apply to selected items in the consumption basket of a typical poor household. For example, the PDS system prices are heavily concessional for food items typically purchased by the poor households. Many states provide additional subsidies or concessionalities for poor households. Similarly, medical services can be accessed almost free of cost in the primary health centers and educational fees particularly tuition fees are zero or near zero in most states, up to the primary or secondary level schooling. Electricity and fuel (cooking gas and kerosene) typically in rural areas are also available at concessional rates. For these reasons, an apparently low poverty threshold is likely to represent a relatively larger purchasing power when compared to the purchasing power of the same nominal amount evaluated at prices which would prevail in the absence of subsidies and

[10] Cuaresma, J. C., Fengler, W., Kharas, H., Bekhtiar, K., Brottrager, M., & Hofer, M. (2018). Will the Sustainable Development Goals be fulfilled? Assessing present and future global poverty. Palgrave Communications.
[11] The methodology used for measuring the head count ratio by world poverty clock is different from that used by the World Bank
[12] Growth is good for the poor. J Econ Growth 7(3):195–225 Edward P, Sumner A (2014) Estimating the scale and geography of global poverty now and in the future: How much difference do method and assumptions make? World Dev 58:67–82; Dollar D, Kleineberg T, Kraay A (2016) Growth still is good for the poor. Eur Econ Rev 81:68–85

concessions. Even when extreme poverty is assessed to be abolished as per the world poverty clock, 3% of the population is still estimated to be below the poverty line. This may largely consist of individuals who may not have income or earning opportunities due to chronic health issues, physical infirmities, extreme old age, children who are on the streets without families and other deprived sections. Since this segment of the population is likely to remain detached from the normal economic growth process, an effective way to reach this segment may be through identification and support by a direct income transfer program. However, it may be realized that any income transfer program through the formalized sectors of the economy such as banks may still not be able to capture a good part of this segment because of illiteracy, non-availability of a fixed address, etc. This segment of population can only be assisted through links established with welfare workers in villages and urban areas such as in the Anganwadi program and banking intermediaries.

Fiscal policies for poverty alleviation are effective when they are properly targeted. Such targeting can be facilitated by examining the concentration pattern of the rural and urban poor. Using the Rangarajan Committee data for 2011-12, the long-term poverty trends in India indicate that over time, the poverty headcount ratio has come down, poverty has shifted from rural to urban areas and that the poor are concentrated in a limited number of states. Table 4.5 shows that three states account for 47% of total rural poor in the country. These states are Uttar Pradesh, Bihar and Madhya Pradesh. If we add another seven states to this, more than 80% of the total rural poor would be covered. A similar concentration pattern is visible in the case of the urban poor. Four states namely, Uttar Pradesh, Maharashtra, West Bengal and Madhya Pradesh account for 45.8% of total urban poor. If we add another six states to this list- Tamil Nadu, Bihar, Karnataka, Gujarat, Andhra Pradesh, Rajasthan and Chhattisgarh, it would be possible to cover more than 80% of the urban poor. We also notice that a number of higher income states are included in this list.

Table 4.5: State-wise concentration of poor people in rural and urban areas

Sl. no.	States arranged in descending order of share of poor in total rural poor	Rural				Urban		
		No of poor (lakhs)	% of all-state rural poor	Cumulative percentage	States in descending order of share of poor in total urban poor	No of poor (lakhs)	% of all-state urban poor	Cumulative percentage
1	Uttar Pradesh	600.9	23.1%	23.1%	Uttar Pradesh	208.2	20.3%	20.3%
2	Bihar	376.8	14.5%	37.5%	Maharashtra	88.4	8.6%	28.9%
3	Madhya Pradesh	241.4	9.3%	46.8%	West Bengal	86.8	8.5%	37.4%
4	West Bengal	188.6	7.2%	54.0%	Madhya Pradesh	86.3	8.4%	45.8%
5	Orissa	169	6.5%	60.5%	Tamil Nadu	72.8	7.1%	52.9%
6	Maharashtra	139.9	5.4%	65.9%	Bihar	61.4	6.0%	58.9%
7	Jharkhand	117	4.5%	70.4%	Karnataka	60.9	5.9%	64.9%
8	Assam	114.1	4.4%	74.8%	Gujarat	58.9	5.7%	70.6%
9	Rajasthan	112	4.3%	79.1%	Andhra Pradesh	45.7	4.5%	75.1%
10	Gujarat	109.8	4.2%	83.3%	Rajasthan	39.5	3.9%	78.9%
11					Chhattisgarh	26.9	2.6%	81.6%

Source (basic data): Report of the Expert group to review the Methodology for Measurement of Poverty, Planning Commission (2014)

In terms of policy formulation, these patterns indicate that the following considerations may be relevant in designing a suitable and well targeted poverty alleviation policies: 1) rural and urban

poor are concentrated in a limited number of states, 2) in the case of urban poverty, some of these states are also developed and are relatively higher income states, 3) the normal growth process may by itself reduce incidence of poverty but the poverty alleviation impact can be increased by targeted income transfer programs as well as well-designed subsidy and taxation regimes.

Chapter 5

Economic cycles, shocks and crises: Strengthening India's economic resilience (October 2022)

Abstract

Growth and stability are two critical dimensions that must be catered to for India to become a global economic power. Growth itself is not enough. It needs to be accompanied by a policy framework that aims to minimize the impact of economic cycles, shocks and crises. India has historically remained vulnerable to various shocks with global and domestic roots. These include, in recent times, global crude oil price shocks, COVID-19 and global economic and financial crises/recessions. Domestically, in India, excessive floods and droughts have been a regular occurrence apart from periodic instances of earthquakes and tsunamis. India has evolved institutional innovations and mechanisms over time to minimize the economic impact of such shocks. These mechanisms need to be strengthened to protect the stability of growth in the medium to long term. In this context, this chapter emphasizes the following initiatives:

1. Setting up of buffer stocks of food grains
2. Enacting and implementing FRLs at the level of GoI and states
3. Designing a Monetary Policy Framework, ensuring coordination between monetary and fiscal policies
4. Building adequate infrastructure to deal with exogenous multidimensional shocks including chemical, biological, nuclear emergencies, pandemics and tsunamis.
5. Setting up an 'Oil Price Stabilization Fund' to minimize exposure to excessive global crude price volatility.
6. Activating Disaster Mitigation Funds at the national, state and district levels and earmarking a certain portion of government budgets for disaster preparedness and avoidance.
7. Accelerating green energy initiatives, including Green Grids Initiative (GGI) and One Sun One World One Grid (OSOWOG), and restoring coal cess.
8. Budgetary reprioritization favoring education and health
9. Pursuing Aatmanirbhar Bharat: focusing on complex products and strategic sectors
10. Defining sustainable annual current account deficit limits

Introduction

India is aspiring to become a global economic power in terms of the size of its economy relative to the world economy. For achieving this, it is critical not only to uplift India's economic growth but also ensure its stability. India has historically remained vulnerable to various shocks with global and domestic roots. These include, in recent times, crude oil price shocks, COVID-19 and global economic and financial crises/recessions[13]. The importance of tackling economic and financial instability has also been recognized in the fact that the 2022 economics Nobel has been awarded to Bernanke, Diamond and Dybvig for their work relating to aspects of financial instability and economic crises. Domestically, in India, excessive floods and droughts have been a regular occurrence apart from periodic instances of earthquakes and tsunamis. India has evolved institutional innovations and mechanisms over time to minimize the economic impact of such shocks. These mechanisms need to be strengthened to protect the stability of growth in the medium to long term.

A. Sources of economic instability and shocks

A1. Episodes of global economic recessions/slowdowns

The world economy has experienced four global recessions during 1950 to 2019 namely, 1975, 1982, 1991, and 2009. During each of these episodes, annual real per capita global GDP contracted, and this contraction was accompanied by weakening of key indicators of economic activity, including global trade. These global recessions were synchronized across countries/country groups. As shown in **Table 5.1**, in the first three instances, growth in overall output slowed down but remained positive while in 2009, it contracted. Average world growth in these four slowdown episodes was only 0.3% while average growth in non-recession years was 3.9%, indicating an average difference of 3.6% points.

Table 5.1: Output growth during recession (%)

	Global recession years				Avg.	Non-recessions	Global downturns	All years	Non-recession minus avg. (% pts.)
	1975	1982	1991	2009					
1	2	3	4	5	6	7	8	9	10 (7-6)
World economy	1.1	0.4	1.3	-1.8	0.3	3.9	2.3	3.7	3.6
Advanced economies	0.2	0.3	1.3	-3.4	-0.4	3.5	1.8	3.3	3.9
EMDEs	4.2	0.9	1.5	1.8	2.1	4.9	4	4.7	2.8
LICs	0.1	1.0	-0.5	5.9	1.6	3.9	3.6	3.8	2.3

Source (basic data): Kose, M. A., Sugawara, N., & Terrones, M. E. (2020), Global Recessions, World Bank Policy Research Working Paper No. 9172, World bank.

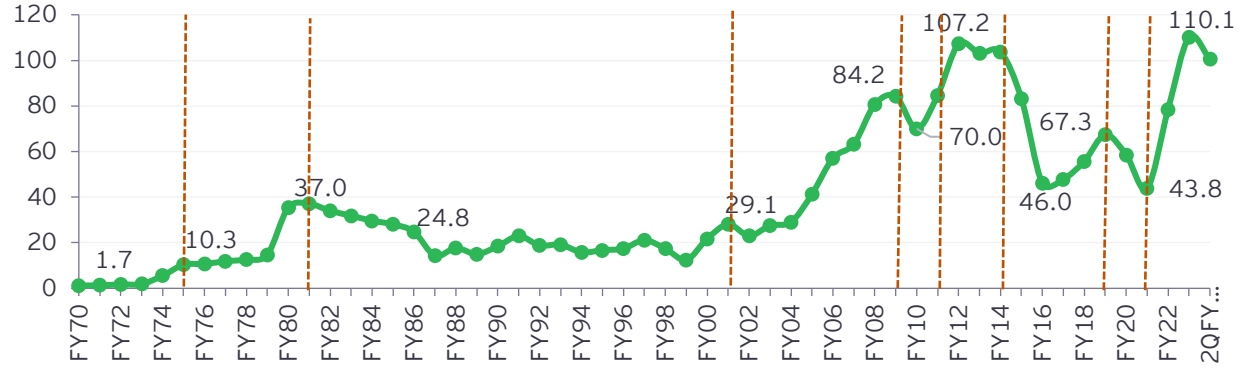
A2. Crude oil shocks

In major economic slowdowns, often a common factor has been shocks emanating from global crude price upsurges. Being a large importer of crude oil, India has remained, over a long period, vulnerable to global crude price shocks. **Chart 5.1** gives a history of global crude oil price upsurges from time to time. Over the period from FY1970 up to FY2022, crude oil prices that were close to less than US$2/bbl. prior to FY1972 kept moving upwards with an asymmetric cyclicality in terms of amplitude and duration of the upward and downward phases. Notable years of major price episodes may be identified as below.

[13] Diamond, D. W., & Rajan, R. G. (2005). Liquidity shortages and banking crises. The Journal of finance, 60(2), 615-647; Diamond, D. W., & Rajan, R. G. (2012). Illiquid banks, financial stability, and interest rate policy. Journal of Political Economy, 120(3), 552-591

1. **FY1974:** Crude prices shot up from US$1.7/bbl. in FY72 to US$10/bbl. in FY75.
2. **FY79 to FY81:** Following the Iranian revolution in 1979, the price of crude oil more than doubled to US$37/bbl. by FY81. Oil prices did not subside to pre-crisis levels until the mid-1980s.
3. **FY2001 to FY2009:** The world oil prices showed an accelerated increase during this period, rising from US$29.1/bbl. in FY01 to US$84.2/bbl. in FY09.
4. **FY10:** The FY09 global economic and financial crisis involved a fall in global crude prices to US$69.9/bbl. in FY10 from its elevated level in FY09.
5. **FY11 to FY14:** From FY11 onwards, crude prices increased to levels above US$100/bbl., reaching a peak of US$107.2/bbl. in FY12. Prices remained in excess of US$100/bbl. up to FY14.
6. **FY20 and FY21:** After briefly recovering in FY19 to reach a level of US$67.3/bbl., the subsequent sharp fall can be blamed on the adverse impact of COVID-19.
7. **FY22 onwards:** After a brief period of recovery, the onset of the geopolitical conflict (Ukraine-Russia conflict) led to major surge in global crude and energy prices toward the end of FY22, reaching a peak of US$110.1/bbl. in 1QFY23.

Chart 5.1: Average global crude prices (US$/barrel): FY70 to FY22



Source (Basic data): World Bank

A3. Pandemics and epidemics

Health related global crises in terms of pandemics and epidemics lead to large-scale human suffering and loss of lives besides having a significant disruptive economic impact. Table 5.2 summarizes global episodes of major epidemics and pandemics where at least 1 million deaths had occurred. Some instances of major economic losses have been quantified in a number of studies. For example, in a briefing submitted to the European Parliament in 2020[14], it was stated that the total value of losses incurred by a severe global influenza pandemic, such as the 1918 pandemic, could reach about US$500 billion per year, that is, about 0.6% of global income. Further, the briefing also quoted a 2019 joint report from the World Health Organization (WHO) and the World Bank which estimated the impact of such a pandemic upward, bringing the total cost to 2.2% to 4.8% of global GDP (US$3 trillion). With respect to India, the RBI[15] recently estimated the output loss due to COVID-19 over the three years namely FY21, FY22 and FY23 at INR52.6 lakh crore, that is, 7.4% of corresponding estimated nominal GDP.

[14] https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/646195/EPRS_BRI(2020)646195_EN.pdf
[15] RBI - Report on Currency and Finance 2021-22

Table 5.2: Epidemics and pandemics with at least 1 million deaths

#	Epidemics/pandemics	Disease	Death toll	Years	Location
1	Spanish flu	Influenza A/H1N1	17–100 million	1918–1920	Worldwide
2	Plague of Justinian	Bubonic plague	15–100 million	541–549	North Africa, Europe and West Asia
3	HIV/AIDS global pandemic	HIV/AIDS	40.1 million (as of 2021)	1981–present	Worldwide
4	COVID-19 pandemic	COVID-19	7–25 million (as of Aug. 2022)	2019 to present	Worldwide
5	Third plague pandemic	Bubonic plague	12–15 million	1855–1960	Worldwide
6	1918–1922 Russia typhus epidemic	Typhus	2–3 million	1918–1922	Russia
7	1957–1958 influenza pandemic	Influenza A/H2N2	1–4 million	1957–1958	Worldwide
8	Hong Kong flu	Influenza A/H3N2	1–4 million	1968–1969	Worldwide

Source: https://en.wikipedia.org/wiki/List_of_epidemics

A4. Climate change and natural disasters

Natural disasters occur with considerable frequency from time to time covering individual countries or groups of countries. Many of these disasters have recently been the outcome of the ongoing climate change. A 2018 UN Report[16] covering six major disasters namely, earthquake, earthquake and tsunami, storm, extreme temperature, flood and drought provides an estimate of economic losses during the period 1998 to 2017. As per the study, direct economic losses amounted to US$2,908 billion, of which climate-related disasters costed US$2,245 billion or 77% of the total economic losses. India's estimated loss at US$79.5 billion was the fourth largest. The World Bank has also calculated the average per annum cost of natural disasters at nearly US$520 billion, with disasters pushing 26 million people into poverty every year.

Natural disasters in India: Selected episodes

The Indian economy has remained vulnerable to frequently occurring natural disasters including floods and droughts although some of these may have links to global climate change. The economic cost of these disasters often tends to be quite substantial. Major natural disaster episodes in recent history include floods in Kerala in 2018, and in Uttarakhand and Kashmir in 2013, a tsunami in 2004, an earthquake in Gujarat in 2001, and a super cyclone in Odisha in 1999. In India's longer-term history, calamities linked with the Bengal Famine of 1943 and way back in 1770 linger on in the country's long-term memory. **Table 5.3** gives a list of instances of major droughts and floods in India during 1987 to 2019. Recommendations of the Finance Commissions (FCs), starting with FC 11, have resulted in the setting up of a number of institutions and mechanisms in India to cope with the damages caused by such natural disasters.

Table 5.3: List of recent major droughts and floods in India

Droughts		Floods	
Year	Region affected	Year	Region affected
1987	Central and North India	2005	Mumbai (July)
2000	North-west and Central India	2007 and 2008	Bihar (August of both years)
2002	North-west parts of India	2012	Brahmaputra floods (June)

[16] Economic Losses, Poverty and Disasters - 1998-2017 (2018), GoI for Research on the Epidemiology of Disasters, United Nations Office for Disaster Risk Reduction (https://www.undrr.org/publication/economic-losses-poverty-disasters-1998-2017)

Droughts		Floods	
Year	Region affected	Year	Region affected
2008	Central India	2013	North India floods - Uttarakhand (June), Brahmaputra floods (July)
2009	Most of the country except north and south interior Karnataka	2014	Assam (June and August), Gujarat (July), Kashmir (September)
		2015	Chennai (November)
2015	Indo-Gangetic plains and western peninsular India	2016	Assam (July)
		2017	North-east India floods (June and July), Bihar, West Bengal and Gujarat (July), Mumbai (August)
2016-18	The southern Indian states of Andhra Pradesh, Karnataka and Tamil Nadu continuously declared drought from 2016 to 2018 linked to low northeast monsoonal rainfall.	2018	Kerala (August)
		2019	Widespread over Indian regions (July, August and September)

Source: Krishnan, R., Sanjay, J., Gnanaseelan, C., Mujumdar, M., Kulkarni, A., & Chakraborty, S. (2020). *Assessment of climate change over the Indian region: a report of the ministry of earth sciences (MOES), government of India* (p. 226). Springer Nature and Mishra, V., Thirumalai, K., Jain, S., & Aadhar, S. (2021). Unprecedented drought in South India and recent water scarcity. Environmental Research Letters, 16(5), 054007.

A5. Country-differentiated aging of populations

Differentiated aging profiles of countries during the 21st century have significant economic implications. The growth prospects of countries may be adversely affected as their populations age. During this century, large countries such as India are witnessing a surge in their working age population to total population ratio. They are characterized by a high growth potential with low dependency ratios and high savings rates.

Table 5.4: Median age of major economies at decadal intervals (in years)

Country	2000	2020	2030	2040	2050	2100	Country	2000	2020	2030	2040	2050	2100
Countries with median age of less than 35 years in 2020							Countries with median age above 35 years in 2020						
South Africa	20.9	26.9	29	30.7	33.1	40.8	Australia	34.4	36.7	39.5	42.1	43.6	47.9
India	21.6	27.3	30.9	34.6	38.1	47.5	China	28.9	37.4	42.7	48	50.7	56.8
Mexico	21.8	28.7	32.8	36.8	40.7	52.1	US	34.2	37.5	39.7	41.5	43.1	47.3
Saudi Arabia	21.2	29.2	33.4	36.2	38.8	47.6	Russia	35.6	38.6	42.1	44.9	43.6	46.2
Indonesia	23.7	29.3	31.7	34	36.5	44.5	UK	36.6	39.5	41.6	43.8	44.9	49.2
World	25.3	29.7	32.1	34	35.9	42.3	Canada	35.8	39.9	42	43.9	45.3	48.4
Turkey	23.6	30.6	34.8	38.5	41.1	50.5	France	36.8	41.4	43.5	45.1	46.1	50.4
Argentina	26.8	31	34.1	37.1	39.9	49	South Korea	30.7	42.8	48.4	53.2	56.7	59.3
Brazil	24.3	32.4	36.5	40.4	43.6	50.4	Germany	39	45	45.9	48.1	49.2	49.8
							Italy	39.2	46.4	50.3	52.4	53.4	54.2
							Japan	40.7	48	51.5	53	53.6	54.4

Source: UN World Population Prospects, 2022

On the other hand, many countries have already started aging by 2020. Table 5.4 provides a listing of two groups of countries amongst the G20 countries according to their respective median ages in 2020, based on the UN World Population Prospects, 2022 data.

Countries where median age is less than 35 years in 2020 include South Africa, India, Mexico, Saudi Arabia, and Indonesia. Countries where the median age has already crossed 35 years in 2020 include China, the US, France, South Korea, Germany, Italy and Japan. Countries where population is aging fast through the rest of the century are likely to face a significant shortage of human

resources and *ceteris paribus*, their growth rates are likely to dip unless counterbalanced by accelerated immigration. India's population, although presently young with a median age of 27.3 years (2020), starts to age rapidly and by 2060, its median age would have crossed 40 years *(not shown in Table 6)*. Thus, the four decades from 2020 to 2060 can be considered as the golden period for India's growth potential.

A6. Supply chain disruptions

The global economy is currently undergoing major structural upheavals. Post COVID-19, with the onset of geopolitical conflict, global supply chains have been significantly adversely affected. These changes are likely to have long-lasting effects. Supply chain disruptions consist of five major dimensions:

i. **Sources of raw materials:** Important raw materials, such as crude, primary metals, and urea, have been facing critical shortages affecting industries such as automobiles, aeronautics, electronics, and fertilizers.

ii. **Sources of intermediate products:** There have also been major shortages of intermediate products, particularly energy (crude, coal, and natural gas) and semiconductors. The resulting scarcity and upsurge in energy prices is one of the key factors responsible for the ongoing economic recessions/slowdowns in many economies.

iii. **Sources of final outputs:** Supply disruptions and trade sanctions have also led to historically higher prices for a number of final goods, including wheat, oilseeds, cereals, rice, maize, edible oils, and milk.

iv. **Disruption in trade and transport routes:** Trade channels and transportation routes have been adversely affected. In some parts of the world, maritime companies have closed lanes and suspended shipping services. Further, airspace closures due to the geopolitical conflict have accentuated the supply chain disruptions[17].

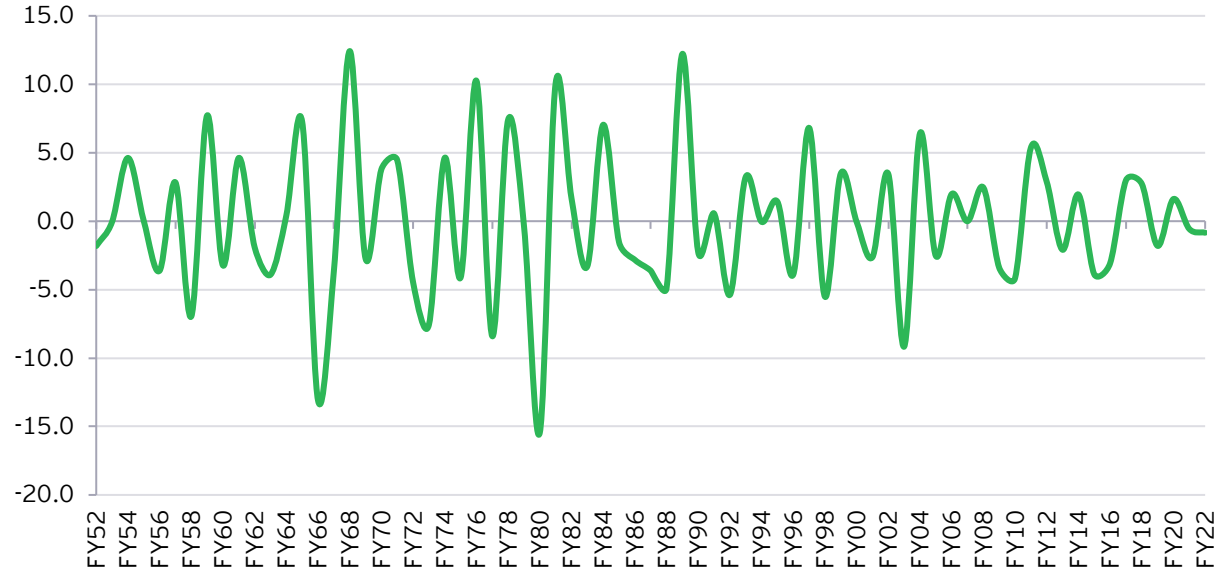
v. **Disruption of financial settlement architecture:** There has also been a disruption linked to financial and business-related sanctions, including a bar on the use of the SWIFT platform for selected countries. Selective export bans and delays and difficulties in making international payments have disrupted trade as well.

A7. Domestic economic cycles: Agricultural and non-agricultural cycles

In this section, we discuss some major economic shocks to the Indian economy in the relatively recent past. India has remained vulnerable both to global disasters as well as India-specific crises. Among these, a frequently occurring crisis relates to agriculture, which is periodically affected by floods and droughts.

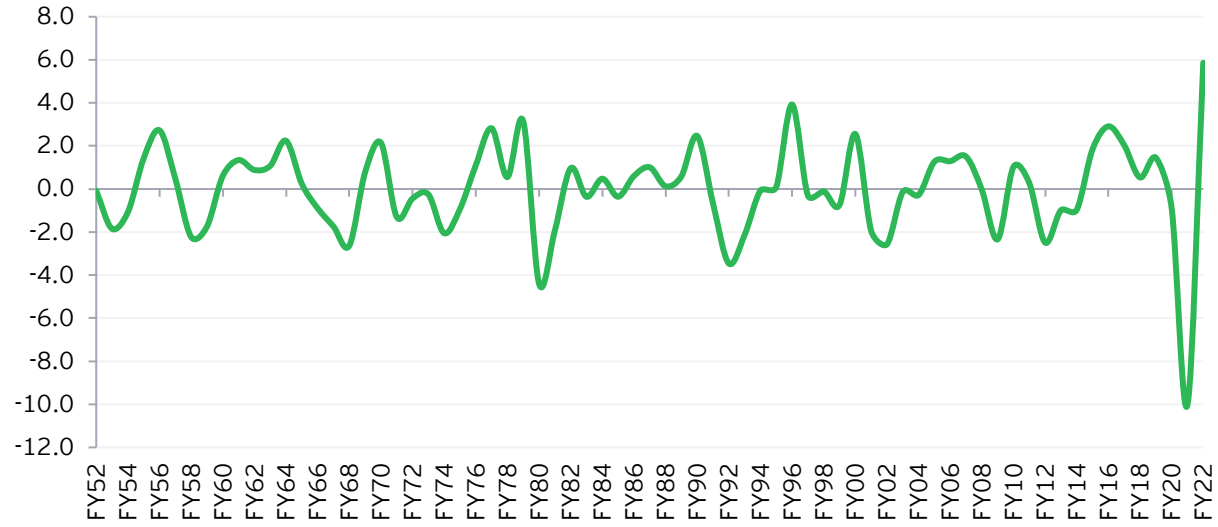
[17] https://economictimes.indiatimes.com/small-biz/trade/exports/insights/airspace-closures-after-ukraine-invasion-stretch-global-supply-chains/articleshow/89938255.cms?from=mdr

Chart 5.2: Cyclicality of agricultural GVA



Source (Basic data): MoSPI

Chart 5.3: Cyclicality of non-agricultural GVA



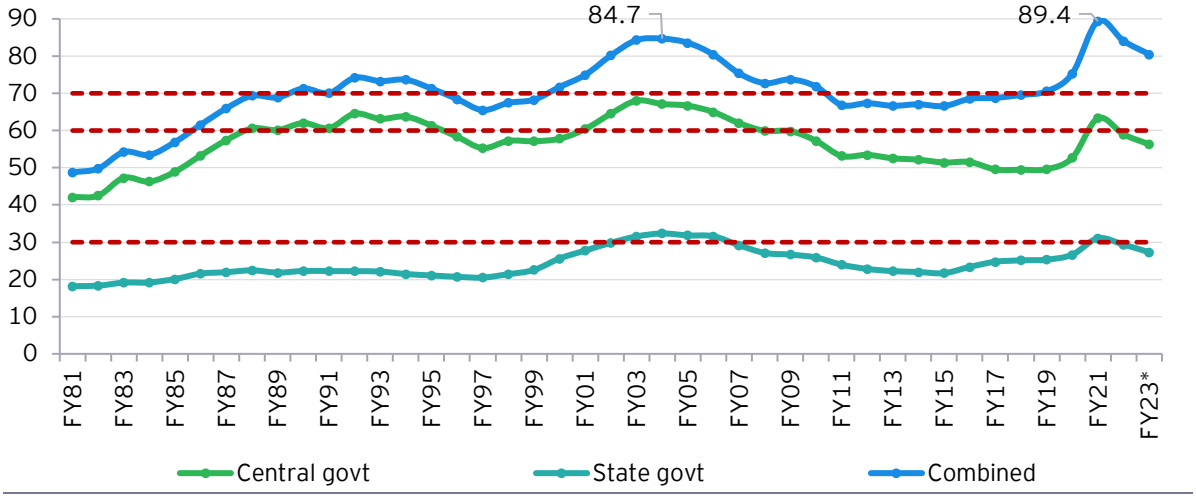
Source (Basic data): MoSPI

In spite of cumulated investment in irrigation across India, agriculture remains heavily dependent on monsoon and therefore, the cycles that get generated linked to the cyclicality of the rainfall relative to its long period average. This cyclicality is regular in terms of its periodicity, broadly comparable in terms of the related cyclical amplitudes, and its impact on agricultural output and incomes, as well as the overall economy. **Chart 5.2** indicates that the periodicity of real growth in agricultural output (GVA) in India over the last 70 years is close to three years. We also notice that the amplitude of agricultural cycles has come down over time. Since the share of non-agricultural sectors in India's GVA has been increasing over time, cyclicality of non-agricultural output is also a critical determinant of economic performance. Looking at the growth of non-agricultural GVA over the period from FY1952 to FY2022, we observe that the average periodicity of the non-agricultural cycle measured as the difference between trend growth and actual growth is close to six years

(**Chart 5.3**). Its amplitude has been +27.6%/-30.4% (calculated as the average of positive and negative deviations relative to trend growth) over this period. The year FY21 witnessed a much sharper negative deviation due to the impact of COVID-19.

A8. Fiscal imbalances and sustainability challenges

Chart 5.4: Debt to GDP ratio: Central and state governments and combined



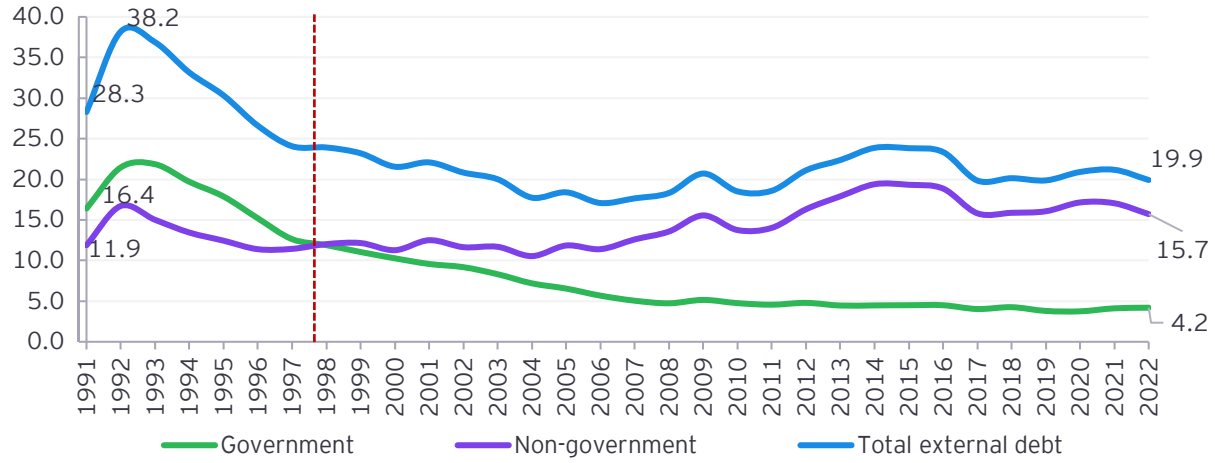
Source (basic data): RBI; *estimated for 2022-23; Notes: (1) In 2022-23, Central government's fiscal deficit is assumed to be at the budgeted level of 6.4% of estimated GDP at INR276.9 lakh crore, (2) Fiscal deficit of states in aggregate is taken to be at 3.5% of GDP[18]

India's debt-GDP ratio is recognized to have reached levels that are well above sustainability levels. **Chart 5.4** shows that the combined debt-GDP ratio has increased from a level of close to 50% in the early 1980s to a level close to 90% in the COVID year of FY21. This is after having reached a peak of nearly 85% in FY04. Recognizing the need to bring the debt-GDP level down, the central and state governments during the period from 2003 to 2008 enacted their respective Fiscal Responsibility Legislations (FRLs). These legislations were amended from time to time. As a result, government debt-GDP ratio had fallen and remained close to 70% of GDP during FY11 to FY19. Subsequently, an economic slowdown in FY20 followed by COVID-19 led to a sharp upsurge in the government debt-GDP ratio. The latest amendment to the central government's Fiscal Responsibility and Budget Management Act (FRBMA) in 2018 has specified sustainable levels of combined and central debt-GDP ratios at 60% and 40% respectively and that for states at 20%. At the end of FY23, the combined debt to GDP ratio is estimated to be 80.5%. As per the amended FRBMA, the Union Government has been mandated to prescribe the annual targets for reduction of fiscal deficit for the period beginning from the date of commencement of the act and ending on 31 March 2021. The revenue deficit target provided for in the original FRBMA of 2003 has been given up.

[18] https://www.ndtv.com/business/fiscal-deficit-seen-at-6-7-in-2022-23-report-3031889

A9. External sector imbalances and sustainability issues

Chart 5.5: Composition of external debt as % of GDP



Source (basic data): Ministry of Finance, Government of India

A similar sustainability issue arises in the context of external debt and current account deficit. **Chart 5.5** shows external debt as a percentage of GDP and its composition by type of borrowers. During 1991 to 1998, government's share in external debt was higher than that of non-government sector. At present, total external debt relative to GDP is nearly 20% (2022). The volume of external debt poses a different kind of economic problem, particularly if the share of exports is also limited. The entire external sector needs to remain stable to protect the economy against external shocks. India's exposure to global GDP upheavals depends significantly on the share of its exports and imports in GDP.

Table 5.5: Share of exports and imports in GDP (%): Real and nominals

Year	At constant prices		At current prices	
	Exports	Imports	Exports	Imports
FY91	6.2	6.7	7.1	8.5
FY95	7.8	10.0	9.9	10.2
FY00	10.2	13.1	11.5	13.4
FY05	16.2	16.7	17.9	19.6
FY10	20.3	25.5	20.4	25.9
FY15	23.9	25.3	23.0	26.0
FY20	19.4	22.9	18.7	21.3
FY21	18.8	21.1	18.7	19.1
FY22	21.5	26.3	21.4	23.9

Source (basic data): MoSPI

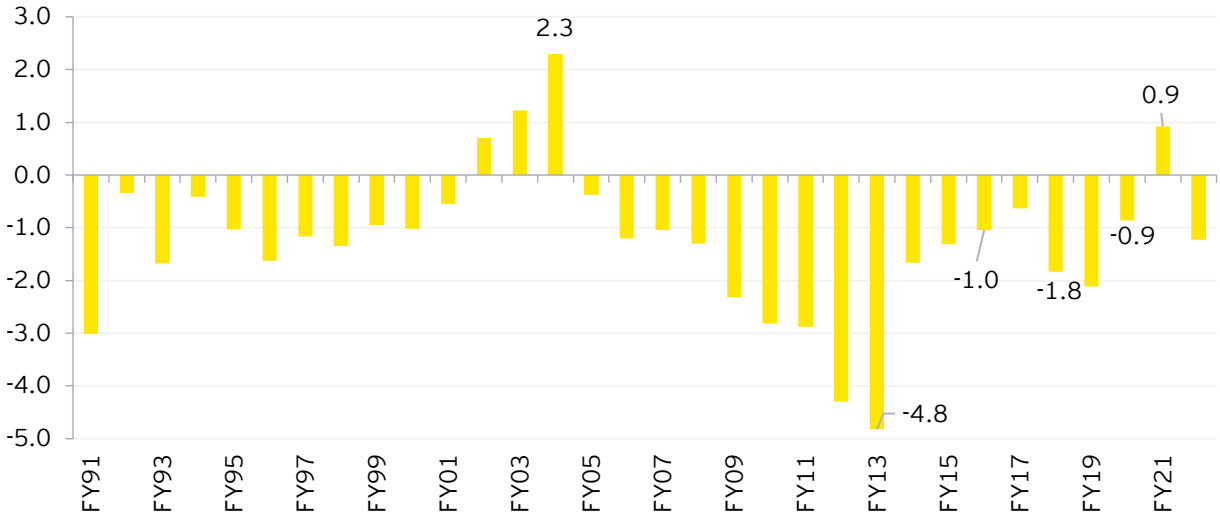
Table 5.6: Contribution of net exports to real GDP growth (% points)

Period	Average contribution
FY01 to FY05	-0.1
FY06 to FY10	-1.1
FY11 to FY15	0.5
FY16 to FY20	-0.6
FY21	1.4
FY22	-2.9
All period (FY01 to FY22)	-0.3

Source (basic data): MoSPI

India's share of exports in nominal terms has ranged between 20.4% and 25.4% during the period FY07 to FY15, averaging close to 23%. Since then, it has fallen, averaging 19.5% during the FY16 to FY22 (**Table 5.5**). Thus, in a global slowdown, India's exports fall by a few percentage points and in an expansionary phase, they regain this ground. A similar pattern characterizes the share of imports. India's vulnerability to global headwinds also depends on the contribution of net exports to GDP growth. Table 5.6 shows that the five yearly averages over the period from FY01 to FY20 have ranged between (-)0.6% points to 0.5% points. The overall average contribution of net exports to real GDP growth is negative at (-)0.3% points.

Chart 5.5: Current account balance as % of nominal GDP: Long-term perspective



Source (basic data): RBI; Note: -ve shows a deficit and +ve indicates a surplus

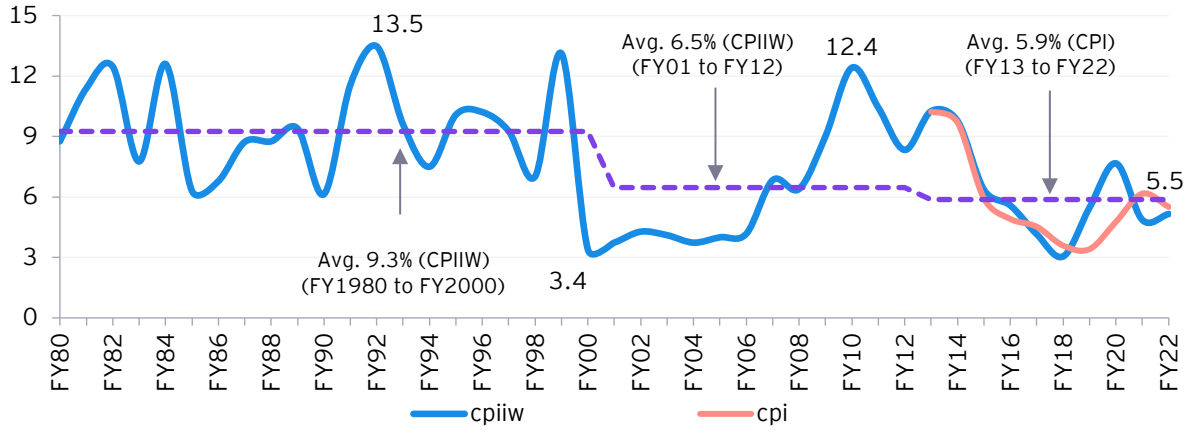
Major upheavals are also occurring in capital flows affecting India's current and capital account balances, which in turn have an impact on domestic inflation and current account sustainability. These trends have been accelerated because of high CPI inflation rates in many of the developed countries, including the US, the UK and many EU countries.

Chart 11 provides a relatively longer-term perspective in the movement of India's current account balance. Most years show a deficit on the current account while there have been only four years characterized by a surplus. The current account deficit had reached a peak of (-)4.8% of GDP in FY13 after which it had started to fall. The long period average of current account balance as percentage of GDP over the period FY1991 to FY2022 is (-)1.2%. In fact, there is a noticeable correlation between global crude prices and the size of India's current account deficit. With a minimization of exposure to crude price volatility, the volatility of the current account deficit may also be contained.

A10. Price instability

Chart 5.6 shows the annual volatility of CPI inflation around the periodic average level of CPI inflation. During FY1980 to FY2000, CPI inflation as measured by CPI Industrial workers (general index) averaged 9.3%. This average fell to 6.5% during FY01 to FY12. The new CPI inflation series was introduced in 2012. The average CPI inflation during FY13 to FY22 has been 5.9%. High average CPI inflation levels as well as volatility around it are major concerns for not only households but also policymakers. To cope with issues of price instability, important institutional mechanisms were installed in 2015 through a Monetary Policy Framework (MPF) discussed in section B10.

Chart 5.6: Trends in CPI (Industrial workers) index-based inflation



Source (basic data): RBI

B. Coping with instability and shocks: Existing mechanisms and potential future initiatives

B1. Dealing with global economic crises

Historically, both fiscal and monetary instruments have been used to address economic crises with global roots. In a recession or economic slowdown, monetary authorities expand liquidity by reducing policy rates and undertaking other related measures. After the establishment of the MPF, the monetary authorities are cognizant of the upper limit of inflation in expanding the money supply. Often their action needs to be supplemented by expansionary policies of the fiscal authorities who have a degree of flexibility regarding government fiscal deficit. Both fiscal and monetary instruments are exercised under certain constraints due to the FRBMA and the MPF. In India, their effective coordination can be improved by setting up a mechanism for coordinated action under the guidance of an overarching supervisory mechanism such as a Fiscal and Monetary Policy Coordination Council so that both the growth and inflation objectives are tackled in a balanced way. In dealing with stabilization issues, the central government has the primary role, which is consistent with the literature on fiscal federalism. In India, however, there may also be a case for the state governments to play a complementary role. This is discussed further in section B7.

Global economic shocks tend to be irregular, having a large economic impact and leaving the domestic economy vulnerable. These can emanate from various causes, economic and non-economic, including geopolitical upheavals and health related unanticipated challenges. Different kinds of shocks require different types of preparations. Some of these are covered in the discussions below.

B2. Oil price shocks: Oil price stabilization fund

India used to have oil pool accounts until the late 1990s. These were meant to serve as stabilization funds. However, due to non-replenishment of these funds in the expansionary phase of economic cycles, these funds accumulated substantive deficits and eventually had to be abandoned. Stabilization funds can work only if there is appropriate fiscal discipline exercised by governments to replenish funds in expansionary phases of a cycle while withdrawing these in the recessionary or slowdown phases. Given the repetitive nature of global crude or oil price shock, it may be useful to revive the idea of an 'Oil Price Stabilization Fund'[19]. The Stabilization Fund can be used such that the price signals are not necessarily fully blocked but the extent of their volatility is reduced. This may allow economic agents to start adjusting to the price signals while partially mitigating the

[19] For more details, refer to September 2022 edition of the EY Economy Watch; https://assets.ey.com/content/dam/ey-sites/ey-com/en_in/topics/tax/economy-watch/2022/09/ey-economy-watch-september-2022.pdf?download

excessive adverse economic impact of large cyclical movements. In the medium term, the capacity for storage of oil needs to be expanded so that more options are available for absorbing external price shocks. In the long run, there is a need to reduce India's dependence on imported oil by accelerating the pace of the pursuit of non-conventional energy sources along with further exploiting domestic oil and gas reserves, both offshore and on land.

B3. Dealing with epidemics and pandemics: Need for future planning

Recent experience with COVID-19 has left a painful memory of limited preparedness for such health emergencies as evinced in shortages of dedicated beds, facilities, and oxygen supplies, among other things. India's health infrastructure has remained deficient relative to global benchmarks due to under-investment and under-prioritization over a long period. Investing in expanding health infrastructure is justifiable because of its salient inter-linkages with other sectors of the economy. This is likely to prepare India to deal with any future epidemics and pandemics.

One underlying strategy could be to build dual use infrastructure meant to serve both peace time requirements and crisis related emergencies so as to cope with unanticipated exogenous shocks including pandemics, chemical, biological and nuclear emergencies, and global natural disasters such as tsunamis.

B4. Coping with climate change and natural disasters

The National Policy on Disaster Management (NPDM) 2009 issued under the Disaster Management Act 2005 envisages building a safe and disaster-resilient India by developing a holistic, proactive, multiple disaster-oriented and technology-driven strategy through a culture of prevention, mitigation, preparedness and response. Under the provisions of the Act, the National Disaster Management Authority (NDMA) has been set up and the National Disaster Response Force raised. There are 12 natural disasters notified under the State Disaster Relief Fund (SDRF) for release of assistance and gratuitous relief to the affected families and persons in cases of death and injury of persons, death of animals and damage to property. These are (i) Drought; (ii) Flood; (iii) Earthquake; (iv) Cyclone; (v) Fire; (vi) Hailstorm; (vii) Landslide; (viii) Tsunami; (ix) Avalanche; (x) Cloud Burst; (xi) Pest Attack (xii) Frost and cold wave.

The primary responsibility for undertaking rescue, relief and rehabilitation measures during a disaster lies with the state governments. The Union government supplements their efforts through logistic, technical and financial support during severe natural disasters. At the same time, the states find that the fiscal burden of financing disaster management, including relief and reconstruction, falls largely on them. As a consequence, the states have been compelled to spend funds in excess of the SDRF from their own resources, particularly on post-disaster restoration and reconstruction, which has adversely affected the fiscal performance of the states.

The Disaster Management Act 2005 envisaged the constitution of two types of funds, one for disaster response and the other for mitigation. These are to be set up at the national, state and district levels. Thus, for disaster response, the Act envisages a National Disaster Response Fund (NDRF), a State Disaster Response Fund (SDRF) and, within the states, a District Disaster Response Fund (DDRF). Similarly, the Act envisages a National Disaster Mitigation Fund (NDMF), State Disaster Mitigation Funds (SDMF) and District Disaster Mitigation Funds (DDMF). The Disaster Response Funds have been set up at the national, state and district levels in most states but the disaster mitigation funds have generally not been set up. It is time to activate these funds and undertake planning and strategies of intervention for disaster mitigation. It may be best to earmark a certain portion of central and state budgets for disaster mitigation funds.

With regard to climate change, India announced a five-point agenda in the COP26 summit in October and November 2021[20] as given below:

1. Increasing India's non-fossil energy capacity to 500 GW by 2030.
2. Meeting 50% of India's energy requirements from renewable energy by 2030.

[20] COP26 and energy transition: An outlook on India's stance | Business Standard News (business-standard.com)

3. Reducing total projected carbon emissions by one billion tons from now till 2030.
4. Reducing the carbon intensity to less than 45% by 2030.
5. Achieving the target of net zero emissions by 2070.

Pursuing India's endeavor towards green energy initiatives such as captured in the Green Grids Initiative (GGI) and One Sun One World One Grid (OSOWOG) are well conceived.

Further, despite a coal cess being levied for mitigating the adverse environmental impact in the coal producing states, the cess revenue had largely remained unspent. With the inception of GST, the coal cess was merged into the GST compensation fund. With the discontinuation of compensation fund, the coal cess may be resumed according to the original objective so that the environmental impact of coal mining can be mitigated in the coal rich states.

B5. Budgetary reprioritization favoring education and health

Governments in India underspend on education and health. A review of government expenditure on education and health in India in a cross-country comparative framework is available in the July 2022 edition of the EY Economy Watch[21]. In this regard, it is best to follow global norms of budgetary allocation for these sectors and set up dynamic targets to reach global norms within a specified period of time.

B6. Pursuing Aatmanirbhar Bharat

Sectors which depend more on exports have proved to be relatively vulnerable, providing for a strong argument for the Aatmanirbhar Bharat strategy. This strategy with an increased focus on complex products and strategic sectors may facilitate a stable growth path for India, relatively sheltered from global economic shocks. In the post-COVID-19 geopolitical world economic order, India may be well served by the Aatmanirbhar strategy, which is quite well timed in the current global situation, particularly in the sectors such as defense and space technology. Efforts may be made to attract investment into India so that India can play a major role in the global supply chains. In this context, the government of India's PLI scheme is proving to be quite effective.

It is also worth noting that the structure of global output is likely to become progressively more complex, in which it might be difficult to distinguish outputs that pertain strictly to industry vis-à-vis services. Many manufacturing outputs have a significant share of services, and many services utilize manufactured products to a significant degree. In this context, it may be useful for India to prioritize the production of complex products as part of its existing Aatmanirbhar Bharat initiative. Some examples of complex products include robots, drones, self-driven vehicles, satellites and rockets, high-definition cameras, telescopes, microscopes, aircrafts, 3D printing of goods and buildings, financial derivatives, research and designing of semiconductors, artificial intelligence, and Internet of Things.

B7: Dealing with economic cycles: Flexibility in fiscal deficit targets and stabilization funds

The literature on fiscal federalism has advocated a primary role for the central government in macro stabilization. In India's context, however, states may effectively complement the central government's stabilization effort since many of India's state governments are relatively large and also have the constitutional responsibility of agriculture and therefore agricultural cycles. The share of states in combined primary expenditure in India has increased sharply since FY11 and had reached a peak of 68.1% by FY19. Further, the sum of GSDPs of six states namely, Maharashtra, Tamil Nadu, Gujarat, Uttar Pradesh, Karnataka and West Bengal, considered in real terms (2011-12 series), have accounted for more than 50% of the all states-GSDP in FY19.

The Twelfth Finance Commission (FC12) recommended *(paragraph 15.7 of their Report)* that the overall limit to the annual borrowing of states from all sources be supervised by an independent body like a Loan Council with representatives from the Ministry of Finance, Planning Commission (erstwhile), RBI, and the state governments.

[21] https://assets.ey.com/content/dam/ey-sites/ey-com/en_in/topics/tax/economy-watch/2022/07/ey-economy-watch-july-2022.pdf

Existing mechanisms for dealing with economic cyclicality, whether relating to agriculture or non-agriculture, include flexibility in fiscal deficit as embedded in GoI's FRBMA and mechanisms of buffer stocks and price controls with respect to agriculture. There is a need to revise GoI's 2018 FRBMA to provide for higher flexibility in fiscal deficit to GDP ratios, along with more realistic conditions permitting such departures. These mechanisms may be supplemented by setting up central and state stabilization funds. The latter may provide an active role for the state governments also to play a countercyclical role, particularly in respect of agricultural cycles and in selected instances, even in respect of non-agricultural cycles.

B8. Fiscal responsibility legislations, reforms and periodic institutional reviews

GoI's FRBM as amended in 2018 may need to be reviewed with a view to examining the following issues: a) bringing back revenue account balance as a target, b) need for asymmetric targets for debt and fiscal deficits for the GoI and states and c) reconsideration of magnitude of departure of the level of fiscal deficit as percentage of GDP from the sustainability norms and the conditions under which this may be permitted. There is also a need to set up an institutional mechanism, such as a Fiscal Council, to oversee the working of the FRLs at the central and the state levels. The FRBM review committee of 2018 had also recommended setting up of a Fiscal Council.

B9. External sector: Need for defining sustainable CAD limits; mechanism for investing and diversifying FX reserves

As part of India's medium term growth strategy, it may be useful to acknowledge that for some more years, a current account deficit may be acceptable if it is financed largely by FDI inflows as long as the current account deficit as a percentage of GDP remains sustainable. India continues to carry a significant volume of foreign exchange reserves and it may be useful to ensure that these reserves are managed in a way that provides a reasonable return on them in terms of foreign exchange earnings. Earlier studies have shown that a current account deficit of about (-)2.3% of GDP annually may be sustainable[22].

B10. Coping with price instability: MPF

Monetary policy in India has evolved from a multiple indicator approach and a focus on WPI inflation to a regime of flexible inflation targeting and focus on CPI inflation. In February 2015, MPF was agreed upon between GoI and the RBI. CPI inflation target for 2016-17 and beyond was set at 4% with a tolerance range of +/-2%, implying an overall CPI inflation range of 2% to 6%. This target is to be reviewed once every five years. In order to implement this framework, a Monetary Policy Committee (MPC) was established in September 2016 by amending the RBI Act. The RBI has been mandated to publish a Monetary Policy Report every six months, explaining the sources of inflation and forecasts of inflation for the next 6 to 18 months. According to the MPF, the RBI would fail to meet the target if the rate of inflation is more than 6% or less than 2% for three successive quarters. Further, in case of failure, the RBI is required to submit a report to the GoI detailing a) the reasons for failure, b) remedial actions to be taken and c) estimate of time period within which the target would be achieved. As per the Monetary Policy Statement dated 7 April 2021, the government retained the current targets of the MPF for a period of another five years.

India has followed the example of developed countries to focus on inflation targeting for its MPF. It may be useful for the MPC to coordinate with GoI regarding growth objectives and maintaining sustainable current account deficit along with exchange rate stability.

Concluding observations

For an economy aspiring to be a leading global economic player, it is important to develop institutions and mechanisms by which the country and its population can be effectively protected against expected and unexpected economic shocks and crises. India has already taken recourse to a number of mechanisms to deal with economic cycles, shocks and crises, including setting up of

[22] https://www.epw.in/journal/2013/07/insight/indias-external-sector.html.

buffer stocks, enacting FRLs, and setting up of MPF. Some more steps may be undertaken, including the following:

1. Building adequate infrastructure to deal with exogenous multidimensional shocks including chemical, biological, nuclear emergencies, pandemics and tsunamis.
2. Mechanisms for coordination between monetary and fiscal policies.
3. Setting up an 'Oil Price Stabilization Fund' to minimize exposure to excessive global crude price volatility.
4. Activating Disaster Mitigation Funds at the national, state and district levels and earmarking a certain portion of government budgets for disaster preparedness and avoidance.
5. Accelerating green energy initiatives, including Green Grids Initiative (GGI) and One Sun One World One Grid (OSOWOG) and restoring coal cess.
6. Budgetary reprioritization favoring education and health
7. Pursuing Aatmanirbhar Bharat: focus on complex products and strategic sectors
8. Flexibility in fiscal deficit targets and setting up of stabilization funds
9. Amending FRBMA (2018) and setting up of a Fiscal Council
10. Defining current account deficit limits on an annual basis

Chapter 6

India's success in reducing multidimensional poverty (November 2022)

Abstract

Recent discussions on poverty measurements have emphasized its multidimensional nature beyond the more conventional income deficiency approach. A 2022 UNDP Report had highlighted India's relative success in bringing down multidimensional poverty quite significantly during the period 2005-06 to 2019-21. The Report indicated that India was successful in bringing 415 million people above the poverty line during this period. According to the definitions used by the UN, the poverty headcount ratio in the multidimensional measurement of poverty was reduced from 55.1% in 2005-06 to 16.4% in 2019-21. It was also recognized that the Sustainable Development Goal (SDG) target 1.2 – *"reducing at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions by 2030"* is within reach. It was observed that the fastest reduction in poverty happened for the poorest states and groups (children, lower castes and those living in rural areas), although the data do not reflect post-pandemic changes.

Simulations in 2020, as per the UNDP report, suggested that the COVID-19 pandemic had set the progress in reducing the Multidimensional Poverty Index (MPI) values back by between 3 to 10 years. More recent data indicate that the setback at the global level is likely to be on the higher end of this range.

Introduction

A recent UNDP Report[23] has highlighted India's relative success in bringing down multidimensional poverty quite significantly during the period 2005-06 to 2019-21. The Report indicated that India was successful in bringing 415 million people above the poverty line during this period. According to the definitions used by the UN, the poverty headcount ratio in the multidimensional measurement of poverty was reduced from 55.1% in 2005-06 to 16.4% in 2019-21. It was also recognized that the Sustainable Development Goal (SDG) target 1.2 – *"reducing at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions by 2030"* is within reach. It was observed that the fastest reduction in poverty happened for the poorest states and groups (children, lower castes and those living in rural areas), although the data do not reflect post- pandemic changes.

Simulations in 2020 suggested that the COVID-19 pandemic had set the progress in reducing the Multidimensional Poverty Index (MPI) values back by between 3 to 10 years. More recent data indicate that the setback at the global level is likely to be on the higher end of this range.

Understanding multidimensional poverty: The 2022 UNDP Report findings

The conventional measurement of poverty related to a single dimension of purchasing power of households generally captured by income. These measures led to summary indices such as the headcount ratio, the poverty gap ratio and the FGT index[24]. In subsequent literature, these measures have been supplemented by considering multi-dimensional aspects of poverty. These initiatives were undertaken by institutions such as the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI). They provided a platform for cross-country comparison of poverty levels and reduction in these over time. The 2010 study compared 104 countries covering 5.2 billion people[25]. The latest study published in 2022 compared poverty reduction achievements across 111 countries covering 6.1 billion people.

These studies were based on three dimensions namely, health, education, and living standards. In turn, these were captured by 10 indicators closely aligned to the SDGs developed by the UNDP. **Table 6.1** summarizes these three broad dimensions along with the ten related indicators and the relative weights assigned to these.

Equal weights are assigned to the three broad dimensions. For health and education, there are two indicators each, which are given a weight of 1/6 each. With regards to the dimension pertaining to living standards, there are six indicators, and these have been individually given a weight of 1/18. For each person, a deprivation score is first created by adding up the weights of each indicator the person is deprived in, thus reflecting the percentage of a person's weighted deprivations. An MPI poor is defined as someone who experiences one-third of the weighted deprivations or more, severely poor as someone with half or more, and vulnerable as someone with greater than 20% but less than one-third.

Table 6.1: Dimensions, indicators, deprivation cutoffs, and weights of the Global MPI (2018, 2022)

#	Poverty dimension	Indicator and SDG area	Deprived if…	Weight	SDG indicator
1	Health	Nutrition	Any person under the age of 70 for whom there is nutritional information is undernourished.	1/6	SDG 2
		Child mortality	Any child has died in the family in the five-year period preceding the survey.	1/6	SDG 3

[23] https://hdr.undp.org/system/files/documents/hdp-document/2022mpireportenpdf.pdf
[24] Foster, J., Greer, J., Thorbecke, E.: A class of decomposable poverty measures. Working Paper No. 243, Department of Economics, Cornell University (1981).
[25] https://www.ophi.org.uk/wp-content/uploads/MPI_One_Page_final_updated.pdf

#	Poverty dimension	Indicator and SDG area	Deprived if…	Weight	SDG indicator
2	Education	Years of schooling	No household member aged 10 years or older has completed six years of schooling.	1/6	SDG 4
		School attendance	Any school-aged child is not attending school up to the age at which he/she would have completed class 8.	1/6	SDG 4
3	Living standards	Cooking fuel	The household cooks with dung, wood or charcoal.	1/18	SDG 7
		Sanitation	The household's sanitation facility is not improved (according to SDG guidelines) or it is improved but shared with other households.	1/18	SDG 11
		Drinking water	The household does not have access to improved drinking water (according to SDG guidelines), or where safe drinking water is at least a 30-minute walk from home, roundtrip.	1/18	SDG 6
		Electricity	The household has no electricity.	1/18	SDG 7
		Housing	The household has inadequate housing: the floor is of natural materials, or the roof or wall are of rudimentary materials.	1/18	SDG 11
		Assets	The household does not own more than one of these assets: radio, TV, telephone, computer, animal cart, bicycle, motorbike or refrigerator, and does not own a car or truck.	1/18	SDG 1

Source: Alkire, S., Oldiges, C. and Kanagaratnam, U. (2018). "Multidimensional poverty reduction in India 2005/6–2015/16: still a long way to go but the poorest are catching up", OPHI Research in Progress 54a, University of Oxford.

The global MPI begins by constructing a deprivation profile for each household and the person in it. For example, a household and all people living in it are deprived if a) any child is stunted or any child or adult for whom data are available is underweight, b) if at least one child died in the past five years, c) if any school-aged child is not attending school up to the age at which he or she would have completed class 8 or no household member has completed six years of schooling, or d) if the household lacks (i) access to electricity, (ii) source of drinking water within a 30-minute walk round trip, (iii) sanitation facility that is not shared, (iv) non-solid cooking fuel, (v) durable housing materials, and (vi) basic assets such as a radio, animal cart, phone, television or bicycle.

Information relating to these criteria are aggregated into a summary index of poverty called MPI, which also captures the intensity of poverty faced by the households. An aggregate MPI is calculated by multiplying the incidence of poverty (H) and the average intensity of poverty (A). More specifically, H is the proportion of the population that is multi-dimensionally poor, while A is the average proportion of dimensions in which poor people are deprived. So, MPI = H x A, reflecting both the share of people in poverty and the degree to which they are deprived. A higher value of MPI indicates greater incidence of poverty.

MPI estimates for India: Perspectives on poverty reduction

Table 6.2 gives the estimates of MPI and related aggregates for India. In 2005-06, 55.1% (H) of India's population was deprived in at least one-third of the 10 weighted indicators. These are counted as MPI poor. The headcount ratio had fallen to 27.7% in 2015-16 resulting in a reduction in the number of MPI poor people by 275 million. In 2019-21, the headcount ratio fell further to 16.4%. Correspondingly, the number of MPI poor fell by 140 million over the period 2015-16 to 2019-21. The intensity of poverty amongst the multi-dimensionally poor reduced to 44% during

2015-16 from 51.3% in 2005-06. In 2019-21, there was a further fall to 42%. As a result, the MPI has fallen by 0.214 points over the period 2005-06 to 2019-21, a decline of more than 75%.

Table 6.2: MPI estimates for India

Year	MPI (HxA)	Headcount ratio (H)	Number of MPI poor (million)	Intensity of poverty (A)	Vulnerable
2005-06	0.283	55.1%	646	51.3%	17.1%
2015-16	0.122	27.7%	371	44.0%	19.1%
2019-21	**0.069**	16.4%	231	42.0%	18.7%
Change (2005-06) - (2015-16)	0.161	27.4%	275	7.3%	-2.0%
Change (2015-16) - (2019-21)	0.053	11.3%	140	2.0%	0.4%
Change (2005-06) - (2019-21)	0.214	38.7%	415	9.3%	-1.6%

Source: "Global MPI Country Briefing 2018: India (South Asia)", Oxford Poverty and Human Development Initiative (OPHI), University of Oxford; Global Multidimensional Poverty Index 2022

Table 6.3 shows the contribution of the three dimensions of deprivation used for constructing the MPI. In 2019-21, with reference to the total MPI value of 6.9, the largest contribution came from deprivation with reference to living standards, followed by health and education. In the latest report (2022), while the total MPI value is given, its decomposition for the earlier years was not provided.

Table 6.3: Dimension-wise weighted contribution to multidimensional poverty in India

#	Dimension	2019-21	2015-16	2005-06
			Weighted index	Weighted index
1	Health	2.2	NA	NA
2	Education	1.9	NA	NA
3	Living standards	2.7	NA	NA
4	**Total** (=MPIx100)	**6.9**	**12.1**	**27.9**

Source (basic data): Global Multidimensional Poverty Index 2022 (UNDP, OPHI)

Rural and urban poverty

One of the key findings of the UNDP report (2022) is that for the poorest states and groups (children, lower castes and those living in rural areas), poverty reduced the fastest in absolute terms, although the data do not reflect post- pandemic changes. The incidence of poverty fell from 36.6% in 2015-2016 to 21.2% in 2019-2021 in rural areas and from 9% to 5.5% in urban areas. Rural disparities are comparatively pronounced. 90% of India's poor people live in rural areas and 10% in urban areas. In absolute numbers, 205 million of the nearly 229 million poor people live in rural areas. Only 23 countries among those covered have a higher proportion of poor people living in rural areas as compared to India.

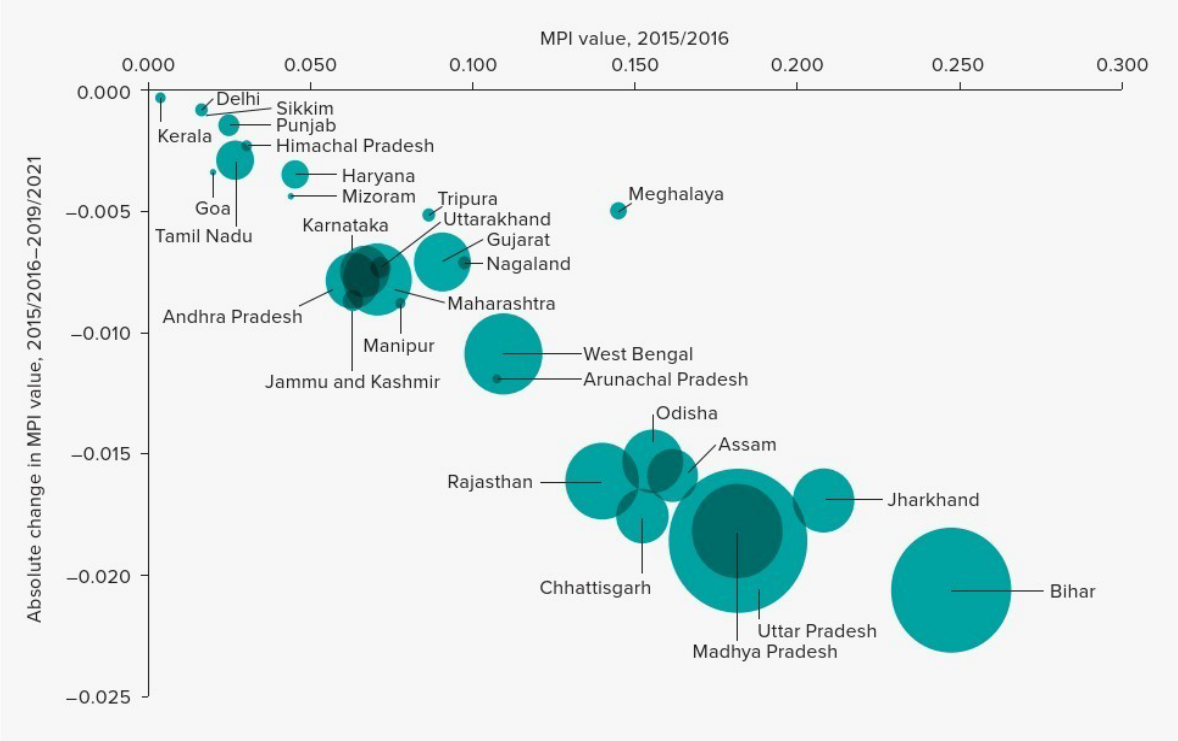
In rural areas, the dimensions of poverty are often interlinked. Taking school attendance as an example, 1.9% of people (8.2 million) in urban areas are poor and living with an out-of-school child as compared with 4.8% (46.3 million) in rural areas. In rural areas, 82.4% of poor people who are deprived in school attendance live in households that are also deprived in housing, and 84.7% live in households that are also deprived in cooking fuel. The corresponding percentages in urban areas are 45.4% and 41.6%. In both rural and urban areas, nutritional deprivation is rampant, with around

60% of people experiencing it. Schooling programs such as the midday cooked meals scheme address some interlinked deprivations affecting out-of-school children while also supporting their educational attainment.

Poverty estimates: State-wise perspective

One of the key findings of the UNDP Report (2022) is that the incidence of multidimensional poverty got reduced the fastest in the poorest states **(Chart 6.1)**. Bihar, the poorest state in 2015-2016, saw the fastest reduction in its MPI value. The incidence of poverty there fell from 77.4% in 2005-2006 to 52.4% in 2015-2016 and further to 34.7% in 2019-2021. Across states and union territories, the fastest reduction in the MPI in relative terms was in Goa, followed by Jammu and Kashmir, Andhra Pradesh, Chhattisgarh and Rajasthan. Despite this improvement, in relative terms, the poorest states are still behind the rich states. Of the 10 poorest states in 2015-2016, only one (West Bengal) was not among the 10 poorest in 2019-2021. The rest of the states namely, Bihar, Jharkhand, Meghalaya, Madhya Pradesh, Uttar Pradesh, Assam, Odisha, Chhattisgarh and Rajasthan, remain among the 10 poorest.

Chart 6.1: State-wise MPI values from 2015-16 to 2019-20



Note: The size of the bubble is proportional to the number of poor people in 2015/2016.

Source: UNDP Global Multidimensional Poverty Index 2022

The impact of COVID-19 on multidimensional poverty

The 2020 global MPI report noted that the COVID-19 pandemic could set back the progress in poverty reduction by 3 to 10 years. The analysis built on microsimulations informed by data on school closures and food security published by the UN agencies in early 2020. Their recent estimates suggest that the most pessimistic scenarios are likely. Updated data from the United Nations Educational, Scientific and Cultural Organization show that, on average, students across the globe have lost half a year of schooling due to the pandemic. Even where school attendance has swiftly rebounded, the learning process has still been negatively affected in many cases, and some children never went back to school. Furthermore, the most recent data on food insecurity from the

World Food Programme suggest that the number of people living in food crisis increased to 193 million in 2021 as compared to 135 million in 2020[26].

Poverty estimates: Cross-country perspective

As compared to an MPI value of 0.069 for India, Bangladesh and Pakistan had higher MPI values of 0.104 and 0.198 respectively for the latest period. It was 0.091 for South Asia as a whole. **Table 6** compares multidimensional poverty with income poverty measured by the percentage of the population living below 2011 PPP US$1.9 per day. It shows that income poverty only tells a part of the story. The headcount or incidence of multidimensional poverty is 6.1% points lower than the incidence of income poverty. This implies that individuals living below the income poverty line may have access to non-income resources. **Table 6.4** also shows the percentage of India's population that lives in severe multidimensional poverty. The contributions of deprivations in each dimension to the overall poverty provide a comprehensive picture of people living in multidimensional poverty. It may be noted that India has the lowest incidence of population in severe MPI as compared to Bangladesh and Pakistan as also the South Asia region.

Table 6.4: Poverty reduction: International perspectives

Country	Survey Year	MPI Value	Headcount ratio (%)	Intensity of deprivations (%)	Population share (%)			Contribution of deprivation in dimension to overall MDP (%)		
					Vulnerability to MPI	In severe MPI	Below income poverty line	Health	Education	Standard of living
India	2019-2021	0.069	16.4	42	18.7	4.2	22.5	32.2	28.2	39.7
Bangladesh	2019	0.104	24.6	42.2	18.2	6.5	14.3	17.3	37.6	45.1
Pakistan	2017-2018	0.198	38.3	51.7	12.9	21.5	3.6	27.6	41.3	31.1
South Asia	-	0.091	20.5	44.6	17.9	6.9	19	28	33.7	38.3

Source: UN

Pandemic poverty and inequality in India: Key findings of a recent IMF study

Bhalla et al. (2022)[27] have recently provided findings based on some innovations toward the study of poverty in India. They cover the pandemic years of 2020 and 2021, highlighting the critical role of food subsidies in containing extreme poverty in India.

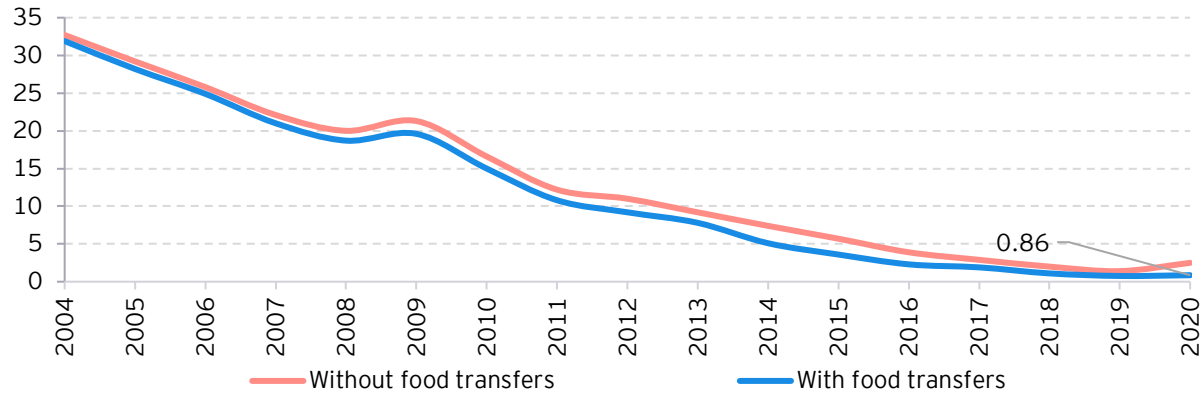
These estimates indicate that prior to the pandemic, in 2019, extreme poverty in India, using alternate methods, ranged between 1.4% (official MMRP method, PFCE growth) and 5.4% (outdated uniform recall method, state domestic product growth). According to the official MMRP method, poverty in the pre-pandemic year of 2019 was just 1.4%, implying a decline of 10.8% points since 2011-12. This indicates that India was close to eliminating extreme poverty prior to the pandemic. Bhalla et al. argue that even this low level of extreme poverty may be an overestimate since it ignores poverty removal because of the transfer of food rations (to now almost two-thirds of the population). In their estimate, extreme poverty was as low as 0.8% in 2019. Food transfers played an important role in ensuring that extreme poverty remained contained at a low level even in the

[26] The World Food Programme (WFP 2021)
[27] Pandemic, Poverty, and Inequality: Evidence from India' Bhalla, S., Bhasin, K., & Virmani, A. (2022)

pandemic year of 2020. Post-food subsidy inequality at 0.294 is now very close to its lowest level of 0.284 observed way back in 1993-94.

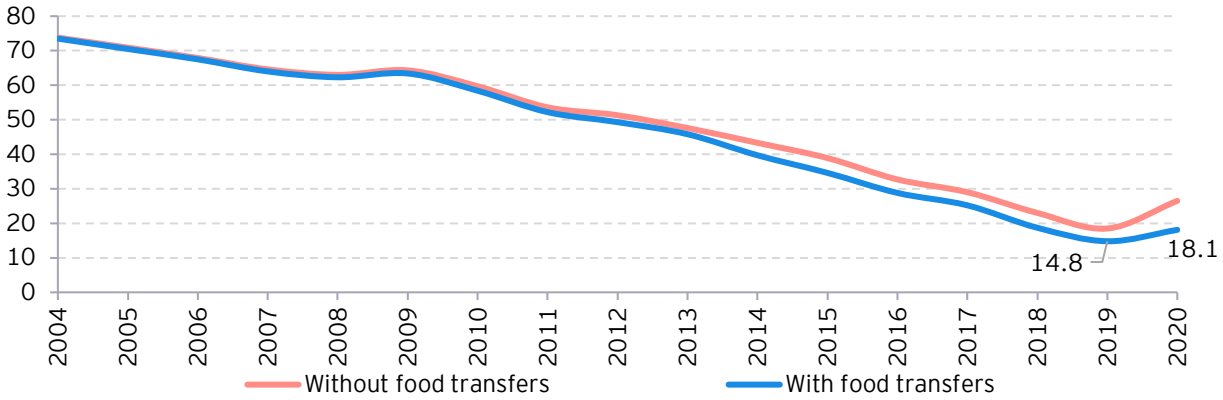
Charts 6.2 and 6.3 show the steady fall in the incidence of extreme poverty with reference to two benchmarks namely, a poverty line of PPP$1.9 and of PPP$3.2[28]. The fall is steady except for the pandemic years, when there is a slight increase in the incidence of poverty. The blue line indicates the impact of food transfers on reducing the incidence of poverty. Accordingly, with reference to the PPP$1.9 poverty line, extreme poverty fell to below 1% by 2020. Even with reference to the higher benchmark of PPP$3.2, poverty fell to about 14.8% and 18.1% in 2019 and 2020 respectively after inclusion of food subsidies. With reference to PPP$3.2 poverty line, there was an increase of 3.3% points as a result of the pandemic. In comparison, with reference to PPP$1.9 poverty line, the increase in the incidence of poverty due to the pandemic was only 0.1% points. This indicates that the food subsidy program was well targeted and had the necessary impact on the lowest income rungs of the society.

Chart 6.2: Poverty rate (%) estimates using PPP$1.9



Source (basic data): Bhalla. S. et. al (2022)

Chart 6.3: Poverty rate (%) estimates using PPP$3.2



Source (basic data): Bhalla. S. et. al (2022)

India in the World Poverty Clock

The World Poverty Clock provides another complementary perspective on poverty reduction in India. It renders an online platform for monitoring the progress in reducing extreme poverty defined by the poverty line of PPP$1.9 with respect to individual countries on an annual basis. It provides insights on the progress made on eradication of extreme poverty under the business as usual assumptions provided by specific scenarios called 'Shared Socio-economic Pathways (SSP 2)'.

[28] Computations by Bhalla et al. using the 2011-12 NSO Consumer Expenditure Survey & National Accounts Statistics

The methodology builds a relationship of poverty reduction with population and average per capita income [for detailed methodological framework, see Cuaresma (2018) [29]]. As per this study, empirical evidence indicates that increase in the income level of the poor tends to be proportional to increase in average income per capita (Dollar and Kraay, 2002, Dollar et al., 2016)[30].

According to this clock, India would be able to eliminate extreme poverty by 2024[31]. Despite this, an estimated 36.8 million people would still remain in extreme poverty in 2024. It can be seen that prior to the onset of COVID-19 in 2019, India was on course to achieving its SDG goal of bringing extreme poverty below a level of 3% of the population. However, due to the deleterious impact of COVID-19, close to 17 million people were pushed into extreme poverty in 2020, with the number of people living in extreme poverty increasing from 53.3 million to 70.2 million **(Table 6.5)**. However, in 2021, about 11 million people have moved out of extreme poverty largely due to the government support through the pandemic stimulus packages. In 2022, close to 8.3 million people are expected to be lifted out of extreme poverty.

Table 6.5: Estimated people living in extreme poverty in India as per world poverty clock

Year	Estimated			
	No. of people living in extreme poverty (million)	No. of people living in extreme poverty as % of total population	No. of people lifted out of extreme poverty (million)	Total population (million)
1	2	3	4	5
2016	74.4	5.6		1,324.1
2017	67.7	5.1	-6.7	1,339.0
2018	59.1	4.4	-8.6	1,353.6
2019	53.3	3.9	-5.8	1,368.0
2020	70.2	5.1	16.9	1,382.2
2021	59.4	4.3	-10.8	1,395.9
2022	51.1	3.6	-8.3	1,409.4
2023	44.2	3.1	-6.9	1,422.6
2024	36.8	2.6	-7.4	1,435.4

Source: World Poverty Clock website; https://worldpoverty.io/index.html

Conclusion

India has been quite successful in reducing poverty in its various dimensions. Poverty reduction has been made more effective and comprehensive by support from various government policies, including food subsidies and subsidization of services relating to health, education and water and sanitation. These effects are captured in multidimensional measurement of poverty as highlighted in the recent UNDP study (2022).

PM Garib Kalyan Anna Yojana (PM-GKAY) played a critical role in containing extreme poverty even in the presence of COVID-19. The PM-GKAY provided 5 kg of food grain per person per month free of cost for all the beneficiaries covered under the National Food Security Act (NFSA) [Antodaya Anna Yojana and Priority Households] including those covered under Direct Benefit Transfer (DBT). Up to November 2022, PM-GKAY has been in operation for 27 months under different phases. As per available information, the government provided food grains to around 800 million beneficiaries covering all 36 states/UTs during April 2020 to November 2021[32].

[29] Crespo Cuaresma, J., Fengler, W., Kharas, H. et al. Will the Sustainable Development Goals be fulfilled? Assessing present and future global poverty. Palgrave Commun 4, 29 (2018). https://doi.org/10.1057/s41599-018-0083-y

[30] Growth is good for the poor. J Econ Growth 7(3):195–225 Edward P, Sumner A (2014) Estimating the scale and geography of global poverty now and in the future: How much difference do method and assumptions make? World Dev 58:67–82; Dollar D, Kleineberg T, Kraay A (2016) Growth still is good for the poor. Eur Econ Rev 81:68–85

[31] The UN SDG number 1 considers bringing extreme poverty below 3% of population as equivalent to abolition of poverty.

[32] In a response given to Lok Sabha Starred Question no.39 dated 20th July 2021

The more general policy support programs covering sectors such as health and education also have had a bearing on poverty reduction, especially when poverty is viewed as a multidimensional phenomenon. As substantiated by the 2022 UNDP report, the reduction in the incidence of poverty is much sharper in a multidimensional perspective as compared to the income-based measurement of poverty. The key findings of the UNDP report (2022) are summarized below:

1. India was successful in bringing 415 million people above the poverty line during the period 2005-06 to 2019-21. The poverty headcount ratio reduced from 55.1% in 2005-06 to 27.7% in 2015-16 and further to 16.4% in 2019-21.
2. In 2019-21, with reference to the total MPI value of 6.9, the largest contribution came from deprivation with reference to living standards, followed by health and education. For the poorest groups (children, lower castes and those living in rural areas), poverty reduced the fastest in absolute terms, although the data do not reflect post- pandemic changes.
3. The incidence of poverty fell from 36.6% in 2015-2016 to 21.2% in 2019-2021 in rural areas and from 9% to 5.5% in urban areas.
4. India's headcount or incidence of multidimensional poverty is 6.1% points lower than the incidence of income poverty, implying that individuals living below the income poverty line may have access to non-income resources.
5. India is relatively better placed in terms of the MPI as compared to some of its South Asian counterparts. As compared to an MPI value of 0.069 for India, Bangladesh and Pakistan had higher MPI values of 0.104 and 0.198 respectively for the latest period. The MPI value was 0.091 for the South Asia region.

Part – 2

Monetary and Banking reforms

Chapter 7

Non-performing assets: The Achilles heel of India's banking system (April 2016)

Abstract

The NDA government inherited a major problem with respect to the non-performing assets (NPAs) of scheduled commercial banks. A major aspect of the problem related to the measurement of the size of the NPAs in India's banking system. At the end of 2015, banks' NPAs were estimated at INR3,22,916 crore, amounting to about 4.3% of gross advances. Given the large volume of NPAs in India, a number of Asset Reconstruction Companies (ARCs) emerged. ARCs serve the role of taking over distressed companies from the banks at a discount and convert debt to equity. They can then try to turn these companies around or sell them to prospective buyers or liquidate the assets. A greater use of ARCs is required rather than banks selling the NPAs assets directly. The existence of large NPAs makes banks exceedingly cautious in their lending policies, slowing down credit as well as the overall economic growth. The Government of India has to support the banks as a last resort to ensure that the banking system remains viable and trustworthy. The GoI had recognized the problem and made a provision of INR25,000 crore in the Union Budget of FY17 for dealing with NPAs. Subsequently, several other policy measures were undertaken to overcome the NPA problem.

Introduction

Banks take deposits and lend. They generate earnings out of the margin between the two interest rates, that is, the excess of lending rate over the deposit rate. Lending involves risk. Banks are required to do due diligence before lending and back it by collaterals. If the borrowers fail to generate enough returns on their investment, they default on servicing the loans. If this default goes beyond a specified period, the underlying asset, that is, the financial instrument or agreement between the bank and the borrower, is declared as non-performing. According to RBI instructions, when the default extends beyond 90 days, the underlying asset is to be classified as non-performing. When such non-performing assets become large relative to the bank advances, the banking sector becomes over-cautious in lending, which starts to hurt economic growth. India's banking system appears to be heading towards this situation. The central government, which has the policy responsibility, as well as the central bank, which has the regulatory responsibility over the banks, are justifiably concerned. Here, we review the NPA problem of India's banking system in terms of the size of the problem, its causes, and the desired remedial action.

Non-performing assets: The size of the problem

In measuring the size of the problem, a key aspect is that a good part of it is hidden. Official data on NPAs indicate only those assets that have officially been recognized as NPAs. But a significant share of the banks' assets may have effectively become non-performing but have not yet been so recognized. First, we examine the volume of the officially recognized NPAs.

Table 7.1: Gross of NPAs of banks: Size and change

Calendar year	Gross NPAs (INR crore)	Gross NPAs to Gross Advances Ratio (%)	% change in NPA over previous year	GDP growth (2004-05 Series)	GDP Growth (2011-12 series)	Financial year
2005	57396.0	4.92		9.28		2005-06
2006	51753.1	3.35	-9.83	9.26		2006-07
2007	50517.0	2.52	-2.39	9.80		2007-08
2008	56606.0	2.26	12.05	3.89		2008-09
2009	69953.7	2.31	23.58	8.48		2009-10
2010	81718.1	2.51	16.82	10.26		2010-11
2011	93996.9	2.35	15.03	6.64		2011-12
2012	136968.3	2.95	45.72		5.62	2012-13
2013	192768.8	3.23	40.74		6.64	2013-14
2014	263015.2	3.83	36.44		7.24	2014-15
2015	322916.1	4.27	22.77		7.57	2015-16

Source (Basic data): RBI database and National Income Accounts, CSO.

At the end of 2015, banks' NPAs were estimated at to INR322916 crore, amounting to about 4.3% of gross advances. Two reasons usually account for loans going bad: (a) driven by policy and (b) driven by growth conditions. In years, when growth slows down, or conditions such as a persistent fall in exports or commodity prices prevail, specific groups of borrowers begin to incur losses and default on their bank liabilities. Policy driven default arises when banks are forced to lend to priority sectors or favored customers on the basis of explicit policy or implicit political influence. Comparing growth of NPAs with GDP growth in Table 7.1, it is clear that years in which growth has fallen are accompanied by an increase in the growth of the NPAs and years in which growth increased growth of the NPAs fell. The year 2009 was the year when a major loan waiver for farmers was announced

prior to general elections. We also notice that in recent years, particularly during 2012 to 2014, growth in the NPAs has been inordinately high. This was a period of low growth.

The present NPA crisis may turn out to be bigger than the size of NPAs indicated in Table 1. According to available information, apart from loans in default for over 90 days, there is another large chunk amounting to INR306,180 crore where already there is a default for more than 30 to 60 days. These assets are near NPAs and may become an NPA very shortly. In this case, the NPA as a percentage of gross advances may turn out to be 9%.

Relative share in NPAs: Banking sector groups

The Indian banking sector can be divided into four major groups: SBI and associates, nationalized banks, private sector banks, and foreign banks. Table 2 is in two parts. The first part gives the relative share of different groups in the overall NPAs. As expected, the highest share of the NPAs pertains to the nationalized banks, followed by SBI and associates. We define failure rate in the present context as the share of NPA to advances. By this criterion, and normalizing the averages failure rate to 100, we see from Table 7.2, that the relative increase in the failure rate was far higher in the case of the SBI and associates.

Table 7.2: Bank group-wise share in gross NPAs and their relative failure rate

Year	Share in NPAs				Group-wise relative failure Rate			
	SBI and associates	Nationalized banks	Private sector banks	Foreign banks	SBI and associates	Nationalized banks	Private sector banks	Foreign banks
2005	27.2	53.98	14.92	3.89	108.303	109.144	77.902	62.087
2006	25.7	55.68	14.68	3.94	104.811	113.891	72.027	63.438
2007	25.1	52.04	18.10	4.75	103.107	107.072	86.887	76.462
2008	27.3	44.38	22.83	5.45	114.010	91.166	109.124	84.896
2009	27.3	38.32	24.00	10.36	110.506	75.471	126.199	188.793
2010	26.7	43.41	21.18	8.70	112.746	81.077	119.210	173.909
2011	29.9	45.65	19.05	5.37	132.503	83.790	105.250	111.132
2012	33.4	48.77	13.30	4.58	148.125	90.561	70.909	93.824
2013	32.6	52.75	10.57	4.11	137.067	100.279	54.846	94.287
2014	30.3	56.06	9.19	4.40	129.702	106.858	46.477	100.944
2015	22.8	63.47	10.43	3.33	100.113	123.125	49.076	74.829

Source (Basic data): RBI data base.

Remedial initiatives

There is a need to distinguish between willful default and defaults happening as a fall-out of economic events, such as low growth, fall in exports, and crash in sectoral prices. In the case of willful default, the only justifiable recourse is legal action. For defaults induced by economic events, recovery has to be managed by sharing the burden between four parties: the central government, the RBI, the concerned bank, and the concerned party, since these are responsible for the resultant NPA to some degree.

Given the large volume of NPAs in India, a number of Asset Reconstruction Companies (ARCs) have emerged. ARCs serve the role of taking over distressed companies from the banks at a discount and convert debt to equity. They can then try to turn these companies around or sell them to prospective buyers or liquidate the assets. More and more use of ARCs is required rather than banks selling the NPAs assets directly. The existence of large NPAs makes banks exceedingly cautious in their lending policies, slowing down credit growth and the overall growth. The

government of India has to support the banks as a last resort to ensure that the banking system remains viable and trustworthy. The government of India has recognized the problem and made a provision of INR25,000 crore in the Union Budget of FY17 for dealing with the NPA problem. If the global economic slowdown continues, the NPA problem may expand further, calling for much larger support from the government of India.

Chapter 8

Evolution of Monetary Policy in India (May 2016)

Abstract

In February 2015, a Monetary Policy Framework was agreed upon by the Government of India and the RBI, which stipulated a CPI target range of 2-6% for 2016, 2017 and beyond. Subsequently, a Monetary Policy Committee (MPC) was established in 2016 by amending the RBI Act. The MPC was to set an inflation target based on CPI once every five years. Further, the RBI was to publish a Monetary Policy Report every six months, explaining the sources of inflation and forecasts of inflation for the next 6 to 18 months, providing a framework for transparent and objective decisions regarding interest rates and other critical monetary policy variables.

The MPC was envisaged to consist of six members, three from the RBI, and three outside experts, with the Governor being the ex officio chairperson. Most developed countries have comparable bodies to guide their monetary policy.

At that time, the commercial banking scenario in India was challenging. First, there was the looming shadow of the public sector's non-performing assets, that is, loans that had gone bad. Second, monetary transmission in India remained weak. Third, there was a critical need for consolidation of banks so that they have a reasonable size comparable to international norms. Availability of liquidity was also a concern. Under these circumstances, the constitution of the Monetary Policy Committee was a welcome initiative. This chapter takes stock of these challenges, which were critical for framing appropriate targets and setting the course of monetary policy in India.

Introduction

Starting from November 1997, India had four RBI governors namely Dr. Bimal Jalan (Nov 97- Sep 03), Dr. Y V Reddy (Sep 03-Sep 08), Dr. D Subbarao (Sep 08- Sep 13) and Dr. Raghuram Rajan (Sep 13 till date). During this period, monetary policy has evolved from a multiple indicator approach and a focus on WPI inflation to a regime of flexible inflation targeting and focus on CPI.

In February 2015, a Monetary Policy Framework was agreed upon by the Government of India and the RBI which stipulated a CPI target range of 2-6% for 2016, 2017 and beyond. Now, a Monetary Policy Committee (MPC) is being established by amending the RBI Act. The MPC will set an inflation target based on CPI once every five years. RBI will publish a Monetary Policy Report every six months explaining the sources of inflation and forecasts of inflation for the next 6 to 18 months. This may provide a framework for transparent and objective decisions regarding interest rates and other critical monetary policy variables.

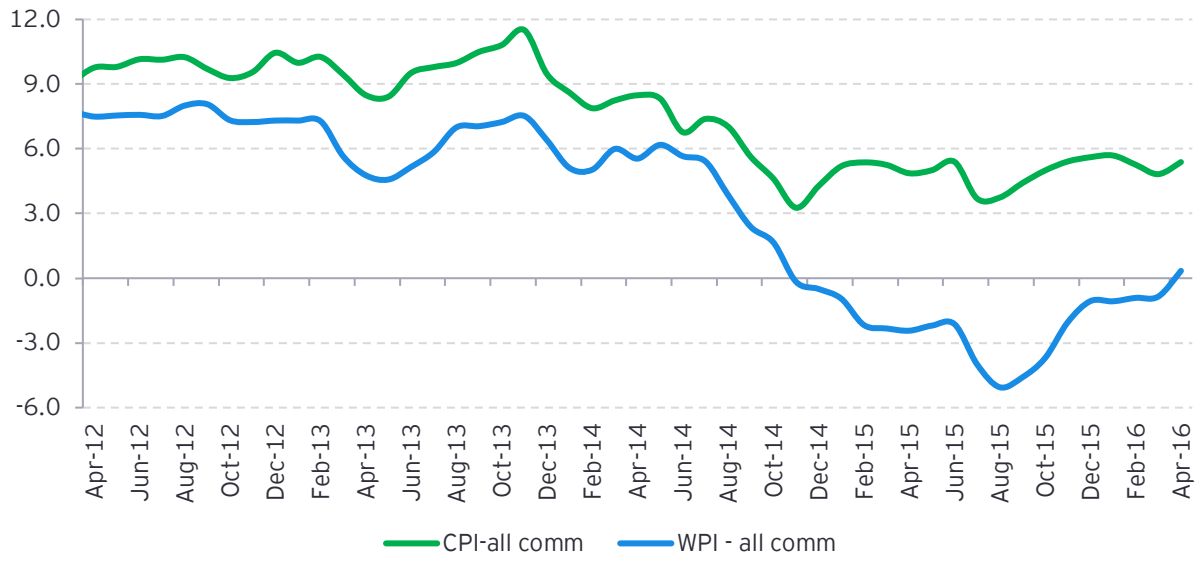
The MPC would consist of six members. Three of the members would be from the RBI, and three would be outside experts and serving Government officials appointed by the Government. The Governor would be the ex-officio Chairperson. Each member will have one vote and in case of a tie, the Governor will have a second or casting vote. Most developed countries have comparable bodies to guide their monetary policy.

Policy Anchor: Relative Merits of Alternative Inflation Measures

There are three main measures of inflation available in India namely CPI, WPI and the Implicit GDP deflator. The GDP deflator is available only at quarterly and annual frequencies. It is also revised quite often. A new CPI series became available in January 2011. Historically, the WPI has been maintained on a consistent basis for the longest period of time in India, but it is quite inadequate for policy guidance since it does not include services and does not reflect prices that consumers actually pay.

In recent times, WPI and CPI have given conflicting signals. There has been a considerable divergence between the two, as depicted in **Chart 8.1**. This divergence reflects the composition of the index itself, the relative change in prices for the same components at the wholesale and consumer level, and the relative weights of different components (**Table 8.2**). This divergence peaked in September 2015 when the wedge between the two indices was 9 percentage points. This differential has been coming down since then. In April 2016, it was about 5 percentage points.

Chart 8.1: CPI and WPI inflation



Source (Basic Data): Ministry of Commerce and Industry, MOSPI

Table 8.2: Comparison of weight structure

#	Commodity	Weight in CPI	Weight in WPI
1	Food and beverages	45.9	24.5[1]
2	Pan, tobacco and intoxicants	2.4	1.6
3	Clothing and footwear/Textiles	6.5	7.3
4	Housing Services	10.1	0
5	Fuel and light	10.3[2]	14.9
6	Other goods	13.4	51.7
7	Other Services	11.5	0
	Total	100.0	100.0

1- Including soft drinks
2- Including petrol and diseal used for vehicles

Source: Ministry of Commerce and Industry, MOSPI

Clearly, CPI is a better measure to reflect cost of living in India as it captures not only the changes in retail prices that consumers have to pay but it also captures some services. While the weight of services in WPI is zero, in the case of CPI, considering housing services and other services, the weight of services is 21.6%. There are, however, problems even with the CPI as a measure of cost of living in a country. In the context of the US, the Boskin Commission (December 1996) had highlighted four types of biases in CPI measures. These are (1) Substitution bias, which occurs because a fixed market basket fails to reflect that consumers substitute relatively less for more expensive goods when relative prices change, (2) Output substitution bias, which occurs when shifts to lower price outlets (e.g.- online purchases on discounted prices) by the consumers are not properly captured, (3) Quality change bias, which occurs when improvements in the quality of products such as greater energy efficiency is measured inaccurately or not at all, and (4) New product bias, which occurs when new products are not introduced in the market basket or are included only with a long lag. These issues also apply to the CPI in India.

Monetary Policy Transmission

A major problem in the working of monetary policy in India is its weak transmission. Since December 2014, the RBI has reduced the repo rate, its main policy instrument, by 150 basis points, but the bank deposit and lending rates have come down only by 50-75 basis points. The gap between the expected and the actual result following a monetary policy change is due to transmission loss. In most emerging economies, monetary transmission is weak. It is particularly partial and slow in India due to the way the transmission mechanism works.

There are four main channels through which monetary transmission operates, namely, interest rate channel, credit channel, exchange rate channel and asset price channel. The interest rate channel operates through the cost of credit and interest rate expectations. If the policy stance is contractionary, the cost of credit and the future interest rates are expected to increase. The credit channel operates through its effect on bank lending. Thus, a contractionary policy may reduce the supply of bank loans. It may also lower the net worth of firms and consequently their ability to borrow. Similarly, exchange rate appreciation or depreciation affects demand for domestic goods relative to foreign goods. The asset price channel refers to the impact of changes in the policy rate on the prices of assets, such as equities and real estate.

Empirical evidence suggests that, in India, while monetary transmission does take place through multiple channels, the strongest effect is that of the interest rate channel followed by the credit channel. India is a bank dominated economy. Banks constitute the largest source of domestic

corporate borrowing as compared to equity or debt. Regulatory constraints make markets less competitive and banks less responsive to policy signals.

In India, monetary transmission has remained weak for a variety of reasons. First, non-formal sources of finance still fulfill a large share of borrowing needs particularly in the case of farmers, small to medium enterprises (SMEs) and the real estate sector thus limiting the role of formal finance. Second, the captive market provided for government securities through statutory requirements for banks and other financial institutions artificially suppresses government's cost of borrowing, thus dampening the transmission of interest rate changes across the term structure of interest rates. Third, the favorable treatment given to small savings slows down the overall transmission. Until recently, there was an interest premium on small savings instruments, and interest rates applicable to them were changed infrequently. Fourth, interest rate subsidies provided to selected sectors such as farmers, SMEs and exporters dampens overall monetary transmission. Fifth, tax advantages given to selected non-bank financial products relative to bank deposits also constrain transmission. Finally, liquidity constraints weaken monetary transmission by constraining the banks' ability to transmit a decline in interest rate to the deposit rates.

Some of these factors are now being attended to. RBI's initiative in April 2016 to reduce the gap between repo and reverse repo rate by 50 basis points and other liquidity related initiatives may help provide adequate liquidity in the system smoothening monetary transmission. Recent downward adjustments to the small savings interest rate and lending regime based on marginal costs rather than average costs enable banks to pass on the interest rate reductions to their deposit rates and further to lending rates.

An effective monetary transmission in India needs to ensure that RBI's interventions through the repo rate and other instruments such as the reverse repo rate, cash reserve requirements and statutory liquidity ratios as well as the open market operations translate more fully into desired results, not only relating to deposit and lending rates but also to inflation and growth.

RBI's Current Policy Challenges

The main challenge before the RBI is to calibrate interest rates in a manner that results in achieving the inflation rate target. But central banks do look beyond the inflation rate and coordinate policies with the government so that growth can be supported. Also, controlling volatility of exchange rate becomes a major challenge in uncertain global conditions.

The commercial banking scenario in India is challenging. First, there is the looming shadow of public sector's non-performing assets that is loans that have gone bad. Second, monetary transmission in India remains weak. Third, there is a critical need for consolidation of banks so that they may have a reasonable size comparable to international norms. Availability of liquidity has also been a concern in recent months. Under these circumstances, the constitution of the Monetary Policy Committee may be a welcome initiative. It needs to take into account these challenges while framing appropriate targets and setting the course of monetary policy.

Chapter 9

Dissecting demonetization: Balancing losses and gains (November 2016)

Abstract

India undertook a major initiative in terms of demonetizing its high denomination currency notes on 08 November 2016. This step evoked strong reactions from both protractors and detractors. A short-term contractionary effect appeared beyond dispute. The RBI, in its Monetary Policy Review, had pared its FY17 GDP growth estimate from 7.6% to 7.1%. The policy issue related to the realization of potential long-term gains, ensuring that they more than made up for the short-term losses.

Demonetization is one of the tools for combating the creation of black wealth. It needs to be supported by supplementary policies. This chapter argued for undertaking several supplementary steps for achieving the objectives of demonetization. These included (1) reduction in stamp duty rate so that the incentive to understate the value of a property is weakened and people do not ask for exchange of black money in settling property deals, (2) reduction in the corporate tax rates to 25% while abolishing various tax exemptions and deductions thereby minimizing the scope of discretion of tax officials, (3) rationalization and lowering of personal income tax rate and simplification by abolishing cesses and surcharges, (4) reforming financing of elections and funding of political parties, (5) supporting policies for formalization and digitization of the economy resulting in improved transparency in both government and private sector operations, (6) bringing construction sector within the ambit of GST and (7) actively pursuing exchange of live information with countries that serve as tax havens. Many of these initiatives were subsequently undertaken by the GoI.

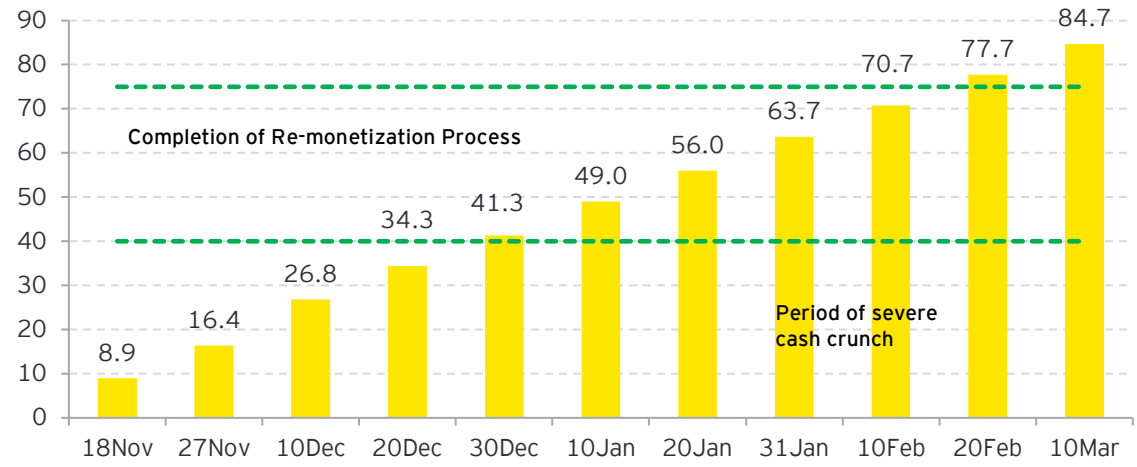
Introduction

India's November 8 demonetization has evoked strong reactions from both protractors and detractors. A short-term contractionary effect seems beyond dispute. RBI, in its Monetary Policy Review, has pared its FY17 GDP growth estimate from 7.6% to 7.1%. The policy issue is how to realize potential long-term gains and ensure that they more than make up for the short-term losses. Much depends on the follow-up policies.

Re-monetization Rigidities

While de-monetization happened in one stroke, re-monetization has been a far slower process because of constraints on RBI's capacity to print and supply new currency notes. This has created an imbalance in the rate at which the demonetized notes are brought into the banks and that at which these are getting remonetized. This imbalance has resulted in a severe cash crunch accompanied by a huge surge in additional deposits with the banks. According to data released by the RBI and our estimates, the picture as on November 27, 2016 was that of the INR15, 241 billion worth of the demonetized high denomination notes, only 16.4% was remonetized in value terms while 39% remained as net additional deposits with the banks. Adding these, 55.4% of the demonetized money came back into banking and the new cash system as on 27 November, 2016. As per information given on 7 December 2016, about 78% of the demonetized money has already come back into the system. We expect that in the next few weeks, the cumulative percentage of re-monetization may significantly increase. Alongside the cumulative share of additional bank deposits may reach a peak and start falling.

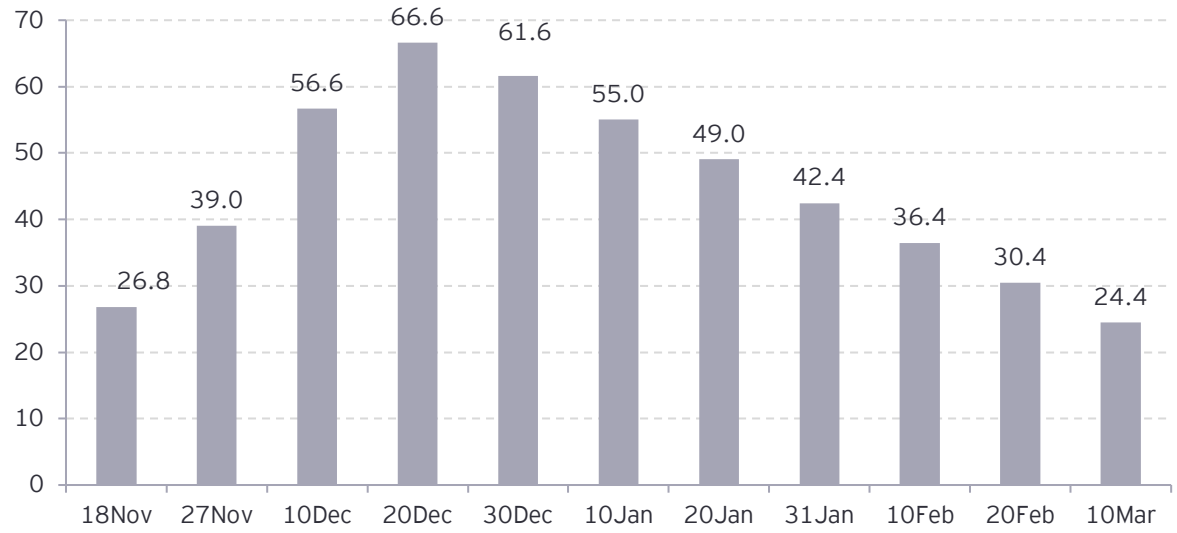
Chart 9.1: Cumulative re-monetization (withdrawal and exchange) as % of value of demonetized currency



Source (basic data): Estimates based on available information; Ratios are indicative only

Chart 9.1 shows the expected progressive increase in re-monetization as percentage of the value of demonetized currency. Given current trends, by the end of December 2016, about 40% of the demonetized currency is estimated to have been re-monetized. By 20 February 2016, the cumulative coverage is estimated to be close to 75%. We expect that further re-monetization may not be needed. Instead, there may be a net increase in the deposits held with the banks. Chart 9.2 shows that initially, net addition to bank deposits as percentage of demonetized currency is likely to rise fast, reaching a peak at about 65% and then decline to about 25%.

Chart 9.2: Cumulative net additional deposits as % of value of demonetized currency



Source: Estimates based on available information; Ratios are indicative only

Table 9.1: managing demonetized currency in five buckets

At the time of Demonetization		After Re-monetization is completed			Amounts (INR Billion)
Black Money	20%	A	Currency Extinguished	10%	1,524
		B	Currency Re-whitened Kept in Bank Deposits	5%	762
		C	Currency Re-whitened and Re-monetized	5%	762
White money	80%	D	Additional Deposits with Banks	20%	3,048
		E	Share Re-monetized	60%	9,144
Total Currency De-monetized	100%	F	Total currency extinguished, deposited or re-monetized	100%	15,240
Total Re-monetized Money After Government Accesses the Equivalent of Extinguished Money through Rebalancing of RBI Assets and Liabilities (A+C+E)					75%
Additional Bank Deposits (B+D)					25%

Source: Estimates based on available information; Ratios are indicative only

For the purpose of analysis, the demonetized money can be arranged in five buckets as shown in **Table 9.1**: (A) Share of currency extinguished (10%), (B) Currency Re-whitened but kept in bank deposits (5%), (C) currency re-whitened and re-monetized (5%), (D) additional deposits with banks (20%), and (E) share of white money brought to banks for re- monetization (60%). Items (A), (B) and (C) constitute the original black money. These add up to 20%. Items (D) and (E) add to white money, amounting to 80% of the demonetized money. The indicated shares are broad assessments as available information is limited.

Rebalancing RBI's assets and liabilities

The critical question is that if less than 100% of demonetized currency is re-monetized, what would be the impact on money supply. We consider two scenarios: (a) 65% of demonetized currency is re-monetized, 10% is extinguished and the balance end up as additional bank deposits, (b) 75% of demonetized currency is re-monetized by bringing back the extinguished money through rebalancing of RBI's assets and liabilities and net additional deposits remain as in case (a). RBI's liabilities consist of notes issued, deposits and other liabilities. RBI's assets primarily come from foreign currency assets, gold coin and bullion and rupee securities and treasury bills of the government (Table 9.2). Since on the liability side, a portion of issued notes may be extinguished, it is expected to reduce RBI's liabilities. We expect, based on current trends, that no more than 10% of the demonetized

money amounting to about INR1,524 billion is estimated to be extinguished. This amounts to just 1% of GDP.

Table 9.2: RBI assets and liabilities (INR billion): Post demonetization, assuming no changes in notes in circulation and deposits

Liabilities		Assets	
Notes Issued	13,072.5	Foreign Currency Assets	23,193.0
Deposits	8,961.0	Gold Coin and bullion	1,367.9
Other Liabilities	9,254.9	Rupee securities including Treasury Bills	7,563.1
		Loans and Advances	555.5
		Bills purchased and discounted	0.0
		Other assets	109.6
		Investment	23.2
Total Liabilities	**31,288.4**	**Total Assets**	**32,812.5**
		Excess Assets	**1,524.1**
		FY17 GDP	**1,50,650.1**
		Excess Assets as % of GDP	**1.0**

Source (Basic Data): RBI and EY Estimates (As on 11 November 2016)

The mechanism by which the Central government can access this resource is still to be worked out. Some analysts have suggested that this can be given by RBI as special dividends. Doubts are also being raised whether there may be any scope of such a fiscal windfall, if demonetized notes are deposited back entirely.

The demand for currency might be fully met at about 75% of the currency in circulation at the time of demonetization. A suitable increase in the deposit to currency multiplier (ratio of total deposit to currency held with public) or equivalently a fall in the demand for currency relative to money supply would be needed to ensure that there is no contraction in money supply. This may be facilitated by a tangible increase in digitization of transactions.

Neutralizing Contraction in Money Supply

First, there is short term money supply contraction forced because of the cash crunch largely in 3QFY17. To counterbalance this, government has to undertake some fiscal stimulus measures in Q4. Broad money supply (M3) depends on currency with public (CP), demand and time deposits, and 'other deposits' with RBI. The process of credit creation leads to a link between currency with public and demand and time deposits through a multiplier. This multiplier is the ratio of demand and time deposits to currency held with public. In the longer run whether there would be a contraction in money supply that would depend on four critical factors.

First, what would be the amount of extinguished money as a result of demonetization?

Second, by what margin the demand for currency as % of M3 would fall after re-monetization, or equivalently by what margin the currency with public to M3 multiplier would increase as a result of digitization?

Third, what is the extent of increase in bank deposits, as a consequence of the demonetization?

Without intervention, money supply may contract and GDP growth may fall even in the long run. This may be neutralized by a combination of suitable initiatives. First, fiscal stimulus may be provided to an extent equivalent to extinguished money. Second, additional stimulus may be provided by using additional tax revenues through the Income Declaration Scheme. Third, aggressive digitization may lead to an increase in the deposit to CP ratio. Fourth, taking advantage of higher bank deposits, the

repo rate may be reduced and transmitted so that demand for credit increases. In conclusion, while year-on-year Q3 growth is likely to unavoidably go down, a combination of policy initiatives can make the economy recover part of the ground in Q4 of FY17 and make us a net gainer in FY18.

Differential Sectoral Effects

The short-term adverse effect of demonetization is likely to be larger in sectors with relatively higher shares of unorganized activities (**Table 9.3**) which tend to be cash-intensive. Agriculture, construction and some of the service sector activities including trade and transport may therefore prove to be vulnerable. Available information for the month of November has already signaled through the PMI data, a contraction in services and a slowdown in manufacturing. With respect to Agriculture, available information indicates that acreage under Rabi sowing has shown a robust performance. In addition, the third quarter growth is also expected to be affected by other global and domestic macro forces. Investment demand continues to be weak. Although, there is some recovery in export demand, it is still sluggish. Oil prices have also started to firm up. At the same time, some economic activities directly related to demonetization may show increased growth such as the banking sector and some parts of the transport sector. The digitization drive has led to significant one-time boost in the financial activities relating to digital transactions such as e-wallets. The net impact of the positive and negative effects may prove to be net negative but of limited extent.

Table 9.3: Share of unorganized sector (%)

#	Sector	Share of unorganized sector (2012-13)	Sectoral Share in overall GDP (2015-16)
1	Agriculture, forestry and fishing	**94.7**	17
2	Mining and quarrying	**13.2**	2.6
3	Manufacturing	**28.2**	16.2
4	Electricity, gas, water supply & other utility services	**2.6**	2.6
5	Construction	**60.2**	8.3
6	Trade, hotels, transport, communication and services related to broadcasting	**74.5**	18.6
7	Financial, real estate & professional services	**44.2**	20.6
8	Public Administration, defence and otherservices	**24.2**	14
9	**All sectors**	**55.3**	**100**

Source (basic data): MoSPI

Potential growth: Supporting initiatives

Demand can be further supplemented by a reduction in the interest rates. This can be facilitated due to the surge in bank deposits, implying an increase in financial savings and the expectation of falling CPI inflation. There is currently a dire need to stimulate demand because of the continued weak demand for Indian exports and the falling investment demand. According to the latest release of GDP data, growth in demand for gross fixed capital formation has been negative in three consecutive quarters and the magnitude of fall has progressively increased. In terms of global factors, the main development that might constrain a reduction in the repo rate is the US Fed's decision on their policy rate. In its December 7 Monetary Policy Review, the RBI has abstained from reducing the repo rate. However, this may be a temporary stance in view of uncertainty.

We also expect that government may have a net gain of tax revenues because of the revision in the IT Act enabling it to access part of the declared black money brought into the banks through the penal tax rates.

Several policy initiatives are required to counterbalance the potential contractionary effect of demonetization. First, government may find a way to finance fiscal stimulus taking advantage of the extinguished black money. Second, the policy rate may be reduced. Third, aggressive digitization may ensure a fall in currency to money supply ratio. Associated with demonetization is also an expectation regarding erosion of prices of property and valuables such as gold. To the extent that this price revision may reduce the value of black wealth held in non-currency forms, there may be an erosion of black wealth through this indirect route. But since there is also likely to be an erosion of wealth of property owners, where properties were acquired through white money, there may be an adverse wealth effect on demand.

Combating creation of black money: Supplementary policies

Demonetization is only one tool for combating creation of black wealth. It may need to be supported by supplementary policies. First, the stamp duty rate needs to be reduced so that the incentive to understate the value of a property is weakened and people do not ask for exchange of black money in settling property deals. Second, the government may reduce the corporate tax rates to 25% while abolishing various tax exemptions and deductions thereby also minimizing the scope of discretion of tax officials. Third, personal income tax rate may be lowered, rationalized, and made simpler by abolishing cesses and surcharges. Fourth, there is an urgent need to reform financing of elections and funding of political parties. Fifth, supporting policies for formalization and digitization of the economy may result in improved transparency in both government operations and private sector operations. Some initiatives to this effect have already been announced. Sixth, construction sector may be brought within the ambit of GST. Exchange of live information with countries that serve as tax havens may be actively pursued.

Chapter 10

Impact of demonetization on India's GDP: Capturing mixed signals (February 2017)

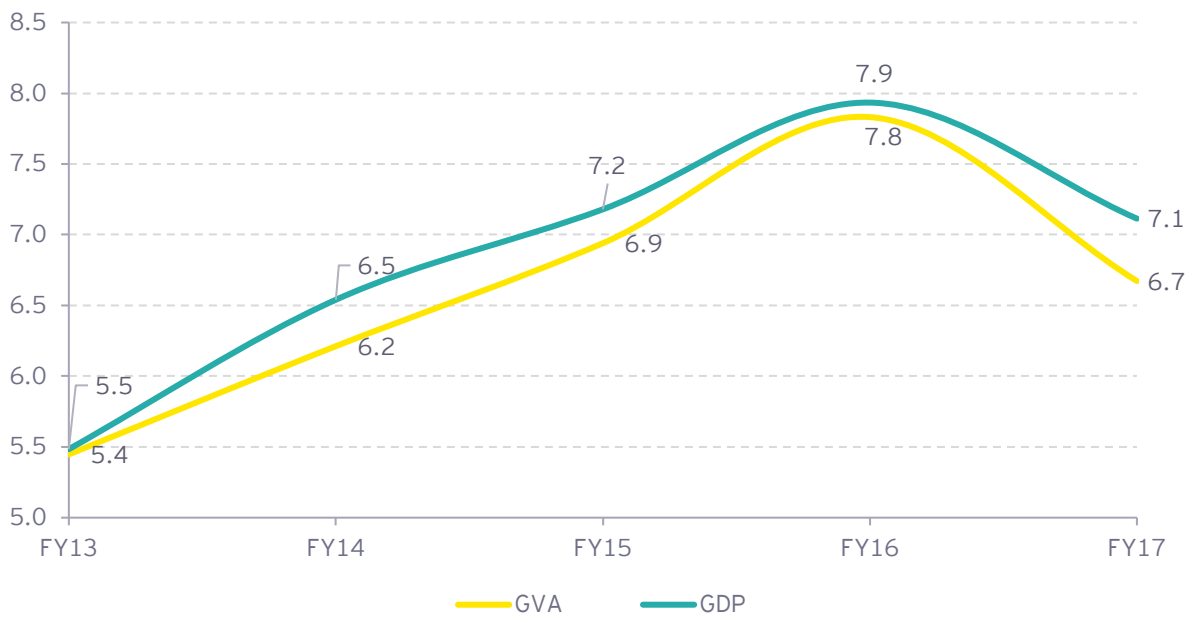
Abstract

Economists and policymakers have generally agreed that the impact of demonetization on India's growth performance has been adverse in the short-term. The official estimate provided by the CSO in its second advance estimates was for FY17 based mostly on data available for the first nine to ten months of FY17. Extrapolation was done for the remaining months to prepare the advance estimates for the full year. Since demonetization happened on 08 November 2016, the basic information used by the CSO reflected the impact of demonetization for close to two months only. Some other international institutions, like the IMF, also estimated India's GDP growth for FY17. By comparing its earlier estimate (October 2016) for FY17 with the subsequent estimate (January 2017), we assessed the impact of demonetization on India's GDP growth. We noted that in FY16, CSO's estimates showed a real GDP growth of 7.9% whereas the IMF estimated it at 7.6%. For FY17, in both cases, a fall was indicated from their respective estimates of the previous year. In CSO's case, the fall was of 0.8% points, whereas in the case of IMF, it was 1% point. Thus, as per the IMF estimates, India's GDP growth was only 6.6% in FY17. CSO's estimates may not have fully reflected the impact of demonetization since their methodology used information for seven pre-demonetization months and for slightly less than two months of the post-demonetization period. However, in the last quarter of the fiscal year, it was only the information for the post-demonetization months which was relevant. It was noted that sectors that suffered relatively more due to demonetization included motor vehicles including two-wheelers, railway passenger traffic, steel, food products, textiles, chemical and chemical products, other non-metallic mineral products and fabricated metal products.

Introduction

Economists and policymakers have generally agreed that the impact of demonetization on India's growth performance has been adverse in the short-term. The official estimate provided by the CSO in its Second Advance Estimates is based mostly on data available for the first nine to ten months of FY17. Extrapolation has been done for the remaining months for preparing the advance estimates for the full year. Since demonetization happened on 8 November 2016, the basic information used by the CSO reflects the impact of demonetization for close to two months only. Some other international institutions like the IMF have also estimated India's GDP growth for FY17. By comparing its earlier estimate (October 2016) for FY17 with the recent estimate (January 2017), we get an idea as to its assessment of the impact of demonetization on India's GDP growth. We note that in FY16, CSO's estimates show a real GDP growth of 7.9% (Chart 10.1) whereas the IMF estimated it at 7.6%. For FY17, in both cases, a fall is indicated from their respective estimates of the previous year. In CSO's case, the fall is of 0.8% points whereas in the case of IMF, it is 1% point. Thus, as far as IMF estimates are concerned, India's GDP growth was only 6.6% in FY17 (**Chart 10.2**). CSO's estimates may not fully reflect the impact of demonetization since their methodology uses information for seven pre-demonetization months and for slightly less than two months of the post-demonetization period. However, in the last quarter of the fiscal year, it is only the information for the post-demonetization months which is relevant.

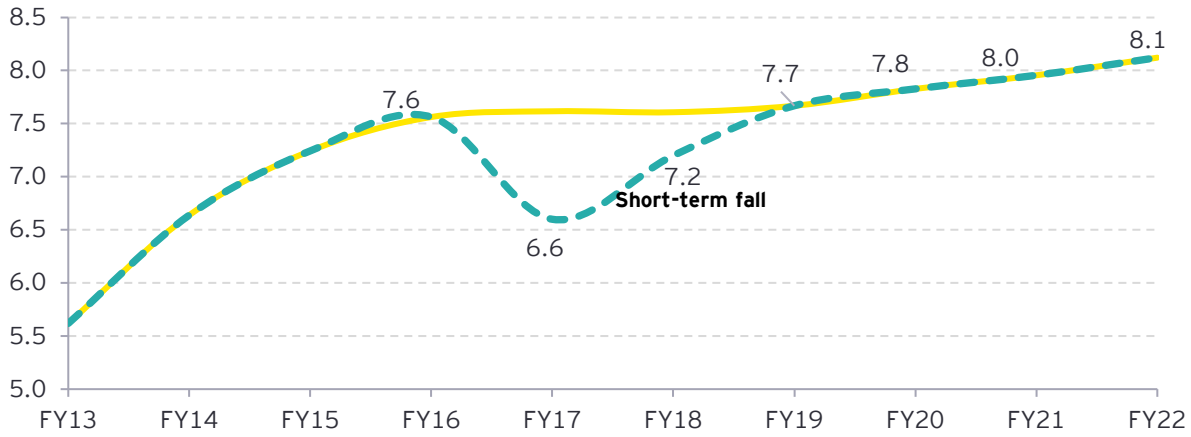
Chart 10.1: CSO's estimate of real GVA and GDP growth (%)



Source (Basic Data): MOSPI, CSO

GVA growth, which reflects the output growth, has been noticeably lower than GDP growth in the period from FY13 to FY17 (**Chart 10.1**). This reflects that net indirect taxes have grown faster than the GVA. The extent of the difference is the largest in FY17. Data on net indirect taxes on accounts basis was available for nine/ten months. Extrapolation of this data might also overestimate the performance of tax revenues in the last quarter.

Chart 10.2: IMF-Annual GDP growth (%) up till FY22



Source (Basic Data): MoSPI and IMF

Demonetization and the structure of demand and output

Demonetization did have a differential impact on sectoral output as well as the structure of demand (**Tables 10.1 and 10.2**).

Table 10.1: real GDP growth (%)

AD component	4QFY16	1QFY17	2QFY17	3QFY17	4QFY17
PFCE	10.6	7.2	5.1	10.1	6.5
GCE	3.6	15.5	15.2	19.9	18.1
GFCF	-0.03	-2.2	-5.3	3.5	6.5
EXP	-2.46	2.1	-0.9	3.4	4.4
IMP	-4.36	-2.7	-7.4	4.5	1.4
GDP	8.6	7.2	7.4	7.0	7.0
Of which					
% contribution of disc.	2.2	1.2	3.2	-1.2	-0.5

Source (Basic Data): CSO

Note: Growth rates for 4Q FY15-17 are based on numbers derived as the difference between the respective annual numbers and the numbers for the first three quarters as per the CSO release dated 28th February, 2017.

Table 10.2: sectoral real GVA growth (%)

Sector	4QFY16	1QFY17	2QFY17	3QFY17	4QFY17
Agr.	1.7	1.9	3.8	6.0	5.0
Ming.	11.5	-0.3	-1.3	7.5	-0.7
Mfg.	10.8	9.0	6.9	8.3	6.8
Elec.	7.8	9.6	3.8	6.8	6.4
Cons.	3.0	1.7	3.4	2.7	4.8
Trans.	13.2	8.2	6.9	7.2	7.0
Fin.	8.9	8.7	7.6	3.1	5.9
Publ.	6.7	9.9	11.0	11.9	11.7
GVA	8.2	6.9	6.7	6.6	6.5

Source (Basic Data): CSO

Quarterly growth data relating to components of aggregate demand indicate that investment contraction reflected in the growth rate for GFCF, started in 4QFY16 and the magnitude of contraction continued to increase until 2QFY17. This, therefore preceded demonetization. After demonetization, a consumption slowdown is evident at least in 4QFY17. The pick-up in investment demand in the third and even more strongly in the fourth quarter is surprising but it could possibly

be due to increase in government's capital expenditure as reflected in the annual revised estimates for FY17 in the Union Budget.

On the output side, signals are considerably mixed. There is a noticeable downturn in 'mining and quarrying' and manufacturing in 4QFY17. There is a mild downturn in the case of 'electricity, gas, water supply and other utilities' and 'transport and communication'. For the overall GVA, there is a steady slowdown through the quarters as its growth fell from 8.2% in 4QFY16 to 6.5% in 4QFY17, a fall of 1.7% points. Thus, comparing 4QFY17 to 4QFY16, there is a significant fall, both in GDP and GVA growth rates but it reflects the combined effect of an ongoing slowdown preceding demonetization and demonetization.

Supplementary Slowdown Signals

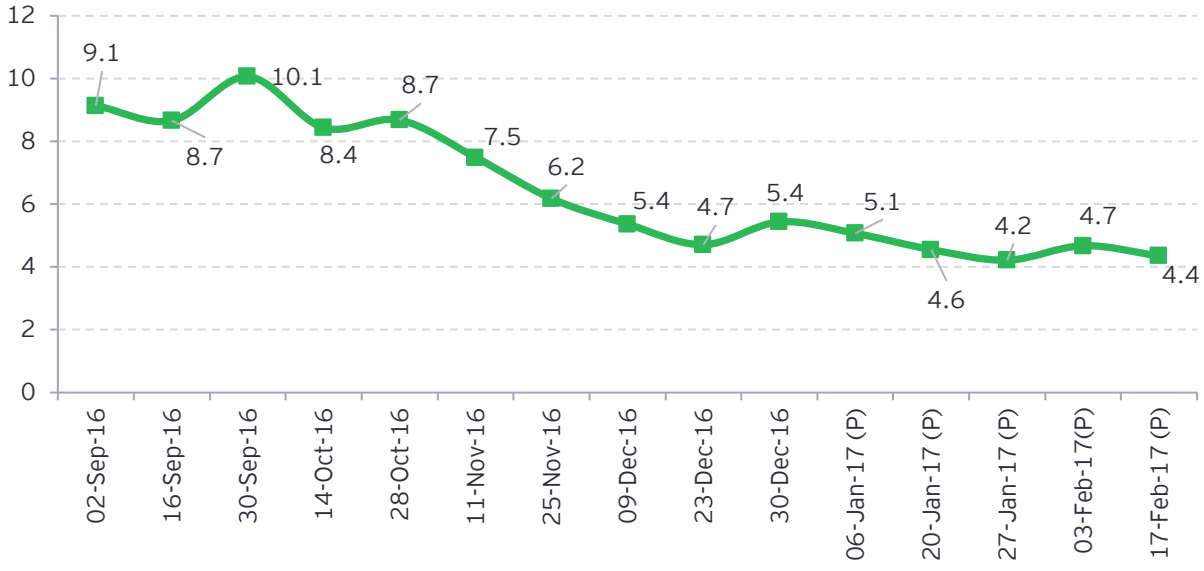
PMI data for manufacturing and services and credit growth data provide leading signals as to the direction of economy's growth momentum. In terms of monthly data, PMI manufacturing reflected a slowdown / contraction starting November 2016 (Table 10.3). This trend has continued at least up to February 2017. Further supplementary evidence is obtained from examining fortnightly data on credit growth. There is a sharp and continued slowdown since end-October 2016 (Chart 10.3).

Table 10.3: PMI manufacturing and services

#	Indicator	Sep-16	Oct-16	Nov-16	Dec-16	Jan-16	Feb-17
1	Headline Manufacturing PMI	52.1	54.4	52.3	49.6	50.4	50.7
2	Headline Services PMI	52	54.5	46.7	46.8	48.7	50.3
3	Headline Composite Output Index	52.4	55.4	49.1	47.6	49.4	50.7

Source (Basic Data): NIKKEI PMI, Markit Economics

Chart 10.3: Credit growth (%)



Source (Basic Data): RBI

Selected Sectors in Adversity

Latest available IIP data indicates that some sectors such as steel, food products, textiles, chemical and chemical products, other non-metallic mineral products and fabricated metal products clearly came into adversity in the post-demonetization months. In most cases, a sharp contraction is evident as indicated in Table 10.4. A noticeable contraction is also observed in the sales of motor vehicles including two-wheelers and railway passenger traffic (Table 10.5).

Table 10.4: IIP (%, y-o-y)

Month	Index of Cement (Core)	Food products and beverages	Textiles	Chemicals and chemical products	Other non-metallic mineral products	Fabricated metal products, except machinery and equipment
Oct-16	6.2	-0.5	-4.0	1.7	3.2	-10.8
Nov-16	0.5	7.1	3.8	1.0	-0.7	5.3
Dec-16	-8.7	-3.5	-6.6	-4.6	-9.2	-1.4

Source: Office of the Economic Adviser, Ministry of Commerce and Industry

Table 10.5: Motor vehicles sales and railway passenger traffic (%, m-o-m)

Year/Item	Motor vehicle sales	Railway passenger traffic
Oct-16	-3.2	-1.5
Nov-16	-25.8	5.5
Dec-16	-17.6	-5.4

Source: Society of Indian Automobile Manufacturers, Ministry of Railways

In conclusion, the following observations can be made:

1- In the annual GDP growth, there is a fall of 0.8-1% points, according to CSO and IMF estimates. This is due to both pre-demonetization slowdown and demonetization.
2- In the 4QFY17 growth, which suffered the brunt of demonetization, the estimated fall, according to CSO, is 1.6% points in GDP and 1.7% points in GVA.
3- Sectors that have suffered relatively more are motor vehicles including two-wheelers, railway passenger traffic steel, food products, textiles, chemical and chemical products, other non-metallic mineral products and fabricated metal products.

Chapter 11

Revisiting demonetization: Balancing long-term gains with short-term costs (September 2017)

Abstract

The RBI's 2017 annual report, which contained the first official estimate of the volume of demonetized cash in the form of specified bank notes (SBNs) at INR15.28 trillion, triggered another major round of debate around the success or failure of India's 8 November 2016 demonetization. Since it had earlier been acknowledged that the demonetized cash amounted to INR15.44 trillion, it was only 1.036% of the demonetized cash that did not come back into the formal banking system. Notably, the figure of INR15.28 trillion was still an estimate, possibly an underestimate. This is because the RBI, in its annual report of FY17, qualified its statement saying that *"Till such time these notes are processed by the Reserve Bank for their numerical accuracy and authenticity, only an estimation of SBNs received back is possible."*

Furthermore, the RBI also clarified that these SBNs did not include cash returned to District Central Cooperative Banks and Indian rupee held by Nepalese citizens/financial institutions. Once these were also accounted for, the percentage of cash returned out of the demonetized currency was expected to be quite close to 100%. This made it clear that if there was any expectation of a fiscal surplus arising out of demonetization due to some portion of the demonetized currency remaining unreturned leading to an extinguishment of the RBI's liabilities, such an expectation, may have been belied. This, however, did not mean that black money was not held in the form of cash. It probably implied that people who held money in this form found ways of getting it back into the banking system. One of the ways was possibly through discounts offered by these people to owners of Jan-Dhan accounts and savings accounts whereby large amounts could be dispersed into smaller deposits. We noted that the average balance in Jan Dhan accounts increased noticeably by nearly 48% during the period of demonetization, that is, from 9 November 2016 to 28 December 2016, but had significantly fallen thereafter. The net outcome was that any black money held in the form of cash was "whitened."

Introduction

The RBI's recent annual report, which contained the first official estimate of the volume of demonetized cash in the form of specified bank notes (SBNs) at INR15.28 trillion, triggered another major round of debate around the success or failure of India's 8 November 2016 demonetization. Since it had earlier been acknowledged that the demonetized cash amounted to INR15.44 trillion, it is only 1.036% of the demonetized cash that has not come back into the formal banking system. Notably, the figure of INR15.28 trillion is still an estimate, possibly an underestimate. This is because the RBI, in its annual report of FY17, has qualified its statement saying that "Till such time these notes are processed by the Reserve Bank for their numerical accuracy and authenticity, only an estimation of SBNs received back is possible."

Furthermore, the RBI has also clarified that these SBNs do not include cash returned to District Central Cooperative Banks and Indian rupee held by Nepalese citizens/financial institutions. Once these are also accounted for, the percentage of cash returned out of the demonetized currency may well be quite close to 100%. This makes it clear that if there was any expectation of a fiscal surplus arising out of demonetization due to some portion of the demonetized currency remaining unreturned leading to an extinguishment of the RBI's liabilities, such an expectation has been belied. This, however, may not mean that black money was not held in the form of cash. It may imply that people who held money in this form found ways of getting it back into the banking system. One of the ways was possibly through discounts offered by these people to owners of Jan-Dhan accounts and savings accounts whereby large amounts could be dispersed into smaller deposits. The average balance in Jan Dhan accounts increased noticeably by nearly 48% during the period of demonetization, that is, from 9 November 2016 to 28 December 2016, but has fallen by 19% since then. The net outcome therefore has been that any black money held in the form of cash has now been "whitened."

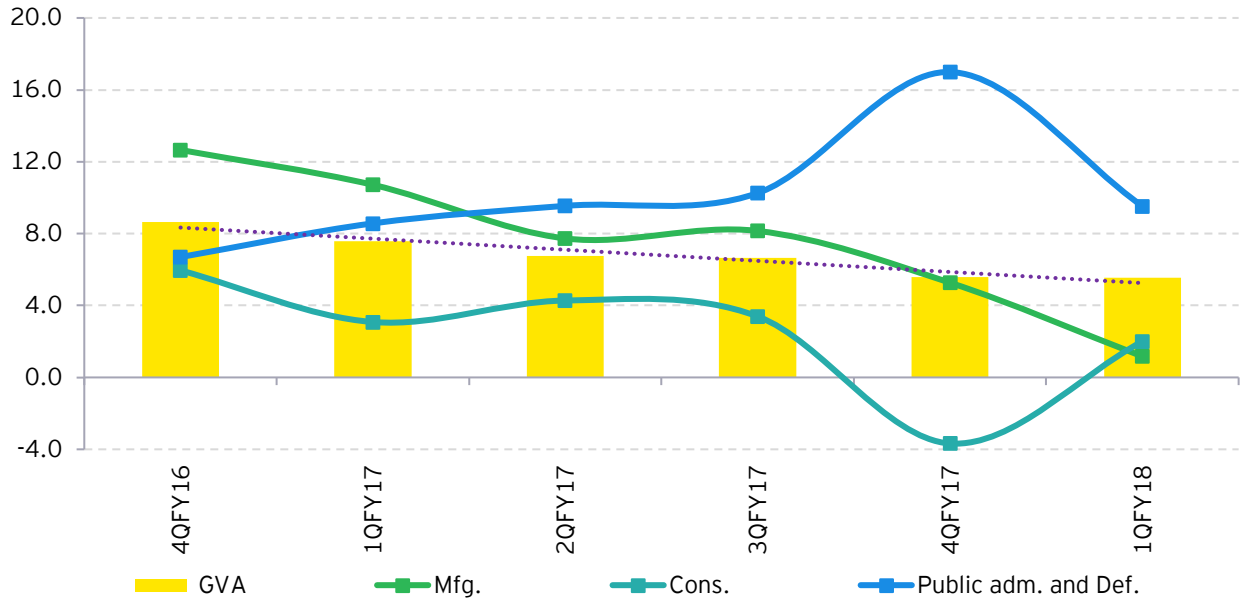
Short-term shocks and related costs: Erosion of growth momentum and employment

The Government and people at large did have to bear considerable costs in the immediate aftermath of demonetization. Some of these costs may be difficult to quantify, but objective evidence of the short-term costs is available in at least some important dimensions.

First, there was an erosion of growth of output and employment. Second, the Government itself lost dividend from the RBI due to demonetization-related expenses. Third, there were a variety of private costs that had to be incurred by the citizens to cope with the disruption. Fourth, there was a loss of growth momentum in the economy. These adverse effects were the result of a combination of factors, and demonetization alone may not be held fully responsible for these short-term impacts as discussed below.

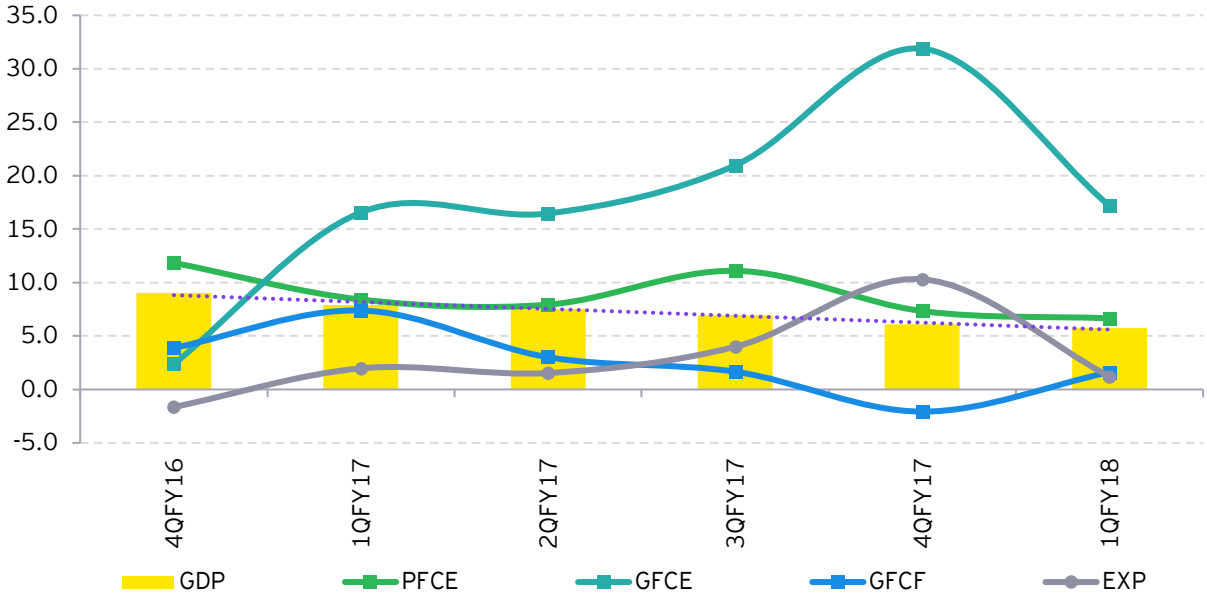
Demonetization had a tangible adverse impact on GDP growth. As shown in Table 1, real GDP growth has been falling steadily quarter after quarter since 4QFY16, when it was 9.0%. It fell to 5.7% in 1QFY18, a decrease of 3.3% points. The two quarters that can be considered as the demonetization quarters in FY17 were 3QFY17 and 4QFY17. In these two quarters, the GDP growth rate fell to 7% and 6.1% respectively. Clearly, the downward trend in GDP growth preceded demonetization largely due to an investment slowdown that had already hit the economy. Demonetization further accentuated this downward trend. The sector most vulnerable to demonetization was the informal sector. This is also argued by the Economic Survey, Volume 2, brought out by the Ministry of Finance on 2 August 2017. In terms of the overall GVA at basic prices, was a fall from 8.7% in 4QFY16 to 5.6% in 1QFY18. **Charts 11.1 and 11.2** track the quarterly growth rates from 4QFY16 to 1QFY18 respectively for overall GVA and GDP and their major components.

Chart 11.1: Components of aggregate output (real, % annual)



Source (Basic Data): MOSPI

Chart 11.2: Components of AD (real, % annual)



Source (Basic Data): MOSPI

In terms of sectoral GDP growth, employment-intensive sectors such as manufacturing and construction suffered the most. In the case of manufacturing, the fall from 12.7% in 4QFY16 to 1.2% in 1QFY18, a fall of 11.5% points, is quite debilitating. The fall in the growth rate of construction from 6% in 4QFY16 to (-) 3.7% in 4QFY17, a fall of 9.7% points, is equally deleterious. A slight increase in the growth rate of construction at 2% in 1QFY18 is hardly any consolation. On the demand side, PFCE declined from 11.8% to 6.7% during 4QFY16 to 1QFY18, rising to a local peak in 3QFY17, the quarter where demonetization took place. This was explained by many analysts as a result of the extra spending that people undertook using their cash balances held in

the form of demonetized currency. Even more disturbing is the fall in the growth of GFCF from 7.4% in 1QFY17 to (-) 2.1% in 4QFY17, with a mild upturn at 1.6% in 1QFY18. Furthermore, export growth also reached extremely low levels, largely been driven by weak global demand. Various agencies, including international agencies such as the IMF, had estimated economic costs of demonetization in terms of erosion of GDP growth at close to 1% point (See In-Focus in the February 2017 issue of Economy Watch).

A distinction also needs to be made between the effects of demonetization and those of GST. Observers say that the effect of demonetization might have continued well into 1QFY18. However, in this quarter, part of the low growth might have been due to the de-stocking that happened in anticipation of GST, which was introduced in July 2017. These are separate influences, but it is still clear that demonization did adversely affect GDP growth and employment in the Indian economy for possibly three quarters: from 3QFY17 to 1QFY18.

Second, the Government itself, instead of reaping a fiscal surplus, actually lost out in terms of the dividend that it receives from the RBI, which declined sharply to INR30,659 crore in FY17 from INR65,876 crore in FY16, a fall of 53.4%, primarily on account of demonetization. Two sources of this erosion in RBI's dividends to the Government were (a) increased cost of printing new money, which was at INR7,965 crore in FY17 and (b) payment of interest of INR17,426 crore by the RBI in FY17 due to the surge in bank deposits (under the LAF) after demonetization.

Third, other costs that are important although not necessarily quantifiable are the private costs in coping with or resulting from demonetization such as closure of businesses, productive time lost in queueing up in front of the banks as well as physical and emotional discomforts in such places. Another important dimension of the costs involved is those suffered by the banking system as a whole. It is now well recognized that demonetization resulted in considerable increase in bank deposits, a part of which remains frozen because of restrictions placed by the Government on its withdrawal. Additionally due to the weak demand for credit, the banking system was left with excess liquidity. Since these balances were held in savings deposits or other interest-bearing deposits, the banks had to pay interest on them while they received a much lower return on the cash that they held with the RBI, even though banks were given relief in a number of ways (for example, the RBI had mandated scheduled banks to maintain an incremental CRR of 100%, effective the fortnight beginning 26 November 2016, on the increase in net demand and time liabilities between 16 September 2016 and 11 November 2016). The detrimental impact of demonetization on the informal sector is analyzed in the Economic Survey, Volume 2, by making reference to data on the demand for reliance on the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). The Survey says that there is suggestive evidence of increased demand for this scheme over the demonetization period (early November 2016 to March 2017). This increased reliance on MGNREGS was especially strong in the less-developed states comprising Bihar, Chhattisgarh, Rajasthan and Jharkhand. This reflects increased unemployment in urban areas and people moving back to rural areas to work under this Scheme.

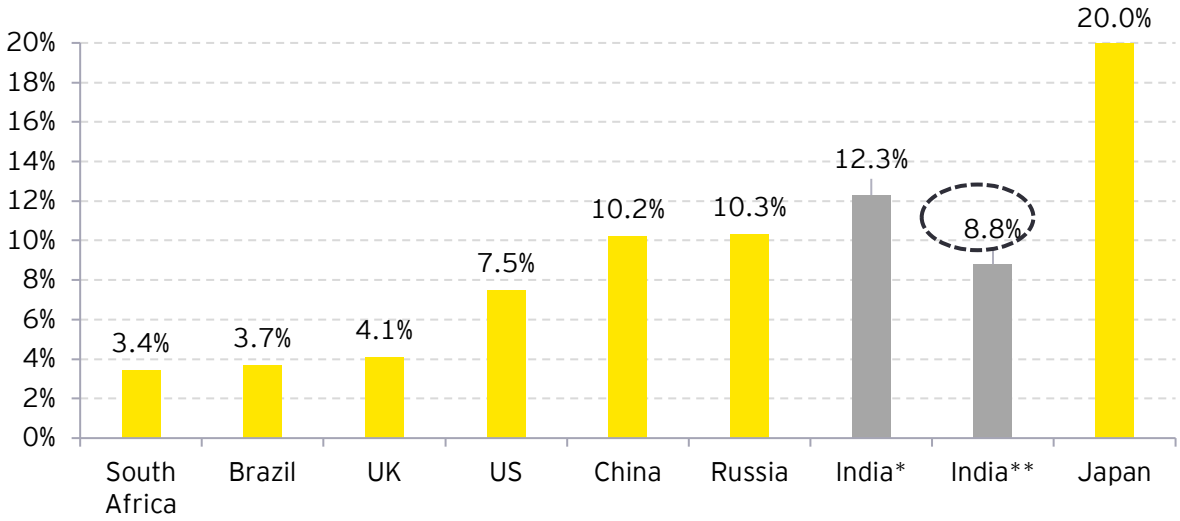
Fourth, there is a loss of growth momentum due to the combined effect of demonetization and uncertainties relating to GST. A visible sign of the weakening growth impulse in the economy is extremely low credit growth rate, which has been in the range of 4% to 6% for almost 8 months. The GST-related uncertainties may take some additional time to wane before the growth pulse of the economy normalizes. It is often not recognized that once in a downslide, persistence in the behavior of economic agents continue the downward movement significantly beyond the point at which the short-term adverse impact of the disruptive events get absorbed.

Short-term benefit: New normal for currency intensity

One immediate benefit of demonetization is a reduction in the demand for holding currency. We may recognize that if currency in circulation were to stabilize at a lower level in terms of percentage of GDP, which the RBI refers to as the new norm, this may itself be a positive gain of some importance. The RBI observes (para I.20, Annual Report, FY17), " … currency demand appears to have attained a new normal (currently around 87% of the pre-demonetization peak) … ." Reducing currency intensity in India, which was the second highest among the major countries, was

one of the objectives of demonetization. If currency in circulation as a percentage of GDP stabilizes at a tangibly lower level compared to its pre-demonetization level, it can be considered as a major positive resulting from demonetization.

Chart 11.3: Currency-intensity of GDP: Selected countries

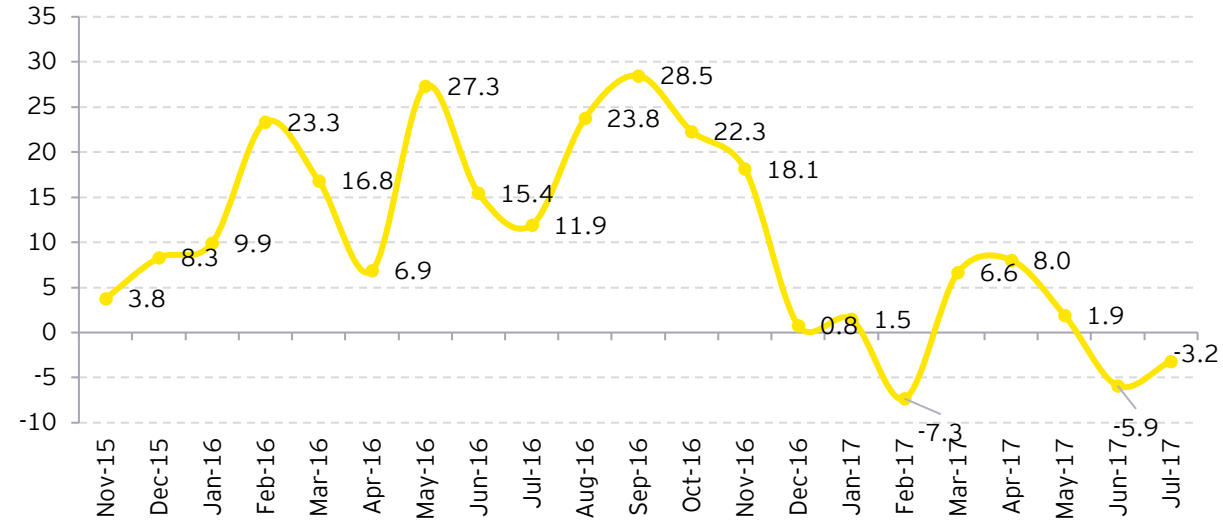


Source: IMF Financial Statistics and respective Central Banks Notes: Ratios for South Africa, Brazil and Japan pertain to 2016 while those of UK, US, China and Russia pertain to 2015 * Data pertains to 2015-16, ** Data pertains to 2016-17, currency in circulation pertains to the amount as on 31st March 2017.

Long-term benefits: Digitization and improved tax compliance

The long-term potential benefits of demonetization are expected to emanate from (a) increased formalization of the economy and (b) increased digitization of the economy, which may consequently increase the tax-GDP ratio. Again, these changes cannot be considered as entirely due to demonetization. First, formalization and digitization are increasing on their own on a trend basis with increased availability of IT, internet etc. Second, these trends are likely to be strengthened by the introduction of GST.

Chart 11.4: Y-o-y growth in the total value of transactions through electronic payment systems (%)



Source (Basic data): RBI

Table 11.1: Monthly shares in respective annual total value of transactions through electronic payment systems (%)

Month/ Year	FY11	FY12	FY13	FY14	FY15	FY16	FY17
April	7.5	5.6	9.5	8.1	7.7	8.0	7.6
May	6.0	7.1	10.2	7.8	7.5	7.2	8.2
June	7.3	8.5	11.1	8.3	8.5	8.8	9.1
July	7.1	6.5	8.6	8.8	7.9	8.3	8.3
Aug	5.4	6.2	8.1	7.4	7.5	7.8	8.6
Sep	7.0	7.6	8.8	8.4	9.4	8.3	9.5
Oct	8.8	6.8	9.0	8.0	7.6	7.9	8.6
Nov	10.1	8.0	5.6	7.2	7.3	6.7	7.0
Dec	11.8	10.4	6.8	8.7	9.1	8.7	7.8
Jan	9.2	10.3	7.0	8.6	8.3	8.0	7.3
Feb	8.3	9.9	6.4	7.4	7.7	8.4	6.9
Mar	11.6	13.0	9.0	11.1	11.4	11.8	11.2
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source (Basic data): RBI

Chart 11.4 shows y-o-y growth in total value of transactions carried out through electronic payment systems. Two trends are clearly visible. First, there is an identifiable seasonality discernible in the monthly shares in respective annual total value of transactions through electronic payment systems. These shares peak in June, September, December and March, the months when tax payments, including advance tax payments, are made (Table 11.1). Second, the growth rates on average have been much higher in the pre-demonetization months as compared to the post-demonetization months. In fact, in June and July 2017, these growth rates were negative. Thus, it would be too early to assert that digitization has increased due to demonetization.

The Ministry of Finance has come out with estimates of the impact of demonetization on widening the tax base and increasing direct tax collections. In terms of widening of the tax base, the Ministry notes that the number of e-returns of individual taxpayers filed till 5 August 2017, which was the due date of filing of returns for FY17, increased to 2.79 crore from 2.22 crore during the corresponding period of the previous year, an increase of 25.3%. The total number of all returns, comprising both electronic and paper returns, during FY17 was 17.3% more than the returns filed during FY16. The Ministry also argues that growth in direct tax collections is also clearly visible. Collection of advance tax under personal income tax (other than corporate tax) as on 5 August 2017 showed a growth of nearly 42% over the corresponding period of FY17. Furthermore, collection of self-assessment tax under personal income tax showed a growth of more than 34% over the corresponding period of FY17. Soon after the GST registration facility opened up, by 29 July 2017, the number of new registrants under GST had crossed 10 lakh, over and above the existing 86 lakh registrants. The combined effect of demonetization and GST is expected to increase India's tax-GDP ratio in the medium term. Considering both direct and indirect taxes, we can estimate our tax-GDP ratio to increase by 4% points in a period of five years. If this happens, it may allow significant additional fiscal space for increasing spending on vital sectors such as health, education and infrastructure. Over the medium term, we need to recognize that in a perspective of one to two years, the positive impact of demonetization on the tax-GDP ratio can also directly fructify provided the Government is able to follow up in terms of tracing the sources of additional bank deposits after demonetization. The press note released by the Government on 31 August 2017 indicates that the number of searches and surveys that the IT department has undertaken after demonetization has witnessed a quantum jump. It has noted that there has been an increase of 158% in the number of searches, an increase of 106% in seizures and an increase of 38% in admission of undisclosed income. The number of surveys has increased by 183% and the percentage increase in undisclosed income detected as a result of the enforcement action is 44%. Clearly, as a result of pursuing these enforcement actions, there may also be a short-term demonetization-linked increase in tax revenues, but these effects would be one-time. The economy

is likely to benefit relatively more from the longer-term forces that may be pushing our tax-GDP ratio further up.

In conclusion, it can be said that while demonetization led to an adverse impact on the economy in the short run, its benefits may yet overtake the short-term costs in the long run provided complementary policies are pursued to uplift the tax-GDP ratio and to increase the depth of digitization.

Part – 3

Fiscal policy and fiscal imbalance

Chapter 12

Landmark corporate income tax reforms: Short-term revenue pain for long-term growth gain (October 2019)

Abstract

A major step in tax reforms was undertaken on 20 September 2019 when comprehensive corporate income tax (CIT) reforms were announced. These reforms were meant to serve a twin purpose. First, by its very nature, it was a structural reform designed to increase productivity and profitability of companies in India by making them globally competitive. The CIT reforms were already initiated way back in FY16 Union Budget. Completion of these reforms was a medium-term objective. Second, these reforms also served a short-term purpose by putting additional purchasing power in the hands of domestic companies to stimulate the demand and reverse the economic slowdown.

These reforms related to a reduction in the basic CIT rate applicable to domestic companies from 30% to 22% which translated into a reduction of nearly 10 basis points, when cesses and surcharges were included. For new investments in the manufacturing sector, the basic CIT rate was reduced from 25% to 15%, translating into a reduction of nearly 12 basis points, taking into account the cesses and surcharges. Further, in order to provide relief to companies which continued to avail exemptions/incentives, the rate of Minimum Alternate Tax (MAT) was reduced from 18.5% to 15%. These rate reductions were effective from FY20. While availing the option of reduced tax rates, the domestic companies had to forego all other exemptions or incentives. A comparable rate reduction was not provided for foreign companies operating in India. These CIT reforms called for corresponding reforms in the rate structure of personal income taxes (PIT). In subsequent years, some PIT reforms have also been undertaken.

Introduction

In order to fiscally stimulate the Indian economy, the central government adopted Corporate Income Tax (CIT) reforms announced on 20 September 2019 as its main vehicle. These reforms serve a twin purpose. First, by its very nature, it is a structural reform designed to increase productivity and profitability of companies in India by making them globally competitive. The CIT reforms were already initiated way back in FY16 Union Budget. Completion of these reforms was a medium-term objective. Second, these reforms also serve a short-term purpose since it puts additional purchasing power in the hands of domestic companies to stimulate the demand and reverse the economic slowdown.

These CIT reforms constitute a major milestone in India's long legacy of tax reforms aimed at lowering tax rates and broadening tax bases. The reforms relate to a reduction in the basic CIT rate applicable to domestic companies from 30% to 22% which translates into a reduction of nearly 10 basis points, when cesses and surcharges are included. For new investments in the manufacturing sector, the basic CIT rate was reduced from 25% to 15%, translating into a reduction of nearly 12 basis points taking into account the cesses and surcharges. Further, in order to provide relief to companies which continue to avail exemptions/incentives, the rate of Minimum Alternate Tax (MAT) was reduced from 18.5% to 15%. These rate reductions are effective from FY2033. While availing the option of reduced tax rates, the domestic companies will have to forego all other exemptions or incentives. A comparable rate reduction has not been provided for foreign companies operating in India.

Brief review of CIT reforms

Table 12.1 gives the statutory CIT rate inclusive of cesses and surcharges for domestic and foreign companies for the period AY91 to AY20. It can be observed that the CIT rate has broadly been brought down over time for both domestic and foreign companies. For domestic companies, the CIT statutory rate including cesses and surcharges peaked at 57.5% during AY92 to AY94. It was brought down to 46% in AY95 with a basic CIT rate of 40%. This was a result of the recommendations of the Chelliah Committee (early 90s) that suggested bringing down the statutory CIT rate from levels varying between 51.75%-57.5% to 45%. The statutory CIT rate was further reduced to 35% in AY98. Later, based on the recommendations by Shome Committee (2001) and Kelkar Committee (2002), the statutory CIT rate inclusive of cesses and surcharges was brought down to 33.7% with a basic rate of 30% in AY06. Since then, the basic CIT rate has remained at 30% and the GoI has varied the rates of cesses and surcharges leading to variations in the statutory CIT rate including cesses and surcharges. For foreign companies, the statutory CIT rate including cesses and surcharges was brought down from a high of 72.8% in AY94 to 41% in AY04. The basic CIT rate in AY04 was at 40% and it has remained at this level since. However, the volatility in the rates after AY04 has been due to varying rates of central cesses and surcharges.

Table 12.1: Statutory CIT rate inclusive of cesses and surcharges for domestic and foreign companies

Assessment year (AY)	CIT rate*: domestic companies	CIT rate*: foreign companies	Assessment year	CIT rate*: domestic companies	CIT rate*: foreign companies
AY91	40.00	65.00	**AY06**	33.66	41.82
AY92	57.50	65.00	**AY07**	33.66	41.82
AY93	57.50	65.00	**AY08**	33.99	42.23
AY94	57.50	72.80	**AY09**	33.99	42.23
AY95	46.00	55.00	**AY10**	33.99	42.23

Assessment year (AY)	CIT rate*: domestic companies	CIT rate*: foreign companies	Assessment year	CIT rate*: domestic companies	CIT rate*: foreign companies
AY96	46.00	55.00	**AY11**	33.22	42.23
AY97	46.00	55.00	**AY12**	32.45	42.23
AY98	35.00	48.00	**AY13**	32.45	42.02
AY99	35.00	48.00	**AY14**	33.99	42.02
AY00	38.50	48.00	**AY15**	33.99	43.26
AY01	38.50	48.00	**AY16**	33.99	43.26
AY02	35.70	48.00	**AY17**	34.61	43.26
AY03	36.75	42.00	**AY18**	34.61	43.26
AY04	35.88	41.00	**AY19**	34.94	43.26
AY05	36.59	41.82	**AY20**	25.17	43.26

Source (Basic data): Union budget documents, CBDT notifications, RBI; * Statutory rate inclusive of cesses and surcharges.

In FY16, the then finance minister announced that the basic CIT rate would be reduced to 25% as the rate of 30% was higher than those prevalent in other major Asian countries, making the Indian industry uncompetitive. However, this was attempted in incremental steps in the next four years. Table 4 shows the CIT rate reductions undertaken in a span of four years from FY17 to FY20. In FY20, when the turnover threshold for availing the lower CIT rate of 25% plus cesses and surcharges was enhanced to INR400 crore, it covered 99.3% of all companies in FY18. However, their cumulative share in income tax liability was estimated at close to 20%[34] (Table 12.2).

Table 12.2: Reform of corporate taxes

Union Budget	Reduced corporate tax rate	Turnover criteria for reduced CIT rate (in INR)
FY17	29% + surcharge and cess	Turnover < 5 crore
FY18	25% + surcharge and cess	Turnover < 50 crore
FY19	25% + surcharge and cess	Turnover < 250 crore
FY20	25% + surcharge and cess	Turnover < 400 crore

Source (Basic Data): Statement of Revenue Impact of Tax Incentives under the Central Tax System, Union Budge 2019-20; respective Union Budgets

Table 12.3: Income-wise share in tax liability

#	Level of profit before taxes (FY18) (in INR)	Cumulative share in total number of companies FY18 (%)	Cumulative share in income tax liability FY18 (%)	Effective tax rate FY18 (%)
1	Less than zero	43.1	1.3	0.0
2	zero	53.6	8.0	0.0
3	0-1 crore	94.6	10.4	26.4
4	1-10 crore	98.9	17.0	27.4
5.1	10-31.3 crore	99.3	22.0	29.1
5.2	31.3-50 crore	99.7	26.4	29.1
6	50-100 crore	99.8	31.6	28.4

[34] Based upon the assumption that profit before taxes are proportional to the turnover

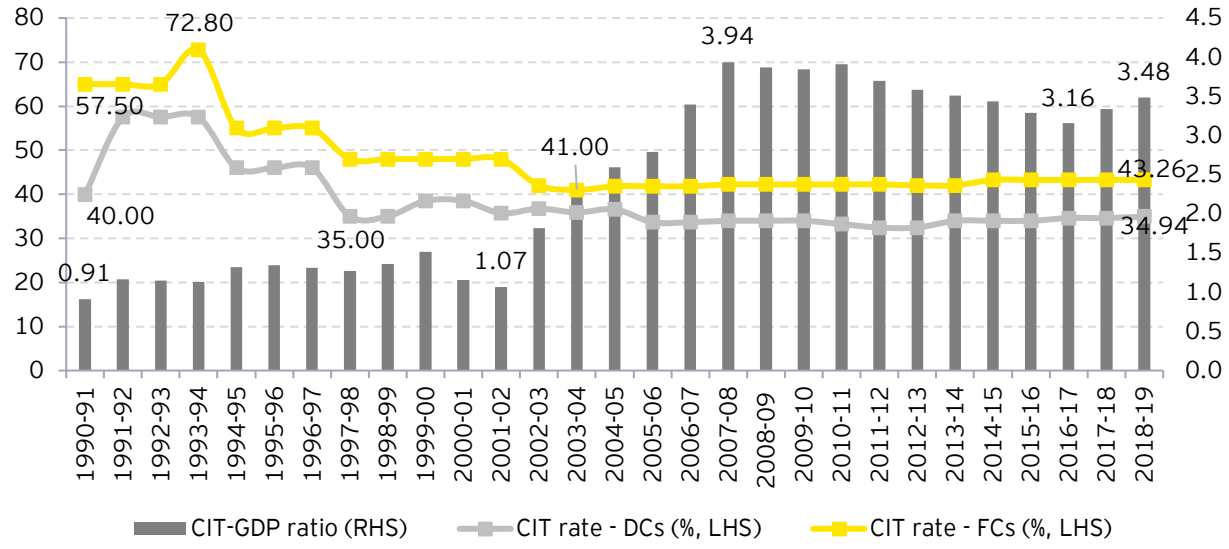
#	Level of profit before taxes (FY18) (in INR)	Cumulative share in total number of companies FY18 (%)	Cumulative share in income tax liability FY18 (%)	Effective tax rate FY18 (%)
7	100-500 crore	99.956	47.9	28.6
8	Greater than 500 crore	100.0	100.0	26.3
	All companies			29.5

Source (Basic Data): Statement of Revenue Impact of Tax Incentives under the Central Tax System, Union Budge 2019-20; respective Union Budgets; EY estimates

Note: Based upon the assumption that profit before taxes are proportional to the turnover

In FY17 budget speech, the then finance minister had also announced a phasing out of various exemptions as the corporate tax was proposed to be lowered. These included an option for new manufacturing companies to be taxed at 25% plus surcharges and cesses, provided they did not claim profit-linked or investment-linked deductions, limiting the accelerated depreciation from 100% to 40% from April 2017 onward, and limiting the benefit of deductions for research from 200% to 150% from April 2017 onward and 100% from April 2020 onward. During this period, the GoI's revenue forgone as a proportion of CIT revenues also witnessed a decline from 17.8% in FY17 to 16.4% in FY18 and FY19.

Chart 12.1: CIT revenue to GDP ratio and CIT rate



Source (Basic data): MoSPI, Union Budget documents, CBDT notifications, RBI; * CIT rate implies statutory rate inclusive of cesses and surcharges; DCs refer to domestic companies and FCs refer to foreign companies.

While broadly analyzing the movement of CIT revenues relative to GDP and the statutory CIT rate inclusive of cesses and surcharges, it is evident that during the period FY91 to FY02, when the CIT rates for both domestic and foreign companies were relatively high, the CIT to GDP ratio averaged only 1.2% (Chart 6). Subsequently, as the rates were gradually brought down, starting with the reduction in statutory rate including cesses and surcharges on foreign companies to 42% in FY03 from 48% in FY02, the CIT revenues relative to GDP improved, reaching a peak of 3.9% in FY08. This was also the period when the Indian economy witnessed high GDP growth rates. It remained close to this level until FY11. However, post FY11, there was a gradual decline in the CIT to GDP ratio which reached a trough of 3.2% in FY17. This phase, showing a fall in CIT revenues relative to GDP, was accompanied by some increases in the CIT rate especially if we consider the changes in the rates of surcharge. Over a long period therefore, there is a broad indication of an inverse relationship between CIT rate and CIT revenues relative to the GDP. The fall in CIT revenues relative to GDP post FY11 is quite sharp. Noticeably during this period, the nominal GDP growth fell, which

may have led to reduced profitability of companies. We examined the trend in nominal growth rate and the share of loss making and zero profit companies in total companies and found an inverse relationship between the two.

Analyzing the impact of FY20 CIT reforms

1. Identifying beneficiary vs. status quo companies

In order to assess the revenue impact of the CIT reforms, we need to distinguish between three broad groups of companies pertaining to domestic companies that are expected to gain from these reforms, domestic companies that continue with the existing rates, and foreign companies which also continue with the existing rates. In a recent analysis, *Rangarajan and Srivastava (2019)*[35] have called these three groups as beneficiary domestic companies (Group A), status quo domestic companies (Group B) and status quo foreign companies (Group C). Based on the available information from the revenue forgone statement for FY18 (FY20 Union Budget) covering 8,41,687 companies, Group A companies are those with an effective tax rate (ETR) above 25.17%. These companies are likely to take advantage of the lower rate. Group B companies have an ETR below 25.17%. They may prefer to continue with the existing rates while availing tax exemptions and/or deductions. Since there is no change in the tax rates applicable on foreign companies, they will continue to maintain status quo. Table 6 shows Group A companies have a relatively larger share in the total number of companies, total profit before tax and total tax revenue. Group B companies, on the other hand, account for only 2.6% in terms of number of companies. But their share in the tax base at 17.5% and tax paid at 12.4% is relatively larger

Table 12.4: Beneficiary and status quo companies: Share in tax and tax base

Group	Group's name	Share in number of companies (%)	Share in profit before tax (%)	Share in total tax revenues (%)	Effective tax rate (%)
A	Beneficiary domestic companies	93.2	74.3	76.7	30.4
B	Status quo domestic companies	2.6	17.5	12.4	20.9
C	Status quo foreign companies	4.2	8.3	11.0	39.1
		Number	INR crore	INR crore	%
	Total	8,41,687	15,18,224	4,47,744	29.5

Source: Statement of Revenue Impact of Tax Incentives under the Central Tax System: Financial Years 2017-18 and 2018-19 (Union Budget 2019-20)

Table 12.4 shows the composition of each company group in terms of the major sectors, their shares in group level profits, tax paid and their respective ETRs. In group A, manufacturing including pharmaceuticals, motor vehicles and engines have the highest share in total tax paid at 39.7% followed by financial intermediation activities including commercial loan activities at 18.0%. In Group B, manufacturing activities such as those of refined petroleum products together contribute 51.2% of the total tax paid with an ETR of 21.7%. Their share in the number of companies is however much smaller at 4.4%. In Group C, consisting mainly of foreign-owned companies, 66.4% of the total tax is contributed by commercial banks (Table 12.5), saving banks and discount houses (financial intermediation sector).

[35] "*The macro arithmetic of corporate tax cuts*", C. Rangarajan and D.K. Srivastava (published in Hindu Business Line on 4 October 2019); https://www.thehindubusinessline.com/opinion/the-macro-arithmetic-of-corporate-tax-cuts/article29586882.ece

Table 12.5: Group-wise shares of major sectors in total tax paid and effective tax rate

#	Major sectors	Share in group total			Effective tax rate
		No. of companies	Profit before tax	Total tax paid	
	Group A				
1	Other services	24.4	7.7	8.8	34.7
2	Financial intermediation services	6.2	16.8	18.0	32.6
3	Manufacturing	16.5	40.8	39.7	29.6
4	Computer and related services	2.4	10.9	9.6	26.7
5	Residual	50.5	23.8	24.0	30.7
	Total	100.0	100.0	100.0	30.4
	Group B				
1	Manufacturing	4.4	49.4	51.2	21.7
2	Electricity, gas and water	21.4	22.5	23.0	21.3
3	Mining and quarrying	0.9	22.4	19.9	18.6
4	Residual	73.3	5.7	5.9	21.5
	Total	100.0	100.0	100.0	20.9
	Group C				
1	Financial intermediation services	0.6	64.5	66.4	40.3
2	Mining and quarrying	1.2	22.3	20.9	36.7
3	Residual	98.2	13.3	12.7	37.5
	Total	100.0	100.0	100.0	39.1

Source (Basic Data): Revenue impact of Tax Incentives under the Central Tax system, Receipts Budget, Union Budget 2019-20

2. Impact on CIT revenues

Rangarajan and Srivastava (2019) estimated the cost of this reform in terms of revenue foregone in FY20 using the distinction between the beneficiary and status quo groups. They reassessed the FY20 budget estimate of CIT revenues given at INR7,66,000 crore by using FY19 CGA actuals instead of revised estimates. The budgeted growth rate over CGA actuals at 15.4% (14.2% with respect to FY19 RE) also requires a downward adjustment due to the economic slowdown. Budget estimates for FY20 were based on a nominal GDP growth assumption of 12%. CIT revenues grew only by 4.6% in the first five months of FY20. CIT revenues have been reassessed assuming a nominal GDP growth at 10% and using a buoyancy of 1.2. The assumed buoyancy in FY20 (BE) with respect to FY19 (RE) was a little less than 1.2. The reassessed CIT revenue is estimated at INR7,43,201 crore (**Table 12.6**). This may be used to derive the revenue impact of the CIT reforms.

Using the proportion of tax revenues in FY18 for companies in Groups A, B, and C, the corresponding revenues may be estimated for FY20 at the old rates. Tax revenues divided by the ETR gives an estimate of its tax base. On this tax base for Group A companies, the new lower CIT rate of 25.17% is applied. For groups B and C, there is no change since their ETR continue at the earlier rates of 20.9%[36] and 39.1%, respectively.

Table 12.6: Estimated revenue impact of new CIT rates (INR crore)

Group	Pre-reform reassessed tax revenue	Estimated profit before tax (tax base)	Post-reform estimated tax revenue	Revenue loss
Group A	5,69,830	18,72,270	4,71,250	98,579

[36] The estimated tax revenue would be somewhat lower than the amount indicated for Group B companies because this group includes some of the companies who may be currently paying MAT at 18.5%. The MAT rate has now been reduced to 15%. Based on MAT revenue assessed for FY19 at INR30,700.7 crores, we estimate the effect of a reduction of MAT rate from 18.5% to 15% at INR5,808.2 for FY19.

Group	Pre-reform reassessed tax revenue	Estimated profit before tax (tax base)	Post-reform estimated tax revenue	Revenue loss
Group B	91,948	4,39,795	91,948	0
Group C	81,423	2,08,001	81,423	0
Total	**7,43,201**	**25,20,067**	**6,44,621**	**98,579**

Source (basic data): Statement of Revenue Impact of Tax Incentives under the Central Tax System: Financial Years 2017-18 and 2018-19 (Union Budget 2019-20) and authors' estimates

The estimated revenue loss is thus, INR98,579 crore (Table 8), which is lower than the revenue foregone estimate given by the government at INR1,45, 000 crore. Recent analysis by Barclays and Nomura[37] also stated that the government's estimate of revenue loss due to the CIT rate reduction is an overestimate.

3. Impact on fiscal deficit

Rangarajan and Srivastava (2019) also extend their analysis to estimate the impact of the CIT reform on the fiscal deficit. This depends on a broader set of factors. Relative to the budget estimates, downward adjustments are required for all central taxes since the base year (FY19) figures, as well as the nominal growth and assumed buoyancy numbers appear to be out of alignment. Second, the revenue cost of the CIT reforms and the earlier announcement relating to the export incentives (INR50,000 crore) may be provided for. On the positive side, the effect of RBI additional dividends needs to be considered. There are likely to be positive effects of the stimulus through the CIT reforms and export incentives, but these may take time to work themselves out. From the RBI transfer of INR1,76,051 crore, after deducting INR90,000 crore which has already been provided for in the budget, INR86,051 crore is included. This assumes that like last year when an interim dividend of INR28,000 crore was paid by the RBI, the central government may again ask for an interim dividend of a similar amount in FY20[38].

In their assessment, a set of positive and negative effects of CIT reforms supplemented by a reassessment of budgetary revenue estimates gives a broad idea of the likely fiscal slippage (**Table 12.7**).

Table 12.7: Adjustments relative to budget estimates for FY20 (INR crore)

Item	Total	GoI	States
Revenue cost of CIT reform	98,579	62,463	36,116
Revenue cost of export subsidy	50,000	31,682	18,318
Revenue cost of downward revision of BE	2,14,006	1,35,602	78,404
Total revenue cost	**3,62,585**	**2,29,747**	**1,32,838**
Less: additional dividends from RBI	86,051	86,051	
Net revenue loss	**2,76,534**	**1,43,696**	**1,32,838**
Net revenue loss as % of GDP – S1 (at 10% growth)	**1.32**	**0.69**	**0.64**
Net revenue loss as % of GDP – S2 (at 9.5% growth)	**1.37**	**0.72**	**0.65**
Net revenue loss as % of GDP – S3 (at 9% growth)	**1.42**	**0.75**	**0.67**

Source (basic data): "The macro arithmetic of corporate tax cuts", C. Rangarajan and D.K. Srivastava (published in Hindu Business Line on 4 October 2019); https://www.thehindubusinessline.com/opinion/the-macro-arithmetic-of-corporate-tax-

[37] Emerging Market Research document (dated 26 September 2019) - "India: deconstructing the tax cut math", Barclays, Asia Insights (dated 20 September 2019) – "India: government blinks on fiscal and announces corporate tax cuts", Nomura

[38] It may be noted that the Jalan Committee had recommended that payment of such interim dividends "*may…be restricted to extraordinary circumstances*". This point was brought out by Dr. Rakesh Mohan in the correspondence with Dr. Rangarajan (*op.cit*)

cuts/article29586882.ece, Statement of Revenue Impact of Tax Incentives under the Central Tax System: Financial Years 2017-18 and 2018-19 (Union Budget 2019-20) and; *reassessed GDP for 2019-20

It is thus shown that lower the nominal GDP growth, the higher is the slippage in fiscal deficit relative to GDP. It is also a matter of concern that a substantial part of the slippage in fiscal deficit is to be borne by the state governments.

The central government may attempt to reduce the extent of slippage in fiscal deficit by enhancing their efforts to garner additional non-tax revenues and disinvestment proceeds over and above the budget estimates. To some extent, public sector companies may also gain from the lower CIT rate. As a result, additional profits may accrue to them which can be accessed by the government in the form of higher dividends. This might also serve to reduce GoI's fiscal deficit. However, this gain may largely accrue only to the central public sector enterprises and only marginally to state public sector enterprises since they have a very limited number of profit-making public enterprises[39]. However, any contraction in expenditure may be avoided since that may only delay economic recovery by neutralizing the effect of the fiscal stimulus.

Some other estimates of the potential impact CIT reform may have on fiscal deficit of the GoI are summarized in **Table 12.8**.

Table 12.8: Potential slippage from GoI's budgeted fiscal deficit for FY20: selected estimates

#	Institution	Slippage from the budgeted fiscal deficit target (estimated fiscal deficit to GDP ratio)	Comments
1	Barclays	0.5% points (3.8% of GDP)	The analysis accounts for reduced state transfers and other sources of revenue such as RBI dividends and petroleum taxes; takes into account a normal revenue shortfall (due to weaker growth)
2	Nomura	0.3% points (3.6% of GDP)	The analysis takes into account weak nominal GDP growth estimated at 9.5%, higher RBI dividends and potentially large expenditure savings
3	Survey of seven economists (median) - Standard Chartered, Edelweiss Securities Ltd., Nirmal Bang Equities Pvt, Oxford Economics, TS Lombard, Yes Bank, Morgan Stanley	0.6% points (3.9% of GDP)	NA
4	Moody's	0.4% points (3.7% of GDP)	NA
5	A.K. Bhattacharya	0.2% points (3.5% of GDP)	Based on the assumption that government saves the entire expenditure on tax exemptions (INR1.08 trillion)

Source: Emerging Market Research document (dated 26 September 2019) - "India: deconstructing the tax cut math" (http://www.cogencis.com/newssection/analysis-govt-bets-the-house-with-corporate-tax-cut-to-boost-growth/), Asia

[39] This point was made by Dr. Rakesh Mohan who was a member of the Expert Committee to Review the Extant Economic Capital Framework (Bimal Jalan Committee) in a letter that he wrote to Dr. C. Rangarajan with reference to the article by Rangarajan and Srivastava (2019)

Insights (dated 20 September 2019) - India: government blinks on fiscal and announces corporate tax cuts (https://www.business-standard.com/article/pti-stories/corporate-tax-cut-carries-fiscal-slippage-risks-experts-119092100860_1.html), Financial Express (https://www.financialexpress.com/economy/indias-fiscal-deficit-may-rise-highest-in-four-year-after-nirmala-sitharaman-gives-tax-gifts/1712373/), Economic Times (https://economictimes.indiatimes.com/news/economy/indicators/moodys-cuts-indias-fy20-growth-forecast-to-5-8/articleshow/71515759.cms?from=mdr), Business standard (https://www.business-standard.com/article/economy-policy/underestimates-overreactions-the-math-behind-fm-s-corporation-tax-cuts-119092301355_1.html)

4. Short-term effects

Companies may use the benefit of the CIT rate revision in a variety of ways. These are briefly discussed as follows:

- **Investment effect:** in the case of companies which switch to the lower CIT rate and have a tax benefit, if additional profits are utilized to increase capital expenditure, corporate investment may go up and spur production in the future years.
- **Dividend distribution effect:** if tax benefits are converted into additional dividends, it might have a demand-side effect. There may be a pick-up in consumption demand and this may have a more immediate effect.
- **Price reduction effect:** if the beneficiary companies pass on their benefits partially/fully to the consumers through lower product prices, it is likely to have a positive demand-side impact, possibly in the short-run.
- **Reduction in corporate debt:** tax benefits could be used by the corporates for deleveraging thereby reducing their borrowings and future interest liability.
- **Buyback effect:** additional profits of the beneficiary companies could be used by them for sharing buybacks, reducing their liabilities and increasing income in the hands of individuals holding these shares. This could have an effect of augmenting demand in the system.
- **Additional government dividend effect:** since some of the beneficiary companies within Group A would be public-sector companies, they may gain in terms of additional profit due to the lower CIT rate which can be accessed by the government in the form of higher dividends. Most of this benefit is likely to accrue to the central government because profit making state level public enterprises are limited in number.

Individual circumstances of companies are expected to determine their decisions as to which option or combination of options they adopt. The effects may be diffused across different options and the positive impact of CIT reforms on investment may take some time to materialize.

5. Long-term effects

Essentially, the CIT reforms are supply side reforms aimed at increasing the profitability and productivity of investment. India's CIT rates have now become globally competitive as shown in Table 12.9. There is intra-sectoral neutrality across industry and services except for new manufacturing companies which has got an additional boost. Supply side reforms take time to work themselves out. Fiscal space for demand expansion stands squeezed out in the current year. The expected increase in investment may take time to work out. Economic theory suggests that the value of autonomous expenditure multiplier[40] increases when the tax rate is lowered. This multiplier then results into increased GDP levels based on the extent of the increase in autonomous expenditures which include government expenditures. Thus, the long-term benefit is the result of the combination of higher multiplier and higher government expenditures. It may therefore be recommended that to take full advantage of the CIT reforms, the government may need to increase its capital expenditures.

[40] This refers to increase in GDP following a 1% increase in government expenditure when it is not financed by a corresponding increase in taxation.

Table 12.9: CIT rates: A cross-country comparison

S. no.	Country	CIT rate (%)	S. no.	Country	CIT rate (%)
1	Brazil	15	9	South Korea	25
2	China	25	10	US	21
3	Russia	0, 15.5, 20	11	UK	19
4	South Africa	28	12	Japan	23.2
5	Indonesia	25	13	Italy	24
6	Malaysia	24	14	Germany	15.83
7	Thailand	20	15	France	32.02
8	Singapore	17	16	Canada	15

Source: OECD. Stat, 2019 worldwide corporate tax guide, EY (https://www.ey.com/gl/en/services/tax/worldwide-corporate-tax-guide---country-list)

However, there are still issues of alignment that need to be addressed in due course. First, the difference in effective rates between foreign and domestic companies has increased after the CIT reforms. As such, instead of increasing their investment, foreign companies may be discouraged for further investment in India, given their relatively higher tax burden compared to domestic companies. Secondly, there is a significant difference between the tax treatment of new manufacturing companies and existing manufacturing companies. This implies an inducement to set up new companies rather than expand investment in existing companies which is likely to add more quickly to higher profits and higher tax revenues. Thirdly, the broad parity between the highest PIT rate and the average CIT rate may also require reforms in the PIT rate structure.

Chapter 13

Overcoming GoI's fiscal constraints with infrastructure-centered investment strategy (June 2020)

Abstract

In March 2020, the global and the Indian economies were hit by the adverse impact of COVID-19. Most economies went into a recession or a severe economic slowdown. Monetary and fiscal stimuli were both resorted to across countries. India faced its own challenges in designing a suitable fiscal response to COVID-19 induced economic contraction. At that time, the GoI's tax-GDP ratio had already fallen due to comprehensive CIT and GST reforms that had already been undertaken. In this context, the fight against COVID-19 proved to be an uphill task due to GoI's constrained finances. This had limited the capacity of the GoI to inject a large fiscal stimulus into the system through direct expenditure augmentation. The key weaknesses of GoI's fiscal management related to (a) falling tax-GDP ratio, (b) rising fiscal deficit relative to GDP, and (c) near-stagnant capital expenditure to GDP ratio. The fall in growth rate of GoI's gross tax revenue (GTR) on a trend basis had impacted states' share in central taxes more than proportionately due to an increase in the non-sharable portion of GoI's GTR.

GoI's capacity to mount a larger fiscal stimulus beyond what was announced until mid-May 2020 remained constrained due to the performance of GoI's GTR which contracted by (-)3.4% in FY20. This revenue underperformance was due to a chronic component resulting from a fall in GoI's GTR on trend basis, and an acute component resulting from the revenue implications of FY20 CIT reforms, among other factors. In order to break out from the vicious circle of low tax revenue-low fiscal stimulus-low real and nominal GDP growth in addition to coping with COVID-19, the GoI developed a strategy which required a borrowing-based implementation of National Infrastructure Pipeline that had envisaged a spike in infrastructure investment in FY21 and FY22.

Introduction

The World Bank, in its release of Global Economic Prospects on 8 June 2020, forecasted India's FY21 real GDP to contract by (-)3.2%, a downward revision of 5.4% points from its earlier growth forecast of 2.2% (released on 12 April 2020). The IMF in its recent release of World Economic Outlook Update (24 June 2020) also sharply revised down its earlier growth projection of 1.9% for India by 6.4% points to (-)4.5% in FY21. The ADB revised even more sharply, its earlier projection of 4.0% to (-)4.0%. On 10 June 2020, the OECD projected India's GDP to contract by (-)3.7% in the single hit scenario and by (-)7.3% in the double hit scenario where single hit scenario assumes an avoidance of a second outbreak which is factored in the double hit scenario. It is notable that the revisions undertaken by the IMF, World Bank, OECD and ADB with respect to India's growth projections have come after the announcement of the stimulus packages by the RBI and the Ministry of Finance (MoF) in several tranches over the period from end-March 2020 to date. The main stimulus announcements by the MoF came in mid-May 2020. International institutions assessed that these stimulus packages had only a limited impact in reversing the contractionary momentum of the Indian economy.

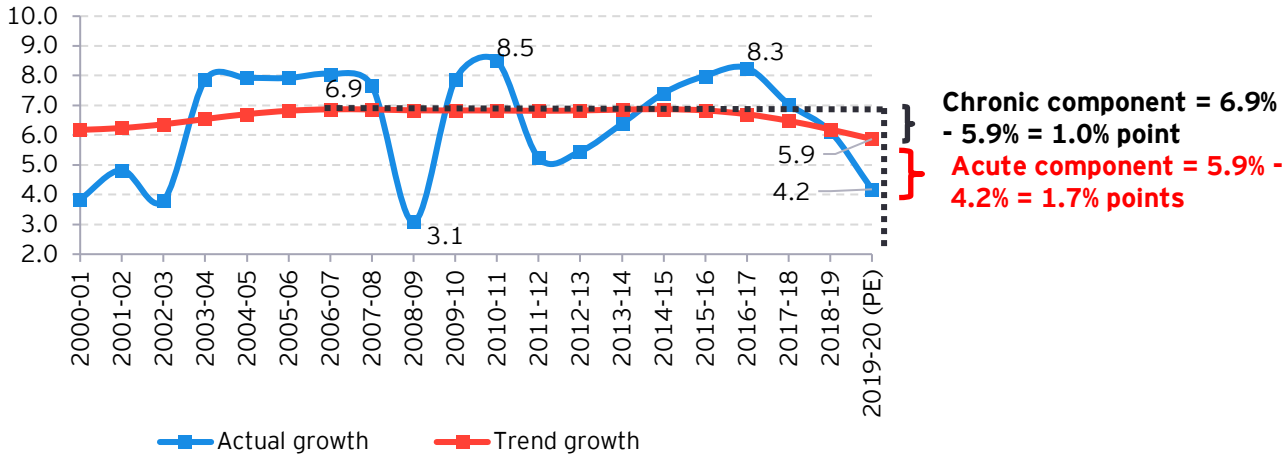
The fight against COVID-19 is proving to be an uphill task due to GoI's constrained finances. This has limited the capacity of the GoI to inject a large fiscal stimulus into the system through direct expenditure augmentation. The key weaknesses of GoI's fiscal management relate to (a) falling tax-GDP ratio, (b) rising fiscal deficit relative to GDP, and (c) near-stagnant capital expenditure to GDP ratio. The fall in growth rate of GoI's gross tax revenue (GTR) on a trend basis has impacted states' share in central taxes more than proportionately due to an increase in the non-sharable portion of GoI's GTR.

GoI's GTR to GDP ratio fell from a peak of 11.2% in FY18 to 9.9% in FY20, a fall of 1.3% points. GoI's fiscal deficit relative to GDP has increased from a level of 3.4% in FY19 to 4.6% in FY20, an increase of 1.2% points. GoI's capital expenditure relative to GDP was 1.9% in FY17. It fell to a low of 1.5% in FY18 and increased marginally to 1.6% in FY19 and 1.7% in FY20.

Falling GDP and tax revenue growth on a trend basis

As **Chart 13.1** indicates, trend real GDP growth had reached a peak of 6.9% in FY07. It remained stable at that level for a number of years, but it started trending downwards since FY15. In FY20, the trend growth had fallen to an estimated level of 5.9%. Thus, we can decompose the real GDP growth of 4.2% in FY20 into two parts: (a) fall in trend growth rate of 1% point (chronic component) and (b) fall in actual growth rate below the trend by 1.7% points (acute component). This situation has arisen even before the COVID-19 crisis hit the Indian economy. As many analysts expect a contraction in GDP in FY21, the magnitude of the acute component is likely to rise further in the current year. These trends have also affected the tax revenue performance particularly in the case of GoI's GTR.

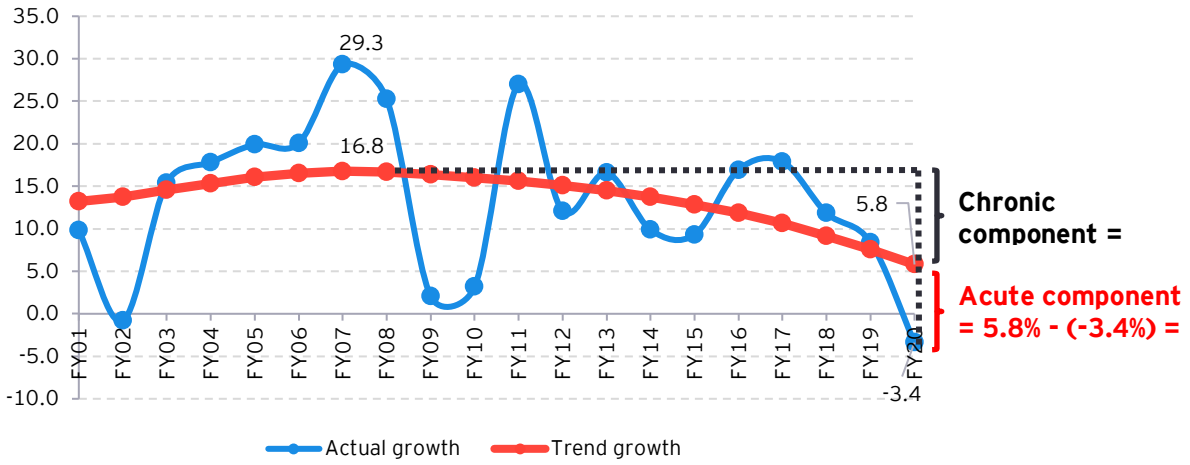
Chart 13.1: Real GDP growth: Actual and trend growth (%)



Source (basic data): MoSPI

Chart 13.2 shows that the trend growth rate in GoI's GTR has fallen even more sharply. Its peak was at 16.8% in FY07 and since then, the trend growth rate has fallen consistently. By FY20, it had fallen to 5.8%, a fall of 11% points. The actual growth rate of GoI's GTR in FY20 became negative at (-)3.4%. There are two main reasons for this fall over such a long period. First, alongside a fall in the real GDP growth, there has been a sharper fall, on trend basis, in the nominal growth as well (**Chart 13.3**). Second, on a trend basis, there has been a steady fall in the buoyancy[41] of GoI's GTR with respect to nominal GDP (**Chart 13.4**). The differential between nominal and real GDP growth has narrowed because of a fall in the implicit price deflator-based inflation on a trend basis (**Chart 13.5**).

Chart 13.2: Gross tax revenues of the GoI actual and trend growth (%)



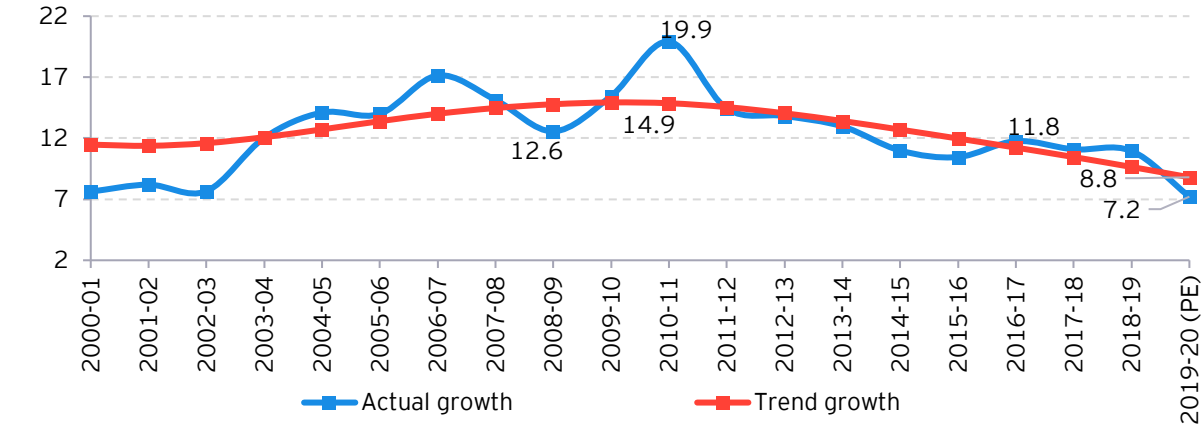
Source (basic data): IPFS, Union budget documents and CGA

Chart 13.3 shows that on a trend basis, nominal GDP growth was at 14.9% in FY11. Since then, it has been steadily falling. By FY20, it had fallen to 8.8% while actual nominal GDP growth fell further to 7.2%. It is also noticeable that on a trend basis, the buoyancy of GoI's GTR relative to nominal GDP has also been falling. As chart 13 shows, it fell from a peak of 1.2 in FY07 to just 0.5 by FY20. Thus, the growth in GoI's GTR which is measured in nominal terms, has fallen over the years both

[41] Buoyancy refers to the percentage growth in tax revenues as a response to a 1% growth in nominal GDP. Growth in tax revenues may also be seen as nominal GDP multiplied by the tax buoyancy

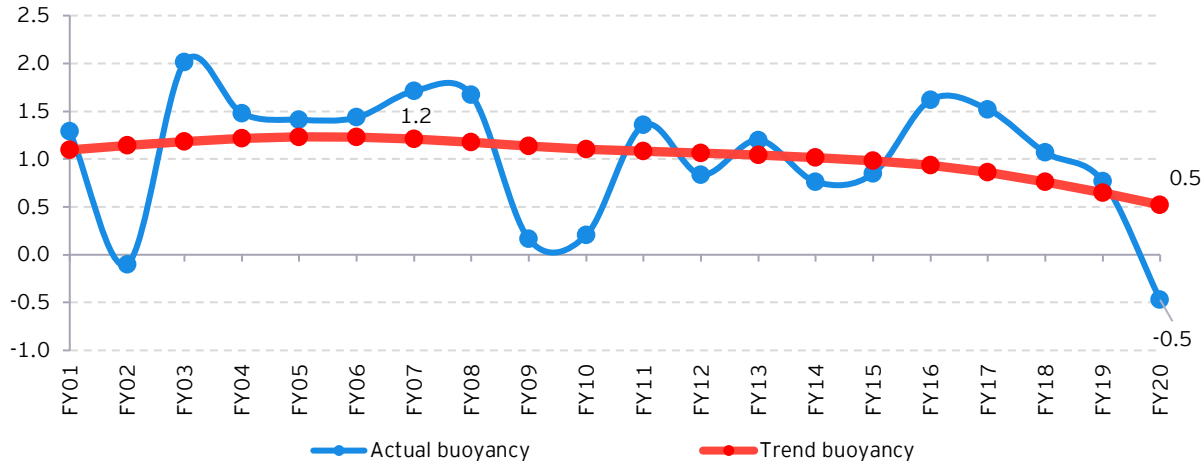
due to a fall in the nominal GDP growth and tax buoyancy on a trend basis. These factors account for a systematic erosion of fiscal space for the central government.

Chart 13.3: Nominal GDP growth: Actual and trend growth (%)



Source (basic data): MoSPI, IPFS, CGA

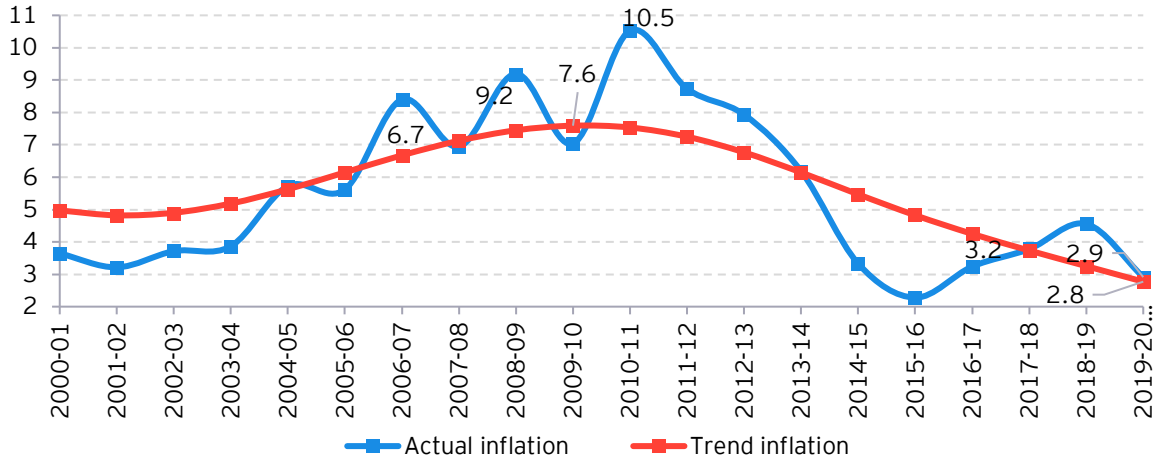
Chart 13.4: Buoyancy of GoI's GTR: Actual and trend



Source (basic data): MoSPI, IPFS, CGA

The reason for a fall in nominal GDP growth on a trend basis can be traced back to (a) fall in real GDP growth and (b) fall in implicit price deflator-based inflation. Chart 14 shows the movement in implicit price deflator (IPD)-based inflation on a trend basis which indicates a sharp fall from a peak of 7.6% in FY10 to 2.8% in FY20. We have already reviewed the fall in real GDP growth in Chart 13.1. Clearly, the sharper fall in the IPD-based inflation of 4.8% (Chart 13.5)points bears the larger responsibility in explaining the fall in nominal GDP growth viz.-à-viz. the fall in real GDP growth of 1% point, with all growth rates measured on a trend basis.

Chart 13.5: Implicit price deflator-based inflation: Actual and trend growth (%)



Source (basic data): MoSPI

We may note that the contraction in GoI's GTR in FY20 represents a discontinuity because of the CIT reforms undertaken during this year. The revenue loss on account of these reforms would have become a part of the base year figure for FY21. As such, a positive CIT growth in FY21 would have been observed but the onset of COVID-19 has caused another kind of discontinuity. This may adversely affect the growth of all central tax revenues including CIT. The fact that GoI's tax revenues have been exposed to two revenue eroding discontinuities in succession is a major factor that has constrained GoI's ability to fight its way out of the economic impact of COVID through a strong fiscal stimulus. In fact, FY21 represents a structural break in the economy. Under these circumstances, normal buoyancy and elasticity analyses may break down since these analyses assume a smooth response function while estimating responsiveness of tax revenues to a percentage change in the tax base which is proxied in this context, by nominal GDP.

GoI's revenue performance: Impact on states

The latest CGA data indicates an adverse impact on the magnitude of states' share in central taxes. This is due to two developments in recent years. First, the increasing share of cesses and surcharges had kept the states' share in GoI's GTR well below the Fourteenth Finance Commission's recommendation of 42% during FY16 to FY20. Then in FY20, the central government increased the rate of road and infrastructure cess and the special additional excise duty (SAED) on the central excise on petroleum products, reducing the sharable portion of GoI's GTR. As a result, the share of states in GoI's GTR fell sharply from 36.6% in FY19 to 32.4% in FY20 (Table 13.1). These changes have happened at a time when states' own tax revenues are also suffering on account of the ongoing economic slowdown.

Table 13.1: GoI's revenue performance: Impact on states

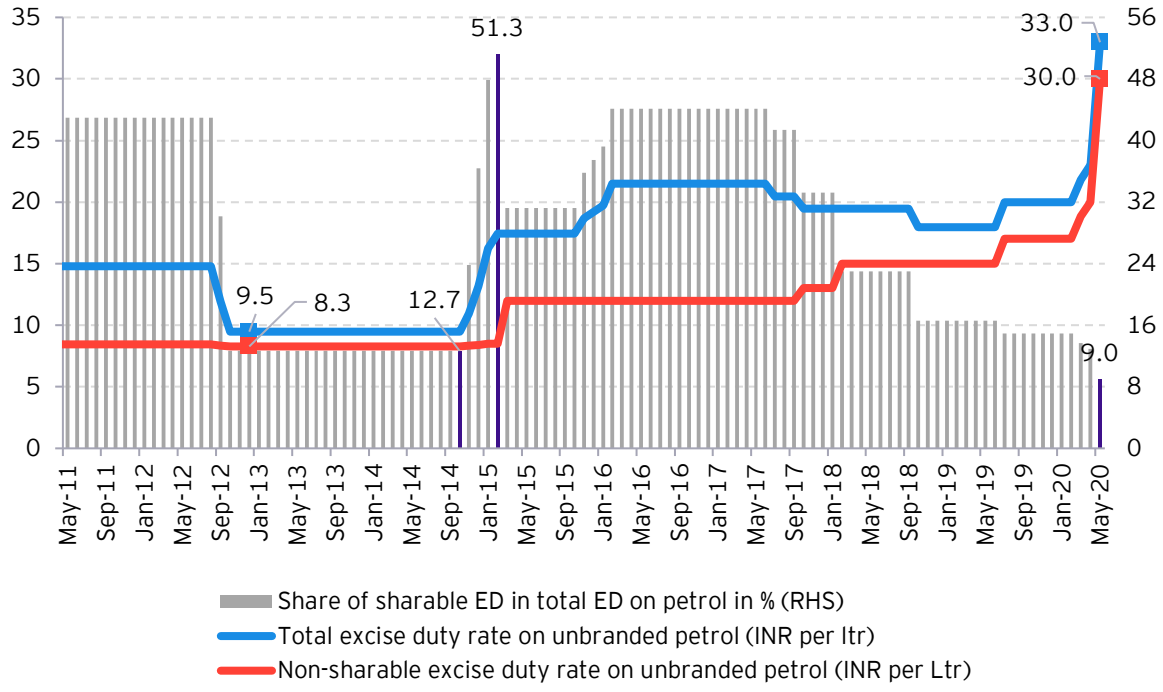
Fiscal year	Gross tax revenues (INR crore)	Assignment to states (INR crore)	Share of states as % of GoI's GTR	Year-wise change in share of states in central taxes (% points of GTR)
(1)	(2)	(3)	(4)	(5)
FY16	14,55,648	5,06,193	34.8	7.64*
FY17	17,15,822	6,08,000	35.4	0.66
FY18	19,19,009	6,73,005	35.1	-0.36
FY19	20,80,465	7,61,454	36.6	1.53
FY20	20,09,882	6,50,677	32.4	-4.23

Source (basic data): CGA, MoSPI
*This change reflects the impact of transition from the recommendations of the Thirteenth to Fourteenth Finance Commission

Charts 13.6 and 13.7 depict the trend of excise duty levied by the central government on petrol and diesel. These show two components of GoI's excise duty, namely, the one that is sharable with states and the one that is not sharable. The non-sharable component of the excise duty comprises road and infrastructure cess and the SAED, while the basic excise duty constitutes the sharable component. Trends in these components highlight changes in GoI's excise policy during the recent years. It can be seen that during the period April 2011-August 2012, the overall excise duty rate on unbranded petrol was kept stable at a level of INR14.8/ltr., of which the sharable component constituted approximately 43%. In October 2012, owing to high global crude prices (Chart17) and consequent pressure on inflation, the GoI reduced the overall excise duty rate by lowering the sharable excise duty component. Subsequently, as global crude prices fell, starting November 2014, the GoI gradually increased the overall excise duty rate by mainly increasing the sharable component, whose share increased to a peak of 44.1% in February 2016 and remained at that level until June 2017. From a peak of INR21/ltr. in June 2017, the overall excise duty was brought down to INR18.5/ltr. in October 2018, a reduction of INR3.5/ltr. This was achieved by a) lowering the sharable component by INR6.5/ltr. and simultaneously b) increasing the non-sharable component by INR3/ltr. This was reflected in a sharp fall in the proportion of the sharable component to 16.7% by October 2018. Similar trends can be observed in the case of unbranded diesel (Chart 13.8). In FY20, the overall excise duty rate was increased by INR5/ltr. for both petrol and diesel solely on account of an increase in the non-sharable component. As discussed above, this significantly contributed to an increase in the non-sharable portion of GoI's GTR in FY20.

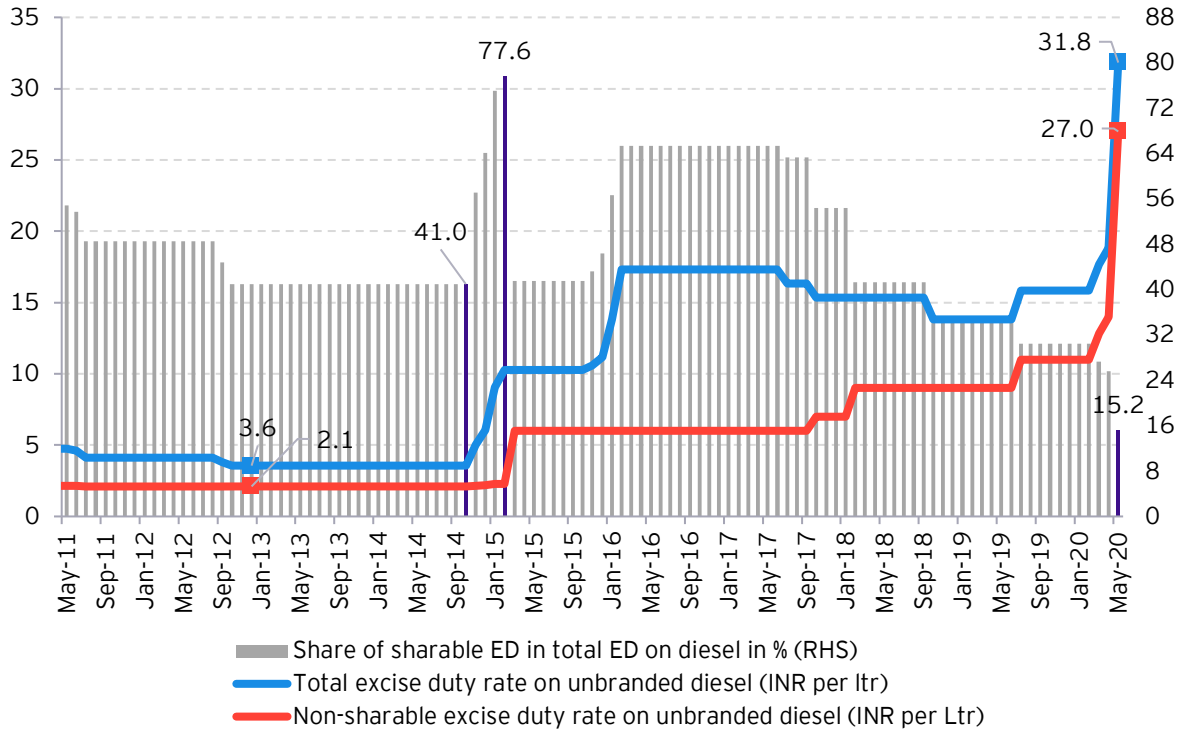
The GoI sharply increased the non-sharable component of the excise duty on unbranded petrol further from INR20/ltr. in March 2020 to INR30/ltr. in May 2020 taking the overall excise duty rate to INR33/ltr. It is notable that the sharable component of excise duty has been maintained at a subdued level of INR3/ltr. since October 2018 while the non-sharable component has been increased by INR15/ltr. over the same period.

Chart 13.6: Trends in excise duty rate on unbranded petrol



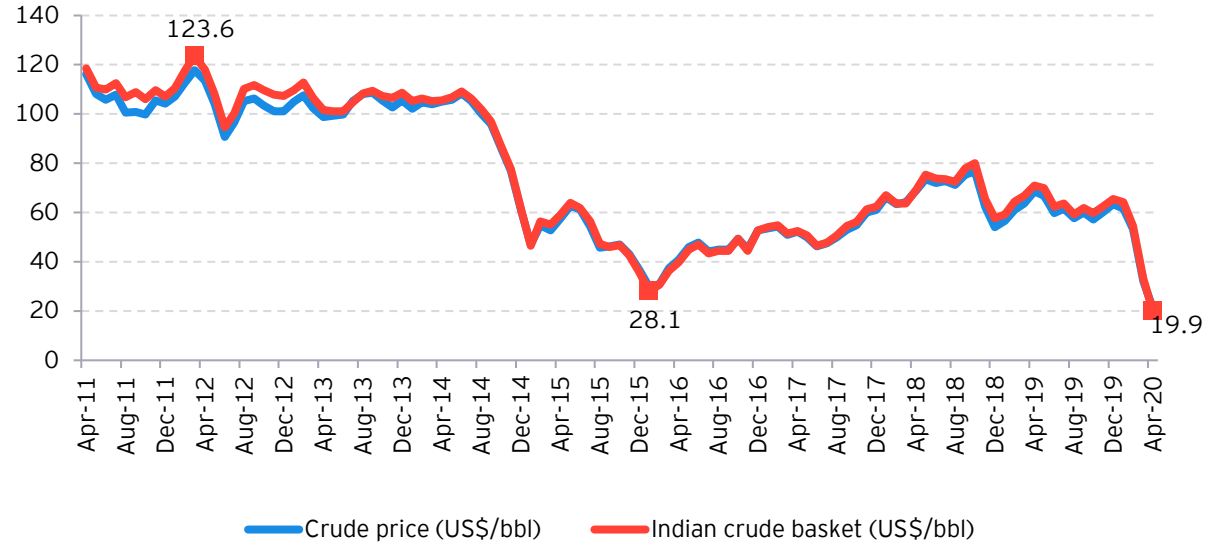
Source (basic data): PPAC; CBIC notifications

Chart 13.7: Trends in excise duty rate on unbranded diesel



Source (basic data): PPAC; CBIC notifications

Chart 13.8: Trends in price of global crude and Indian crude basket (US$/bbl)



Source (basic data): Pinksheet, Worldbank; PPAC

Strategizing economic recovery

In developing a strategy for India's recovery in FY21 and beyond, two issues need to be addressed. One relates to the acute crisis of overcoming the pandemic's debilitating economic impact and the second relates to the chronic issues of declining real GDP growth and tax revenues especially GoI's GTR, and suboptimal IPD-based inflation rate. India can resolve both the acute and the chronic issues by (a) creating additional fiscal space, and (b) undertaking asset-creating capital expenditures associated with high multipliers. For creating the fiscal space, the central government

may endeavor to augment the tax base particularly that of companies by inducing additional investment from foreign countries. This may start making up for the loss of CIT tax base due to the FY20 CIT reforms. For augmenting capital expenditures, the central government needs to frontload the National Infrastructure Pipeline (NIP).

Trends in GoI's fiscal imbalance

As **Table 13.2** indicates, a large part of GoI's increasing fiscal deficit to GDP ratio has been pre-empted by an increasing revenue deficit to GDP ratio. As percentage of fiscal deficit, revenue deficit has increased from a level of 58.9% in FY17 to 71.3% in FY20. Thus, the additional liability creating borrowing by the central government was largely spent on non-asset creating revenue expenditure. This is also mirrored in a low ratio of capital expenditure to GDP (Table 13.3).

Table 13.2: GoI's fiscal and revenue deficit (% to GDP) and quality of fiscal deficit (%)

Fiscal year	Fiscal deficit (FD)	Revenue deficit (RD)	Quality of fiscal deficit (RD/FD)
FY16	3.9	2.5	64.3
FY17	3.5	2.1	58.9
FY18	3.5	2.6	76.0
FY19	3.4	2.4	70.1
FY20	4.6	3.3	71.3

Source (basic data): CGA, MoSPI

Total capital expenditure can be divided into two parts, namely, defence capital expenditure and non-defence capital expenditure. It is the non-defence capital expenditure which largely accounts for expenditure on infrastructure by the central government. This, as a percentage of GDP has fallen to 1.13% in FY20 which is only 24.56% of this year's fiscal deficit.

Table 13.3: GoI's capital expenditure

Fiscal year	Total capital expenditure *of which*	Defence capital expenditure	Non-defence capital expenditure
INR crore			
FY16	2,53,022	79,958	1,73,064
FY17	2,86,282	86,878	1,99,404
FY18	2,62,476	90,217	1,72,259
FY19	3,07,089	95,037	2,12,052
FY20	3,36,744	1,06,546	2,30,198
% to GDP			
FY16	1.84	0.58	1.26
FY17	1.86	0.56	1.30
FY18	1.54	0.53	1.01
FY19	1.62	0.50	1.12
FY20	1.66	0.52	1.13

Source (basic data): CGA, MoSPI, Union Budget
Note: Total capital expenditure is divided into defence and non-defence capital expenditure using shares from the Union Budget documents.

Relating GoI's capital expenditure to National Infrastructure Pipeline (NIP)

The key to uplift economic activities in India is to ensure that the GoI is able to undertake capital expenditure in line with its proposed NIP. The NIP envisages an ambitious infrastructure investment plan over the period FY20 to FY25. There are five critical participants in NIP namely, (1) central government, (2) state governments, (3) central PSEs, (4) state PSEs, and (5) private sectors (**Table 13.4**). The relative contribution in the overall investment plan for the GoI (including CPSEs), states (including SPSEs) and the private sector is in the ratio of 39:40:21. The position of the central government is quite pivotal. If there is a shortfall in GoI's contribution in any one year, it is likely that investment from the other contributors may also fall.

It may be justified to undertake additional borrowing by the GoI if that is fully spent on infrastructure investment in line with the NIP. Subsequently, the central government can also persuade the state governments to resort to additional borrowing for spending on infrastructure. This is the crucial missing component of fiscal stimulus in FY21, and additional borrowing to ensure that there is no shortfall in GoI's contribution to NIP may be justified since such spending is associated with high multiplier effects positively affecting employment and GDP growth. Within the infrastructure spending, spending on health infrastructure may be the most justified in the COVID-19 context. Some analysts have argued that even monetization of deficit may be justified if such borrowing is utilized for social sector infrastructure. In a recent article[42], the following observation was made:

"If they [Modi government] try to seriously deal with the huge educational challenges in India and the huge systematic health challenges in India, and if the fiscal costs of that would end up being the reason the central bank would end up doing some more ambitious monetisation, I think that would be an incredibly smart thing to do. And I think markets around the world would be forgiving."
- Jim O'Neill, Chair, Chatham House

Table 13.4: Financing of NIP (INR lakh crore)

Fiscal year	Total NIP investment	Central government *of which*	*Budgetary*	*CPSE*	State governments *of which*	*State budgets*	*SPSEs*	Private sector
FY20	**14.42**	**5.62**	*2.25*	*3.37*	**5.77**	*3.46*	*2.31*	**3.03**
FY21	**23.35**	**9.11**	*3.64*	*5.46*	**9.34**	*5.60*	*3.74*	**4.90**
FY22	**23.13**	**9.02**	*3.61*	*5.41*	**9.25**	*5.55*	*3.70*	**4.86**
FY23	**18.28**	**7.13**	*2.85*	*4.28*	**7.31**	*4.39*	*2.92*	**3.84**
FY24	**17.22**	**6.71**	*2.69*	*4.03*	**6.89**	*4.13*	*2.75*	**3.62**
FY25	**14.96**	**5.83**	*2.33*	*3.50*	**5.98**	*3.59*	*2.39*	**3.14**

Source (basic data): NIP, GoI

NIP covers quite extensively, the infrastructure sectors, including construction. We may divide the aggregate pipeline into two parts, namely, construction and non-construction infrastructure (**Chart 13.9**). Their investment magnitudes in the overall NIP are given in **Table 13.5**.

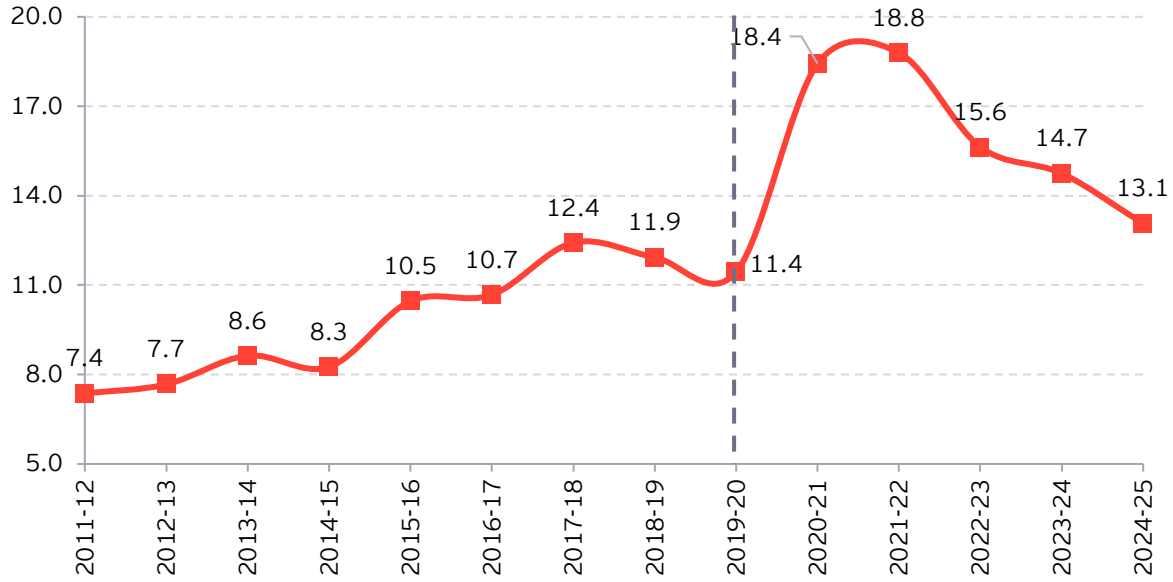
Table 13.5: investment of construction and non-construction infrastructure (INR lakh crore)

Fiscal year	Total infrastructure spending	Non-construction infrastructure spending	Construction sector spending
2020	14.4	11.4	3.0
2021	23.3	18.4	4.9
2022	23.1	18.8	4.3
2023	18.3	15.6	2.6
2024	17.2	14.7	2.5
2025	15.0	13.1	1.9

Source (basic data): NIP, GoI

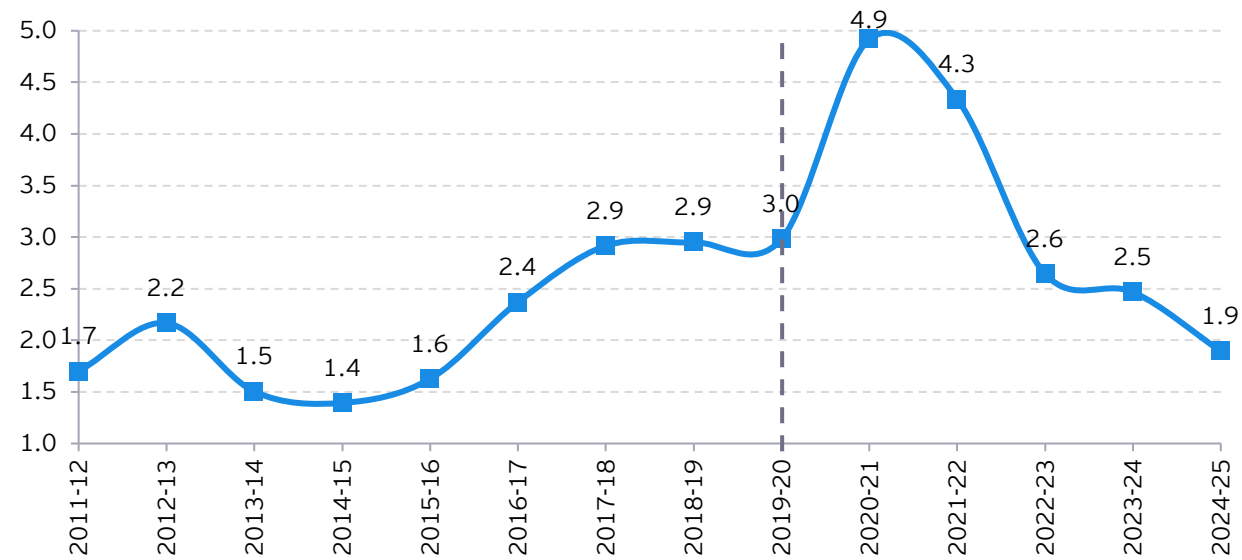
[42] https://www.bloombergquint.com/business/monetising-deficit-to-up-health-education-spend-worth-considering-jim-oneill

Chart 13.9: GFCF in infrastructure spending excluding construction (INR lakh crore)



Source (basic data): NAS (2019), MoSPI, NIP - GoI, Input-Output transactions table (2015-16), Brookings India

Chart 13.10: GFCF in construction sector (INR lakh crore)



Source (basic data): NAS (2019), MoSPI, NIP - GoI, Input-Output transactions table (2015-16), Brookings India

The NIP had envisaged a sharp upsurge in construction as well as non-construction infrastructure investment in FY21 before COVID-19 impacted the economy (**Chart 13.10**). At the current juncture, financing this upsurge in FY21 may pose a considerable challenge because of the squeezed fiscal space. The only way this can be financed is through additional borrowing. This could be the main source of financing the upsurge for central and state governments and their respective PSEs. Accordingly, the public sector borrowing requirement (PSBR) is expected to show a corresponding upsurge. To get a broad idea of the borrowing requirement of the system, we have estimated the PSBR for FY21 to FY25 under certain assumptions. The PSBR as percentage of

estimated GDP is estimated at close to 15% in FY21 and FY22. This additional borrowing may be justified as long as it is used exclusively for infrastructure investment.

Within the overall infrastructure investment, priority may be accorded to the construction sector and the social infrastructure which includes health infrastructure. Priority to invest in the construction sector may be justified on account of potential impact on GDP through the multiplier which is estimated at 2.9[43]. Further, the impact on employment is also likely to be significant since construction accounts for the highest share in employment after agriculture. In fact, excluding agriculture, the share of employment in total employment per unit of share of GVA to total GVA is the highest for the construction sector. As shown in Table 13.6, for each 1% increase in construction sector GVA in total GVA, the share in employment increases by 2% points.

Table 13.6: Share in employment and GVA of major sectors in the Indian economy (%)

Sector	1980-81	1990-91	2000-01	2010-11	2016-17	2016-17 minus 1980-81 (% points)	2016-17 share in GVA	Ratio of Share in employment to share in GVA (% points)
Agriculture	69.8	64.8	59.4	49.2	40.5	-29.4	18.0	2.3
Construction	2.0	3.7	4.5	9.5	15.6	13.6	7.7	2.0
Manufacturing	10.4	10.6	10.8	11.6	11.8	1.4	16.7	0.7
Trade	5.8	7.4	9.1	10.0	10.0	4.2	18.2	0.5
Others	11.9	13.5	16.2	19.7	22.2	10.2	39.3	0.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**		**100**	

Source: KLEMS database, RBI

The additional investment in social sector infrastructure needs to be focused on health infrastructure which is also a part of the NIP. The explosive increase in the incidence of COVID-19 cases in India is highlighting the fact that there is likely to be considerable shortage of hospital beds which can be earmarked for COVID patients across the country. New specialty hospitals to fight the COVID-19 cases need to be built on an urgent basis. Hospital bed availability in India, in any case, is deficient compared to international norms[44].

Conclusion

GoI's fiscal capacity to mount a larger fiscal stimulus beyond what was announced until mid-May 2020 remains constrained due to the performance of GoI's GTR which contracted by (-)3.4% in FY20. This revenue underperformance is due to a chronic component resulting from a fall in GoI's GTR on a trend basis, and an acute component resulting from the revenue implications of FY20 CIT reforms, among other factors. In order to break out from the vicious circle of low tax revenue-low fiscal stimulus-low real and nominal GDP growth in addition to coping with COVID-19, the GoI has to develop a strategy which requires a borrowing-based full implementation of NIP. The NIP has envisaged a spike in infrastructure investment in FY21 and FY22. This is precisely what is needed to restore growth and generate tangible employment. The high multiplier values associated with construction justify making a large exception to the Fiscal Responsibility and Budget Management (FRBM) targets in FY21 and if necessary, in FY22.

[43] Multiplier for dwellings and residential construction (housing); sourced from Report on Trend and Progress of Housing in India, 2016, National Housing Bank

[44] https://www.financialexpress.com/economy/bringing-indian-healthcare-up-to-global-standards-suneeta-reddy-tells-how-much-investment-is-needed/1746034/

Chapter 14

Is it time to recast India's fiscal and monetary policy frameworks? (August 2020)

Abstract

The central government had enacted an FRBMA in 2003. This Act has been amended a number of times since its inception. The latest amendment was in 2018. GoI's FRBMA was supplemented by state governments' Fiscal Responsibility Legislations (FRLs) which were legislated during 2002 to 2007 for most of the states and in 2010 for two of the remaining states namely, West Bengal and Sikkim. In the 2003 FRBMA, GoI's fiscal deficit to GDP ratio was targeted at 3% and the revenue account was to be kept in balance or in surplus. The 2018 amendment changed the target variable to debt-GDP ratio. The objective of revenue account balance was given up. For the combined account of GoI and state governments, the debt-GDP ratio target was kept at 60% with GoI's share at 40% and states' share at 20%. The central government was given a countercyclical role with a flexibility of 0.5% points of GDP in its fiscal deficit-GDP ratio subject to certain conditions and rules. The 12 Finance Commission (FC) had given an indicative benchmark of 28% as the debt-GSDP target for states. Correspondingly, the benchmark value for interest payment to revenue receipts was provided at 15%. Even though the central government amended its FRBMA in 2018, the state governments did not bring about corresponding changes in their respective FRLs which would have required reducing their individual debt-GSDP ratios to 20%.

Monetary policy in India had evolved from a multiple indicator approach and a focus on WPI inflation to a regime of flexible inflation targeting and focus on CPI inflation. In February 2015, a Monetary Policy Framework was agreed upon between the Government of India and the RBI. As per the framework, the RBI was mandated to target a CPI inflation rate below 6% by January 2016. CPI inflation target for 2016-17 and beyond was set at 4% with a tolerance range of +/-2%, implying an overall CPI inflation range of 2% to 6%. This target is to be reviewed once in five years. In order to implement this framework, a Monetary Policy Committee (MPC) was established in September 2016 by amending the RBI Act.

In this chapter, we have noted certain aspects in which the monetary and fiscal policy frameworks that may need to be resolved. The outcome of this independent pursuit of two macro policy frameworks was that the monetary policy pursuits kept driving the nominal GDP growth down, thereby reducing government's fiscal space which is dependent on tax buoyancy and nominal GDP growth. This led to persistent upward pressures on the fiscal deficit thereby making the central government miss its target of 3% year after year. There is thus a clear need for removing the inconsistency between the two macro policy frameworks.

Introduction

The combined fiscal deficit of central and state governments may turn out to be in the range of 11-12%[45] of GDP in FY21 leading to a sharp upsurge in the debt-GDP ratio. This is expected to lead to a significant departure from the target debt-GDP ratio of 60% for the combined government as per the GoI's 2018 amendment to the Fiscal Responsibility and Budget Management Act (FRBMA). The CPI inflation had also breached the upper tolerance limit of 6% in 4QFY20 and 1QFY21[46]. In July 2020, the CPI inflation was 6.9%. The RBI, in its FY20 Annual Report, has assessed upside risks to inflation prospects due to supply side disruptions. While the immediate impact is that of COVID, even prior to the pandemic, India's macroeconomic parameters were slipping with real and nominal GDP growth falling well below desired levels in FY20 at 4.2% and 7.2% respectively. This gives an opportunity to review and recast India's macro policy frameworks consisting of fiscal and monetary policy frameworks. In this review, we examine their infirmities and suggest possible reforms.

Fiscal policy framework: Key features

The central government had enacted an FRBMA in 2003. This Act has been amended a number of times since its inception. The latest amendment was in 2018. GoI's FRBMA was supplemented by state governments Fiscal Responsibility Legislations (FRLs) which were legislated during 2002 to 2007 for most of the states and in 2010 for two of the remaining states namely, West Bengal and Sikkim.

In the 2003 FRBMA, GoI's fiscal deficit to GDP ratio was targeted at 3% and the revenue account was to be kept in balance or in surplus. The 2018 amendment changed the target variable to debt-GDP ratio and used the fiscal deficit-GDP ratio only as an operational target. The objective of revenue account balance was given up. For the combined account of GoI and state governments, the debt-GDP ratio target was kept at 60% with GoI's share at 40% and states' share at 20%. The central government was given a countercyclical role with a flexibility of 0.5% points of GDP in its fiscal deficit-GDP ratio subject to certain conditions and rules.

The state governments enacted their FRLs individually following the guidance given by the Twelfth Finance Commission (12 FC). Although some of them amended their respective FRLs, their basic features remained the same while changing the target dates from time to time. Some of the important features of the state FRLs related to limiting the fiscal deficit to GSDP ratio to 3% and keeping the revenue account in balance if not in surplus. The 12 FC had given an indicative benchmark of 28% as the debt-GSDP target for states. Correspondingly, the benchmark value for interest payment to revenue receipts was provided at 15%[47]. Even though the central government amended its FRBMA in 2018, the state governments did not bring about corresponding changes in their respective FRLs which would have required reducing their individual debt-GSDP ratios to 20%.

Trends in fiscal imbalance of GoI and states

Chart 14.1 shows the fiscal deficit of GoI and states during the period FY01 to FY20. In the case of GoI, there was some initial success with GoI's fiscal deficit falling gradually to 2.6% of GDP by FY08, the only year in which it was below the FRBM target of 3% of GDP. Fiscal deficit relative to GDP sharply rose to 6.1% and 6.6% in FY09 and FY10 respectively as a consequence of the 2008 global economic and financial crisis. After that, although there was a steady reduction, it could not be brought down to the targeted level. Instead, the central government resorted to postponing the target dates. In FY20, GoI's fiscal deficit increased to 4.6% of GDP. In FY21, it is expected to rise to a range of 6-7% of estimated GDP[48]. States, considered together, have been more successful in keeping their fiscal deficit below 3% of GDP. After FY05, there are three years namely, FY10, FY16, and FY17 in which states' combined fiscal deficit was above 3% of GDP.

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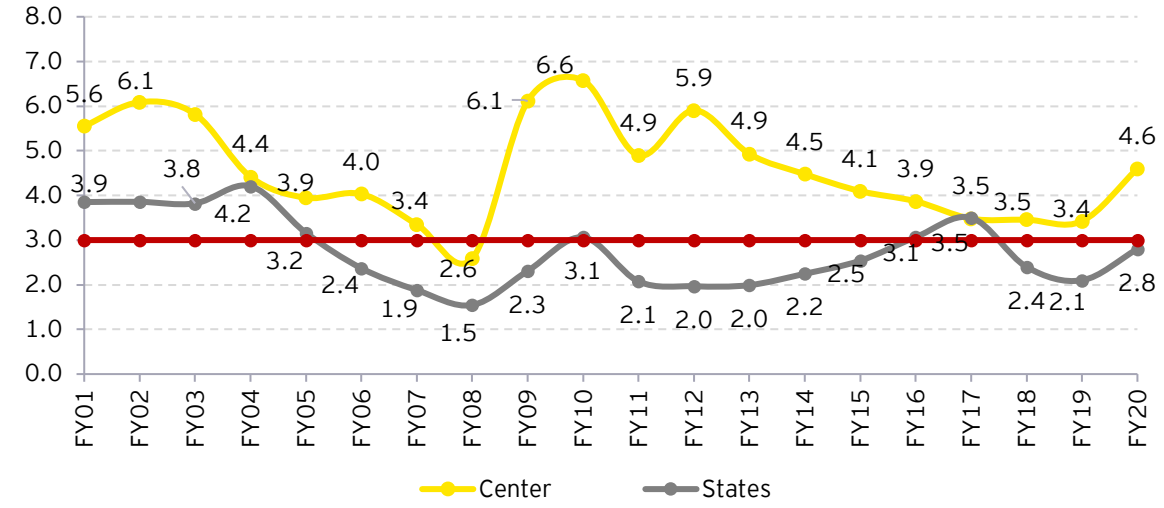
[45] The World Bank in its recent release of India Development outlook (July 2020) has projected a general government deficit of 11.1% of GDP. IMF has projected a general government fiscal deficit of 12.1% of GDP in FY21

[46] http://www.mospi.gov.in/sites/default/files/press_release/CPI%20Technical%20Note%20on%20Imputation.pdf

[47] Paragraph 4.54 of the Report of the Twelfth Finance Commission

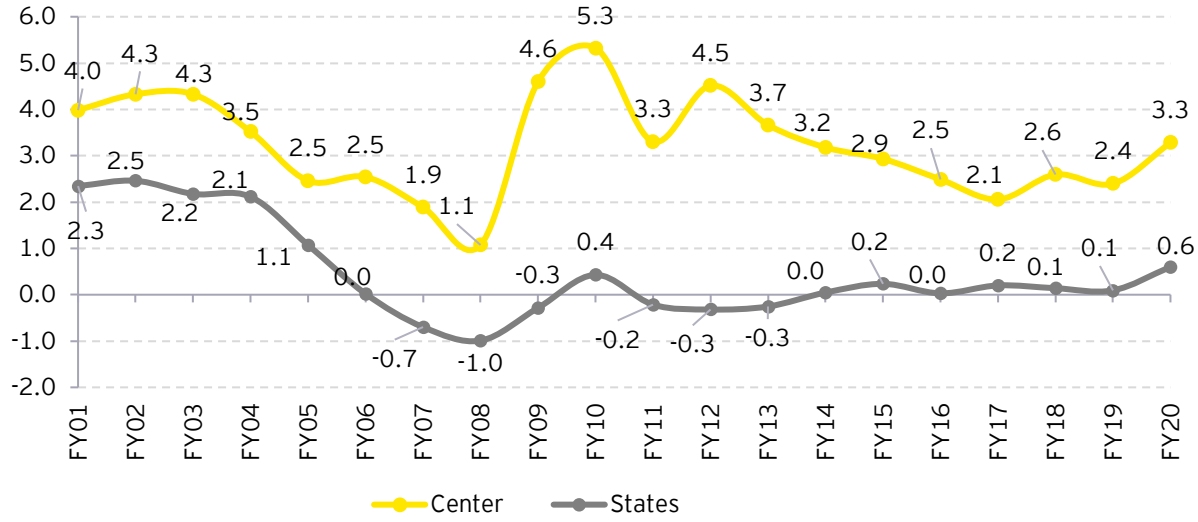
[48] 'India Development Update' (July 2020), World Bank

Chart 14.1: Fiscal deficit (+) relative to GDP: GoI and states



Source (Basic Data): CGA, IPFS, CSO, RBI FY20 Annual Report (25 August 2020)
Note: For states, data from FY17 onwards is sourced from the RBI where FY20 pertains to RE

Chart 14.2: Revenue deficit (+) relative to GDP: GoI and states



Source (Basic Data): CGA, IPFS, CSO, RBI FY20 Annual Report (25 August 2020)
Note: For states, data from FY17 onwards is sourced from the RBI where FY20 pertains to RE

With respect to revenue account, the GoI's budget went into deficit in FY80 and has remained in deficit in all years since then. The aggregate account of the states went into revenue deficit in FY88 on a persistent basis. It remained in deficit until FY06. Post that, there was either a surplus or a marginal deficit (**Chart 14.2**). In this analysis, revenue deficits and surpluses of individual states are aggregated together to arrive at the combined revenue deficit of states.

Table 14.1: Estimated debt-GDP ratio: GoI, states and combined

Years	f_t	b_t	$b_t - b_{t-1}$	g_t
Combined: GoI and states				
FY18	5.9	69.8		11.1
FY19	5.5	68.4	-1.4	11.0
FY20	7.4	71.2	**2.8**	7.2
FY21 (projected)	11.5	**80.6**	**9.4**	3.0

Years	f_t	b_t	$b_t - b_{t-1}$	g_t
GoI				
FY18	3.5	44.7		11.1
FY19	3.4	43.7	-1.0	11.0
FY20	4.6	45.4	1.7	7.2
FY21 (projected)	7.0	**51.0**	5.7	3.0
States				
FY18	2.4	25.1		11.1
FY19	2.1	24.7	-0.4	11.0
FY20	2.8	25.9	1.1	7.2
FY21 (projected)	4.5	**29.6**	3.7	3.0

Source: IPFS, Union Budgets, RBI FY20 Annual Report (released 25 August 2020)
Notes: *(1)* Initial debt to GDP ratio for FY18 has been sourced from the RBI and for subsequent years, debt-GDP ratios have been estimated using the fiscal deficit numbers from the Union Budget and the RBI; *(2)* the debt-GDP ratio in FY18 includes external debt evaluated at current exchange rates; *(3)* The projected debt-GDP ratios for the GoI excludes extra budgetary borrowing; *(4)* The Combined debt-to-GDP ratio and the GoI's debt to GDP ratio are net of inter-governmental transactions between the GoI and the state governments amounting to 5% points of GDP due to the following components: (a) NSSF investment in State governments special securities (b) Loans and advance by the GoI to States and (c) State governments' investment in GoI's treasury bills

Impact of slippage fiscal deficit on the debt-GDP ratio

The debt-GDP ratio at the end of a fiscal year depends on three factors: (a) level of fiscal deficit in the current year (f_t), (b) debt-GDP ratio of the previous year (b_{t-1}), and (c) growth rate of the current year (g_t). The increase in debt-GDP ratio between two successive years ($b_t - b_{t-1}$) would be higher if (i) the current fiscal deficit is higher, (ii) the current growth rate is lower, and (iii) the previous year's debt-GDP ratio is lower[49]. Accordingly, in Table 14.1, we have estimated the likely level of debt-GDP ratios of the GoI, the states and their combined account. With the nominal GDP growth plummeting in FY20 and FY21 (projected), the predicted debt-GDP ratio on the combined account is likely to be close to 81% with GoI's debt at 51.0% of GDP and states' at 29.6% of GDP. We may note that the World Bank[11] has projected in its baseline scenario, that the general government debt in India would increase to 87.5% of GDP at the end of FY22 and to 89.2% at the end of FY23. This implies a slippage of nearly 30% points from the current FRBMA target of 60%, if we go by the World Bank estimate for FY23.

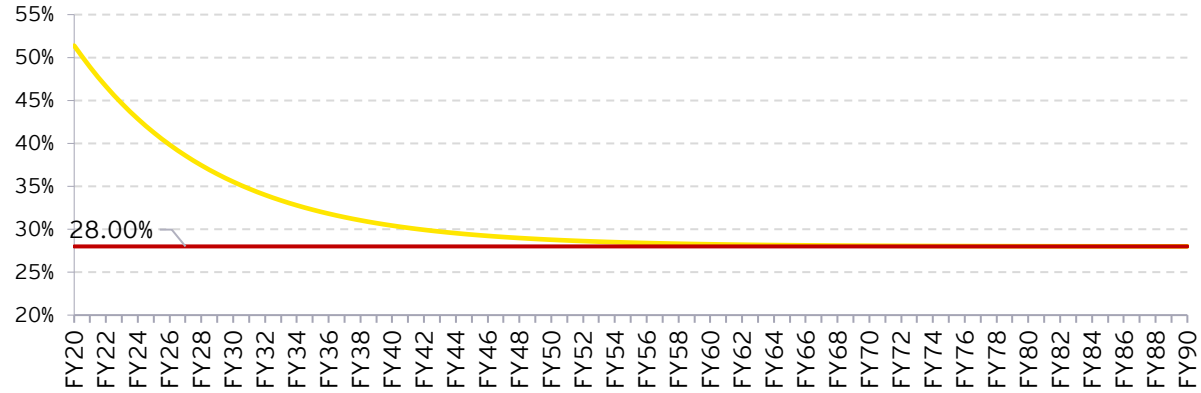
Infirmities in the fiscal policy framework

With the combined debt-GDP ratio likely to depart from the target level of 60% by more than 20% points at the end of FY21, it would render the 2018 amendment completely out of alignment. In fact, the 2018 FRBMA has a number of other infirmities as discussed below:

1. **Elimination of revenue deficit target:** Maintaining balance or surplus on revenue account is critical since it is linked to government sector dissavings. For realizing India's potential growth, it is important to maximize the savings rate. One important instrument for this is to maintain government's revenue account in balance or in surplus. This was also the primary objective of GoI's 2003 FRBMA. The target of maintaining a revenue account balance has been given up in GoI's 2018 FRBMA.
2. **Inconsistent targets for debt and deficit for GoI and states:** It can be seen that maintaining a fiscal deficit target of 3% of GDP for both GoI and states is inconsistent with targeting debt-GDP ratio of 40% for GoI and 20% for states. Simulations indicate that they should both be equal if the fiscal deficit targets are equal. **Charts 14.3 and 14.4** show that they would converge to an equal level if fiscal deficit to GDP ratios are equal and the nominal growth rate is common. In this example, the nominal annual growth rate is assumed to be 12% and fiscal deficit is assumed to be 3% of GDP each for the GoI and states.

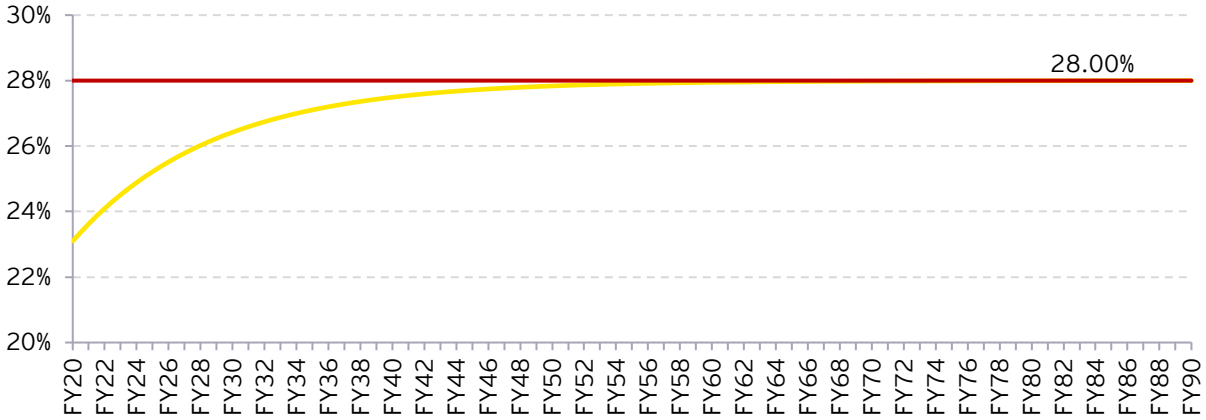
[49] The exact formula is $b_t - b_{t-1} = f_t - b_{t-1}\left[\frac{g_t}{(1+g_t)}\right]$

Chart 14.3: GoI's Debt-GDP ratio



Source: RBI, MOSPI, and author's estimates; Note: Initial debt to GDP ratio for FY20 for the GoI was taken at 51.4% (RE). Debt-GDP ratio for all states was taken at 23.1% (RE)

Chart 14.4: States debt-GDP ratio



Source: RBI, MOSPI, and author's estimates; Note: Initial debt to GDP ratio for FY20 for the GoI was taken at 51.4% (RE). Debt-GDP ratio for all states was taken at 23.1% (RE)

3. **Inadequate countercyclical clauses:** GoI's 2018 FRBMA has a provision for countercyclical measures. It provides for five conditions in which a departure from the operational fiscal deficit target of 3% of GDP can be made. These conditions relate to: (a) national security, (b) act of war, (c) national calamity, (d) collapse of agriculture severely affecting farm output and incomes and (e) structural reforms in the economy with unanticipated fiscal implications. The Act provides that if, as a result of one or more of the above conditions, there is a "*...decline in real output growth of a quarter by at least 3% points below its average of the previous four quarters...*", then fiscal deficit limit may be increased but this increase "*shall not exceed one half percent of the gross domestic product in a year*". The COVID-19 pandemic may be classified as a national calamity under clause (c) above. However, the real GDP growth had started declining in the pre-pandemic quarters. In fact, it declined from a peak of 8.2% in 4QFY18 for eight successive quarters with one exception in 4QFY19, to 3.1% in 4QFY20. Yet this rule of a departure of 0.5% points of GDP could not be invoked. Its conditions proved to be too impractical to capture the evolving situation. When it was invoked in FY20, the cited reason was '*structural reforms*' and the magnitude of actual departure became much larger than 0.5% points of GDP[50]. Further, in a pandemic kind of situation also, the magnitude of permitted departures has proved to be too inadequate.

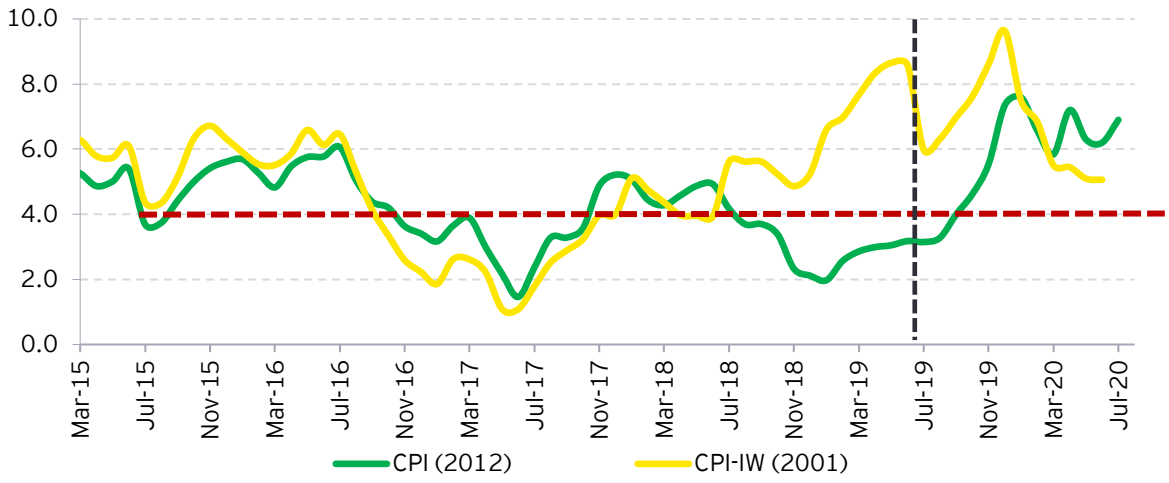
[50] Center's fiscal deficit was budgeted at 3.5% of GDP for 2019-20. The actual fiscal deficit relative to GDP was at 4.6%.

Monetary policy framework

Monetary policy in India has evolved from a multiple indicator approach and a focus on WPI inflation to a regime of flexible inflation targeting and focus on CPI inflation. In February 2015, a Monetary Policy Framework was agreed upon between the Government of India and the RBI. As per the framework, the RBI was mandated to target a CPI inflation rate below 6% by January 2016. CPI inflation target for 2016-17 and beyond was set at 4% with a tolerance range of +/-2%, implying an overall CPI inflation range of 2% to 6%. This target is to be reviewed once in five years[51]. It is due for a review in March 2021. In order to implement this framework, a Monetary Policy Committee (MPC) was established in September 2016 by amending the RBI Act. The MPC consists of six members, three from the RBI, and three outside experts/government officials. The Governor is the ex-officio Chairperson. The RBI has been mandated to publish a Monetary Policy Report every six months explaining the sources of inflation and forecasts of inflation for the next 6 to 18 months. According to the Monetary Policy Framework, the RBI would fail to meet the target if the rate of inflation is more than 6% or less than 2% *for three successive quarters*. Further in case of failure, the RBI is required to submit a report to the Central government detailing a) the reasons for failure, b) remedial actions to be taken and c) estimate of time period within which the target would be achieved.

Since the adoption of CPI inflation target of 4% in 2016, the average CPI inflation (2012 series) during April 2016 to March 2020 has been 4.1%. (**Chart 14.5**). We note that the annual IPD-based inflation was below the CPI inflation by a margin of 1.2% points during FY15 to FY20 on average. If we consider this difference from FY16 onwards, it has come down to 0.9% points. It may be noted that the relationship between core CPI inflation and IPD-based inflation is more stable since most of the volatility in CPI inflation is caused by variations in food and fuel prices which are excluded from core CPI inflation and does not have much influence on IPD-based inflation. IPD-based inflation has an important bearing on nominal GDP growth (**Chart 14.6**).

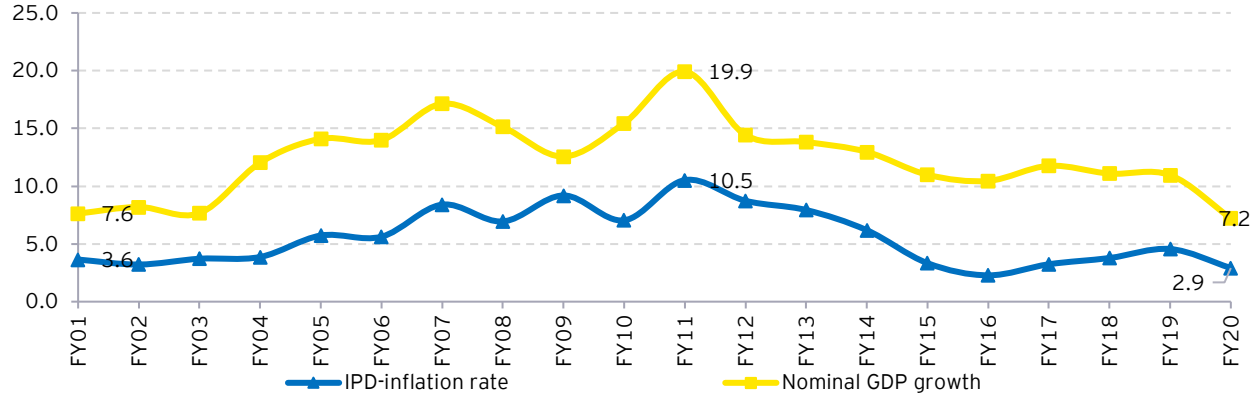
Chart 14.5: CPI inflation



Source (basic data): MOSPI

[51] Chapter III F [Clause 45ZA(1)]; https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/RBIA1934170510.PDF

Chart 14.6: IPD-based inflation and nominal GDP growth



Source (basic data): MOSPI

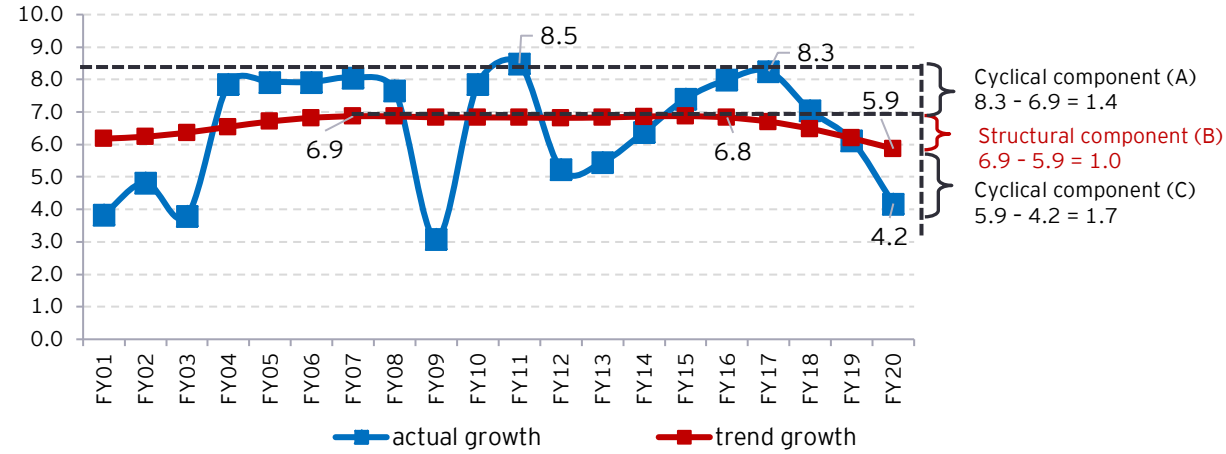
Policy anchor: Relative merits of alternative inflation measures

There are three main measures of inflation available in India namely CPI, WPI and the implicit GDP deflator. The GDP deflator is available only at quarterly and annual frequencies. A new CPI series became available in January 2011. Historically, the WPI series has been released by the CSO on a consistent basis for the longest period of time in India, when compared to other price measures, but has been considered inadequate for policy guidance since it does not include services and does not reflect prices that consumers actually pay. For policy guidance, many countries use CPI inflation rate as an anchor. Sometimes, using core CPI inflation which excludes food and fuel prices is considered to be better since these two are determined largely by exogenous factors. Even if CPI is chosen as the policy anchor for inflation, it is important to keep in mind its relationship with IPD-based inflation. This has a bearing on tax revenue growth as discussed in the next section.

Reviewing growth experience in India: Real and nominal

One key macro policy objective is to ensure that the actual growth in the economy remains close to its potential growth[52]. While there are a number of methods for measuring potential growth, it is often captured by estimating the trend growth rate over a longer period of time which is estimated in a manner such that cyclical movements are ironed out. For this purpose, we consider the 2011-12 base GDP series.

Chart 14.7: Real GDP growth: Actual and trend



Source: MOSPI; Note: the trend growth was estimated using Hodrick-Prescott filter using a lambda value of 50

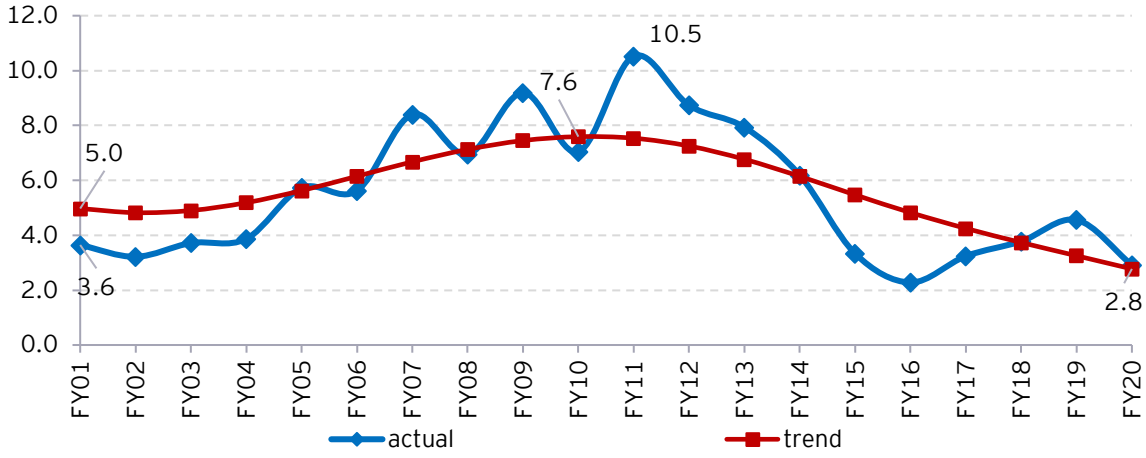
[52] Rangarajan, C., and D. K. Srivastava. "Underlying Drivers of India's Potential Growth." *Economic & Political Weekly* 52.25-26 (2017): 69-77.

Chart 14.7 shows that while actual growth peaked at 8.3% in FY17, the trend growth rate remained close to 7% over a longish period ranging from FY07 to FY16. In FY20, the difference between actual growth and the most recent peak growth amounts to 4.1% points. This fall is due to structural as well as cyclical factors. The cyclical factors account for 3.1% points whereas the structural component accounts for nearly 1% point of GDP. It is the responsibility of the macro policy makers to ensure that both the cyclical and structural gaps are minimized. The structural problem has effectively remained unattended. This becomes apparent from the persistent decline in India's saving and investment rates since FY11[53]. The structural problem was overlaid by a cyclical problem of deficient demand in the more recent years particularly in FY20.

Analyzing movement of IPD-based inflation

A link is provided between the monetary policy framework and the fiscal policy framework through the profile of IPD-based inflation. The monetary authorities manage CPI inflation and by implication, also manage the IPD-based inflation. This has a bearing on GDP in nominal terms which determines tax revenue growth, which in turn critically affects the fiscal space. If tax revenue growth falls unduly, it may affect the public sector saving rate by adversely affecting government's revenue deficit. It may also force the public authorities to borrow more and thereby affect the fiscal deficit. Thus, fiscal and monetary policy decisions must be coordinated for optimum results. This coordination is discussed in the next section.

Chart 14.8: Deflator based inflation rate: Actual and trend

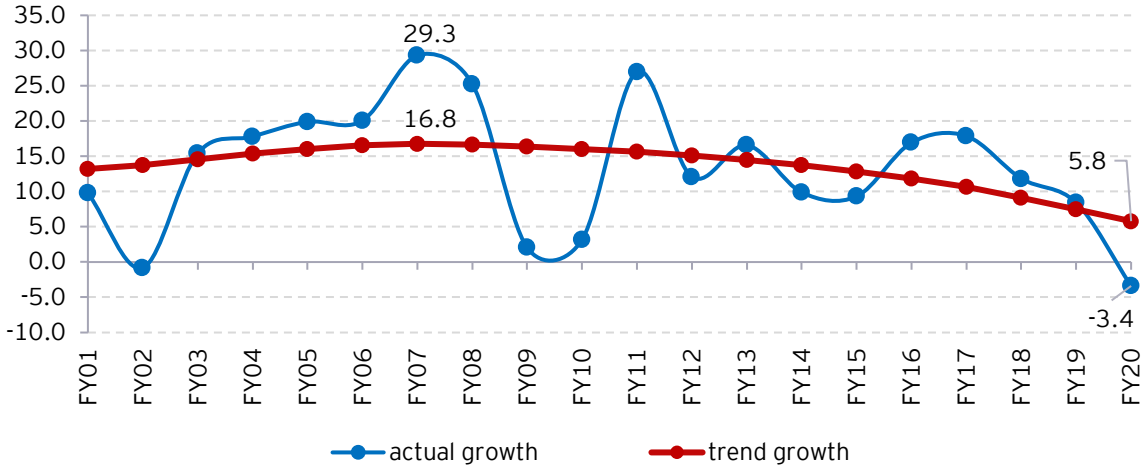


Source: MOSPI
Notes: the trend growth was estimated using Hodrick-Prescott filter using a lambda value of 50

Chart 14.8 shows that the deflator-based inflation fell on trend basis from a peak of 7.6% in FY10 to 2.8% in FY20. Nominal GDP growth also fell on trend basis from a peak of 14.9% in FY11 to 8.8% in FY20. The actual nominal GDP growth fell to 7.2% in FY20 (not shown here). GoI's tax revenue growth also fell on trend basis, from 16.8% in FY08 to 5.8% in FY20. In actual terms, there was in fact, a contraction in GoI's gross tax revenues of (-)3.4% in FY20 (**Chart 14.9**).

[53] EY Economy Watch September 2019 (https://assets.ey.com/content/dam/ey-sites/ey-com/en_in/topics/tax/economy-watch-september-2019.pdf)

Chart 14.9: GoI's GTR growth: Trend and actual



Source: MOSPI
Notes: the trend growth was estimated using Hodrick-Prescott filter using a lambda value of 50

This review indicates two important deficiencies in the monetary policy framework in the current Indian context. First, there is no emphasis on the growth objective for the MPC to consider. Second, the CPI inflation target of 4% on average implies an IPD-based inflation of 2.5-3%. This is too low and inconsistent with the fiscal policy framework which assumes a nominal GDP growth of 11-12% as discussed below.

Issues of coordination between monetary and fiscal policy frameworks

There are notable inconsistencies between implicit growth and inflation targets in major macro policy decisions which were taken roughly around the same time. In the case of fiscal policy decisions, two implicit assumptions regarding nominal GDP growth are important. First, with respect to GST which was implemented on 1 July 2017, the states were guaranteed a growth of 14% in nominal terms in their share of GST revenues. This guarantee was implemented through the mechanism of the compensation cess. A 14% growth in GST revenues assumes a combination of GST buoyancy and nominal GDP growth. The higher the buoyancy, the lower would be the implicit assumption of nominal GDP growth. It may be reasonable to assume that at the time of transition to a revenue neutral GST, a buoyancy higher than 1.2 may not have been feasible. In fact, the actual buoyancy turned out to be much lower. A buoyancy of 1.2 for the component of GST attributable to states (SGST + states' share in IGST) implies a nominal GDP growth of 11.7% per annum. In the year in which GST was introduced, the Union Budget had assumed a nominal GDP growth of 11.75%[54]. According to the minutes of the 3rd GST council meeting (held on 18-19 October 2016), most state ministers had argued for a 14% growth over the base year GST revenue, considering a nominal GDP growth of 12% or above[55].

Second, for stabilizing the combined debt to GDP ratio at 60% with a 6% combined fiscal deficit-GDP as per GoI's 2018 FRBMA, the implicit nominal GDP growth rate works out to be nearly 11%. These growth assumptions turned out to be much higher than the nominal GDP growth outcome driven by the monetary policy framework. As discussed earlier, the MPF targeted a CPI inflation of 4%. We note that the IPD based inflation during FY15 to FY20 was below the CPI inflation by 1.2% points on average. This implies that a CPI inflation target of 4% was associated with an IPD based inflation of 2.8% during FY15 to FY20. The difference between CPI inflation and IPD-based inflation increased to 1.9% points in FY20. Combining the average IPD based inflation at 2.8% with the average real GDP growth at 6.8% during FY15 to FY20, the resultant nominal GDP growth comes out to be

[54] https://www.indiabudget.gov.in/budget2017-2018/ub2017-18/bag/bag1.pdf
[55] http://www.gstcouncil.gov.in/sites/default/files/gst%20rates/Signed%20Minutes%20-%203rd%20GST%20Council%20Meeting.pdf

(6.8+2.8+0.19) = 9.8%. This outcome emerging from the monetary policy framework is well-below that emerging from the fiscal policy framework which ranges from 11-12%.

Thus, there is a built-in inconsistency between the two macro policy frameworks. The outcome of this independent pursuit of two macro policy frameworks was that the monetary policy pursuits kept driving the nominal GDP growth down, thereby reducing government's fiscal space which is dependent on tax buoyancy and nominal GDP growth. This led to persistent upward pressures on the fiscal deficit thereby making the central government miss its target of 3% year after year. The GST revenues also fell well-short of the implicit growth of 14%. There is thus a clear need for removing the inconsistency between the two macro policy frameworks.

Modifying fiscal policy framework

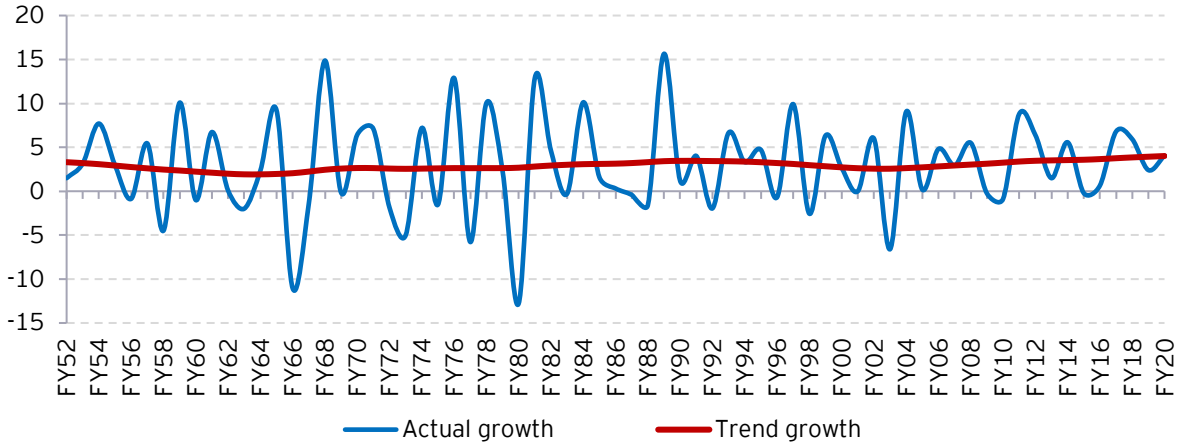
The GoI's FRBMA has been thrown out of gear because at the end of FY21, the policy anchor namely, the combined debt-GDP ratio is likely to be close to 81%, more than 20% points higher than its target value of 60%. Given the history of correction in the debt-GDP ratio, bringing it down from 81% to 60% may prove to be unrealistic. The average annual rate of change in the combined debt-GDP ratio over the period from FY91 to FY20 is close to 0 (0.030% points) with some patches where inter-year variations were relatively larger. This historical experience shows that achieving a reduction of more than 20% points is unlikely. It may be better to recast the FRBMA.

There is a case to consider asymmetric debt-GDP targets for the GoI vis-à-vis the states. In fact, the central government may be given a higher target in view of (a) its higher current debt-GDP levels, (b) its relatively more important macro stabilization role, and (c) its pivotal role in building defence and non-defence infrastructure under the current circumstances faced by India. It may be desirable to continue with the 40% debt-GDP target for the GoI but change the fiscal deficit target to 4% of GDP. This provides a sustainable combination of debt and deficit at a nominal GDP growth rate of 11%. For the states considered together, the debt-GDP target may be uplifted to 30%, revising up the current inconsistent level of 20%. It can now be combined with a consistent fiscal deficit target for the states at 3% of GDP and for individual states, at 3% of their respective GSDPs. This combination is also consistent with the nominal GDP growth rate of 11%. This implies that the combined debt-GDP ratio target may need to be revised upwards to 70%. It may be useful to work out the adjustment path to reach this level from the expected peak level of debt-GDP ratio at the end of FY23[11]. Another important change that is required in GoI's FRBMA relates to the strategy for dealing with countercyclical provisions.

Distinguishing between agricultural and non-agricultural cycles

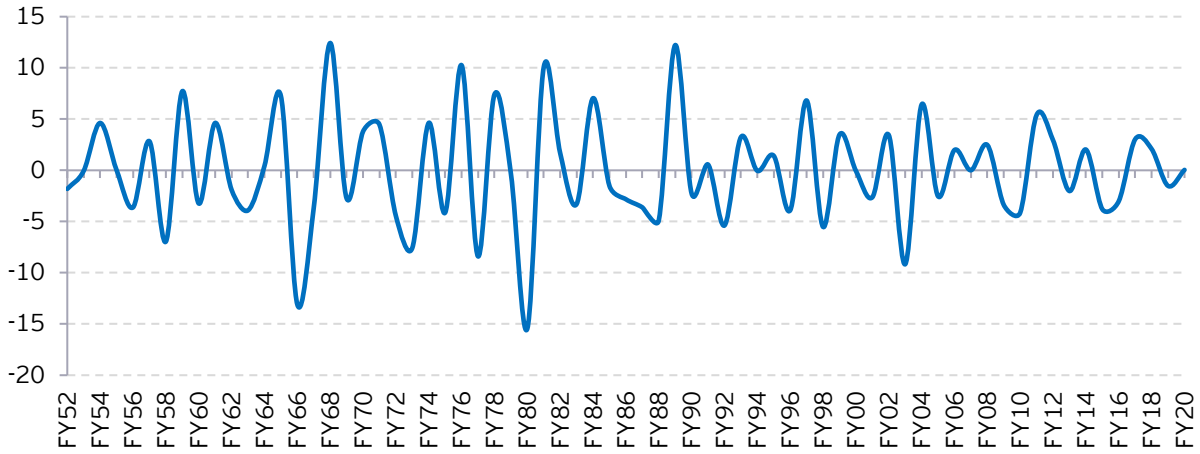
In this section, we consider the desirability of developing countercyclical fiscal instruments which are different for dealing with agricultural vis-à-vis non-agricultural cycles. In spite of progressive investment in irrigation across India, Indian agriculture remains heavily dependent on monsoon and therefore, the cycles that get generated linked to the cyclicality of the rainfall relative to its long period average. This cyclicality is regular in terms of its periodicity, broadly comparable in terms of the related cyclical amplitudes, and its impact on agricultural output and incomes as well as the overall economy.

Chart 14.10: Real agricultural growth: Actual and trend (%)



Source (basic data): MOSPI

Chart 14.11: Cyclicality in agricultural growth: Deviation of actual growth from trend growth (% points)



Source (basic data): MOSPI

Charts 14.10 and 14.11 indicate that the periodicity of real growth in agricultural output (GVA) in India over the last 70 years is close to three years. We also notice that the amplitude of agricultural cycles has come down over time. In comparison, for non-agricultural output (GVA) growth, the average periodicity over the same period is close to six years (not shown here).

There are two major countercyclical instruments which can be embedded in the FRBMA. One is to establish a stabilization fund from which governments may withdraw in slowdowns while replenishing the fund in expansionary phases. The other instrument is to allow a flexibility in the fiscal deficit limit in relation to its target value, borrowing more than average in slowdowns and less than average in expansionary phases. It may be useful to utilize both instruments in India's case. A stabilization fund-based approach may be effective for tackling agricultural cycles. Further, since agriculture is a state subject and often agricultural droughts tend to be state-specific, states may be given the facility to draw from the fund which may be established and managed by the central government so that discipline is maintained. For the non-agricultural cycle, a flexibility of 1% point of GDP in fiscal deficit may be provided for the central government. In macro stabilization literature, countercyclical policy is the main responsibility of the central government. However, these instruments are meant for regular and periodic agricultural and non-agricultural cycles. This framework would break down in the case of structural breaks such as a pandemic or a war. In these exceptional circumstances, it may be better to have an institutional framework which can devise

appropriate methods for dealing with such situations requiring coordination between central and state governments as well as fiscal and monetary authorities.

Ensuring consistency with saving investment profiles

For the fiscal framework, the internally consistent target real GDP growth rate is set at its potential level of 8%[56]. This requires an investment of about 36% of GDP, which may be financed by domestic savings of 33.5% of GDP and net capital inflow of 2.5% of GDP which is consistent with a corresponding sustainable level of current account deficit (CAD)[57]. Achieving a domestic saving rate of 33.5% requires uplifting the current rate of about 29% by more than 4% points. This is to be brought about mainly by eliminating revenue deficits of the central and state governments and by uplifting savings of household and private corporate sectors together by margins of 0.5-1% point of GDP.

Modifying monetary policy framework

The monetary policy framework is due for a review every five years. Thus, it should be reviewed in March 2021. In view of the earlier discussion, the following changes in the monetary policy framework may be considered:

(a) The RBI may continue with CPI inflation as the target variable.
(b) The average targeted CPI inflation rate may be kept at 5% with a tolerance range of +/- 2%, so that the IPD based inflation is targeted at 4% on average.
(c) The monetary authority may keep in mind an annual real GDP potential growth target of 8% and a nominal GDP growth target of 11-12%. The monetary authority may ensure this in coordination with the fiscal authorities. For this coordination, an institution like a *Macro Policy Coordination Council* (or *Fiscal Council)* may prove to be quite effective.

Coordination issues: Role of Macro Policy Coordination Council

There are important coordination issues in managing fiscal and monetary policy frameworks. This is a specialized task requiring periodic monitoring, and informing the policymakers both on the monetary and fiscal sides, of the expected implications of their actions. In fact, coordination is needed between the central government, indvidual state governments and UTs with legislatures, and the MPC. Such a task is best attended to by an institutional innovation such as the setting up of a *Macro Policy Coordination Council* (or a *Fiscal Council*). Many countries across the world have established autonomous Fiscal Councils. Such a Council has also been recommended by a number of recent Finance Commissions as also by the FRBM Review Committee in 2018. The Fiscal Statistics Committee of the National Statistical Commission[58] had also examined this issue and endorsed the need for instituting a Fiscal Council in India which can play a role as (a) co-ordinator of macro-stabilization policies, (b) fiscal data analyst, (c) fiscal consolidation path monitor, (d) forecaster of fiscal aggregates, (e) fiscal policy advisor , and (f) fiscal data coordinator.

The proposed *Macro Policy Coordination Council* may keep the following targets as part of its objective functions: (1) potential real GDP growth of 8%, (2) CPI inflation of 5% with a flexibility of +/-2% or equivalently, an IPD based inflation of 4% with a flexibility of +/-2%, (3) nominal GDP growth target in the range of 11-12%, and (4) combined debt-GDP target at 70% with 40% for the GoI and 30% for the states. Correspondingly, the fiscal deficit targets should be 7% for the combined government with 4% for the GoI and 3% for the states.

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[56] Rangarajan, C., and D. K. Srivastava. "Underlying Drivers of India's Potential Growth." *Economic & Political Weekly* 52.25-26
(2017): 69-77.
[57] https://www.thehindu.com/opinion/lead/Can-India-grow-at-8-to-9-per-cent/article14317462.ece
[58] http://www.mospi.gov.in/sites/default/files/committee_reports/Report%20of%20the%20Committee%20on%20Fiscal%20Statistics.pdf

Conclusions

We have reviewed India's monetary and fiscal policy frameworks which have guided policymaking during the last five years. We have noted that there are certain infirmities and inconsistencies in these policy frameworks. Further, there has been a lack of coordination between the pursuits of fiscal and monetary authorities to ensure desirable growth and inflation outcomes. In fact, there is an internal inconsistency in their implicit assumptions. In view of these observations, it may be useful to recast these frameworks for which the following may be considered:

1. The 2018 version of FRBMA needs to be re-amended.
2. The new FRBMA needs to bring back revenue account balance as a key target for both central and state governments.
3. There is a case to consider the need for introducing asymmetric targets for fiscal deficit and correspondingly for debt relative to GDP for the central government vis-à-vis the state governments. GoI's fiscal deficit and debt may be kept at somewhat higher levels in the current circumstances of the Indian economy given the macro stabilizing role that the GoI undertakes and the need to build infrastructure in the next five years or so. We may consider a combination of 40% of debt-GDP ratio and 4% of fiscal deficit to GDP ratio for the GoI and 30% of debt-GDP ratio and 3% of fiscal deficit-GDP ratio for the states considered together. These are stable combinations at a nominal growth rate of 11%. Together, the debt-GDP ratio target can be increased to 70%. It may be noted that for the last 30 years, the combined debt-GDP ratio of the central and state governments in India has remained close to 70% with some inter-year variations.
4. The combined fiscal deficit to GDP ratio at 7% can be financed by a surplus in the household sector savings rate of an equal amount. The net borrowing requirement of the non-government public sector and the private corporate sector taken together, of 2.5% of GDP can then be met by net capital inflows. As revenue deficit of central and state governments is progressively reduced to zero this is likely to become feasible.
5. This level of fiscal deficit for the government can be sustained at a suitable level of saving-investment combination consistent with the potential growth rate of 8%. At an incremental capital output ratio (ICOR) of 4.519, an investment rate of 36% is required to generate this growth. Considering 2.5% of GDP as sustainable level of net capital inflows, a domestic saving rate of 33.5% is required. This can be obtained by combining (a) household sector saving at 19% with a financial saving component of about 8%, (b) private corporate saving of 10.5%, and (c) public sector saving of 4%. These levels are only marginally above those achieved by household and private corporate sectors in recent years. The main improvement is to be brought about in public sector saving for which keeping government's revenue account in balance is necessary.
6. State governments may be given a specific macro stabilization role particularly for agricultural cycles which may be handled by establishing an Agricultural Cycle Stabilization Fund (ACSF).
7. Non-agricultural cycles may be handled by a rule-based flexibility of nearly 1% point of GDP in GoI's fiscal deficit wherein there could be a mechanism for ensuring that departures of fiscal deficit from its average target are followed symmetrically in cyclical upturns and downturns so that the debt-GDP ratio remains sustainable and stable.
8. The monetary policy framework of 2015 may be amended.
9. The MPC may keep in mind, a growth objective although it is to be monitored by the suggested Macro Policy Coordination Council.
10. The target variable may continue to be CPI.
11. The target CPI inflation rate may be kept at 5% on average with a tolerance range of +/-2% points. This is consistent with an IPD based inflation rate of 4% on average.
12. A Macro Policy Coordination Council needs to be established. It may serve a number of objectives but the most important may be to provide a framework in which monetary and fiscal policy decisions are coordinated. It may also deal with instances of structural breaks caused by extraordinary exogenous events such as a pandemic or a war. Growth and inflation targets may be defined for both of these frameworks in a mutually consistent way. The Macro Policy Coordination Council may aim at a potential real GDP growth rate of 8%, a nominal GDP growth

in the range of 11-12%, a CPI inflation of 5%[59] with a flexibility of +/-2% or equivalently, an IPD based inflation of 4% with a flexibility of +/-2%. The combined debt-GDP target should be 70% with 40% for the GoI and 30% for the states. Correspondingly, the fiscal deficit targets should be 7% for the general government with 4% for the GoI and 3% for the states.

[59] There has been a discussion around determining a suitable threshold level of inflation for India which may be close to 5%. For example see **(i)** https://www.thehindubusinessline.com/economy/inflation-at-5-an-acceptable-threshold-for-india-rangarajan/article20545706.ece1

(ii) Mohanty, D., Chakraborty, A. B., Das, A., & John, J. (2011). Inflation Threshold in India: An Empirical Investigation. Reserve Bank of India working paper series, 18, 2-9.

(iii) Singh, P. (2010). Searching threshold inflation for India. Economics Bulletin, 30(4), 3209-3220.

(iv) Pattanaik, S., & Nadhanael, G. V. (2011). Why persistent high inflation impedes growth? An empirical assessment of threshold level of inflation for India. RBI Working Paper Series No. 17.

Chapter 15

Growing government indebtedness: Sustainability signals from the Budget (January 2024)

Abstract

In the COVID year, due to the high level of fiscal deficit relative to GDP at 9.2%, GoI's debt-GDP ratio had shot up to close to 90%. Since then, it has been incrementally coming down but has still remained far above the FRBM level of 40%. At the time of the presentation of the Interim Budget in February 2024, prior to the general elections of 2024, there was the apprehension that government fiscal deficit and debt may shoot up. The IMF had also cautioned regarding India's general government debt being above sustainability levels. In this chapter, we have argued that there is a case for GoI to specify the assumptions regarding the trajectories of fiscal deficit and nominal growth to indicate a realistic path to achieve the FRBM targets. We have also shown that if fiscal deficit is to be reduced in FY25, the GoI's capital expenditure growth may have to be adjusted downwards. This adjustment may become larger and larger as fiscal deficit is reduced progressively more to reach 3% of GDP. We had highlighted that since growth was primarily being supported by government capital expenditure, a realistic combination of fiscal deficit reduction and a reduction in capital expenditure growth may have to be worked out in the FY25 Interim Budget.

Introduction

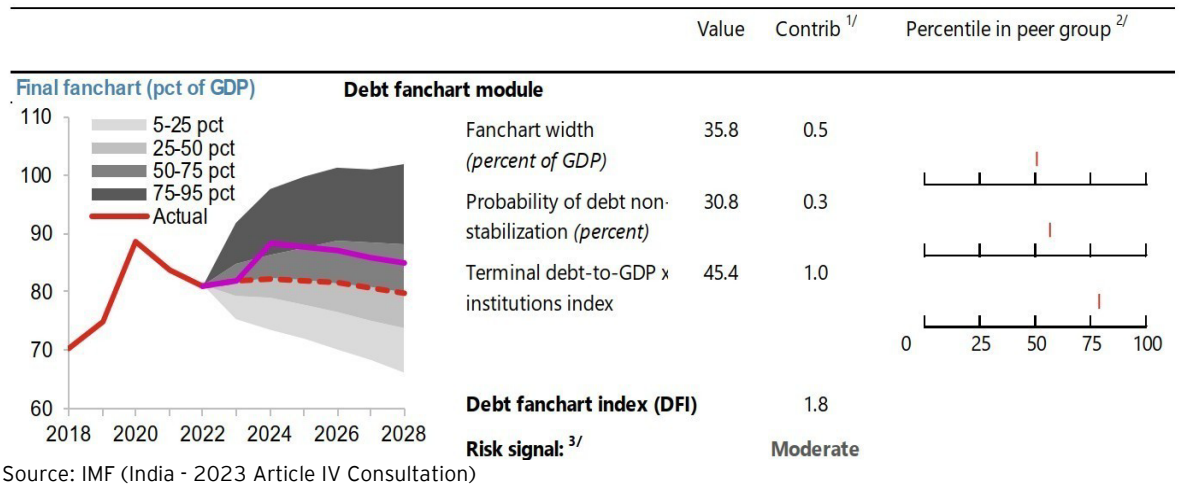
GoI's Interim Budget for FY25 is scheduled to be presented on 1 February 2024. With general elections due in May 2024, any major policy announcements are not expected in this Budget. The Budget provides an occasion to assess the fiscal health of the economy against the backdrop of a robust economic growth. A recent IMF study (India - 2023 Article IV Consultation) has pointed out significant risks associated with the India's combined debt of central and state governments. In particular, they had raised the possibility of the combined government debt crossing 100% of GDP under a stress scenario. The upcoming Budget provides an occasion for the GoI to give a clear roadmap for achieving the Fiscal Responsibility and Budget Management Act (FRBMA) targets. The statutory targets for the combined government debt and GoI's debt relative to GDP are 60% and 40% respectively. In this write-up, we examine the dynamics of growth of government debt in India and study the adjustments needed in order to reach these targets.

IMF's assessment of India's fiscal risks

The IMF, in its 2023 Article IV Consultation, has suggested that an ambitious fiscal consolidation path is needed to replenish buffers and sustainably lower government debt while supporting inclusive growth. Given the shocks that India has experienced historically, and instances of fiscal slippages between 2000 and 2020, the baseline carries the risk that, should similar shocks materialize, India's government debt would exceed 100% of GDP in the medium term. Reaching the fiscal deficit target in FY26 and then maintaining further fiscal tightening would rebuild buffers at a faster pace, safeguarding against shocks. This would also reduce the interest burden on the budget (currently at around one third of tax revenue), creating room for expenditure which supports long-term growth, such as on infrastructure, health, and climate change mitigation and adaptation.

IMF's stress scenario envisages a real GDP growth rate below their estimated potential growth at 6.3% by a margin of 1.5% points. This implies an actual real GDP growth of 4.8%. This can potentially materialize if India experiences another major economic shock due to global factors. The 2008-09 global economic and financial crisis and the 2020-21 COVID shock are comparable examples. Even at this lower growth rate, the risk of combined government debt to GDP ratio crossing 100% only arises in the 75th to 95th percentile of the fan chart associated with this scenario of a one-time shock. This is shown in Chart **15.1**.

Chart 15.1: IMF's projection of India's general government debt-GDP ratio under stress scenario

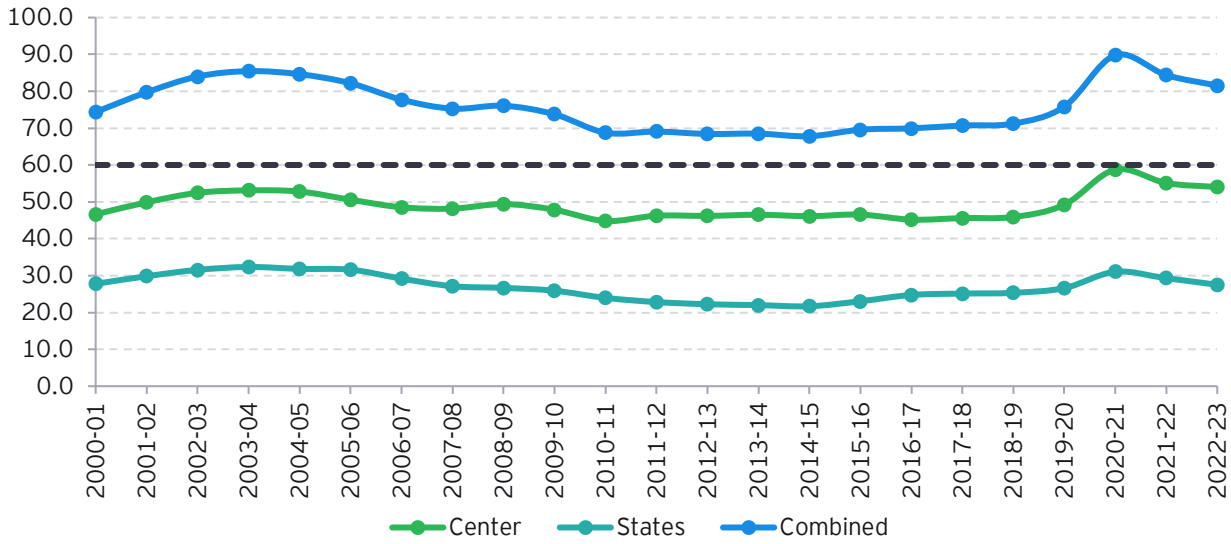


Source: IMF (India - 2023 Article IV Consultation)

The profile of the government debt-GDP ratio indicates that the state governments have shown an aggregate debt-GDP ratio of about 30% which can be considered sustainable under certain macro assumptions. It can be shown that a 3% fiscal deficit-GDP target for states is consistent with 30% debt-GDP ratio for stabilization. If the states are to be given a debt-GDP target of 30%, the central government may have to reduce its own target to 30% of GDP in order to remain consistent with

the consolidated target of 60%, consistent with fiscal-deficit to GDP target of 3%. In fact, it has been shown in the literature that 40% of debt-GDP target is not consistent with a 3% fiscal deficit to GDP target[60]. However, the central government has exceeded even the FRBM debt-GDP target of 40% for many years (**Chart 15.2**). It is therefore important for the central government to bring down its debt-GDP ratio. In this analysis, we focus on the drivers of GoI's fiscal deficit and debt.

Chart 15.2: Debt-GDP ratio (%): GoI, states and combined



Source: IPFS, RBI, Union Budgets, CGA, and MoSPI
Note: Debt is evaluated in market exchange rate terms; GoI's debt excludes net on-lending to states.

Fiscal deficit glide path

Debt is an accumulation of fiscal deficit. Compared to the previous year's debt relative to GDP (b_{t-1}), the current year's debt (b_t) would be higher relative to GDP depending on the current year's fiscal deficit to GDP ratio (f_t) and the nominal GDP growth rate (g). This relationship can be depicted by:

$$b_t - b_{t-1} = f_t - b_{t-1}\left[\frac{g}{(1+g)}\right]$$

Starting with a debt-GDP ratio of 54% for the GoI in FY23, and assuming a nominal GDP growth of 8.9% in FY24 with a fiscal deficit to GDP ratio of 5.9% envisaged by the FY24 Union Budget, we estimate the debt-GDP ratio for FY24 to be 55.5% using the above equation. If the growth and fiscal deficit path is maintained as shown in Table 4 below, the GoI would reach the debt-GDP target of 40% by FY37 (base case). However, such a glide path is predicated on the GoI achieving a fiscal deficit target of 3% of GDP in at least FY29. There are many conditions under which reaching this target may either be delayed or indefinitely postponed. We consider two examples. *First*, if a one-time economic shock is experienced in say, FY29 to which the GoI responds with a higher fiscal deficit and then incrementally adjusts it downwards, the target would be reached by FY43 (Simulation 1, **Table 15.1**). *Second*, if fiscal deficit is reduced and retained at 4% of GDP FY27 onwards, it would not be possible to reach a debt-GDP level of 40% if the nominal growth rate is 10.5% (not shown here). In fact, the equilibrium value of GoI's debt-GDP ratio when the fiscal deficit

[60] *Srivastava, D. K. (2022).* The Future of fiscal consolidation in India, Economic and Political Weekly, Issue No. 13, Volume 57, 29-35.; *Srivastava, D.K., Bharadwaj, M., Kapur, T., & Trehan, R. (2021).* Covid's Economic Impact: Should India Recast its Fiscal and Monetary Policy Frameworks?: Journal of International Economics and Finance. 1(1), 63-81; *Srivastava, D. K. (2021).* Fiscal consolidation and FRBM in the COVID-19 context: Fifteenth finance commission and beyond. Economic and Political Weekly, Vol. 56, Issue No. 33, 48-55.

is 4% of GDP and nominal growth is 10.5% would be 42.1%. In the next section, we consider various economic drivers that force the fiscal deficit of the GoI upwards.

Table 15.1: Estimating GoI's debt-GDP ratio: Base case and Simulation 1

Base case					Simulation 1				
Year	f	g	$b_t - b_{t-1}$	b_t	Year	f	g	$b_t - b_{t-1}$	b_t
FY24	0.059	0.089	0.015	0.555	FY24	0.059	0.089	0.015	0.555
FY25	0.052	0.105	-0.001	0.554	FY25	0.052	0.105	-0.001	0.554
FY26	0.045	0.105	-0.008	0.546	FY26	0.045	0.105	-0.008	0.546
FY27	0.040	0.105	-0.012	0.535	FY27	0.040	0.105	-0.012	0.535
FY28	0.035	0.105	-0.016	0.519	FY28	0.035	0.105	-0.016	0.519
FY29	0.030	0.105	-0.019	0.499	FY29	0.060	0.080	0.022	0.540
FY30	0.030	0.105	-0.017	0.482	FY30	0.055	0.080	0.015	0.555
FY31	0.030	0.105	-0.016	0.466	FY31	0.050	0.105	-0.003	0.553
FY32	0.030	0.105	-0.014	0.452	FY32	0.045	0.105	-0.008	0.545
FY33	0.030	0.105	-0.013	0.439	FY33	0.040	0.105	-0.012	0.533
FY34	0.030	0.105	-0.012	0.427	FY34	0.035	0.105	-0.016	0.518
FY35	0.030	0.105	-0.011	0.417	FY35	0.030	0.105	-0.019	0.498
FY36	0.030	0.105	-0.010	0.407	FY36	0.030	0.105	-0.017	0.481
FY37	**0.030**	**0.105**	**-0.009**	**0.398**	FY37	0.030	0.105	-0.016	0.465
FY38	0.030	0.105	-0.008	0.391	FY38	0.030	0.105	-0.014	0.451
FY39	0.030	0.105	-0.007	0.383	FY39	0.030	0.105	-0.013	0.438
					FY40	0.030	0.105	-0.012	0.427
					FY41	0.030	0.105	-0.011	0.416
					FY42	0.030	0.105	-0.010	0.407
					FY43	**0.030**	**0.105**	**-0.009**	**0.398**

Source: estimated

Drivers of GoI's fiscal deficit and debt

The extent of borrowing by the GoI depends on (1) GoI's revenue receipts prior to fiscal transfers to states in the form of tax devolution and grants, (2) the magnitude of fiscal transfers to states determined by Finance Commissions and to some extent, by the central government itself, (3) the competition between GoI and states for fiscal space as reflected by their respective shares in combined primary expenditure, and (4) GoI's primary role in macro stabilization in the face of exogenous economic shocks. Over time, the GoI's committed expenditures, in the form of pensions, interest payments, and fiscal transfers, have increased relative to its gross revenue receipts. It is seen that most of the discretionary expenditures of the GoI are being financed progressively more by fiscal deficit. The share of GoI's net tax revenues in combined tax revenues of the GoI and states considering FY01 onwards, as shown in Column (2) of **Table 15.2**, was at its peak at 50.5% in FY08. Since then, it has fallen, reaching a low of 39.97% in FY19. This fall has also been translated into a fall in GoI's share in the combined revenue receipts, which was at its peak of 41.1% in FY08. It then fell to a trough of 29.3% in FY21.

The GoI competes with the state governments for fiscal space that can be measured through its share in the combined primary expenditure. This was as high as 47.2% in FY03, indicating that the GoI had nearly half of the fiscal space at that time. Since then, this share has eroded, and fell to a low of 33% in FY19. After this, it has started to pick up and is currently at 40.5% (FY23). The share of the GoI in the combined primary expenditure is much higher than its share in the combined revenue receipts. This is possible only by GoI's higher reliance on borrowing, which is reflected in a much higher share of the GoI in the combined fiscal deficit of the central and state governments.

This share was at its peak at 75% in FY12. After that, it fell but has picked up to reach back the level of 71% in FY22. The higher the share of the GoI in combined fiscal deficit, the higher would be its share in the combined debt. As its share in debt increases, its share in combined interest payments is also expected to increase considering nearly equal effective interest rates for the GoI and the states.

Table 15.2: Share of GoI in combined fiscal aggregates (%)

Fiscal year	Taxes	Revenue receipts*	Primary expenditure	Interest payment	Fiscal deficit	Debt
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
FY01	44.76	35.28	45.82	59.00	58.3	62.67
FY02	42.50	35.16	46.04	56.22	60.3	62.58
FY03	44.75	37.38	47.20	57.13	59.6	62.44
FY04	45.16	38.74	43.99	54.12	50.5	62.15
FY05	45.47	39.93	44.16	54.04	54.5	62.39
FY06	45.99	38.88	42.00	58.06	62.6	61.55
FY07	47.67	39.24	40.47	59.03	64.1	62.45
FY08	50.50	41.08	44.26	61.91	62.6	63.98
FY09	48.43	38.09	45.83	64.83	72.6	64.95
FY10	45.62	36.20	44.61	63.55	68.2	64.89
FY11	44.81	40.43	45.84	63.66	70.2	65.16
FY12	42.88	34.65	43.30	65.25	75.0	66.96
FY13	43.23	36.06	41.45	66.39	71.2	67.52
FY14	43.42	37.60	40.61	67.96	66.6	67.89
FY15	44.29	31.99	35.32	67.28	61.7	68.02
FY16	40.44	32.11	34.16	66.64	55.8	66.89
FY17	41.90	35.20	34.12	65.31	50.0	64.61
FY18	40.74	30.75	33.81	64.02	59.0	64.48
FY19	39.97	31.22	33.02	64.31	58.4	64.44
FY20	41.96	30.25	35.27	63.46	64.0	64.90
FY21	44.59	29.26	42.26	66.12	69.3	65.43
FY22	43.16	32.24	38.63	65.09	70.8	65.29
FY23	43.23	32.47	40.50	66.05	69.7	66.25
Finance Commission (FC) averages						
FC11	44.53	37.30	45.44	56.10	56.63	62.45
FC12	47.64	38.70	43.43	61.48	66.01	63.56
FC13	43.73	36.15	41.30	66.11	68.96	67.11
FC14	41.00	31.91	34.08	64.75	57.44	65.06
FC15	43.66	31.32	40.46	65.75	69.93	65.66

Source (basic data): IPFS, RBI, Union Budget Documents, and CGA
Note: GoI's fiscal deficit excludes net on-lending to states.

The dynamics of this process can be described in terms of a chain of causation. In the first step, the FC increases the share of states in GoI's divisible pool of taxes, which increases total transfers from the GoI to the states. Consequently, the lower share of the GoI in the combined revenue receipts can only finance a lower share in combined primary expenditure, but the GoI limits the fall in its share in combined primary expenditure by resorting to additional borrowing. The increase in fiscal deficit and therefore debt leads to higher interest payments, leaving little scope for discretionary expenditures. It can be shown that GoI's committed expenditures have currently become so high that little space is left for incurring discretionary primary expenditures that must be financed by fiscal deficit. Table 15.3 shows that four items of committed expenditures in which GoI has little control except, to some extent, in the case of grants currently account for more than 80% of GoI's gross revenue receipts. Tax devolution and grants that constitute transfers to the states together accounted for nearly 50% in the FC14 and FC15 periods. Interest payments have been rising in

recent years after showing an improvement that happened as a result of the positive impact of the enactment of the FRBM in 2003. GoI's interest payments relative to gross revenue receipts increased from 25% in the FC14 period to 28% in the FC15 period. The GoI has no option except to progressively borrow more if it wants to increase its share in the combined primary expenditures. It has some option in the case of grants. However, it is seen that in general election years, it gets increased to a local peak. In the case of tax devolution, there has been a marked step increase in the FC14 and FC15 periods. This change is exogenous to the central government. Thus, there is a built-in pressure for the GoI to rely progressively more on borrowing. Under these circumstances, it may not stick to the fiscal deficit target of 3% of GDP. Instead, it may like to settle at a fiscal deficit of 4% of GDP in combination with a debt-GDP ratio of 40%. In such a case, the target for the combined debt-GDP ratio may have to be shifted to 70%.

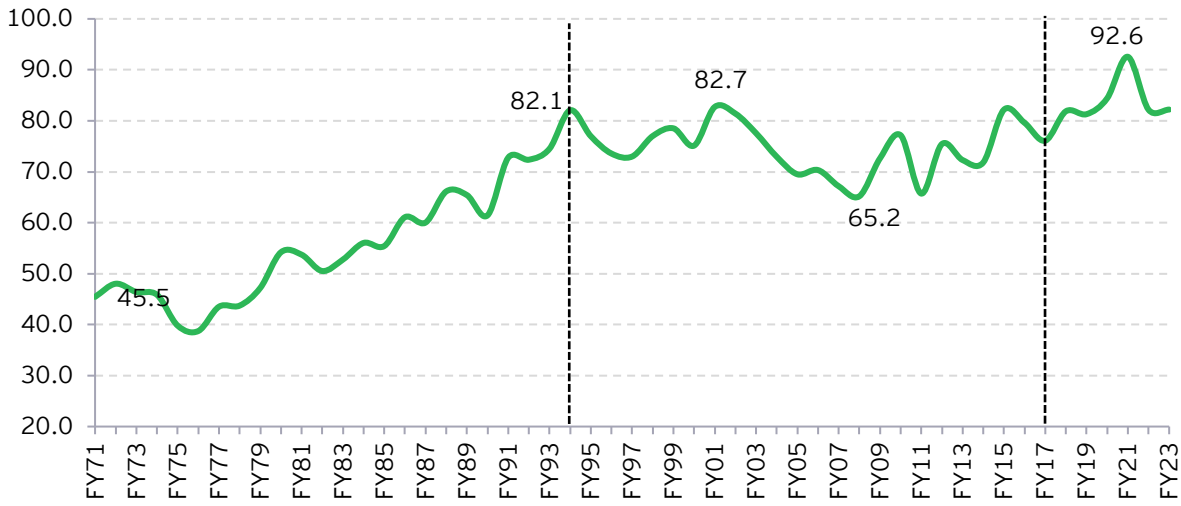
Table 15.3: Share of GoI's committed expenditures in gross revenue receipts (%)

Fiscal year	Interest payment	Pensions	Tax devolution	Grants	Total
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
FY01	0.34	0.07	0.24	0.18	**0.83**
FY02	0.35	0.05	0.23	0.19	**0.81**
FY03	0.34	0.05	0.22	0.17	**0.78**
FY04	0.31	0.04	0.22	0.16	**0.73**
FY05	0.28	0.05	0.22	0.15	**0.70**
FY06	0.27	0.05	0.22	0.17	**0.70**
FY07	0.25	0.04	0.22	0.16	**0.67**
FY08	0.23	0.04	0.23	0.16	**0.65**
FY09	0.26	0.05	0.24	0.18	**0.73**
FY10	0.27	0.08	0.23	0.19	**0.77**
FY11	0.22	0.06	0.22	0.16	**0.66**
FY12	0.26	0.06	0.26	0.18	**0.75**
FY13	0.26	0.06	0.25	0.15	**0.72**
FY14	0.27	0.06	0.24	0.15	**0.72**
FY15	0.28	0.07	0.24	0.24	**0.82**
FY16	0.26	0.06	0.30	0.18	**0.80**
FY17	0.24	0.07	0.31	0.14	**0.76**
FY18	0.25	0.07	0.32	0.18	**0.82**
FY19	0.25	0.07	0.33	0.16	**0.81**
FY20	0.26	0.08	0.28	0.22	**0.84**
FY21	0.30	0.09	0.27	0.26	**0.93**
FY22	0.26	0.06	0.30	0.20	**0.82**
FY23	0.28	0.07	0.29	0.18	**0.82**
FC Averages					
FC11	0.32	0.05	0.23	0.17	**0.77**
FC12	0.26	0.05	0.23	0.17	**0.70**
FC13	0.26	0.06	0.24	0.17	**0.73**
FC14	0.25	0.07	0.31	0.18	**0.81**
FC15	0.28	0.08	0.28	0.22	**0.86**

Source (basic data): IPFS, RBI, Union Budget Documents, and CGA

Chart 15.3 shows the ratio of committed expenditures consisting of interest payments, pensions, tax devolution, and grants to GoI's gross revenue receipts. This ratio can be considered in three distinct phases. In the first phase, up to FY95, it progressively increased from 45.5% in FY71 to a peak of 82.1% in FY94. During the period from FY94 to FY17, it varied within the range of 65.2% to 82.7%. Since then, it has risen again, reaching a peak of 92.6% in the COVID year of FY21. This indicates that for any remaining expenditures, the central government may have to rely mainly on borrowing.

Chart 15.3: Ratio of committed outflows to GoI's gross revenue receipts



Source (basic data): Indian Public Finance Statistics, Union Budget Documents, RBI
Note: Committed outflows constitute pensions, interest payments, tax devolution and grants from GoI to states

Fiscal deficit arithmetic for FY24 and prospects for FY25

Table 15.4 shows that a near 13% growth in GoI's GTR over FY23 actuals is expected to be the main factor taking GoI's fiscal deficit close to the targeted level of 5.9% of GDP in FY24 provided total expenditure growth remains limited to just about 9% decomposed into revenue and capital expenditure growth rates of 3% and 37% respectively. If these numbers turn out to be close to the revised estimates for FY24, we can work out the indicative magnitudes of BE for FY25. The target of reducing fiscal deficit from 5.9% to 5.2% of GDP may call for reducing capital expenditure growth to 20% provided a GTR growth of close to 13% is maintained with an underlying assumption of nominal GDP growth at 10.5%. This implies a GTR buoyancy of 1.24. However, maintaining a high growth in government capital expenditure is critical for sustaining real GDP growth at around 7%. Maintaining a GTR buoyancy of 1.25, a combination of nominal GDP growth of 11.5% and marginal adjustment in the fiscal deficit target to say, 5.3% of GDP in FY25, may accommodate a higher capital expenditure growth of close to 30%. Such a combination appears to be within the feasibility range.

Table 15.4: Fiscal arithmetic for FY24 and FY25

Item	FY23 Actual (CGA)	FY24 BE	FY24 (8 months)	FY24 (e)	FY25 (e)	Growth of FY24 (e) over FY23 actual	Growth of FY25 (e) over FY24 (e)	FY24 (e)	FY25 (e)
	INR Lakh crore					% annual		% to GDP	
Gross tax revenues	30.54	33.61	20.42	34.62	39.12	13.4	13.0	11.67%	11.94%
Assignment to states	9.48	10.21	6.01	10.61	11.99	11.9	13.0	3.58%	3.66%
Net tax revenue	20.97	23.31	14.36	24.01	27.13	14.5	13.0	8.09%	8.28%
Non-Tax revenue	2.86	3.02	2.84	3.39	3.73	18.3	10.0	1.14%	1.14%
Revenue receipts	23.84	26.32	17.20	27.39	30.85	14.9	12.6	9.24%	9.41%
Non-debt capital receipts	0.72	0.84	0.25	0.72	0.79		10.0	0.24%	0.24%
Total non-debt receipts	24.56	27.16	17.46	28.11	31.65	14.5	12.6	9.48%	9.66%

Item	FY23 Actual (CGA)	FY24 BE	FY24 (8 months)	FY24 (e)	FY25 (e)	Growth of FY24 (e) over FY23 actual	Growth of FY25 (e) over FY24 (e)	FY24 (e)	FY25 (e)
	INR Lakh crore					% annual		% to GDP	
Fiscal deficit	**17.33**	**17.87**	**9.07**	**17.50**	**17.05**	--	--	**5.90%**	**5.20%**
Total Expenditure	41.89	45.03	26.52	45.61	48.69	8.9	6.8	15.38%	14.86%
Revenue Expenditure	34.53	35.02	20.67	35.56	36.63	3.0	3.0	11.99%	11.18%
Capital Expenditure	7.36	10.01	5.86	10.05	12.07	36.6	20.0	3.39%	3.68%
Revenue deficit	10.69	8.70	3.46	8.17	5.78	--	--	2.75%	1.76%
Debt	**147.16**	**163.85**		**164.66**	**181.71**	--	--	**55.52%**	**55.45%**
Nominal GDP	***272.41***			***296.58***	***327.72***	***8.9***	***10.5***		

Source (basic data): Union Budget FY24, CGA, and MoSPI
Note: Our estimates are denoted by (e)

Conclusion

GoI's FY25 interim budget due to be presented on 1 February 2024 may be of significance to the extent that it can provide an assessment of the health of central government finances and specify a glide path for fiscal consolidation. In FY24, the budgeted fiscal deficit is 5.9% of GDP. This is likely to be achieved. However, it is nearly twice the FRBM fiscal deficit to the GDP target of 3% for the central government. Correspondingly, the debt-GDP ratio at 54% is also well above the target of 40%. In this writeup, we have argued that, based on the possibility of sustaining a nominal GDP growth at 10.5%, it may take up to 13 years to reach a debt-GDP level of 40%. This is based on successfully reducing the fiscal deficit to GDP ratio to 3% by FY29. However, if fiscal deficit is retained at 4% of GDP FY27 onwards, it would not be possible to reach a debt-GDP level of 40% with a nominal growth rate of 10.5%. In fact, the equilibrium value of GoI's debt-GDP ratio when the fiscal deficit is 4% of GDP and nominal growth is 10.5% would be 42.1%. There are many possibilities of slippage in reaching the statutory FRBM debt target of 40% for the GoI. We have shown that if there is a shock, slowing down the growth in say about five years, reaching the debt target would take up to FY43. The GoI may specify the assumptions regarding the trajectories of fiscal deficit and the nominal growth to indicate a realistic path to achieve the FRBM targets. We have also shown that if fiscal deficit is to be reduced in FY25 from the current levels, the GoI's capital expenditure growth may have to be adjusted downwards. This adjustment would become larger and larger as fiscal deficit is reduced progressively more to reach 3% of GDP. Since it is the government capital expenditure which is currently supporting growth, a realistic combination of fiscal deficit reduction and a reduction in capital expenditure growth may also have to be worked out in the forthcoming FY25 Interim Budget.

Part – 4

Coping with COVID: Policy responses

Chapter 16

Overcoming COVID-19's economic impact: Calibrating India's fiscal stimulus (April 2020)

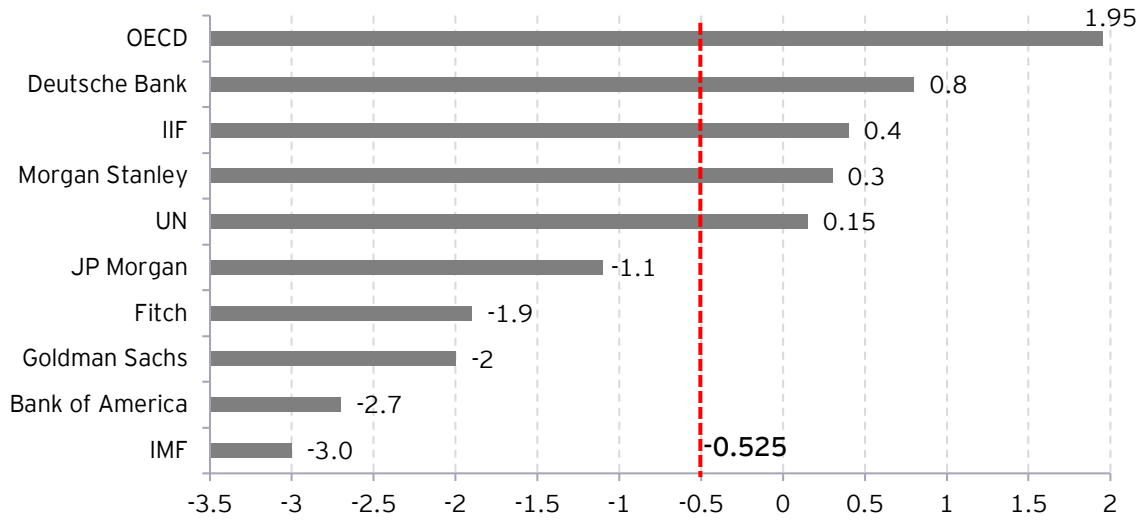
Abstract

In the assessment of various multilateral organizations, the economic impact of COVID-19 was expected to be far more severe than that of the 2008-09 economic and financial crisis. At that time, different organizations had assessed the impact of COVID-19 on global growth ranging from (-) 3.0% (IMF) to 2.4% (OECD's upper range). The mid-point of OECD's projection was 1.95%. India also had to cope with a major contraction. In this chapter, we have argued that there was an urgent need to reprioritize budgeted expenditures in favor of health-related expenditures, including health infrastructure. In terms of rebooting the economy, there was a need to attract new manufacturing capacity in India, requiring additional budgetary allocation. In fact, both revenue and expenditure side estimates of the GoI and state budgets, which had been presented in the Parliament and respective legislatures, required an overhaul. Effective economic policy required aligning the calendar of opening up of economic sectors with injections of fiscal stimulus while being supported by monetary policy initiatives and other industrial policy interventions. It was also suggested that, as things begin to normalize, there may be a need to present new full year budgets since the existing budgetary numbers had been rendered irrelevant by the onslaught of the economic pandemic.

Introduction

Multilateral institutions have assessed that the COVID-19 global pandemic is likely to leave the world economy worse off than the 2008-09 global economic and financial crisis (**Charts 16.2 and 16.3**) which took the world economy nearly five years to recover from. Its impact may be more comparable with the Great Depression of 1929. Many analysts expect that after the crisis, there may be a restructuring of the global economy and trade. If India manages its policy response promptly and strategically, it may emerge among the top economies of the world.

Chart 16.1: Global GDP growth projections for 2020*



Source: Various media articles and organization websites;
Note: Projection by OECD represents the mid-point of the range 1.5-2.4%; projection by UN represents the mid-point of the range (-) 0.9% - 1.2%. * data updated till 15 February 2020

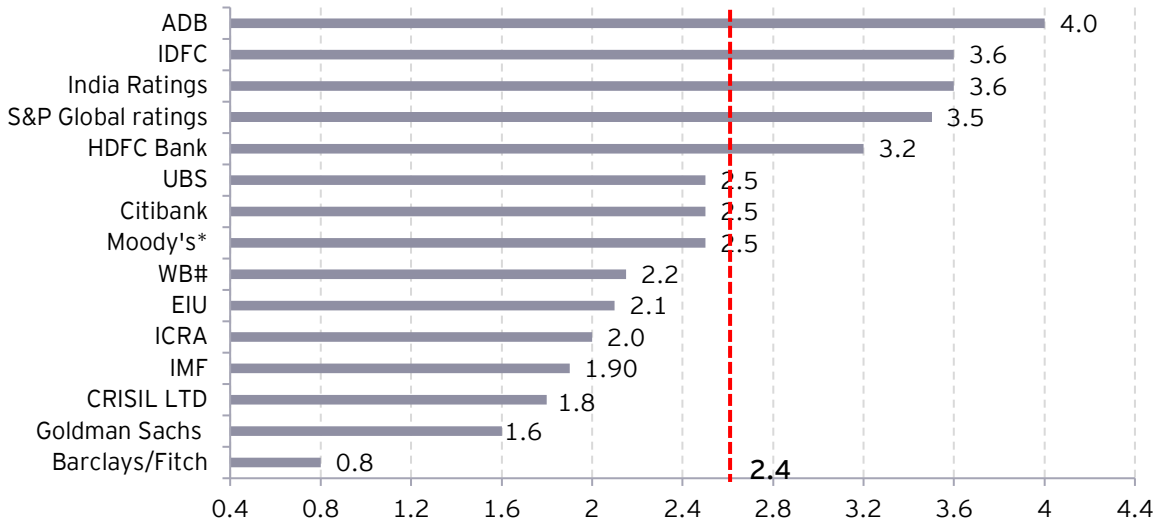
Global growth erosion

Consequent upon the unleashing of COVID-19 on the global economic system, most developed countries have admitted that they are staring at a major contraction in their GDP. **Chart 16.1** indicates the present assessment of the global growth prospects for 2020.These may be considered as preliminary estimates since, as the crisis deepens, new releases may indicate progressively worse global growth prospects. At present, the projected global growth ranges from (-) 3.0% (IMF) to 2.4% (OECD's upper range). The mid-point of OECD's projection is 1.95%.

India's growth prospects

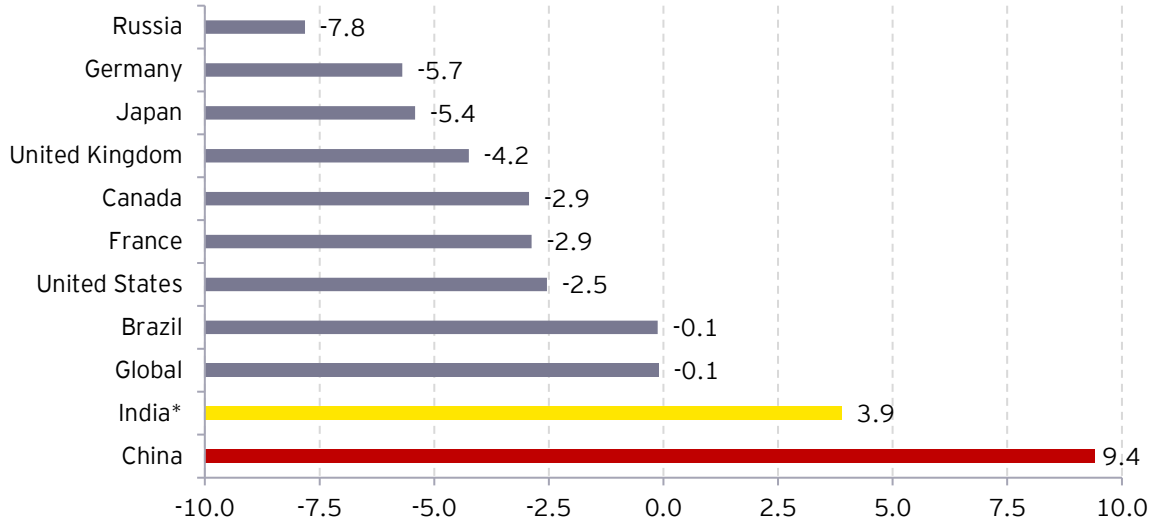
India is facing equally challenging economic growth prospects as it has entered the COVID-19 crisis on the back of an economic downslide. In fact, in FY20, the real GDP growth was estimated at 5.0% as per the CSO release dated 28 February 2020. As more recent information for 4QFY20 becomes available, this estimate may be revised down. The IMF has projected India's FY20 growth at 4.2%. Real GDP growth projections for India for FY21 range from 0.8% (Fitch) to 4.0% (ADB). The median growth rate in the group of large number of projections given in Chart 7 by different agencies is at 2.4% (**Chart 16.2**).

Chart 16.2: Real GDP growth projections for India FY21*



Source: Various media articles and organization websites;
Note: *Projections for calendar year 2020; #-Projection by WB represents the mid-point of the range 1.5-2.8%.
Some rating agencies have predicted a contraction for India in FY21. Both Goldman Sachs and Nomura estimate it to be (-) 0.4%.

Chart 16.3: Country-wise GDP growth in 2009



Source: Various media articles and organization websites;
* FY2009

Comparing the present crisis with the 2008-09 global economic and financial crisis

Multilateral agencies have already provided their preliminary estimates of the contractionary impact of COVID-19 on major world economies. As discussed earlier, many of these institutions have expressed their view that the economic impact of COVID-19 is likely to be tangibly worse than the impact of the global economic and financial crisis of 2008-09. Chart 8 shows that in 2009, except for India and China which showed positive growth, most of the other major economies went into a significant contraction. Some of the larger economies such as Germany, Japan, the UK, France and the US showed sharp contraction ranging from (-) 5.7% (Germany) to (-) 2.5% (the US).

India faced the 2008-09 crisis on the back of five successive high growth years over the period FY04 to FY08. The average growth rate during this period was 7.9%. In FY08, the combined fiscal deficit of the central and state governments was also at its lowest at 4.1% of GDP.

Table 16.1: Private corporate (non-financial) and government debt of AEs and EMDEs: Pre and post global economic and financial crisis

Country	Borrowing sector	2003	2005	2007	2008	2009	2011	2011 minus 2008	2019 (end Sep)
Global	**Government**	**70.9**	**64.7**	**62.7**	**63.5**	**76.9**	**82.4**	**18.9**	**86.1**
	Corporates	**NA**	**NA**	**NA**	**78.0**	**87.2**	**85.0**	**7.0**	**92.8**
AEs	**Government**	**77.0**	**71.9**	**71.7**	**76.5**	**90.8**	**106.6**	**30.1**	**109.1**
	Corporates	**84.0**	**76.6**	**88.9**	**86.7**	**92.9**	**88.6**	**1.9**	**90.4**
US	Government	56.1	61.1	60.7	71.6	81.3	102.4	30.8	103.5
	Corporates	62.0	62.6	69.9	72.5	70.3	66.6	-5.9	75.3
UK	Government	37.7	43.2	44.1	54.0	67.2	96.0	42.0	115.7
	Corporates	82.3	89.8	93.9	101.2	97.2	92.1	-9.1	81.5
Euro area	Government	72.3	74.6	66.9	72.2	83.4	98.7	26.5	100.6
	Corporates	82.9	85.3	91.9	96.2	100.7	104.5	8.3	108.7
Japan	Government	142.1	149.6	145.5	150.3	169.1	196.9	46.6	218.4
	Corporates	106.3	103.4	101.8	105.5	108.5	102.6	-2.9	102.9
EMDEs	**Government**	**45.0**	**39.1**	**37.5**	**31.0**	**42.2**	**38.1**	**7.1**	**49.9**
	Corporates	**NA**	**NA**	**NA**	**56.0**	**73.0**	**78.3**	**22.3**	**96.5**
Brazil	Government	71.6	67.0	63.1	61.5	64.8	61.6	0.1	87.6
	Corporates	37.7	32.3	30.1	35.7	36.2	41.9	6.2	42.8
Russia	Government	32.4	15.3	8.3	7.7	10.2	11.9	4.2	15.3
	Corporates	28.0	31.0	39.0	42.8	47.2	39.8	-3.0	46.0
India	Government	84.7	83.8	76.1	72.9	73.5	66.9	-6.0	68.8
	Corporates	NA	NA	NA	45.7	48.5	50.1	4.4	44
China	Government	26.8	26.4	29.3	27.1	34.6	34.5	7.4	52.5
	Corporates	NA	NA	98.1	97.7	121.7	132.8	35.1	150.4

Source (basic data): Bank for International Settlements (BIS)

These two economic crises are different in some crucial respects. The roots of the 2008-09 crisis emanated from the housing market crisis of the US and excessive lending by global financial institutions to households based on poor quality collaterals. Once the financial crisis became apparent by the failure of the reputed banks and financial organizations, the housing market started to collapse and the value of house as a collateral also collapsed in the US and other developed country markets. This gave rise to a domino effect and financial institutions being interlinked across the globe, started to fail. The credit markets across the world crashed, leading to a collapse of credit demand across countries. This was primarily a demand-led crisis. It was addressed by individual and coordinated stimulus across the G-20 countries. These countries coordinated their stimulus action by reducing interest rates as also tax rates and by increasing their debt-financed government expenditures. In those economies where this was overdone, there was a sharp rise in inflation. The longer-term outcome was an increase in the indebtedness of the whole world. In particular, since most governments followed strong fiscal stimulus measures based on borrowing, it is the government debt which increased sharply after the 2008-09 crisis (**Table 16.1**). Comparing government debt-GDP ratio of 2011 with that of 2008, we note that for the AEs, it rose by a magnitude of 30.1% points of GDP whereas for EMDEs, it rose by 7.1% points of GDP. In fact, within just one year that is from 2008 to 2009, for the EMDEs, it had risen by more than 10% points of GDP. After that there was some reduction in the government debt to GDP ratio. But in subsequent years, government debt increased at a fast pace for EMDEs, but the pace of increase was comparatively lower for the AEs.

Since the present crisis may be deeper than the 2008-09 crisis, the reliance on fiscal measures may be even larger. In fact, in most developed countries, the interest rates are near zero and any monetary side stimulus may have limited effect. As such, it is the borrowing-based financing of government expenditure which is likely to serve to boost demand in different countries. This is likely to result into governments across the world sinking into greater indebtedness.

In contrast to the 2008-09 crisis, the current crisis is a combination of supply side disruptions and a sinking of demand. As demand is uplifted through stimulus, supply side disruptions may have to be simultaneously removed so that the two sides may come out of the crisis in sync. This calls for a carefully calibrated injection of demand stimulus which may be synchronized with the stages of the exit from the lockdown.

First round of global stimulus measures

To counter the economic shock, many AEs have taken bold monetary and fiscal measures to stimulate their economies. On 26 March 2020, the G-20 countries announced a US$5 trillion stimulus package to counter the social and economic impact of COVID-19. The US has announced a fiscal stimulus package amounting to more than 10% of its GDP. The Federal Reserve has reduced the federal funds rate by a cumulative margin of 150 bps in March 2020 to range between 0-0.25%. Japan has also announced a large stimulus package in which fiscal spending is estimated at close to 7% of GDP[61]. Other AEs such as Australia and Germany have announced similar fiscal stimulus packages amounting to 9.7% and 4.9% of their respective GDPs. Besides direct fiscal spending, Germany has announced that it shall provide public loan guarantees amounting to 25% of GDP. France plans to provide state guarantees for bank loans to companies amounting to 13% of GDP.

Table 16.2: Magnitude of fiscal stimulus in selected G-20 countries

Country	Magnitude of fiscal stimulus	Comments, if any
US	US$2.3 trillion = 11% of GDP	
Australia	AUS$194 billion = 9.7% of GDP	Budgeted stimulus to extend till FY2023-24, with the majority to be executed in FY2019-20 and FY2020-21
Canada	CAD$ 193 billion = 8.4% of GDP	
Japan	US$362 billion = 7% of GDP	Total Stimulus package = US$990 billion = 20% of GDP
Germany	EUR 156 billion = 4.9% of GDP	
Brazil	NA. Fiscal package amounting to 3.5% of GDP.	
Saudi Arabia	US$18.7 billion=2.7% of GDP	
France	EUR 45 billion = 2% of GDP	EUR 300 billion (13% of GDP) of state guarantees for liquidity bank loans to companies are given separately
Russia	NA. Fiscal package is valued at 1-1.5% of GDP	
Turkey	US$11.6 billion = 1.5% of GDP	Separately US$3.8 billion (0.5% of GDP) is provided for the doubling the credit guarantee fund
Italy	EUR 25 billion = 1.4% of GDP	
China	RMB 1.3 trillion = 1.2% of GDP	The overall fiscal expansion is expected to be significantly higher, reflecting the effect of already announced additional measures
Argentina	NA. Cost of adopted measures is estimated at 1% of GDP	
South Korea	KRW 16 trillion = 0.8% of GDP	Includes a supplementary budget of KRW 11.7 trillion ~0.6% of GDP
EU	EUR 37 billion = 0.3% of GDP	The European Commission also activated the general escape clause in the EU fiscal rules, which suspends the fiscal adjustment requirements for countries not at their medium-term objective and allow countries to run deficits in excess of 3 percent of GDP.
Indonesia	33.2 trillion rupiah = 0.2% of GDP	

[61] https://www.cnbc.com/2020/04/07/japan-declares-coronavirus-emergency-and-approves-a-near-1-trillion-stimulus-package.html

Source: IMF; Note: Information in the Table is as per data available as on 14 April 2020

Policy challenges for India

India's first three-week lockdown was slated to end on 14 April 2020. It has now been extended up to 3 May 2020. Thus, the month of April 2020 was nearly washed out as far as economic output is concerned. Economic activities may not normalize for some time even after 3 May 2020. In fact, the exit from the lockdown needs to be according to a well-thought out plan. Different output sectors may resume activities at different pace as the health pandemic is gradually brought under control. As sectors are opened up, fiscal stimulus may be injected targeted towards these sectors. GDP growth in India in FY21 depends critically on the pace of opening up of the sectors and the extent of stimulus alignment. It is possible that as in response to the 2008-09 crisis, stimulus was introduced in two successive years, in the present case also, we may consider injecting stimulus over several quarters. First, we need to recognize that the available excess of savings over investment supplemented by net capital inflows from abroad may be quite limited in FY21. A large fiscal deficit may be constrained even if it is partly financed by monetization. This is so because of an extremely subdued tax revenue performance in FY20 which provided the base for FY21 tax revenue growth projections. The present fiscal trends indicate that the FY21 budget estimates for both revenues and expenditure have been rendered irrelevant due to the unfolding economic reality. The budgeted fiscal deficit for FY21 which had already provided for a relaxation of 0.5% points of GDP, may need to be relaxed further. The arithmetic of fiscal deficit calculations even if we take into account broad contours of its determinants, indicate that the scope for additional relaxation of fiscal deficit may be limited.

Space for fiscal stimulus

Industry bodies namely CII, FICCI, ASSOCHAM and PHD Chambers and the NITI Ayog have urged the GoI to announce packages providing substantive fiscal stimulus financed by borrowing (**Table 16.3**).

Table 16.3: Stimulus packages suggested by industry bodies to the government for FY21

Industry body	Stimulus package	Basic features of stimulus package
NITI Ayog	INR10 lakh crore ~ 5% of GDP	1. Income support to the poor, equity support to corporates, absorption of a portion of NPAs in MSME sector and additional investments in healthcare.
CII	INR4.5 lakh crore ~ 2% of GDP (budgeted)	2. Estimated that India would need a credit expansion of 14 to 15% and hence the RBI may extend the wage and interest support. In particular, banks may provide additional working capital limits, equivalent to the April-June wage bill of the borrowers, backed by a government guarantee, at 4-5%, with a refinance guarantee from RBI.
FICCI	INR9-10 lakh crore ~ 4-5% of GDP	3. Setting a "Bharat Self-Sufficiency Fund" with an outlay of INR2 lakh crore for promoting scientific research and innovation and creating self-sufficient industry clusters. 4. Extension of timeline for loan moratorium. 5. Interest free and collateral free loans be given to MSMEs with a turnover of less than INR500 crore for a period of up to 12 months depending on the sector to enable them to cover fixed costs, salaries and other operational expenses.
ASSOCHAM	US$200-US$300 billion ~ 10% of GDP	6. Infusion of US$50-US$100 billion cash over the next three months to arrest the loss of jobs and income.

Industry body	Stimulus package	Basic features of stimulus package
PHD Chamber	INR11 lakh crore ~ 5% of GDP	7. Immediate reduction in the lending rate by banks to percolate the full effect of recent repo rate reduction of 75 basis by the RBI. 8. Deferment of the EMIs of the term-loans for six months. 9. Special interest subvention at the rate of 3% per annum in loans to MSMEs and other badly affected industries. 10. Abolition of all fixed charges of all the utilities and deferment of their bills by three months.

Source (basic data): https://www.outlookindia.com/newsscroll/india-inc-seeks-urgent-stimulus-package-worth-rs-9rs-11-lakh-cr-roundup/1796152, https://www.financialexpress.com/economy/covid-19-crisis-stimulus-of-5-of-gdp-needed-says-niti-aayog/1930993/

While appreciating the need for a large magnitude of fiscal stimulus to support relief and stimulus measures, the available resources for the government appear to be constrained when we match the public sector borrowing requirement (PSBR) with the sources of its financing. This is so because India is facing the COVID-19 crisis in the context of two successive years of fiscal slippage where the central government had to provide for a countercyclical relaxation of 0.5% points of GDP each from their respective targets in FY20 (RE) and FY21 (BE). As noted earlier, India is in a far more handicapped position at present as compared to the 2008-09 crisis.

Table 16.4 shows that the GoI would need to borrow about 1.4% of GDP in FY21 just to make up for the likely shortfall in the budgeted net tax revenues and non-debt capital receipts of the GoI after accounting for the lower than budgeted nominal GDP. If the budgeted expenditures are maintained, the fiscal deficit of the GoI would balloon up from an already escalated level of 3.5% of GDP to 4.9% of estimated GDP even before any additional stimulus is considered. In the relief package of INR1.7 lakh crore under Pradhan Mantri Garib Kalyan Yojana, announced on 24 March 2020, the additionality for FY21 is estimated to be only about 0.3% of GDP since some of the expenditures were already budgeted but brought forward for release. Including this amount, GoI's borrowing requirement amounts to 5.2% of GDP for FY21. Assuming a fiscal deficit of 3.0% of GDP for the states and also accounting for significant revenue erosion due to lower tax devolution (0.5% of GDP) and lower own tax revenues (0.5% of GDP) compared to the corresponding budgeted amounts, the combined fiscal deficit to meet FY21 budgeted expenditures and provide for the already announced relief package is estimated at 9.2% of GDP. Considering additional stimulus spending of 3% of GDP by the central government, 1% of GDP by the state governments, and a borrowing requirement of 3.5% of GDP by the central and state public sector enterprises (PSUs), the total PSBR is estimated at 16.7% of GDP.

Examining the issue from the side of sources of financing PSBR, based on information for FY19 regarding household, private corporate and public sector saving and investment profiles, the estimated excess savings from the household and private corporate sector along with savings of the public sector is about 8.5% of GDP. This may be considered as the upper limit in FY21 given the ongoing economic slowdown. The prospects of net capital inflows from abroad, as reflected by a likely low current account deficit, also appear to be limited to about 1% of GDP in FY21. These estimates may be considered as providing only broad contours. There is thus a significant financing gap between PSBR of 16.7% of GDP to maintain FY21 budgeted expenditures and provide some stimulus, and feasible financing of about 9.5% of GDP. Overall, financing gap can be considered in two steps: (a) gap 1 - to protect budgeted expenditures of the GoI and states (3.2% of GDP) and (b) gap 2 consisting of gap 1 plus stimulus expenditure amounting to 4.0% of GDP together by the GoI and states, adding to 7.2% of GDP. Some of the channels through which this gap may be filled up include monetization of fiscal deficit, borrowing from multilateral institutions including the IMF, and borrowing from NRIs. As borrowing by the central and state governments increase the cost of borrowing is likely to go up over the course of the year.

Table 16.4: PSBR in FY21 and sources of financing: An analysis

#	Item	Amount (INR crore)	% to estimated nominal GDP FY21)
	Requirement of resources		
1	Shortfall* in net tax revenue in FY21	2,27,567	1.0
2	Shortfall* in non-debt capital receipts in FY21	60,000	0.3
3	Estimated slippage in fiscal deficit due to lower GDP in FY21	26,304	0.1
4=1+2+3	**Slippage in GoI's FD due to lower GDP, lower net tax revenue, lower non-debt capital receipts**	**3,13,871**	**1.4**
5	Additionality in first relief package announced on 26 March 2020	65,000	0.3
6=4+5	Additional fiscal deficit (GoI) in FY21 required to maintain budgeted expenditure and provide first relief package	3,78,871	1.7
7	Budgeted fiscal deficit of the GoI	7,61,130	3.5
8	Borrowing of the states as per FRLs	6,52,397	3.0
9	Additional borrowing of states to make up for shortfall in tax devolution (0.5%) and own tax revenues (0.5%)	2,17,466	1.0
10=6+7+8+9	**Combined fiscal deficit to meet budgeted expenditures and provide first relief package**	**20,09,864**	**9.2**
	Scope for fiscal stimulus		
11	Borrowing by central and state PSUs	7,61,130	3.5
12	GoI's additional borrowing for stimulus	6,52,397	3.0
13	States' additional borrowing for stimulus	2,18,124	1.0
14=10+11+12+13	**Total PSBR**	**36,41,516**	**16.7**
	View from financing side		
15	HH and pvt. corporate sector excess savings	15,22,260	7.0
16	Public sector saving	3,26,199	1.5
17	Net capital inflow from abroad	2,17,466	1.0
18=15+16+17	**Supply of resources**	**20,65,925**	**9.5**
19=10+11-18	**Financing gap 1: to protect FY21 budgeted expenditure**	**7,05,069**	**3.2**
20=12+13+19	**Financing gap 2: to provide additional stimulus + financing gap 1**	**15,75,591**	**7.2**
	Memo		
1	FY21 estimated nominal GDP		2,17,46,577

Source (basic data): Union budget documents FY21, CGA, MOSPI, and PIB; *as compared to FY21 (BE)
Notes: (1) A nominal GDP growth of 7% is assumed over the revised nominal GDP for FY20. The revised nominal GDP for FY20 is estimated to be lower than the second advance estimate of the CSO (released on 28 February 2020) by INR60,855 crore
(2) GoI's gross tax revenue for FY20 is estimated to be lower than the FY20 (RE) by INR1,75,070 crore
(3) A lower than budgeted buoyancy of 1 is assumed for GoI's gross tax revenues of FY21
(4) Shortfall in GoI's non-debt capital receipts in FY21 is on account of a shortfall in disinvestment receipts
(5) The genuine additionality in the relief package of INR1.7 lakh crore under the Pradhan Mantri Garib Kalyan Yojana announced in March 2020 is estimated at nearly INR65,000 crore
(6) For states, 0.5% of GDP each is required on account of shortfall in own tax revenues and tax devolution in FY21
(7) In calculating tax devolution to states, the budgeted ratio of assignment to states to GoI's gross tax revenues at 32.5% is used.
(9) For the borrowing requirement of public sector enterprises, the budgeted requirement of central PSUs at 2.6% of GDP is retained and a requirement of 0.9% of GDP is estimated for the state PSUs.
(10) Basic data from the CGA involves adjustment of CIT, PIT and indirect tax revenues for other taxes.
(11) Indirect tax revenues used from FY21 budget exclude taxes of the UTs.

Financing state level borrowing requirements has already added upward pressure on the interest rates indicating low demand for state bonds. The adverse borrowing environment for states was visible on 7 April 2020 when 19 states sought to borrow an amount of INR37,500 crore from the market through sale of bonds. These states could manage to fulfill approximately 87% of this

borrowing need but only at a steep rise in their cost of borrowing. Media sources report that the spread between states' borrowing costs and equivalent government securities (G-secs) increased to 140-200 basis points as compared to a normal level of 60-70 basis points[1]. Despite a steep cut in the repo rate of 75 basis points on 27 March 2020, the average yield for 10-year state government bonds in the 7 April 2020 auction was at 7.81%, 51 basis points higher than their weighted average yield on 30 March 2020, and nearly 100 basis points higher than the yield on 9 March 2020. Reasons for the rising borrowing cost include: a) uncertainty in regard to the future borrowing requirements of states, b) large supply of central and state G-secs, coupled with lower demand due to FPI outflows and c) cautiousness amongst banks on account of expected constrained liquidity due to the interest moratorium on loans placed by the RBI.

Concluding observations

There is an urgent need to reprioritize budgeted expenditures in favor of health-related expenditures including health infrastructure. In terms of rebooting the economy, new manufacturing capacity needs to be attracted in India which may require additional budgetary allocation. In fact, both revenue and expenditure side estimates of the central and state budgets which were only recently presented in the Parliament and respective legislatures may need to be overhauled. Effective economic policy may require aligning the calendar of opening up of economic sectors with injections of fiscal stimulus while being supported by monetary policy initiatives and other industrial policy interventions. As things begin to normalize, there may be a need to present new full year budgets since the existing budgetary numbers have been rendered irrelevant by the onslaught of the economic pandemic.

[1] https://www.business-standard.com/article/economy-policy/cash-starved-and-desperate-states-borrow-at-steep-rate-in-lockdown-120040701763_1.html

Chapter 17

Deciphering India's stimulus package: The sum and fiscal substance (May 2020)

Abstract

Continuing with the COVID theme, in this chapter, we enumerated and examined India's comprehensive economic stimulus package. As a first step, the GoI announced a stimulus package amounting to INR20.97 lakh crore, equivalent to 9.8% of FY21 GDP. In this chapter, we decipher the overall package and the related fiscal cost, as divided between already budgeted amounts and additional expenditures. The additional budgetary cost of the package was limited to 9.7% of the total package. About 5% of the stimulus was related to already budgeted expenditures. The rest pertained primarily to RBI's liquidity enhancement measures, government's insurance programs, credit guarantee schemes, and viability gap funding. We had concluded that restoring growth called for a straight-forward push to demand, particularly investment demand. To kick start this, it was recommended that government's capital expenditure play a pivotal role. By augmenting this, private investment is also likely to increase through multiplier effects. Government's relief packages were meant to provide temporary support and help in kick starting the economy. Given that the COVID crisis was fundamentally a health crisis, we suggested that emphasis be placed on building up health infrastructure, which was also part of the NIP.

Introduction

Recent assessments by various analysts have significantly lowered India's growth prospects for FY21. In a release dated 8 May 2020[62], Nomura projected a contraction of (-)5.2% for India. On 17 May 2020[63], Goldman Sachs also projected a contraction of (-)5.0%. Available growth forecasts vary from (-)5.2% to 4%, showing a wide range of 9.2% points. This only indicates significant uncertainty in the assessment of the economic impact of COVID-19 on the Indian economy by domestic and international observers. The actual outcome is likely to depend on (a) the pace at which the Indian economy opens up, (b) the magnitude and composition of fiscal stimulus over and above the budgeted expenditures, (c) the impact of the monetary stimulus, and (d) the effectiveness of expenditure reprioritization by the central and state governments as compared to their respective budget estimates.

A stimulus package amounting INR20.97 lakh crore, equivalent to 9.8% of FY21 GDP, was announced for the Indian economy. In this write-up, we decipher the overall package and the related fiscal cost, as divided between already budgeted amounts and additional expenditures. The additional budgetary cost of the package was limited to 9.7% of the total package. About 5% of the stimulus related to already budgeted expenditures. The rest pertained primarily to RBI's liquidity enhancement measures, government's insurance programs, credit guarantee schemes, and viability gap funding.

Deciphering the stimulus package

The total stimulus package can be seen in two parts. The first part namely ***'Stimulus 1'*** comprised RBI's liquidity augmenting initiatives (INR8,01, 603 crore) and government's relief measures (INR1,92,800 crore) undertaken prior to 12 May 2020. The second part, that is, ***'Stimulus 2'*** amounting to INR11,02,650 crore was announced in five successive tranches during 13 to 17 May 2020. These measures have now been supplemented by one more round of monetary initiatives wherein the repo rate has been reduced further by 40 basis points, taking it to a historically low level of 4%.

The first tranche

In terms of amounts involved, the first tranche was the largest with a total estimated benefit of INR5.94 lakh crore. The additional expenditure from the FY21 budget is estimated to be INR16,800 crore. The key highlights of this package are summarized in **Table 17.1**.

Table 17.1: The first tranche - schemes and related costs (INR crore)

#	Schemes	Total Amount	Additional to GoI's FY21 Budget	Other than Central Budget
1	MSMEs (Standard establishments)	3,00,000		3,00,000
2	MSMEs (Stressed and High NPA establishments)	20,000	4,000	16,000
3	MSMEs (Potential and viable establishments)	50,000	10,000	40,000
4	EPF support to business and workers	2,800	2,800	
5	Liquidity relief due to reduction in statutory reduction in PF contribution from 12% to 10%	6,750		6,750
6	NBFCs, HFCs and MFIs - Special liquidity scheme	30,000		30,000
7	NBFCs - Partial credit guarantee scheme 2.0	45,000		45,000
8	DISCOMs – One-time provision to infuse liquidity	90,000		90,000
9	TDS/TCS (rate reduced by 25% for the next three months)	50,000		50,000
10	**Total**	**5,94,550**	**16,800**	**5,77,750**

Source (basic data): PIB, FY21 union budget documents

The focus of the first tranche was largely on the MSME sector that is facing the maximum brunt of COVID-19. A large package of INR3,70,000 crore is expected to help them reboot their production activities. Further, a benefit amounting to nearly INR75,000 crore was provided for NBFCs

[62] https://www.bloombergquint.com/economy-finance/indias-gdp-growth-likely-to-contract-52-in-fy21-says-nomura
[63] https://economictimes.indiatimes.com/news/economy/indicators/goldman-sees-worst-india-recession-with-45-second-quarter-slump/articleshow/75796510.cms

including HFCs and MFIs which is expected to facilitate activation of their lending program particularly to the MSMEs.

The second tranche

The second tranche involved an estimated benefit of INR3.10 lakh crore. The additional burden on the FY21 budget amounts to INR9,500 crore. The details of this package are summarized in **Table 17.2**. The second tranche focused on the poorer segments of the society including migrant labor, small and marginal farmers and urban poor. These measures included a mix of short-term relief provisions and a scheme for affordable rental housing for migrant workers and urban poor.

Table 17.2: The second tranche: Schemes and related costs (INR crore)

#	Schemes	Total Amount	Part of GoI's FY21 Budget	Additional to GoI's FY21 Budget	Other than Central Budget
1	Free food grains support	3,500		3,500	
2	Interest subvention of 2% for prompt payees (MUDRA-shishu loans)	1,500		1,500	
3	Special credit facility for street vendors	5,000			5,000
4	Additional Emergency Working Capital Funding for farmers	30,000			30,000
5	Extension of credit linked subsidy scheme for housing	70,000	500	4,500	65,000
6	Concessional credit boost through Kisan credit card	2,00,000			2,00,000
7	**Total**	**3,10,000**	**500**	**9,500**	**3,00,000**

Source (basic data): PIB, FY21 union budget documents

The third tranche

Table 17.3: The third tranche: Schemes and related costs (INR crore)

#	Schemes	Total Amount	Additional to GoI's FY21 Budget	Other than Central Budget
1	Agricultural infrastructure development fund for farm gate infrastructure	1,00,000		1,00,000
2	Scheme for Formalization of Micro Food Enterprises	10,000	10,000	
3	PM Matsya Sampada Yojana	20,000	20,000	
4	Animal husbandry infrastructure development fund	15,000	15,000	
5	Promotion of Herbal Cultivation	4,000	2,000	2,000
6	Beekeeping initiatives	500	500	
7	From 'Top' to 'total'	500	500	
8	**Total**	**1,50,000**	**48,000**	**1,02,000**

Source (basic data): PIB, FY21 union budget documents

The third tranche had an estimated benefit of INR1.50 lakh crore. The additional burden on the FY21 budget is INR48,000 crore. The details of this package are summarized in **Table 17.3**.

The focus of the third tranche was on supply-side agricultural reforms which were long overdue in India. The emphasis on agriculture and allied sectors is justified due to its large share in

employment. These reforms are likely to have welfare-improving and efficiency-augmenting effects.

The fourth and fifth tranches

Considering the fourth and the fifth tranches together, the estimated benefit amounted to INR48,100 crore which is to be fully provided for in the FY21 budget (**Table 17.4**).

Table 17.4: The fourth and fifth tranche: Schemes and related costs (INR crore)

#	Schemes	Total Amount	Additional to GoI's FY21 Budget
1	Support to social infrastructure through enhanced viability gap funding scheme	8,100	8,100
2	Additional allocation towards MGNREGA	40,000	40,000
3	**Total**	**48,100**	**48,100**

Source (basic data): PIB, FY21 union budget documents

The fourth tranche focused largely on industrial reforms. The enhanced role of the private sector in coal, minerals, defence, energy, aviation and space sectors is an element of medium-term efficiency-improving reforms. The proposal to restrict imports of specified defence items, aimed at promoting self-reliance, was long overdue.

A notable feature in the fifth tranche was the enhancement of the budgeted MGNREGA allocation of INR61,500 crore in FY21 by INR40,000 crore (**Table 17.5**). Together, these add to about 0.5% of GDP which is a substantive amount to support rural demand and agricultural prices. This tranche also contained relief measures for the currently resource-constrained state governments by enhancing their borrowing limit from 3% to 5% of their respective GSDPs subject to certain conditions.

Table 17.5: Deciphering overall stimulus package

Date of announcement	Type of initiative	Total amount	Part of GoI's FY21 Budget	Additional to GoI's FY21 Budget	Other than Central Budget
		INR Crore	INR Crore	INR Crore	INR Crore
Prior to 12th May	RBI measures	8,01,603			8,01,603
	Fiscal relief	1,92,800	1,05,000	80,000	7,800
13 to 17 May 2020	**Total of 5 Tranche**	**11,02,650**	**500**	**1,22,400**	**9,79,750**
13-May-20	1st Tranche	5,94,550	0	16,800	5,77,750
14-May-20	2nd Tranche	3,10,000	500	9,500	3,00,000
15-May-20	3rd Tranche	1,50,000	0	48,000	1,02,000
16-May-20	4th Tranche	8,100	0	8,100	0
17-May-20	5th Tranche	40,000	0	40,000	0
Total Stimulus		**20,97,053**	**1,05,500**	**2,02,400**	**17,89,153**
	% of total stimulus	100.0%	5.0%	9.7%	85.3%
	as % of GDP	9.80%	0.49%	0.95%	8.36%
Memo item					
Estimated Nominal FY 21 GDP					2,13,90,909

Source (basic data): PIB, FY21 union budget documents, RBI

The financing of the overall package amounting to INR20,97,053 crore, equivalent to 9.8% of estimated FY21 GDP, can be decomposed into three components namely (a) amounts already provided for in the FY21 budget (5% of total package), (b) amounts that are to be additionally provided for (9.7% of total package), and (c) amounts pertaining to RBI, banks, NBFCs and other institutions and components (85.3% of total package).

The occasion of announcing the stimulus package was also used by the FM to outline a number of major structural reforms. These include repositioning of the public sector, decriminalization of certain corporate lapses, privatization of coal and other mineral mining, increased FDI limit in defence, ban on imports of specified defence weapons/platforms, and privatization of DISCOMs in union territories. Direct listing of Indian companies abroad may enable them to raise capital overseas. In the case of agriculture, the proposed barrier-free all-India market for agricultural produce is expected to be a key feature of India's new normal. As part of the new normal, the education sector is being augmented through the use of IT-enabled platforms. These include PM e-Vidya programme including 'one channel for one class', new DTH channels, extension of Diksha initiative, and special e-content for visually and hearing impaired. These are far-reaching efficiency augmenting supply side reforms.

With regard to direct support to demand, there are only a limited number of components in the entire stimulus package which constitute an additionality with respect to FY21 Budget. The main demand-side components in **'Stimulus 2'** pertained to the provision of free food grains and credit-linked subsidy scheme for housing amounting to INR8,000 crore, and the enhanced allocation under the MGNREGA program amounting to INR40,000 crore. The demand side support in the PM Garib Kalyan Yojana announced earlier on 26 March 2020 was somewhat larger, estimated at nearly INR62,082 crore. Together, these add to about INR1,10,082 crore, which is about 5% of the total stimulus package.

Components of monetary stimulus

The monetary stimulus comprised measures which can be grouped under four heads: (a) reduction in repo rate, reverse repo rate and CRR, (b) supplementary liquidity augmenting measures (c) enhanced Ways and Means Advances (WMA) limits for GoI and states/UTs and (d) regulatory measures. These are summarized below:

- The RBI on 22 May 2020[64], lowered the repo rate further by 40 basis points to a historic low of 4.0%, well below the 4.75% level to which it was brought down in April 2009 in response to the 2008-09 crisis. Consequently, the reverse repo rate was also reduced to 3.35%. On 27 March 2020, the CRR was reduced by 100 basis points to 3.0%.

- The liquidity augmenting measures announced on 27 March 2020[65] included (i) Targeted Long-Term Repo Operations (TLTROs) and (ii) permitting banks to borrow overnight by dipping up to 3% into the Statutory Liquidity Ratio (SLR) from the existing limit of 2%. On 17 April 2020, TLTRO 2.0 was announced wherein an aggregate amount of INR50,000 crore was particularly aimed at supporting NBFCs. A special refinance facility was announced for infusing liquidity into National Bank for Agriculture and Rural Development (NABARD), Small Industries Development Bank of India (SIDBI) and National Housing Bank (NHB) for on-lending/refinancing purposes. On 27 April 2020, the RBI announced injection of INR50,000 crore through a Special Liquidity Facility for Mutual Funds. On 22 May 2020, the RBI extended a line of credit of INR15,000 crore to the EXIM Bank.

[64] RBI's press release dated 22 May 2020 (https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=49843)
[65] Statement on Developmental and Regulatory Policies dated 27 March 2020; (https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=49582)

- In order to support the state/UT governments, who are currently undertaking COVID-19 related containment and mitigation measures, the RBI on 1 April 2020[66], increased the WMA limit by 30% from the existing limit for all states/UTs. On 7 April 2020, the RBI eased overdraft rules for the states/UTs and also extended the duration of the overdraft facility[67]. As per the relaxed norms, a state/UT can be in overdraft continuously up to 21 working days as compared to 14 working days. On 17 April 2020[68], borrowing limit for state and UT governments under WMA was further enhanced by 60%. For the central government, the WMA limit for 1HFY21 was increased to INR2 lakh crore on 21 April 2020[69]. On 22 May 2020, the RBI relaxed the rules for withdrawal by states from the Consolidated Sinking Fund.
- The RBI began undertaking regulatory measures on 27 March 2020 when it relaxed norms for mitigating the burden of debt repayment of borrowers. Specific measures included (i) permitting all commercial banks and financial institutions to provide moratorium of three months on payment of instalments in respect of all term loans outstanding as on 1 March 2020 and (ii) deferment of interest on working capital facilities for a period of three months on all such facilities outstanding as on March 1, 2020. On 17 April 2020, the RBI (i) reduced the LCR requirement for scheduled commercial banks, (ii) stalled the distribution of dividends by scheduled commercial banks and co-operative banks for FY20 until further notice, (iii) provided a one-year extension of NBFC loans to commercial and real estate projects over and above the present norm, and (iv) temporarily eased the asset classification norms. On 22 May 2020, the RBI extended (a) the duration of the refinancing facility for SIDBI by 90 days, (b) the moratorium on term loan instalments by three months and (c) the working capital facilities in the form of cash credit/overdraft provided by lending institutions by three months.

According to estimates provided by the FM, the estimated liquidity enhancement impact of the monetary measures till 17 May 2020 amounted to INR8,01,603 crore.

Fiscal stimulus and overall fiscal imbalance

GoI's tax revenues have shown a dismal performance so far in FY20. Gross taxes of the GoI contracted by (-)0.8% during April-February FY20. There is a strong likelihood that the GoI's budgeted tax revenue growth of 4.0% in FY21 may be missed by a significant margin since both GDP growth and buoyancy assumptions are not likely to be met. Recognizing this, the central government has announced its revised gross borrowing program for FY21 uplifting its budgeted fiscal deficit from 3.5% to 5.7% of GDP. The borrowing limit for states has also been relaxed from 3% to 5% of their respective GSDPs subject to certain conditions. Thus, the combined fiscal deficit for FY21 may stand at 10.7% of GDP.

[66] RBI's press release dated 1 April 2020 (https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=49619)
[67] RBI's press release dated 07 April 2020 (https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=49638)
[68] RBI's press release dated 17 April 2020 (https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=49684)
[69] RBI's press release dated 20 April 2020 (https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=49701)

Table 17.6: Profile of evolving fiscal imbalance

#	Item	% to estimated FY21 nominal GDP		
		GoI	States	Combined
1	Revised fiscal deficit according to borrowing program*	5.70*	5.00	10.70
	As compared to budget estimates			
2	Shortfall in revenues (tax and non-tax revenues and non-debt capital receipts)	2.47	1.22**	3.69
3	Estimated slippage in fiscal deficit due to lower GDP	0.18	-	0.18
4	**Additional borrowing to meet shortfalls (2+3)**	**2.65**	**1.22**	**3.87**
5	Budgeted fiscal deficit	3.50	3.00	6.50
6	**Availability of additional fiscal space (1-4-5)**	**-0.45**	**0.78**	**0.33**
	Stimulus through additionality in relief and stimulus packages			
7	Relief package (INR1.7 lakh crore; 26 March 2020)	0.30	-	0.30
8	COVID-19 Emergency Health Package (INR15000 crore; 9 April 2020)	0.07	-	0.07
9	First to fifth tranche of stimulus (INR11.02 lakh crore; 13 to 17 May 2020)	0.57	-	0.57
10	**Total stimulus/additionality (7+8+9)**	**0.95**	**0.78#**	**1.73#**
11	**Fiscal deficit required to maintain budgeted expenditure and relief and stimulus packages (4+5+10)**	**7.10**	**5.00**	**12.10**
12	Borrowing by PSUs	2.60	0.90	3.50
13	**Total PSBR (11+12)**	**9.70**	**5.90**	**15.60**
	View from financing side			
14	Household and private corporate sector excess savings			7.00
15	Public sector saving			1.50
16	Net capital inflow			1.00
17	**Supply of resources (14+15+16)**			**9.50**
18	**Financing gap (13-17)**			**6.10**
Exploring additional fiscal intervention		GoI	States	Combined
19	Expenditure reprioritization	1.05	0.50	1.55
	Memo			
1	FY21 estimated nominal GDP (INR crore)			2,13,90,909

Source (basic data): Union budget documents FY21, CGA, MOSPI, and PIB;
*as on 8 May 2020; **shortfall in own tax revenues (0.61%) and tax devolution (0.61%); #assuming states fully utilize the additional fiscal space

Notes: (1) A nominal GDP growth of 5.25% for FY21 is assumed over the revised nominal GDP for FY20. The magnitude of the estimated nominal GDP of FY21 is close to that derived by using the data provided by the FM as part of the fifth tranche of stimulus package, namely, a benefit of INR4.28 lakh crore to the states corresponding to a 2.0% points relaxation in their borrowing limit relative to their nominal GSDPs (assuming the sum of nominal GSDPs of all states is equal to the national level nominal GDP).
(2) The revised nominal GDP for FY20 is estimated to be lower than the 2nd advance estimate of the CSO by INR60,855 crore.
(3) GoI's gross tax revenue for FY20 is estimated to be lower than the FY20 (RE) by INR1,75,070 crore
(4) A buoyancy of 0.25 is assumed for GoI's FY21 gross tax revenues
(5) Shortfall in GoI's non-debt capital receipts in FY21 is on account of a shortfall in disinvestment receipts
(6) In calculating devolution to states, budgeted ratio of assignment to states to the GoI's gross tax revenues at 32.5% is used.
(7) For the borrowing requirement of public sector enterprises, the budgeted requirement of central PSUs at 2.6% of GDP is retained and a requirement of 0.9% of GDP is estimated for the state PSUs.
(8) Basic data from the CGA involves adjustment of CIT, PIT and indirect tax revenues for other taxes.
(9) Indirect tax revenues used from FY21 budget exclude taxes of the UTs.

As shown in **Table 17.6**, the total resources for government borrowing at 9.5% of GDP in FY21 fall well short of the total public sector borrowing requirement (PSBR) at about 15.6% of GDP. This gap of 6.1% points may have to be met by monetization of debt as well as additional borrowing from abroad. To the extent an imbalance continues, the borrowing by PSUs may have to be reduced and/or state governments may not borrow to the full extent of their enhanced limit of 5% of GDP. In this situation, a downgrading in India's credit ratings is quite likely which may increase the cost of borrowing. States have already experienced a sharp increase in their cost of borrowing as the yield

of 10-year state government bonds auctioned on 7 April 2020 rose by nearly 100 basis points as compared to that which prevailed a month before. However, the enhanced liquidity resulting from the monetary measures may limit the increase in the borrowing cost for the central and state governments.

Scope for expenditure restructuring

Three reasons predominantly warrant government expenditure restructuring. First, in the period of the lockdown and partial opening up, the government can save significantly on operational expenses including travel and meeting expenses, and expenses on transfer of personnel. Second, the government can take advantage of the significantly lower global crude prices in order to reduce its expenditure on fertilizer and petroleum subsidies. Third, there is a clear need to reprioritize expenditure in favour of health expenditures both on the revenue and capital account while saving on other heads, including defence purchases.

The size of GoI's expenditure relative to GDP as budgeted for FY21 amounts to 14.22%. This consists of revenue expenditure relative to GDP amounting to 12.30% and capital expenditure of 1.93% of GDP of which non-defence capital expenditure amounts to 1.39% of GDP (**Table 17.7**). As we consider expenditure restructuring, it may be desirable to reduce revenue expenditure particularly on establishment expenditure and subsidies. The amount saved on this account may be used to uplift capital expenditure above the budgeted magnitudes. If, however, the government uses this potential fiscal space to maintain its fiscal deficit at 5.7% of GDP and finances the stimulus largely from these expenditure savings, its effect may be to neutralize the stimulus since there may hardly be any additional expenditure over and above the budgeted amounts.

Table 17.7: Structure of GoI's FY21 budgeted expenditure

Expenditure item	FY21 (BE)		Targeted savings	
	INR Crore	as % of GDP	INR Crore	% of GDP
Total expenditure	**30,42,230**	14.22	**2,23,865**	**1.05**
Revenue expenditure	2630145	12.30		
Establishment exp. *of which*	6,02,276	2.82	1,20,455	**0.56**
Salary	--	--	37,530[70]	**0.18**
Pensions	210682	0.98		
Total Subsidies	2,62,109	1.23		
Major subsidies	2,27,794	1.06		
Fertilizer subsidy	71,309	0.33	23,770[71]	**0.11**
Food subsidy	1,15,570	0.54		
Petroleum subsidy	40,915	0.19	16,366[12]	**0.08**
Capital expenditure	4,12,085	1.93		
Establishment exp.	7,308	0.03	1,462	**0.01**
Defence	1,13,734	0.53	17,060[72]	**0.08**
Non-Defence	2,98,351	1.39	44,753	**0.21**
Memo				
Nominal GDP (estimated)				**213,90,909**

Source (basic data): Union Budget 2020-21

According to some recent estimates[11], the GoI may be able to save about INR37,530 crore on account of deferring three instalments of dearness allowance to employees and dearness relief to pensioners. Saving of about INR40,000 to INR80,000 crore is also likely on account of a reduction in non-salary defence expenditure[13]. Utilizing this information, we estimate that the GoI may be able lower its establishment expenditures by 20% vis-à-vis the budgeted amount, saving nearly

[70] https://www.livemint.com/news/india/central-government-freezes-da-dr-hike-for-employees-pensioners-till-july-2021-11587629823509.html
[71] 30% to 40% reduction may be assumed on fertilizer and petroleum subsidies owing to lower global crude prices
[72] https://www.business-standard.com/article/economy-policy/defence-budget-may-be-slashed-by-40-may-save-centre-rs-80-000-crore-120042900077_1.html

INR1.2 lakh crore. In addition, a 30%-40% reduction in expenditure on petroleum and fertilizer subsidies may enable a saving of about INR40,000 crore. Within the capital expenditure, both defence and non-defence expenditures may be reduced by about 15% each, enabling a saving of about INR60,000 crore. Taken together, total savings of INR2.2 lakh crore, that is, 1.05% of FY21 estimated nominal GDP, may be facilitated on account of expenditure rationalization.

The Ministry of Finance prepares an economic and functional classification of the Union Budget every year, but it comes with a lag. This classification may provide useful insights into the nature of expenditure reprioritization. In terms of economic classification, central government expenditure can be divided into three broad categories namely consumption expenditure which accounts for about 21.2% of total expenditure, transfer payments which account for 58.5%, and total investment from GoI's budget which accounts for 20.3%. These shares pertain to FY18 (BE) when the fiscal deficit was budgeted at 3.5% of GDP, similar to that in FY21 (BE). In the transfer payments, grants to states are included but their share in tax devolution is not included since total expenditure is the net of states' share in central taxes. Transfer payments also include pensions and subsidies. In the category of consumption expenditure, salary payments are included. As discussed above, there is a saving possible in some of these components in FY21.

Conclusion

The Indian economy has been on a downslide in recent years although quite a number of growth-supporting initiatives were introduced in the earlier years. In spite of these initiatives, the erosion of growth could not be arrested. The reason for this has been a steady fall in private investment which could not be undone by a corresponding increase in public investment particularly that in government's capital expenditure. In fact, GoI's non-defence capital expenditure has been languishing at low levels of 1.0% to 1.3% of GDP during FY16 to FY21 (BE). The typical reform, relief and stimulus packages have been based on insurance schemes (PM Fasal Bima Yojana, PM Suraksha Bima Yojana, PM Jeevan Jyoti Bima Yojana, and Ayushman Bharat) and credit guarantee programs. Their success depends on a number of behavioral parameters in which entrepreneurial decisions of farmers, MSME entities, managers of NBFCs and banks etc. are involved. Because of these factors, the impact of these schemes gets considerably diluted. Growth calls for a straight-forward push to demand particularly investment demand. To kickstart this, it is government's capital expenditure that may play a pivotal role. By augmenting this, private investment may also increase through multiplier effects. Government's relief packages are meant to provide temporary support and help in kickstarting the economy. Given that the present crisis is fundamentally a health crisis, emphasis may be placed on building up health infrastructure which is also part of the National Infrastructure Pipeline (NIP). Other components of NIP may be taken up in the earlier years of its five-year period.ss

Chapter 18

Reflecting on the COVID year: Losses and lessons (April 2021)

Abstract

We summarized our analysis of the impact of COVID on the Indian economy by assessing the losses that India suffered and by highlighting the lessons that were learnt. At that time, India was dangerously sliding into the second wave of the pandemic, the duration of which remained unpredictable. Critical lessons were drawn from the COVID's first years' experience so as to minimize its impact in future years. Internationally too, no country had fully recovered from the pandemic. In many countries, even a third or fourth wave of the pandemic had hit. Global trade continued to be vulnerable due not only to the impact of the pandemic but also due to other strategic and geopolitical developments including a concerted move to shift supply chains away from China and the upsurge in global crude prices based on supply side actions on the part of OPEC+ countries. Most countries were looking inward to formulate their long-term strategies in the changing global economic scenario. India had also moved towards an 'Atmanirbhar' strategy. Most analysts agreed that the post-COVID global economy is likely to be significantly different from that during the pre-COVID years. Looking at inter-sectoral impact on output growth in India, the worst performing sectors were indicated to be mining and quarrying, construction and trade, transport et.al. In terms of demand segments of GDP, apart from exports, the most vulnerable segments proved to be gross capital formation (investment) followed by private final consumption expenditure.

Drawing lessons for future economic strategy, the following measures were recommended.

1. A decentralized and diffused growth strategy where industrial activities are encouraged to settle away from major urbanized centers such as in smaller sized towns, peripheries of major urban centers and corridors connecting two or more major urban centers may provide a more robust development profile in coping with pandemic type challenges.
2. Atmanirbhar Bharat strategy appeared to be well timed since in pandemic type situations, less dependence on global supply chains may be beneficial for minimizing economic damage.
3. Going forward, expansion of capacity of providing health services as part of overall infrastructure expansion needs to be taken up on an urgent basis to improve India's capacity to deal with COVID-type health shocks.

Introduction

In India's case, a nation-wide lockdown was announced in the last week of March 2020. One full year, affected by the pandemic, has elapsed since then. It may be useful to examine the relative losses suffered by different output sectors and demand segments of the economy. It may be helpful for the future if suitable lessons can be drawn from this calamitous experience so as to deal better with potential pandemic type challenges. COVID-19's impact is by no means over. India is dangerously sliding into the second wave of the pandemic, the duration of which remains unpredictable. Critical lessons may be drawn from the COVID's first year's experience so as to minimize its impact in future years if it does continue for a few years. Internationally too, no country has fully recovered from the pandemic. In many countries, even a third or fourth wave of the pandemic has hit. Global trade continues to be vulnerable due not only to the impact of the pandemic but also due to other strategic and geopolitical developments including a concerted move to shift supply chains away from China and the recent upsurge in global crude prices based on supply side actions on the part of OPEC+[73] countries. Most countries are looking inward to formulate their long-term strategies in the changing global economic scenario. India has also moved towards an '*Atmanirbhar*' strategy. Most analysts agree that the post-COVID global economy may be significantly different from that during the pre-COVID years.

Index of relative shock

In order to study quantitatively, the differential vulnerability of countries and within a country, of the output sectors and demand segments of the economy, it may be useful to define an 'Index of Relative Shock' (IRS) in the context of the losses suffered during the pandemic year. For this purpose, with a view to bringing different sectors and segments as also economies, it may be relevant to measure the losses in the COVID year not in absolute magnitudes but instead, in relative terms. For many developed countries, COVID had arrived somewhat earlier as compared to India and for them, the calendar year 2020 is relevant whereas for India, the fiscal year FY21 is relevant. The actual performance in this reference year can be measured relative to a relevant long-term average. For this purpose, we may consider the entire decade preceding the COVID year as providing the comparable longer-term performance. Thus, in terms of growth loss, we may define an index of relative shock as

$$Index\ of\ relative\ shock\ (IRS) = \frac{decadal\ average\ growth - covid\ year\ growth}{decadal\ average\ growth}$$

This index indicates the performance of a country/sector/segment relative to its longer-term average.

Since this index may have values ranging from negative to positive and sometimes of high magnitudes, it is useful to convert this index within a given category of observation covering sectors, countries, and segments into a relative ranking or an index taking values between 0 and 100. This is defined as below

$$Index\ of\ intra\ group\ relative\ shock = \frac{magnitude\ of\ the\ actual\ IRS - magnitude\ of\ the\ lowest\ IRS}{magnitude\ of\ the\ highest\ IRS - magnitude\ of\ the\ lowest\ IRS}$$

Inter country growth performance: A comparative view

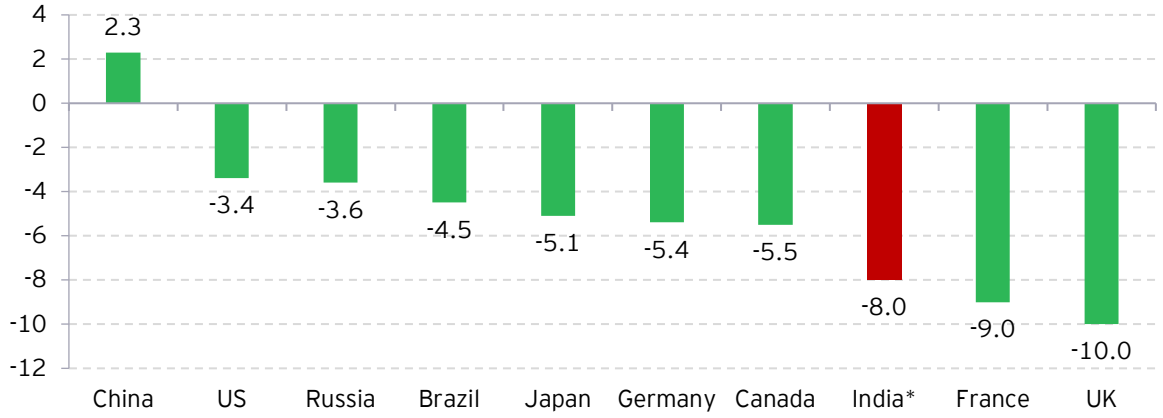
Looking at the growth performance in absolute magnitudes, the picture that emerges is summarized in **Chart 6**. For this purpose, we have selected a group of major economies with representation from advanced and emerging market economies. These include the US, UK, Japan, Germany, France, Canada, Brazil, Russia, India and China.

Chart 6 shows that, measured in terms of loss in growth, UK appears to be the worst performer while US and China appear to be the least affected. India suffered the third largest erosion in its

[73] Organisation of petroleum exporting countries (OPEC); members include 14 OPEC countries and 10 non-OPEC countries including Russia, the largest non-OPEC member.

growth rate. However, in order to make the relative shock more comparable, it is important to place this in the perspective of the differential growth performance of the countries over a longer period. This is shown in **Table 18.1 and Chart 18.1**.

Chart 18.1: Real GDP growth (% annual) of selected economies in 2020



Source (basic data): IMF World Economic Outlook April 2021; *For India data pertains to FY21

In **Table 18.1**, in terms of the relative position within the group of countries selected for comparison, India has the least relative shock at 21.2% as compared to a value of 100% for Canada which suffered the maximum shock in terms of relative impact of COVID on GDP growth.

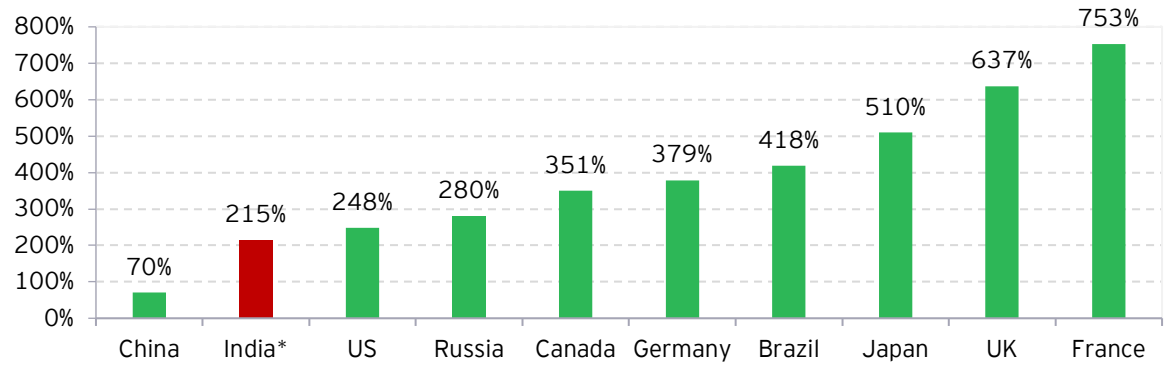
Table 18.1: Country-wise actual and average growth

Country	Growth in 2020	Average growth during 2010-2019	Decadal avg *minus* 2020 growth	Index of relative shock (%)	Relative intra group position
China	2.3	7.7	5.4	70	0.0%
India*	**-8.0**	**7.0**	**15.0**	**215**	**21.2%**
United States	-3.4	2.3	5.7	248	26.1%
Russia	-3.6	2.0	5.6	280	30.7%
Canada	-5.5	2.2	7.7	351	41.1%
Germany	-5.4	1.9	7.3	379	45.2%
Brazil	-4.5	1.4	5.9	418	51.0%
Japan	-5.1	1.2	6.3	510	64.4%
United Kingdom	-10.0	1.9	11.9	637	83.0%
France	-9.0	1.4	10.4	753	100.0%

Source (basic data): IMF; *For India data pertains to FY21

Table 18.1 indicates that for countries that were growing at much lower rates over a longer time, the extent of shock is likely to be much larger to the economy in relative terms. Thus, for example, for a country like France, which was growing at only 1.4% in the longer run, an erosion of growth to the extent of (-)9.0% is quite massive as compared to say, Russia which was growing at 2.0% in the longer run and the erosion in the growth rate in 2020 is (-)3.6%, or US where the longer-term growth rate is 2.3% and the erosion of growth in the COVID year is at (-)3.4%. Viewed in these terms, India's index of relative shock improves to the second lowest position as compared to that shown in **Chart 18.1** where it was the third worst performing country in terms of actual real GDP contraction in 2020 (FY21). Countries like UK and France appear to have suffered a far larger relative shock **(Chart 18.2)**.

Chart 18.2: Country-wise index of relative shock



Source (basic data): IMF; *For India data pertains to FY21

India's GVA: Relative vulnerability of output sectors

In **Table 18.2**, we analyze in greater detail the index of relative shock of different output sectors in India. In terms of erosion in the growth rate in absolute terms, the worst performing sector was trade, hotels, et. al., followed by construction, mining and quarrying and manufacturing. However, when we examine this growth performance in the COVID year in the light of the longer-term growth history of these sectors, their relative rankings change. The last column in **Table 4** shows the relative intragroup position of the GVA sectors in terms of their vulnerability.

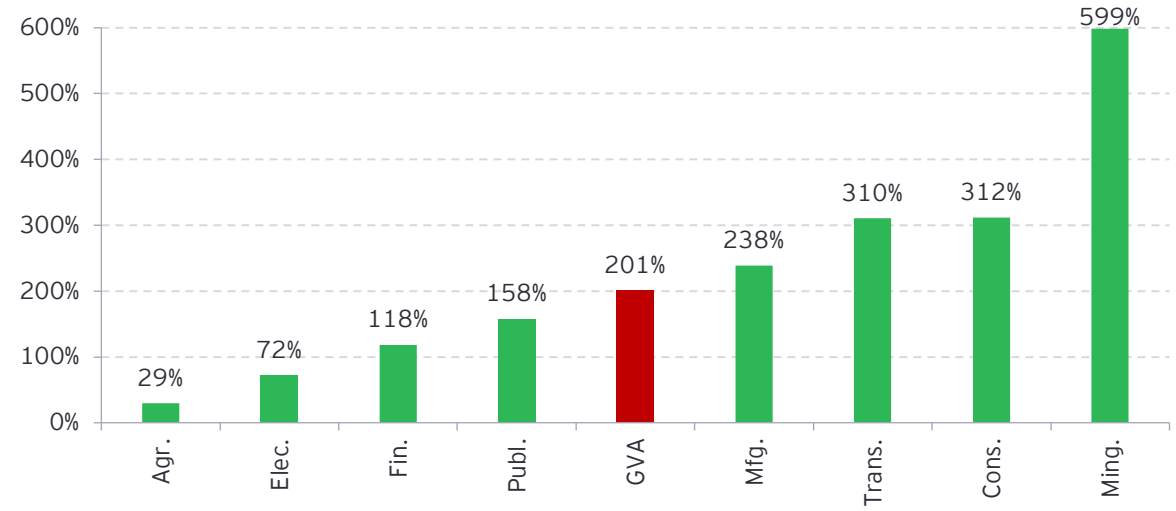
Table 18.2: Sector-wise actual and average growth

	Growth in FY21	Average growth during FY11 to FY20	Decadal average *minus* FY21 growth	Index of Relative shock (%)	Relative intra group position
Agr.	3.0	4.3	1.3	29	0%
Ming.	-9.2	1.9	11.1	599	100%
Mfg.	-8.4	6.0	14.4	238	37%
Elec.	1.8	6.5	4.7	72	8%
Cons.	-10.3	4.9	15.1	312	50%
Trans.	-18.0	8.6	26.6	310	49%
Fin.	-1.4	7.7	9.1	118	16%
Publ.	-4.1	7.1	11.2	158	23%
GVA	-6.5	6.4	12.9	201	--

Source (basic data): MoSPI

As **Chart 18.3** shows, agriculture has proved to be the least vulnerable or the most resilient sector with respect to the COVID shock. It is followed by the electricity, gas and water supply sector and the financial, real estate and professional services sector. The vulnerability of public administration, defence and other services appears to be the fourth lowest. This comes as a surprise because most of this sector's performance depends on expenditures undertaken by central and state governments. This sector could have been made to perform better in the COVID year by ensuring large fiscal stimulus by the central government and evenly spread out fiscal stimuli by the state governments. The most vulnerable sectors are mining and quarrying and construction. These sectors also could have potentially performed better because they respond to government policy decisions and infrastructure expenditure respectively. The trade, hotels and transport sector which showed the worst growth in absolute terms appears to have the third rank in terms of vulnerability in relative terms.

Chart 18.3: Sector-wise estimates of index of relative shock



Source (basic data): MoSPI

India's GDP: Relative vulnerability of demand segments

Similarly, the relative vulnerability of segments of demand that make up India's GDP can be studied. In terms of relative long-term growth, while net exports showed an average growth of 21.4% during FY11 to FY20, within the domestic demand segments, the highest average growth was for private final consumption expenditure (PFCE) at 6.9% followed by 6.4% for gross capital formation (GCF). Government final consumption expenditure (GFCE) showed a relatively lower average growth of 6.0% (**Table 18.3**).

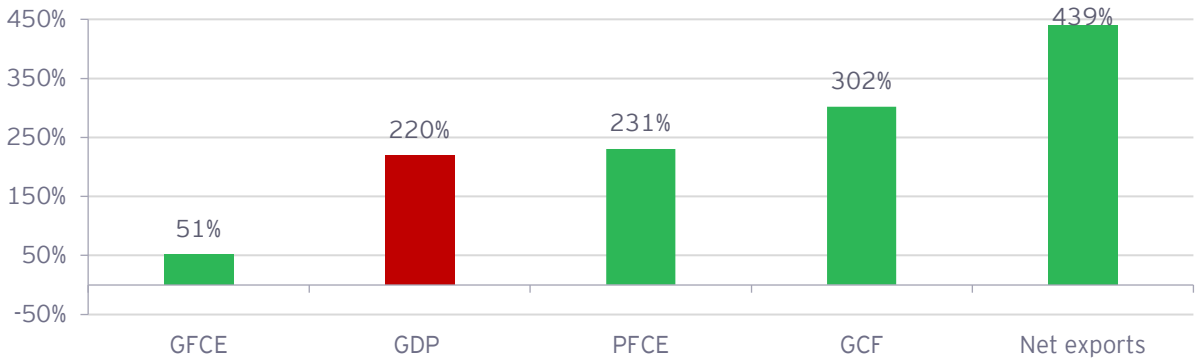
Table 18.3: Actual and average growth of aggregate demand components (domestic)

	Growth in FY21	Average growth during FY11 to FY20	Decadal avg *minus* FY21 growth	Index of Relative shock (%)	Relative intra group position
PFCE	-9.0	6.9	15.8	231	46%
GFCE	2.9	6.0	3.1	51	0%
GCF	-12.9	6.4	19.4	302	65%
GDP	-8.0	6.7	14.6	220	44%
Net exports	-72.5	21.4	93.8	439	100%

Source (basic data): MoSPI

However, in terms of the index of relative shock, the least shock was suffered by the GFCE and the maximum shock, after net exports, was suffered by investment expenditure, that is, GCF. This is shown in in **Chart 18.4** in terms of their relative vulnerability.

Chart 18.4: Index of relative shock: Components of aggregate demand



Source (basic data): MoSPI

India's external sector: Relative shock of imports vis-à-vis exports

Since net exports are derived as exports minus imports, it may be useful to consider their vulnerability separately. In terms of the erosion of growth in the COVID year, both exports and imports of goods and services suffered but imports suffered far more. This is reflected also in the index of relative shock which is 207.0% for exports as compared to 389.6% for imports (**Table 18.4**).

Table 18.4: Actual and average growth of exports and imports of goods and services

Items	Growth in FY21	Average growth during FY11 to FY20	Decadal avg *minus* FY21 growth	Index of Relative shock
Export of goods and services	6.7	-7.2	13.9	207.0%
Import of goods and services	6.2	-17.9	24.1	389.6%

Source (basic data): MoSPI

We can examine the relative vulnerability of principal contributors to merchandise exports and imports in terms of individual commodities.

Table 18.5 shows that growth in exports of drugs and pharmaceuticals in the COVID year was not only high at 18.1% but it was significantly higher than the long-term average growth of 9.1%. This is not unexpected since India became a major supplier of COVID related drugs and subsequently vaccines to the rest of the world. As a result, index of relative shock is negative, indicating relative advantage resulting from higher exports of drugs and pharma products in the COVID year. The residual category of other exports including oil meals and iron ore, is the only other category showing positive growth in the COVID year. But this growth is lower than the corresponding long-term average. As such, the index of relative shock is quite low for this category as compared to other merchandise export categories. The highest shock in relative terms is suffered by oil exports followed by gems and jewelry and readymade garments (RMG).

Table 18.5: Index of relative shock: Major merchandise exports

Sector	Growth in FY21	Average growth FY11 to FY20	Decadal average *minus* FY21 growth	Index of relative shock	Relative intragroup position
Gems & Jewellery	-27.5	3.3	30.9	921.9	100.0%
Drugs & Pharmaceuticals	18.1	9.1	-9.0	-99.1	0.0%
Engineering Goods	-2.6	10.1	12.7	126.1	22.1%
RMG of all Textiles	-20.8	4.1	24.9	608.7	69.3%
Petroleum Products	-37.1	7.3	44.4	608.5	69.3%
Others	3.4	6.7	3.3	49.0	14.5%
Total Exports	**-7.2**	**6.7**	**13.9**	**207.0**	**--**

Source (basic data): Ministry of Commerce and Industry and RBI

In the case of merchandise imports, noticeably gold imports in the COVID year showed a growth rate at 22.6% which was higher than its corresponding long-term average growth at 3.4% (**Table 18.6**). As such, this import category witnessed a relative advantage rather than a relative shock. In terms of the shock, the highest shock is suffered by the category referred to as petroleum, crude and products followed by machinery including electrical and non-electrical goods. Pearls including precious and semi-precious stones also showed a high degree of relative shock.

Table 18.6: Index of relative shock: Major merchandise imports

Sector	Growth in FY21	Average growth FY11 to FY20	Decadal average minus FY21 growth	Index of relative shock	Relative intragroup position
Petroleum, Crude & products	-36.9	7.0	43.9	626.0	100.0%
Pearls, precious & Semi-precious stones	-15.9	9.0	24.9	277.8	70.7%
Machinery, electrical & non-electrical	-24.0	7.1	31.1	435.8	84.0%
Electronic goods	3.4	9.5	6.1	64.0	52.7%
Gold	22.6	3.4	-19.2	-563.1	0.0%
Others	-15.8	6.7	22.5	337.8	75.8%
Total merchandise Imports	**-17.9**	**6.2**	**24.1**	**389.6**	--

Source (basic data): Ministry of Commerce and Industry and RBI

Nature of policy interventions

Different countries responded to the COVID challenge through varying degrees of policy responses designed to stimulate demand and economic activities in the economy. These policies are referred to as stimulus policies. Different countries showed different degrees of aggressiveness in responding to the crisis. Corresponding to the index of relative vulnerability, we may define an index of relative aggressiveness in mounting policy response initiatives. Two major categories of policy responses relate to fiscal and monetary policies. While the stimuli measures may be introduced through a variety of channels, two major instruments used for interventions relate to fiscal deficit and monetary policy rate. We consider that the higher is the increase in the COVID year fiscal deficit to GDP ratio relative to the long-term average in a country, the more aggressive is likely to be its fiscal policy. Similarly, the higher is the reduction in policy rate relative to its long-term average, the more aggressive is likely to be the monetary policy response. The index of relative aggressiveness of policy response may be defined as follows:

$$\textbf{Index of relative aggressiveness of policy response } (\boldsymbol{fiscal}) = \frac{\text{Fiscal deficit relative to GDP in Covid year} - \text{long term fiscal deficit relative to GDP}}{\text{long term fiscal deficit relative to GDP}}$$

$$\textbf{Index of relative aggressiveness of policy response } (\boldsymbol{monetary}) = \frac{\text{Long term average policy rate} - \text{Covid year policy rate}}{\text{long term average policy rate}}$$

Table 18.7 shows the index of relative aggressiveness of fiscal policy in the group of countries where we had compared the growth performance in **Table 18.1**. India does not appear to be particularly aggressive in terms of its fiscal policy response as compared to many other countries. The most aggressive response was that for Canada followed by Russia and China. India's relative position is the second lowest, just above Germany.

Table 18.7: Relative aggressiveness of fiscal intervention in the COVID year: A cross-country comparison

Country	Fiscal balance 2020 (as % of GDP)	Average fiscal balance 2010 to 2020 (as % of GDP)	Decadal average minus 2020 fiscal balance	Index of fiscal response aggressiveness	Relative intra group position (index)
Canada	20.0	1.2	21.2	1802.0	100%
Russia	4.6	0.7	5.3	727.4	73%
China	11.8	2.4	14.2	595.6	70%
United Kingdom	14.5	5.0	19.5	387.2	64%
United States	17.5	6.1	23.6	385.5	64%
France	10.6	4.0	14.6	361.8	64%
Brazil	14.5	5.7	20.2	355.8	64%
Japan	13.8	5.8	19.6	338.9	63%
India*	13.6	7.3	20.9	286.4	62%
Germany	5.1	-0.2	4.9	-2183.0	0%

Source (basic data): IMF; *For India data pertains to FY21

This relative position does not change much in the case of monetary policy. As shown in **Table 18.8**, the most aggressive monetary policy response to the crisis was in the Euro area followed by Brazil and the UK. Japan was the least aggressive followed by China and India. India's position in terms of relative monetary policy aggressiveness is the third lowest in the country/country groups under consideration. We note that in India's case, the scope for further reducing the repo rate in the COVID year was quite limited since it had been reduced to a historical low even before COVID had hit the Indian economy.

Table 18.8: Monetary policy rates: Estimated index of relative shock

Country	2020	2010 to 2019 average	Decadal average minus 2020	Index of monetary response aggressiveness	Relative intra group position
Euro area	0.0	0.4	0.4	100.0	100%
Brazil	2.8	10.0	7.2	71.8	96%
United Kingdom	0.2	0.5	0.3	58.7	95%
Canada	0.5	1.0	0.5	48.1	93%
Russia	4.9	8.7	3.7	43.0	93%
United States	0.4	0.6	0.2	38.8	92%
India*	6.9	4.0	2.8	41.2	92%
China	3.9	5.2	1.3	25.1	90%
Japan	-0.1	0.0	0.1	-674.2	0%

Source (basic data): BIS; *For India data pertains to FY21

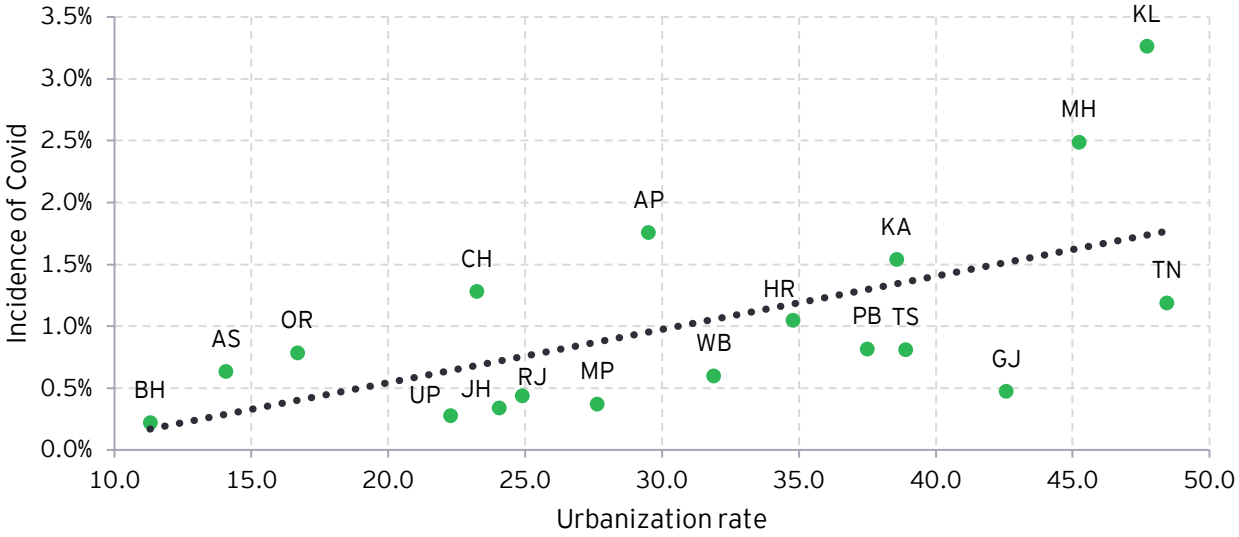
Lessons from COVID

Prefer decentralized development

COVID-19 is by no means over as evidenced by COVID's second wave that is currently sweeping India. It may have made a permanent entry into human affairs from now on. Many countries are experiencing third or fourth COVID wave after suffering from it for one full year. India is also witnessing its second wave and a full control seems well out of reach as yet. A number of lessons can be drawn from the suffering and losses of the experience both within the country and in terms of inter country comparison so as to formulate a robust strategy for minimizing COVID's health impact as also its economic impact.

Looking at India's experience, one broad correlation needs to be highlighted. There is a clear positive and high correlation between the level of urbanization and the incidence of COVID[74]. This is shown in **Chart 18.5** for medium and large states (ML states). The implication is that if economic activities are dispersed away from urbanized centres, as part of future economic strategy, it may help India cope with pandemic type calamities much better. This may call for setting up industries at the periphery of urban areas or corridors connecting to urban centres rather than letting them concentrate within urban areas.

Chart 18.5: Urbanization rate and incidence of COVID-19



Source (basic data): Census 2011 and Government of India[75]

Emphasize Atmanirbhar Bharat as future growth strategy

From the sectoral growth profile of impact of COVID, it can be seen that states that have a relatively higher share of agriculture are likely to have suffered less damage to their overall GSVA growth as well as employment. Sectors which depend more on exports have proved to be relatively vulnerable providing for a strong argument for the Atmanirbhar Bharat strategy, informing India's future growth strategy. In the post-COVID geopolitical world economic order, India may be well served by the Atmanirbhar Strategy which may also characterize the production of the COVID vaccines. Without a reliable and adequate supply mechanism for the COVID vaccines, the Indian population and the economy may remain vulnerable in the medium to long-term to periodic COVID surges based on new strains.

Expand health services capacity

Hospital bed availability in India is deficient as compared to international norms[76]. Both the first and second COVID waves have exposed India's vulnerability to pandemic type of attacks, which go through sudden upsurges, testing the capacity of health services. India appears to have missed out in the first COVID year in building permanent additional capacity for hospitals and beds so as to cope with pandemic surges in future years. As part of future strategy, significant additional investment in health infrastructure is needed. This is part of the already announced National Infrastructure Pipeline (NIP). New specialty hospitals to fight the COVID-19 cases need to be built on an urgent basis.

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[74] Data for number of COVID cases was accessed from mygov.in website as on 9 April 2021.
[75] https://www.mygov.in/corona-data/covid19-statewise-status/
[76] https://www.financialexpress.com/economy/bringing-indian-healthcare-up-to-global-standards-suneeta-reddy-tells-how-much-investment-is-needed/1746034/

Concluding observations

India, like all other countries, suffered an erosion of growth as a result of the impact of COVID-19 in FY21. When the extent of this erosion is viewed relative to a country's long-term growth performance, India's position does not appear to be as bad as revealed by a simple comparison of the magnitude of actual contraction in the GDP. In fact, India's position is only the second lowest after China (**Table 18.1**). Looking at inter-sectoral impact on output growth in India, the worst performing sectors are indicated to be mining and quarrying, construction and trade, transport et.al. In terms of demand segments of GDP, apart from exports, the most vulnerable segments proved to be gross capital formation (investment) followed by private final consumption expenditure.

In terms of policy interventions, in a comparison with major global economies, India's fiscal and monetary interventions appear to be relatively less aggressive. India's relative position was second weakest after Germany in the case of fiscal policy interventions and third lowest after Japan and China in the case of monetary policy interventions.

Drawing lessons for future economic strategy, the following may be highlighted.

1. A decentralized and diffused growth strategy where industrial activities are encouraged to settle away from major urbanized centres such as in smaller sized towns, peripheries of major urban centres and corridors connecting two or more major urban centres may provide a more robust development profile in coping with pandemic type challenges.
2. Atmanirbhar Bharat strategy appears to be well timed since in pandemic type situations, less dependence on global supply chains may be beneficial for minimizing economic damage.
3. Going forward, expansion of capacity of providing health services as part of overall infrastructure expansion needs to be taken up on an urgent basis to improve India's capacity to deal with COVID-type health shocks.

Considering that the adverse impact of COVID's second wave is expected to mainly affect the economic performance in 1QFY22, it may be useful to frontload budgeted capital expenditures for FY22 in this quarter.

Chapter 19

India's experience with COVID: People's and economy's health (May 2021)

Abstract

At the time that the second COVID wave made its onslaught on the Indian economy, we undertook an extensive analysis of the impact of COVID until then on the health of the economy as well as that of the people. India showed a growth performance which was the second worst after the UK (IMF) amongst major world economies. India's performance in this COVID year was also the worst in its post 1950 history. In the second COVID wave, the number of affected people averaged 0.35 million per day during 21 April 2021 to 30 April 2021, peaking at 0.4 million cases per day on 30 April 2021. This was the highest per-day COVID incidence across the COVID waves across all economies. When we chose the lockdown route, the economy suffered and when we chose to remain open, people's health suffered. Clearly, there was a trade-off between people's health and economy's health. In this chapter, we had suggested (1) centralization of procurement of vaccines, (2) appointment of a Vaccination Commission to oversee inter-state allocation of vaccines with a view to optimizing the impact of vaccination, and (3) presence of only two channels of distribution of vaccines namely, government and private. There need not be any distinction between the central and state governments. These may be considered together as one channel and pricing may be uniform for the government channel of vaccination. State governments may be allowed to prioritize the areas/ages for vaccination in their jurisdiction. We also suggested that for the private sector, pricing may differ according to the specific vaccines and their attributes.

Introduction

India is currently facing COVID's second wave. In the first wave, India chose to sacrifice growth by imposing a nationwide lockdown which was lifted in stages. The consequence was that the economy contracted in 1QFY21 by (-)24.4%. The annual growth for FY21 showed a contraction of (-)8.0% as per the second advanced estimate. This was the worst growth performance after the UK (IMF) amongst major world economies and the worst Indian performance (MoSPI) in its post 1950 history. In the second COVID wave, the number of affected people averaged 0.35 million per day during 21 April 2021 to 30 April 2021[77] peaking at 0.4 million cases per day on 30 April 2021. This is the highest per-day COVID incidence across the COVID waves across all economies. These are dubious distinctions. When we chose the lockdown route, the economy suffered and when we chose to remain open, people's health suffered. Clearly, there is a trade-off between people's health and economy's health. The issue is to identify strategies which can deliver better outcomes.

State-wise key demographic features

In this section, we consider the state-wise key demographic features of India's population. In **Table 19.1**, column 2 gives the state-wise share of population in the age group of 18-44 years. This indicates the relative state-wise share of requirement of vaccinations in the Phase 2 of the currently proposed vaccination drive. Column 3 gives the relative share of individual states in the Phase 1 of the vaccination process covering population aged 45 years and above[78]. Column 4 gives the inter-state share of population aged 18+ years and column 5 gives the share of population aged 12+ years. Column 6 gives the share of state's urban population as % of all India urban population.

Table 19.1: State-wise key demographic features in 2021

States[79]	% of pop. aged 18 to 44 years	% of pop. aged 45+ years	% of pop. aged 18+ years	% of pop. aged 12+ years	Urban population as % of total urban population (pop.)
1	2	3	4	5	6
AP	3.9%	4.6%	4.2%	4.1%	4.0%
AS	2.6%	2.4%	2.5%	2.6%	1.1%
BH	8.4%	7.2%	7.8%	8.3%	3.2%
CH	2.1%	2.0%	2.1%	2.1%	1.7%
GJ	5.1%	5.3%	5.2%	5.1%	7.1%
HR	2.3%	2.1%	2.2%	2.2%	2.6%
JH	2.8%	2.5%	2.6%	2.7%	2.1%
KA	5.0%	5.5%	5.2%	5.1%	6.2%
KL	2.3%	3.5%	2.8%	2.7%	5.4%
MH	9.3%	10.2%	9.7%	9.5%	12.7%
MP	6.1%	5.6%	5.8%	5.9%	5.2%
OR	3.1%	3.6%	3.3%	3.3%	1.7%
PB	2.3%	2.5%	2.4%	2.3%	2.7%
RJ	5.8%	5.1%	5.5%	5.6%	4.4%
TN	5.3%	7.1%	6.2%	5.9%	8.6%
TS	2.9%	3.0%	3.0%	2.9%	3.7%
UP	17.2%	14.0%	15.7%	16.1%	11.7%

[77] Ministry of Health and Family Welfare and COVID-19, GoI and PRS India (https://prsindia.org/covid-19/cases)
[78] This group also includes frontline workers etc in the vaccination process although these numbers are not fully covered in the population figures given in column 3. The difference is likely to be marginal in terms of shares.
[79] AP-Andhra Pradesh, AS-Assam, BH-Bihar, CH-Chhattisgarh, GJ-Gujarat, HR-Haryana, JH-Jharkhand, KA-Karnataka, KL-Kerala, MH-Maharashtra, MP-Madhya Pradesh, OR-Odisha, PB-Punjab, RJ-Rajasthan, TN-Tamil Nadu, TS-Telangana, UP-Uttar Pradesh, WB-West Bengal, S&H-Small and Hilly States (Arunachal Pradesh, Himachal Pradesh, Goa, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Uttarakhand), DL-Delhi, UTs-Union Territories (with and without legislatures)

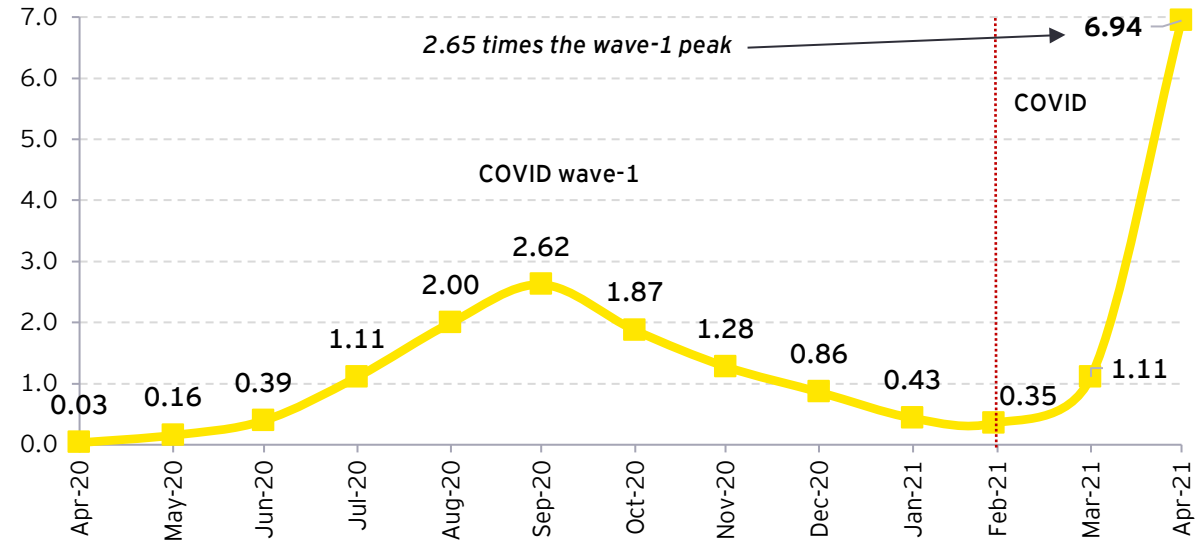
States[79]	% of pop. aged 18 to 44 years	% of pop. aged 45+ years	% of pop. aged 18+ years	% of pop. aged 12+ years	Urban population as % of total urban population (pop.)
WB	7.3%	8.2%	7.7%	7.6%	7.5%
S&H	2.8%	2.7%	2.8%	2.8%	2.4%
DL	1.7%	1.5%	1.6%	1.6%	4.3%
UTs	1.7%	1.5%	1.6%	1.6%	1.8%
IND	100.0%	100.0%	100.0%	100.0%	100.0%

Source (basic data): National Health Mission (NHM), Government of India (*Population Projections for India and States 2011-2036. National Commission on Population, November 2019*)

COVID's march into India: All-India and state-wise climb into misery

India's first confirmed COVID case was reported in Kerala on 27 January 2020[80] and by the end of March 2020, the number of COVID cases had reached 1,637. The central government imposed complete lockdown in India from 24 March 2020 to 30 May 2020 but the number of COVID cases continued to rise steeply, taking the monthly COVID case load to 0.16 million by end May 2020. Since early June 2020, while the lockdown was eased in a phased manner, monthly COVID cases continued to surge until September 2020 where it peaked to 2.62 million cases in one single month **(Chart 19.1)**.

Chart 19.1: Monthly COVID confirmed cases (million): Wave-1 and Wave-2



Source (basic data): Ministry of Health and Family Welfare (MoHFW), Government of India

Post this period, the monthly incidence of COVID started to decelerate and the economy was nearly fully operational with only localized/partial restrictions being put in place. By February 2021, the number of cases fell to their lowest point. In fact, daily cases were averaging at 11,207 during the first fortnight of February 2021, its lowest since the first fortnight of June 2020 when the daily cases averaged 10,170. Consequently, all guards were dropped. In the meanwhile, in the rest of the world, COVID had mutated in multiple ways. International traffic kept pouring into India bringing with it, the mutated variants of the Virus[81]. Within the country, high density urban agglomerations provided these variants ample breeding space to multiply in an accelerated way, taking advantage of its uplifted transmission rate. The months of March 2021 and particularly April

[80] First confirmed case of COVID-19 infection in India: A case report (May 2020), Indian Journal of Medical Research. 2020 May; 151(5): 490–492. (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7530459/#:~:text=We%20present%20here%20the%20first,dry%20cough%20and%20sore%20throat.)

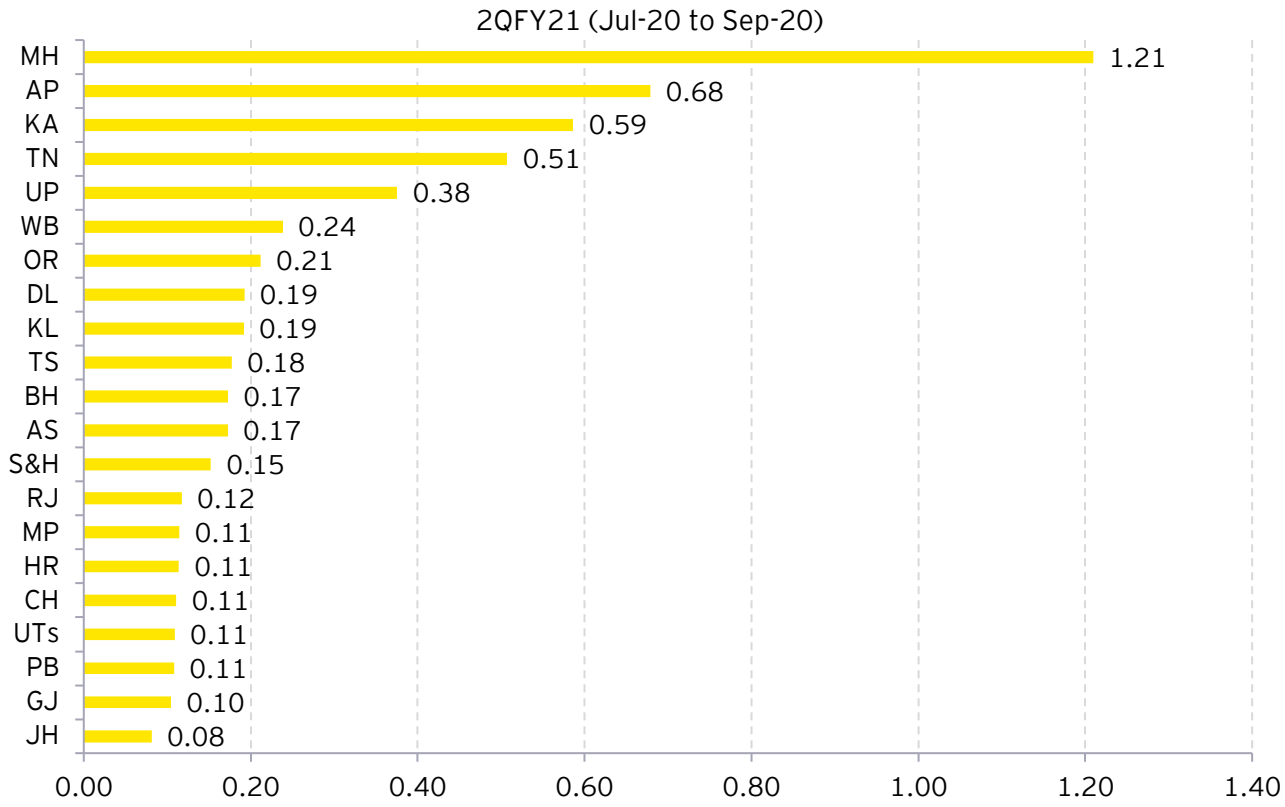
[81] https://www.thehindu.com/news/national/covid-19-after-three-mutant-variants-govt-issues-fresh-set-of-travel-guidelines/article33867701.ece

2021 were characterized by a significant surge in COVID cases. The peak load of COVID's second wave was at 6.94 million cases per month in April 2021.

The inter-state profile of COVID's first and second phases are also of considerable interest. In **Chart 19.2**, the interstate profile of the incidence of COVID is depicted for 2QFY21 reflecting the period in which COVID accelerated and reached a peak. The incidence is highest for Maharashtra exceeding 1.2 million followed by Andhra Pradesh (0.68 million), Karnataka (0.59 million) and Tamil Nadu (0.51 million). Uttar Pradesh was the fifth highest with a case load close to 0.38 million, more than one-third of the Maharashtra's case load.

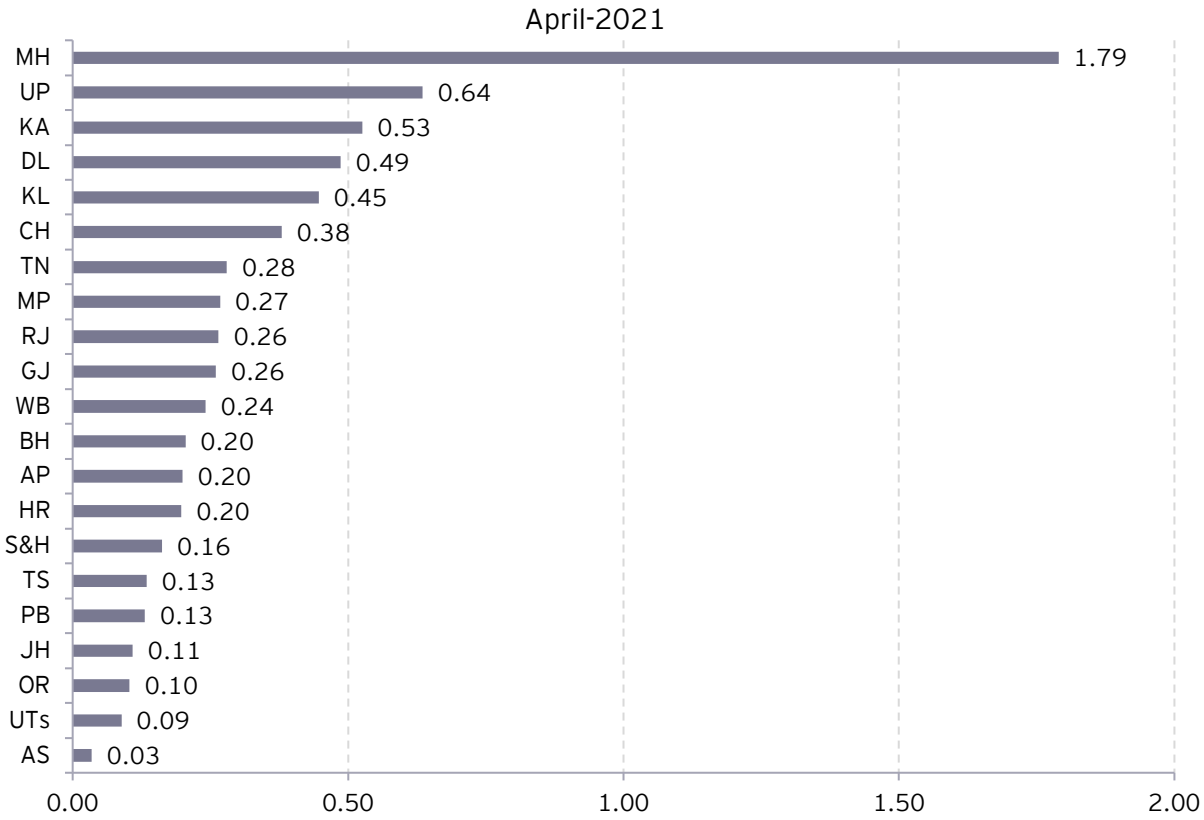
This inter-state profile appears to have changed in some respects in COVID's second wave **(Chart 19.3)**. Maharashtra leads the case load with close to 1.8 million cases in one month alone. This case load was nearly 150% of the three months (2QFY21) case load in the state during the first wave. No wonder, the entire health infrastructure proved to be woefully inadequate in this state as in other states. The second highest was Uttar Pradesh with 0.64 million cases in April 2021 and this was nearly 169% of the cases seen in the state during 2QFY21. The third highest was Karnataka with a case load of 0.53 million followed by Delhi with a case load of 0.49 million in April 2021. The lowest case load was seen in Assam at 0.03 million.

Chart 19.2: COVID interstate profile: Wave-1 (million cases)



Source (basic data): MoHFW, Government of India

Chart 19.3: COVID interstate profile: Wave-2 (million cases)



International passengers: Spatial concentration

Table 19.2 shows the inter-state distribution of arrival of international passengers (IPAX) at airports located in different states and UTs in India. These passengers may not necessarily reside in the concerned states. After arrival, they may travel to their respective states of residence after staying within the state for some period temporarily. Even if their stay is short, if they arrive carrying with them the COVID virus, the likelihood is very strong that they may spread the virus within the state. As such, the arrival of the virus into India and its first port of call are clearly the states where the international airports are located. This is also borne out by the high share of the incidence of COVID in states/UTs like Maharashtra, Delhi, Kerala, Karnataka and Tamil Nadu.

Table 19.2: State/UT wise number of international passenger arrivals[$]

States/ UTs	IPAX (1QFY21)	IPAX (2QFY21)	IPAX (3QFY21)	IPAX (4QFY21[#])	IPAXFY21[**]	Inter-state share IPAX (4QFY21[#])
1	2	3	4	5	6=2+3+4+5	7
ANI*	-	-	26	-	26	0.00%
AP	5,972	26,437	24,213	16,337	72,959	0.86%
AS	19	347	2	-	368	0.00%
BH	6,458	6,625	-	-	13,083	0.15%
DL	1,92,482	6,52,283	9,76,338	8,83,568	27,04,671	31.75%
GA	12,514	4,020	11,839	6,877	35,250	0.41%
GJ	10,678	20,593	58,192	74,124	1,63,587	1.92%
JK	1,896	1,191	69	-	3,156	0.04%
KA	23,510	91,275	1,91,252	2,01,080	5,07,117	5.95%
KL	1,50,444	3,96,250	7,64,422	6,94,304	20,05,420	23.54%
MH	56,981	2,12,015	4,31,058	3,46,634	10,46,688	12.29%

States/ UTs	IPAX (1QFY21)	IPAX (2QFY21)	IPAX (3QFY21)	IPAX (4QFY21#)	IPAXFY21**	Inter-state share IPAX (4QFY21#)
1	2	3	4	5	6=2+3+4+5	7
MN	-	-	9	10	19	0.00%
MP	302	610	1	-	913	0.01%
OR	1,465	4,780	30	-	6,275	0.07%
PB	19,682	28,479	63,381	57,908	1,69,450	1.99%
RJ	6,788	22,191	46,154	36,391	1,11,524	1.31%
SK	-	-	211	296	507	0.01%
TN	32,138	1,21,651	2,95,150	2,68,114	7,17,053	8.42%
TS	17,175	89,646	1,89,444	1,78,506	4,74,771	5.57%
UP	14,118	1,10,865	1,37,520	1,10,848	3,73,351	4.38%
WB	6,022	4,771	47,268	53,986	1,12,047	1.32%
IND	5,58,644	17,94,029	32,36,579	29,28,983	85,18,235	100%

Source (basic data): Airports Authority of India (AAI);
*ANI-Andaman and Nicobar Islands; **April-2020 to February 2021 and # January 2021 to February 2021. $International passenger arrivals at various international airports within a state/UT were aggregated to derive the state-wise international passenger arrivals data.

Determinants of interstate incidence of COVID

In this section, we endeavor to formulate a view on the determinants of the differences in the interstate incidence of COVID. We consider the following variables as relevant for examining their role in determining the interstate profile of the COVID case load. We consider that in the arrival of COVID virus into the country, whether in the first wave or in the second wave, the number of international passengers landing in different states is of critical importance. Once the virus starts spreading within the country, various factors may account for the differential rate of spread of the virus. Some of the factors that we have considered for this purpose are: (a) density of urban population (urban population as a ratio of urban area), (b) share of non-young population (population aged 18 years and above) reflecting economically active population, (c) share of urban population to total population reflecting rate of urbanization and (d) state-wise share of international passengers.

Table 19.3: Determinants of incidence of COVID

Dependent variable: CI				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.0039*	0.0018	2.1751	0.0473
IPAXFY21	0.1325*	0.0285	4.6513	0.0004
IUD^2	0.0409*	0.0056	7.2680	0.0000
DD1	0.0122*	0.0052	2.3444	0.0343
DD4	0.0189*	0.0053	3.6065	0.0029
DD9	0.0258*	0.0054	4.7682	0.0003
DD17	-0.0189*	0.0054	-3.5169	0.0034
R-squared	**0.907**	*Mean dependent var*		0.017
Adjusted R-squared	0.867	*S.D. dependent var*		0.014
S.E. of regression	0.005	*Akaike info criterion*		-7.501
Sum squared residual	0.000	*Schwarz criterion*		-7.153
Log likelihood	85.762	*Hannan-Quinn criterion*		-7.426
F-statistic	22.722	*Durbin-Watson stat*		2.049
Prob(F-statistic)	0.000			

Source (basic data): MoHFW, AAI, NHM and EY estimation; *statistically significant at 5%

As shown in **Table 19.3**, we find that two important determinants of the interstate incidence of COVID (CI) as measured by cumulated COVID cases (March 2020 to end April 2021) as percentage

of state population are state's share in international passengers[82] (IPAXFY21) and index of density of urban population (IUD). It is the squared term of IUD which is statistically quite significant indicating its importance in a non-linear way. There are some state specific effects which have also been captured in the estimated equation. These pertain to Andhra Pradesh, Chhattisgarh, Kerala and Uttar Pradesh. The related intercept values reflect state specific effects or features. In particular, in these states, the impact of the COVID is more than that for the average state except Uttar Pradesh which is indicated by the overall intercept (C). In the case of Uttar Pradesh, it is less than that for the average state. More than 90% of the variation in the interstate incidence of COVID is explained by this equation. Given the importance of arrival of international passengers and the differential urban density in different states in the onset and spread of COVID in the country, important policy implications can be drawn for combating and containing the spread of COVID, lockdown strategy and the vaccination strategy. These strategies are discussed in a later section.

Progress of State-wise vaccination

We have compiled the state-wise daily progress of vaccination for the months of March and April 2021. In Table 19.4 we have provided average per-day vaccination rate so as to prepare a profile of the inter-state variation in the vaccination rate.

Table 19.4: Vaccination doses: Daily average

States	Avg. March 2021 (per-day)	Avg. April 2021 (per-day)	Average per day vacc. administered (1-Mar-21 to 30-Apr-21)	Index of per-day rate of vacc. relative to the highest	Share in total vacc. doses administered for population aged 45+	Cumulated vaccination doses administered (till 30-Apr-21) as % of total vacc. Requirement
1	2	3	4	5	6	7
AP	62,459	1,32,488	96,900	39.5%	4.2%	8.3%
AS	26,626	47,855	37,066	15.1%	1.6%	5.3%
BH	70,799	1,37,803	1,03,752	42.2%	4.5%	4.7%
CH	48,790	1,20,966	84,286	34.3%	3.6%	14.2%
GJ	1,51,581	2,25,278	1,87,825	76.5%	8.0%	12.7%
HR	41,864	72,231	56,798	23.1%	2.4%	9.1%
JH	41,556	50,590	45,999	18.7%	2.0%	6.3%
KA	96,525	1,94,416	1,44,668	58.9%	6.2%	9.9%
KL	90,794	1,32,509	1,11,309	45.3%	4.8%	13.8%
MH	1,61,521	3,32,516	2,45,617	100.0%	10.4%	8.9%
MP	82,108	1,57,429	1,19,151	48.5%	5.2%	7.4%
OR	57,813	1,14,890	85,884	35.0%	3.8%	9.3%
PB	21,021	85,076	52,524	21.4%	2.2%	7.5%
RJ	1,51,552	2,43,367	1,96,707	80.1%	8.4%	12.6%
TN	83,429	97,206	90,204	36.7%	3.8%	5.1%
TS	28,259	1,16,180	71,499	29.1%	3.1%	8.6%
UP	1,26,377	2,38,678	1,81,607	73.9%	8.1%	4.3%
WB	1,33,032	1,91,410	1,61,743	65.9%	7.1%	7.6%
S&H	10,158	15,489	12,780	57.2%	6.4%	18.9%
DL	27,603	66,883	46,921	19.1%	2.1%	10.9%
UTs	3,400	9,654	6,476	18.5%	2.0%	10.3%
IND	16,39,246	29,95,725	23,06,367	44.7% (avg.)	100.0%	8.2%

Source (basic data): MoHFW, Government of India; Vacc. refers to vaccination;

In Column 7, cumulated number of doses already administered up to 30 April 2021 was considered as % of total vaccine requirement for population of 18 years and above taking into account a two-dose requirement under the two phases of the vaccination drive. On an all-India basis, only 8.2% of the requirement was covered leaving 91.8% of the requirement which needs to be undertaken 1

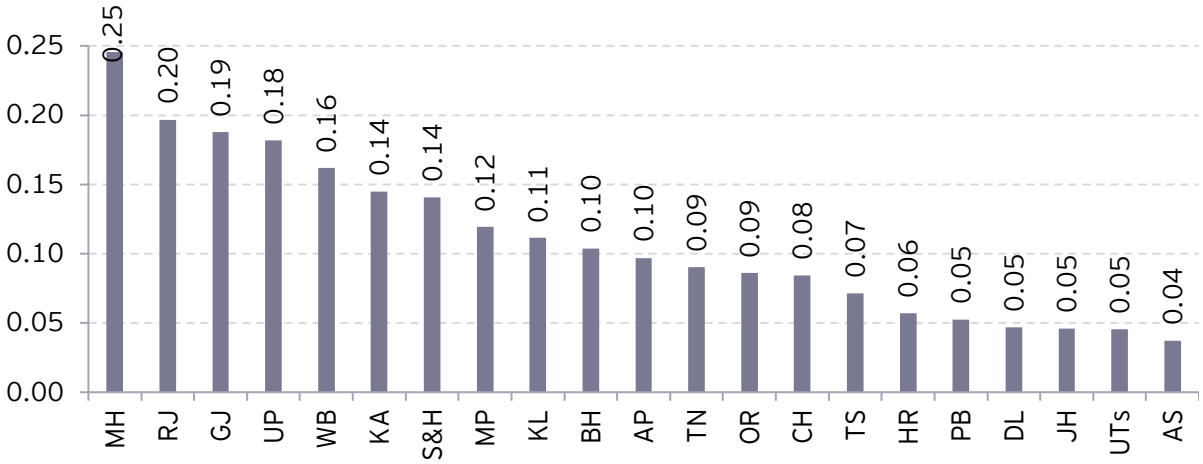
[82] Here we have used adjusted international passenger arrivals state-wise. Since the international airports at DL (Delhi airport), MH (Mumbai, Pune, Nagpur airports) and KL (Calicut and Cochin airports) also serve as the major airports for international passengers from neighboring states, we have distributed the international passenger arrivals of these three states across neighboring states depending on their proximity and their respective share in urban population.

May 2021 onwards. Maximum coverage was for small and hilly states at 18.9% followed by Chhattisgarh at 14.2%, Kerala at 13.8% and Gujarat and Rajasthan at 12.7% and 12.6% respectively. The lowest coverage is for UP at 4.3% and Bihar at 4.7%.

Perspectives on period required to attain full vaccine coverage of eligible population

Chart 19.4 shows the state-wise average per-day vaccination rate in terms of million doses. The highest recipient is Maharashtra, followed by Rajasthan, Gujarat and Uttar Pradesh. We notice that there is a large interstate differential in the per-day vaccination rates. As compared to Maharashtra, Delhi's per day vaccination rate is only one-fifth and Kerala's vaccination rate is less than half.

Chart 19.4: State-wise average per-day vaccination rate (million doses) during March and April 2021



Source (basic data): MoHFW, Government of India

Table 19.5 shows that if the current vaccination rate of 2.31 million doses per day is continued and its current interstate distribution pattern is maintained, the resultant situation is likely to be challenging. At an all-India level, it is estimated that 748 days are required to achieve full coverage of the population of 18 years and above (eligible population). But, in terms of coverage of individual states, some states may require far too many days. For example, Uttar Pradesh may require 1,553 days, while Bihar may require 1,351 days and Tamil Nadu may require 1,217 days. Clearly, the current ad hoc and non-transparent vaccination distribution strategy requires to be recast immediately.

Table 19.5: State-wise estimates of required vaccination doses and number of days to vaccinate the balance 18+ population

States	Million doses				Estimated number of days required to cover the balance 18+ population
	Total vaccine doses required for population aged 18+	Total vaccine administered for population aged 45+ (till 30 Apr 2021)	Balance vaccine doses required for population aged 18+ (1 May 2021 onwards)	Average vaccines doses administered per day (from 1 Mar 2021 to 30 April 2021)	
1	2	3	4 = 2-3	5	6
AP	79	7	72	0.10	747
AS	47	2	45	0.04	1,210
BH	147	7	140	0.10	1,351

States	Million doses				Estimated number of days required to cover the balance 18+ population
	Total vaccine doses required for population aged 18+	Total vaccine administered for population aged 45+ (till 30 Apr 2021)	Balance vaccine doses required for population aged 18+ (1 May 2021 onwards)	Average vaccines doses administered per day (from 1 Mar 2021 to 30 April 2021)	
1	2	3	4 = 2-3	5	6
CH	39	6	34	0.08	400
GJ	98	12	85	0.19	454
HR	41	4	37	0.06	658
JH	50	3	47	0.05	1,014
KA	98	10	88	0.14	609
KL	53	7	46	0.11	413
MH	183	16	167	0.25	678
MP	110	8	102	0.12	854
OR	63	6	57	0.09	662
PB	45	3	42	0.05	800
RJ	103	13	90	0.20	457
TN	116	6	110	0.09	1,217
TS	55	5	51	0.07	709
UP	295	13	282	0.18	1,553
WB	145	11	134	0.16	830
S&H	52	10	42	0.14	301
DL	30	3	27	0.05	572
UTs	30	3	27	0.05	594
IND	**1,879**	**155**	**1,724**	**2.31**	**748**

Source (basic data): MoHFW, Government of India

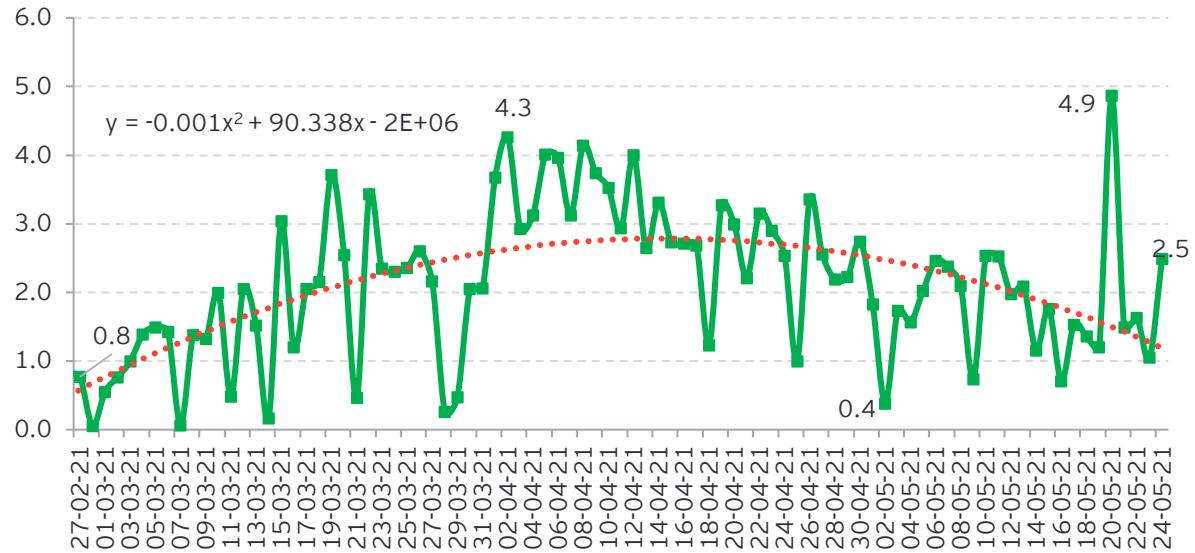
Vaccine supply challenges

Two additional considerations need to be brought in. First, the improvement in the availability of vaccines as the supply situation improves. Second, apart from age cut offs, we need to add a spatial dimension to allocation of vaccines. In other words, some states need to be subjected to "*saturation vaccination*" before we focus on all India coverage. This aspect is discussed subsequently.

Chart 19.5 shows the progress of vaccination in India during March, April and May 2021 in terms of daily vaccination doses. At its peak on 2 April 2021, 4.3 million doses were administered. In the month of May 2021 however, the daily vaccination rate has dipped to significantly low levels. It seems that the average daily rate of 2.34 million doses of COVID vaccines, pertaining to March and April 2021 may not be maintained in May 2021[83] since the current production capacity of Serum Institute India (SII) and Bharath Biotech together is approximately 75 million units per month[84], that is 2.5 million doses per day if we do not export any units for some time.

[83] Average daily rate of vaccination during 1 May 2021 to 24 May 2021 was 1.8 million
[84] https://www.bbc.com/news/world-asia-india-55571793

Chart 19.5: Daily COVID vaccine doses (million) administered in India



Source (basic data): MoHFW, Government of India;
Note: the sudden surge in daily vaccination rate to 4.9 million doses on 20 May 2021 is attributable to the reporting by selected states of the cumulated first dose of vaccines administered for the age group 18-44 years, covering the period 1 May 2021 to 19 May 2021[85].

In a report (no. 342[86]) dated 8 March 2021, submitted to the Rajya Sabha, the Parliamentary Standing Committee on Science and Technology, Environment, Forests and Climate Change, indicated that the estimated current production capacity of COVAXIN by Bharath Biotech was 150 million doses per year, that is, 12.5 million doses per month while the estimated manufacturing capacity of the COVISHIELD by SII was about 70-100 million doses per month[87]. On 16 April 2021[88], the Ministry of Science and Technology indicated that the government planned to augment the production capacity of COVAXIN to reach 100 million doses per month by September 2021 from the current production capacity of 10 million doses per month. The SII, while indicating a possible shortage of vaccine supply, has planned to ramp up the production of COVISHIELD from the current 60-70 million doses a month to 100 million doses a month by end of July 2021[89]. Further, on 20 April 2021, Bharat Biotech announced the scaling up of its manufacturing capacity to produce approximately 700 million doses of COVAXIN annually[90], that is, 58.33 million doses per month. It is not indicated as to when this capacity may become effective. As per recent media reports[91], it is expected that 2,160 million doses of vaccines may be available in India between August 2021 to December 2021 with an expanded scope of types of vaccines, both domestically manufactured and imported. However, the success of these plans depends on a number of favorable positive developments happening according to stipulated timelines.

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[85] Cumulated coverage report of COVID-19 vaccination released on 21 May 2021 by MoHFW.
[86] https://rajyasabha.nic.in/rsnew/Committee_site/Committee_File/ReportFile/19/147/342_2021_3_10.pdf
[87] In fact, way back on 7 August 2020, the SII had entered into a landmark partnership with Gavi, The Vaccine Alliance and the Bill & Melinda Gates Foundation, to accelerate the manufacture and delivery of up to 100 million doses of COVID-19 vaccines for India and low- and middle-income countries.
(https://www.seruminstitute.com/news_gavip_partnership_annoucement.php)
[88] https://pib.gov.in/PressReleseDetail.aspx?PRID=1712271
[89] https://www.businesstoday.in/current/economy-politics/received-order-for-26-crore-covid-19-vaccine-doses-from-centre-serums-adar-poonawalla/story/438152.html
[90] https://www.bharatbiotech.com/images/press/bharat-biotech-covaxin-capacity-expansion-to-worldwide.pdf
[91] https://www.india.com/news/india/india-aims-to-vaccinate-all-citizens-over-200-crore-vaccine-doses-to-be-available-by-end-of-2021-4662878/

Meanwhile, the data published by Ministry of External Affairs showed that India had exported 66.4 million units of COVID-19 vaccine until 5 May 2021[92], which is nearly 43% of total domestic vaccination doses administered till 30 April 2021.

Table 19.6 shows calendar of potential vaccination coverage in India based on ramp-up of production and supply July 2021 onwards. Up to June 2021, it may not be possible to increase supply much more than 54 and 64 million doses respectively in May and June 2021, even with imported vaccines. It is expected that July 2021 onwards, there may be substantial increase in vaccine supply. In sections 6 and 7, we have reviewed the progress of vaccination for population of 18 years and above. However, in order to cope with the prospective third COVID wave, the coverage of vaccination is likely to be extended to population aged 12 years and above. In Table 8, we have considered the eligible population for vaccination as people aged 12 years and above.

Table 19.6: Calendar of potential vaccination coverage in India

	Million doses					
End of month	Requirement of doses	Net monthly vaccination rate	Requirement of doses	Net monthly vaccination rate	Requirement of doses	Net monthly vaccination rate
	2,170		2,170		2,170	
Feb-21	2,156	14	2,156	14	2,156	14
Mar-21	2,105	51	2,105	51	2,105	51
Apr-21	2,015	90	2,015	90	2,015	90
May-21	1,961	54	1,961	54	1,961	54
Jun-21	1,896	64	1,896	64	1,896	64
Jul-21	1,796	100	1,746	150	1,696	200
Aug-21	1,696	100	1,596	150	1,496	200
Sep-21	1,596	100	1,446	150	1,296	200
Oct-21	1,496	100	1,296	150	1,096	200
Nov-21	1,396	100	1,146	150	896	200
Dec-21	1,296	100	996	150	696	200
Jan-22	1,196	100	846	150	496	200
Feb-22	1,096	100	696	150	296	200
Mar-22	996	100	546	150	96	200
Apr-22	896	100	396	150	-	96
May-22	796	100	246	150		
Jun-22	696	100	96	150		
Jul-22	596	100	-	96		
Aug-22	496	100				
Sep-22	396	100				
Oct-22	296	100				
Nov-22	196	100				
Dec-22	96	100				
Jan-23	-	96				

Source (basic data): MoHFW, Government of India and EY estimates; *EY estimates

At the rate of 100 million units of vaccines per month, the entire population aged 12 years and above of close to 1,085 million in India can be covered with two doses of vaccines[93] by January 2023 that is 20 months from now. This period can be curtailed to 14 months if the vaccine supply can be increased to 150 million units per month by sourcing it from several other suppliers. If average monthly supply is increased further to 200 million units July 2021 onwards, it may take 11 months to vaccinate the entire eligible population considered here. It is clear that throughout this period, demand may exceed supply and an appropriate interstate allocation policy may be needed not only to avoid confusion but also to avoid complaints from states.

[92] https://www.mea.gov.in/vaccine-supply.htm
[93] That is about 2,170 million doses of COVID vaccines. Up to end March 2021, about 65 million doses of COVID vaccines were administered in India.

The GoI in its FY22 budget had allocated INR35,000 crore for vaccination. This amount is meant to be transferred to the states[94]. Given that vaccination is associated with strong positive externalities, GoI has a primary role in ensuring country-wide coverage. If GoI becomes the only governmental agency to procure vaccines, the average price per vaccine is likely to be much lower than if individual states get involved in floating global tenders. For vaccinating India's total population aged 12 years and above at 1,085 million, total required doses are estimated at 2,170 million considering two doses per person. At an average price of INR300 per dose, the total vaccination cost is estimated at INR65,108 crore. If states' involvement pushes up the average price to say INR500 per dose, total vaccination bill to the country may go up to INR1.09 lakh crore. This cost enhancement, which would be higher if the average vaccine price increases even more, is clearly avertible apart from avoiding the confusion ensuing from states' involvement in vaccine procurement and implementation.

The next issue, after GoI takes up the entire vaccine procurement responsibility, pertains to its inter-state allocation. The appropriate objective of vaccination may be universal coverage with "strategic sequencing". For this task, a transparent formula based on a dynamic approach is the best.

In this context, it may be useful to set up a ***Vaccination Commission*** consisting of say, five members who may be experts drawn from the field of medicine, health, economics, public policy and judiciary similar to the Finance Commission of India. This may be set up under an administrative order of the Government of India, which was the case for the erstwhile Planning Commission or under the direction of the Supreme Court of India with adequate powers and defined responsibilities pertaining primarily to allocating and specifying a delivery and destination schedule to the vaccine manufacturers including importers. This distribution needs to cover all the states and UTs as also the private sector. This Commission may be continued for a period of three to five years so as to ensure coverage of booster doses as well as unforeseen COVID waves which might occur over time. There is also the issue of extending vaccination coverage to population younger than 18 years of age as soon as the relevant vaccines become available.

Conclusion and suggested policy interventions

Policy needs to be devised to bring down the impact of COVID incidence of the second wave in the country as quickly as possible. It may be best if this can be done by minimizing the economic costs of lockdowns, which are progressively getting extended in terms of duration and in terms of coverage of geographical area. Two key policy instruments are available with the policy makers which can be used for this purpose. One is to extend the vaccination coverage and the second is to extend the lockdown in terms of duration and coverage. The key intervention is vaccination. We suggest the following:

a. Procurement of vaccines can be fully centralized. This is likely to keep total procurement costs to a minimum since a single agency for purchase may be able to reap economies of scale and may have much better bargaining power in the domestic and international markets.
b. A Vaccination Commission may be appointed by a government order or under directions of the Supreme Court of India to oversee the interstate allocation of vaccines, its pricing and its distribution between government sector and private sector.
c. There may be only two channels of distribution of vaccines namely, government and private. Any distinction between the central and state governments may be avoided. These need to be considered together as one channel and pricing should be uniform for the government channel of vaccination. State governments may be allowed to prioritize the areas/ages for vaccination in their jurisdiction. For the private sector, pricing may differ according to the specific vaccines and their attributes.

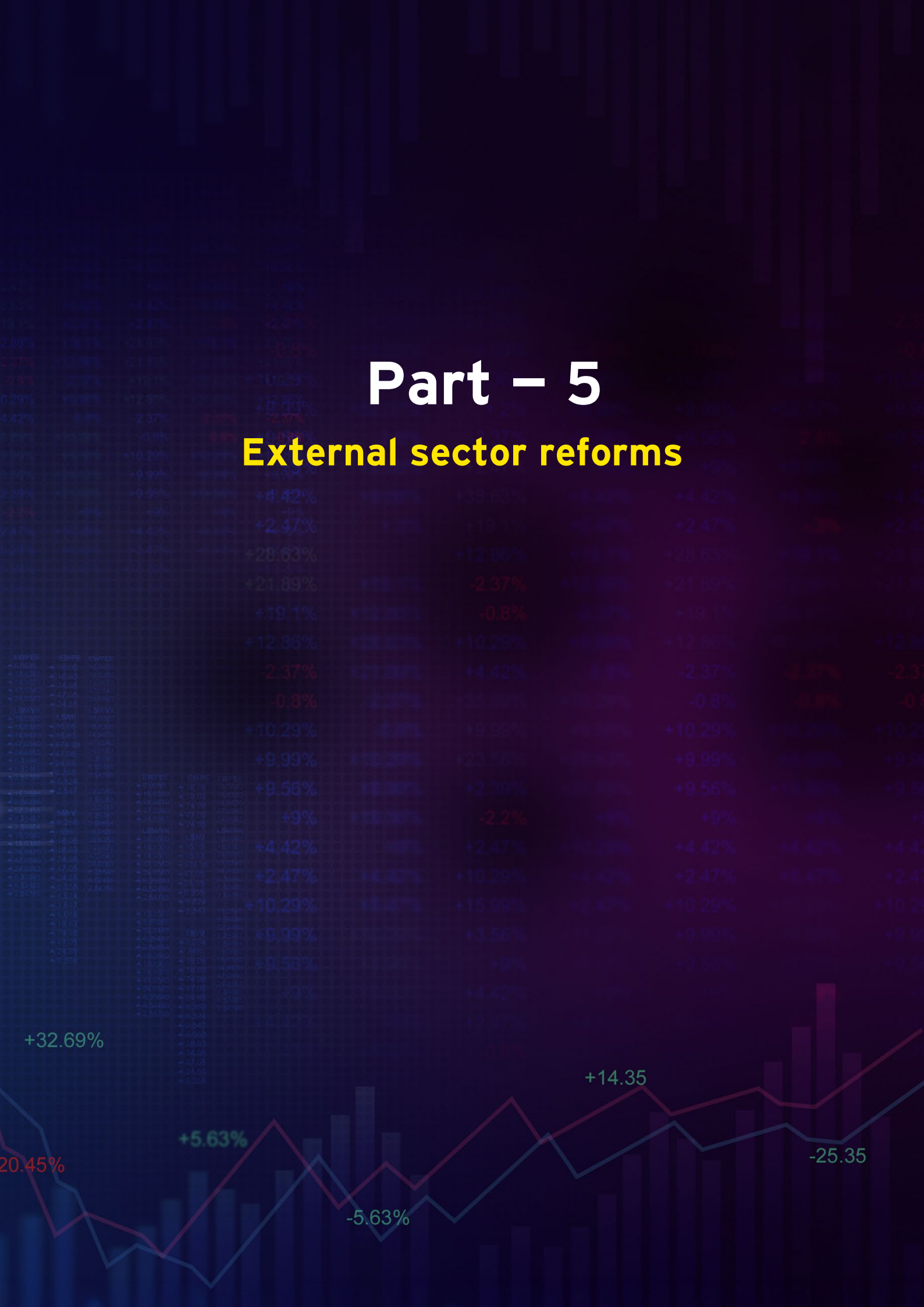
A policy of vaccination that is much better targeted than the current ad hoc strategy may be used for achieving far more effective outcomes in controlling the spread of the second wave. *Saturation vaccination* of targeted states/areas could have and could still control the spread of the second

[94] As per the Demand for Grants No.40, Department of Finance, FY22 Union Budget

wave. Saturation vaccination means that we select a state/UT or a defined geographical area such as cities or urban agglomerations and vaccinate the entire eligible and willing population. Thus, if we had vaccinated Maharashtra, Kerala, Delhi and Karnataka populations fully in that sequence, the peak of the second wave could have been kept far more subdued. This is because these states had the highest share of international passengers and the highest share in the residual COVID affected population after the first wave. It is the interaction between these two population sets that provided the seeds for the second wave. As lockdowns were announced in these states, migrant populations moved inwards into the country taking with them the mutant strains. It may be the responsibility of the Vaccination Commission to construct a dynamic allocation mechanism for the available vaccines so as to have the maximum impact on controlling the spread of COVID. This may be continued until the supply shortage situation in regard to the vaccines continues. This strategy may minimize the need for extended lockdowns in progressively larger areas thereby minimizing economic losses.

Part – 5

External sector reforms



Chapter 20

Oil on re-boil: Can it sap India's growth momentum? (November 2017)

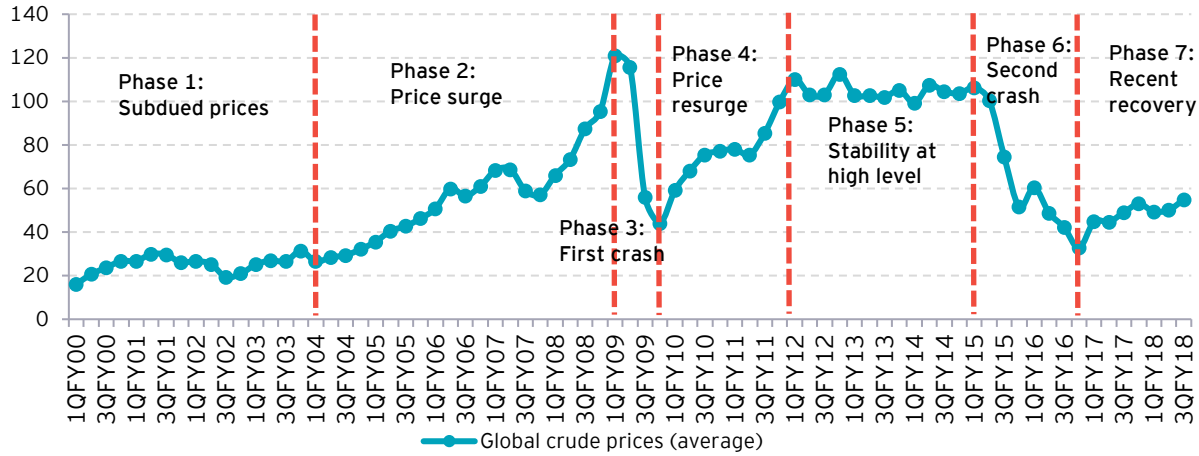
Abstract

The Indian economy is vulnerable to volatility in global crude prices. In November 2017, there were signs of oil prices heating up. We examined various aspects of the vulnerability of India's economy to the movement of global crude oil prices. The Indian crude basket, which had been on average about US$1/bbl. below that of Brent, reflected near 100% co-movement with Brent prices. As a large importer of crude oil, India benefited significantly from lower crude prices during that time, as it helped contain inflation and had a favorable impact on both the fiscal and current account deficits. But a sharp reversal in prices could potentially reverse some of these gains. Crude (Brent) prices touched a two-year high on 6 November 2017 and had gone up by over 15% since early October 2017. We argued that India's long-term economic purposes may be served by reducing its dependence on imported crude, by developing its oil and shale fields and by moving progressively to non-conventional energy sources.

Introduction

Global crude oil prices, after falling from levels of above US$100/bbl. in 1QFY15 to below US$40/bbl. (**Chart 20.1**), are warming up again. Brent crude price has been ranging above US$60/bbl. in recent weeks. The Indian crude basket, which has been on average about US$1 below the Brent, reflects near 100% co-movement with Brent (**Chart 20.2**). As a large importer of crude oil, India benefited significantly from lower prices in the recent quarters as it helped contain inflation and had a favorable impact on both the fiscal and current account deficits. But a sharp reversal in prices can reverse some of these gains. Crude (Brent) prices touched a two-year high on 6 November 2017 and have gone up by over 15% since early October 2017. **Chart 20.1** shows the movement of global crude prices over the last 17 years, on a quarterly average basis, in seven phases as described below.

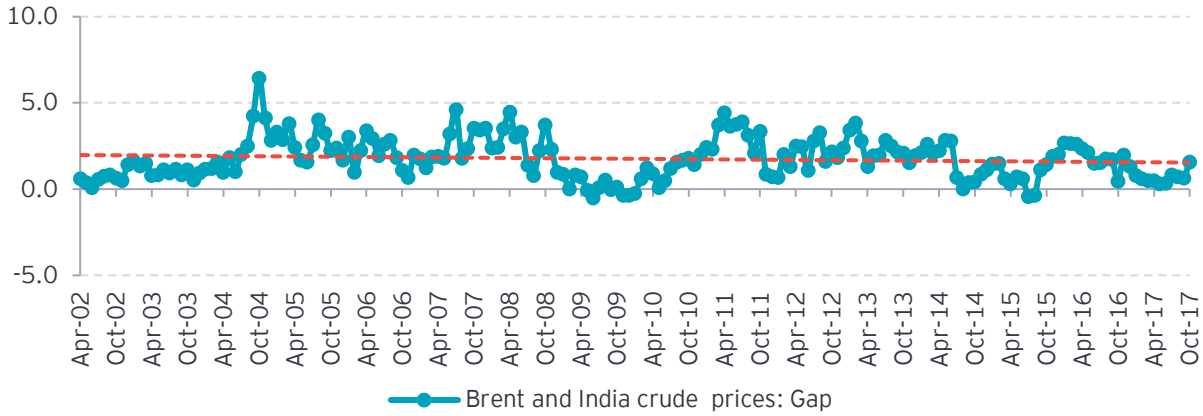
Chart 20.1: Long-term trend in average global crude prices (US$/barrel) – Different phases



Source (Basic data): World Bank

Phase 1 from 1QFY00 to 1QFY04 is that of subdued prices, which remained below US$35/bbl. Then came the long stretch of **phase 2** with a price surge rising close to US$120/bbl. on a quarterly basis. **Phase 3** from 1QFY09 to 1QFY10 was a short stretch of crash in prices to below US$40/bbl. **Phase 4** from 1QFY10 to 1QFY12 represents the second surge when prices scaled back to above US$100/bbl. They remained at this elevated level up to 1QFY15 in **phase 5**. This was the period when India's macro-balances, particularly the current account deficit as a % of GDP, deteriorated sharply. Fortunately for India, crude prices crashed again **(phase 6)** and remained stable in the range of US$40– US$45/bbl. up to 1QFY17. This was the period when US shale-based oil and gas production added a new factor in the determination of global crude prices. In the current phase **(phase 7)**, oil prices have started to rise again. Although the chances of prices reaching the dizzy heights of above US$140/bbl. are remote, even if they remain in the range of US$60–US$65/bbl. for a long period it is not good news for the Indian economy, given its high import-intensity of crude.

Chart 20.2: Deviation of Brent crude price from Indian crude basket (US$/bbl)



Source (Basic data): World Bank and PPAC

Chart 20.2 indicates the deviation of global (Brent) crude price from the India crude basket on a monthly basis from April 2002 to October 2017.

Global crude prices and India's growth momentum

Global crude prices affect the vitals of the Indian economy in many critical ways. First, growth is affected directly by the adverse impact of a rise in crude prices on "net exports." Second, inflation is brought under pressure as crude prices affect food prices as well as energy, transport and storage prices. Third, government finances are adversely affected because of a rise in subsidies (as long as they prevail) and/or the negative impact on excise duty revenues. Indirectly, government consumption expenditure increases since increased prices lead to higher compensatory changes in salaries and pensions. As a result, both fiscal and current account deficits relative to GDP deteriorate.

A fall in net-exports contribution to GDP growth could be a major deterrent to GDP growth, particularly when domestic demand is slowing down. As shown in Chart 17, as growth in oil imports trended downward during 1QFY00 to 4QFY03, growth in real GDP improved. Similarly, after 3QFY14 real GDP began to improve as the trend growth[95] in oil imports dipped to historic low levels. In this context, it is important to note that India's oil intensity of imports has gradually fallen to 22% in 2QFY18 from 39% in 3QFY14 (**Chart 20.7**).

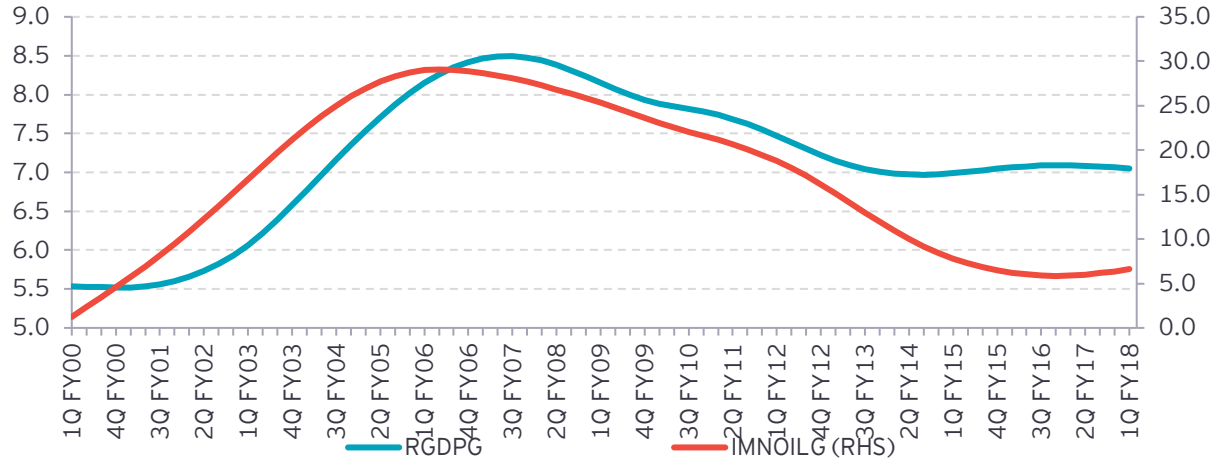
As per the RBI[96], a decline in crude oil prices could impact economic activity and inflation in India through (a) higher real incomes for consumers, (b) lower input costs, boosting corporate profitability and investment, and (c) lower CAD. As per RBI estimates, if a US$50/bbl. fall in crude prices (Indian basket) is sustained for over one year, it could lead to a higher real income equivalent of about 4% of total private consumption expenditure and about 2.9% of nominal GDP. Under the assumption of 50% pass-through to domestic prices of petroleum products, the real income gain could uplift aggregate consumption by about 2% and output by 1%. The RBI's estimates also suggest that for a 10% decline in oil prices, under alternative assumptions of pass-through to CPI, output growth is likely to improve in the range of 0.1%–0.3% points while CPI inflation could decline by about 20–25 basis points below the baseline. The converse of these positive changes are expected to happen when oil prices rise.

"Falling oil prices often affect economic activity and inflation by shifting aggregate demand and supply and triggering significant policy responses. On the supply side, lower oil prices lead to a decline in the cost of production." (Finn, 2000). "The lower cost of production across a whole range of energy-intensive goods may be passed on to consumers, thereby indirectly reducing inflation."

[95] Trend growth is calculated using Hodrick-Prescott filter
[96] RBI Monetary Policy Report, April 2015

(Blanchard and Gali 2008) "The lower cost of production can also translate into higher investment. On the demand side, by reducing energy bills, a decline in oil prices raises consumers' real income and leads to an increase in consumption." (Edelstein and Kilian, 2008; Kilian, 2014; Hamilton, 2009)[97].

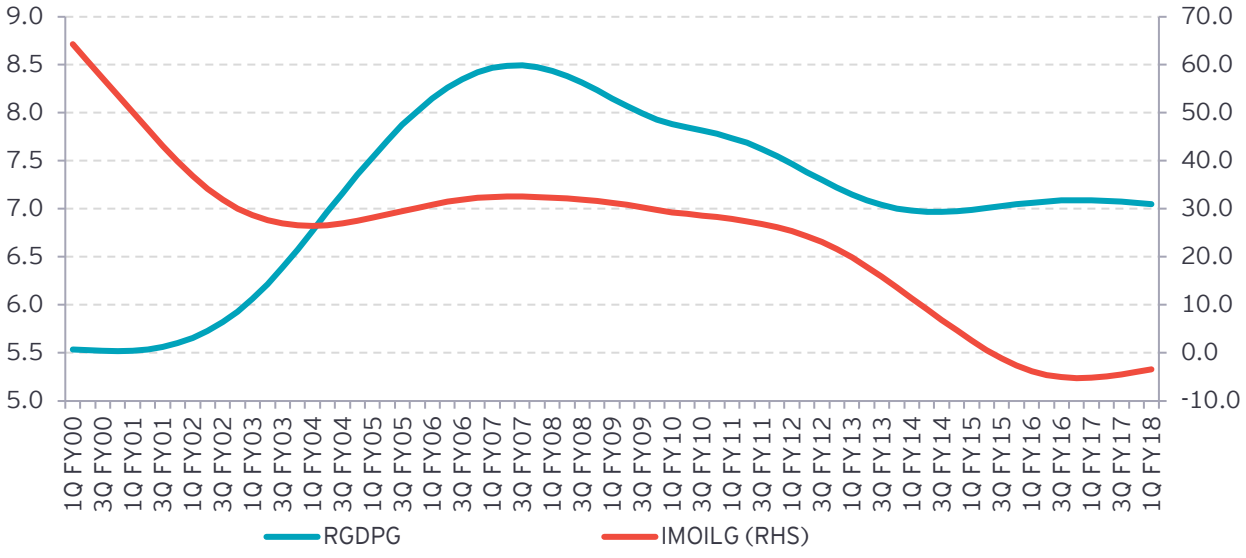
Chart 20.3: Growth in real GDP and non-oil imports



Source (basic data): MOSPI, RBI and EY estimates

The gains from a fall in global crude prices can potentially be reversed as prices rise. Fortunately, there are a number of countervailing forces that enable the Indian economy to absorb and contain the adverse effects of a rise in global crude prices. First, India has developed a large refining capacity, enabling it to export refined petroleum products. As crude prices increase, India's oil exports increase in value and volume. Second, as the Middle-Eastern countries and other oil suppliers prosper, Indian non-oil exports also rise due to strong trade links with these economies. These factors limit the deterioration of India's current account deficit. Growth in real GDP shows a high degree of co-movement with growth in non-oil imports (**Chart 20.3**).

Chart 20.4: Growth in real GDP and oil imports



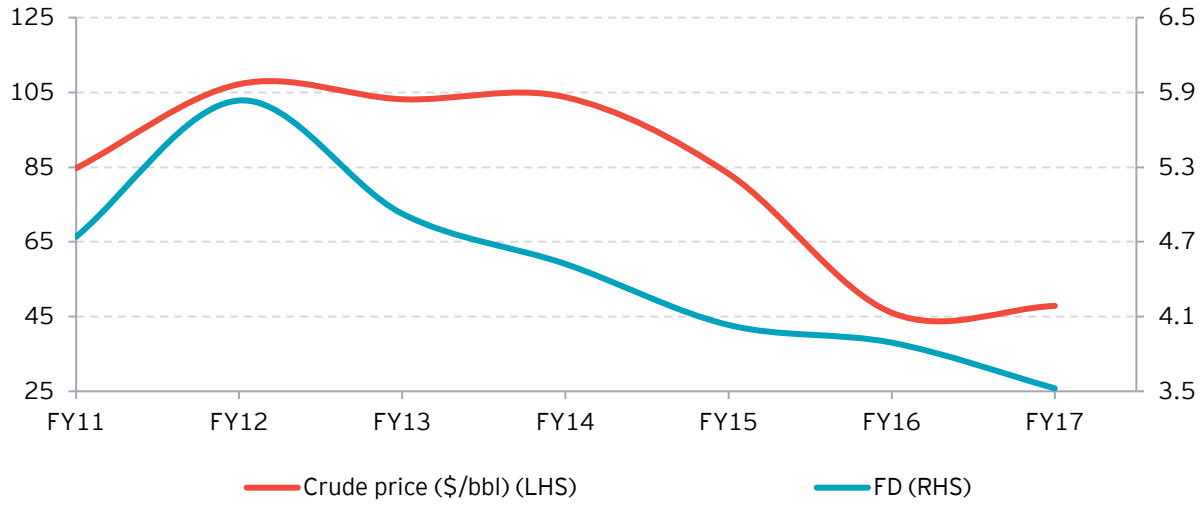
Source (basic data): MOSPI, RBI and EY estimates

[97] World Bank Group, Global Economic Prospects: Having Fiscal Space and Using It, January 2015

Global crude and India's macro imbalances

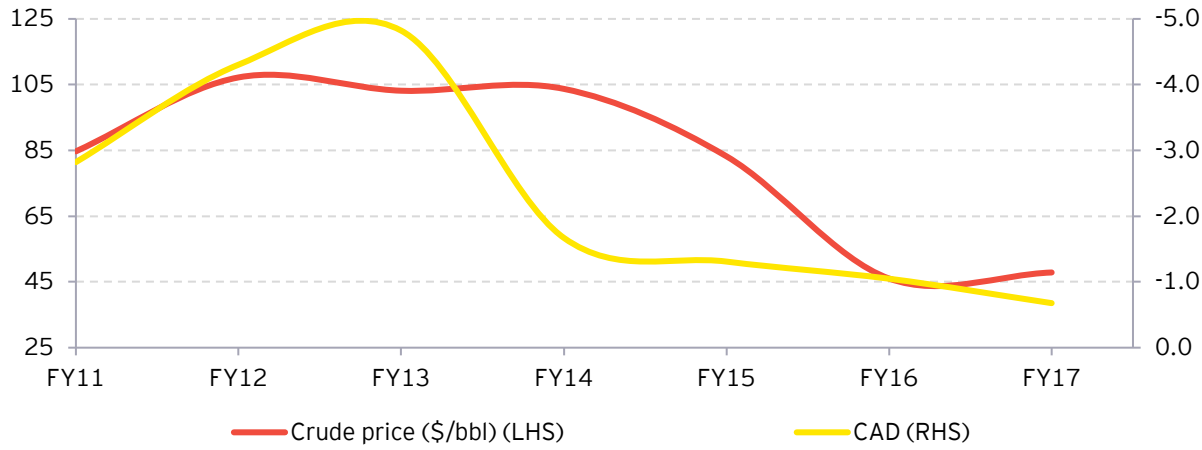
Still, with rising crude prices, both fiscal deficit and current account deficits relative to GDP come under severe pressure (**Charts 20.5 and 20.6**). When global crude prices peaked at US$107/bbl. in FY12, the fiscal deficit of the Central Government rose sharply to 5.8% of GDP and the current account deficit rose to 4.3%.

Chart 20.5: Crude price and fiscal deficit as a % of GDP



Source (basic data): MoSPI, World Bank Pink Sheet

Chart 20.6: Crude price and current account deficit as a % of GDP



Source (basic data): MoSPI, World Bank Pink Sheet

Crude prices and fiscal parameters

From a fiscal perspective, it is of special interest how excise and sales tax buoyancies respond to changes in crude prices. Sales tax/VAT on petroleum products is largely ad valorem in the Indian states. As crude prices increase, sales tax buoyancy of revenue from POL products also increases (**Table 20.1**). Excise duty rate on POL products was converted to a specific rate by the Central Government in FY12 from a combination of ad valorem and specific rates earlier. These are thus subject to a larger discretionary role on the part of the Central Government.

Table 20.1: Buoyancies — Petroleum excise and sales tax revenues, domestic indirect taxes and customs duty

Year	Crude price (US$/bbl.) (LHS)	Buoyancies			
		Excise revenues from POL products	Sales tax revenues from POL products	Domestic indirect taxes of GoI+states	Customs duty
FY10	70.0	1.0	0.2	0.5	-1.4
FY11	84.7	0.4	1.0	1.4	2.8
FY12	107.2	0.1	2.3	1.5	1.3
FY13	103.2	0.5	1.1	1.5	0.6
FY14	103.7	0.5	0.9	0.7	0.5
FY15	83.2	2.5	0.6	0.7	0.7
FY16	46.0	8.1	0.4	0.6	1.1
FY17	47.9	3.3	1.5	1.8	0.3

Source (Basic data): PPAC

The very high excise buoyancies in FY15, FY 16, and FY 17 indicate that the Central Government utilized the fall in crude prices to garner excise duty revenues while the state governments showed lower sales tax buoyancies, indicating that from their side the benefit of falling prices was passed on to the consumer. This picture changed somewhat in FY17 when many states also increased the specific component in their sales taxes on POL products.

Crude oil and shale: Interface

The expectation in the market is that prices could remain elevated owing to several reasons, such as drawdown in inventories, especially in the US, better compliance with the voluntary production cut by the OPEC countries, slower pickup in US shale oil and continued geopolitical risk in West Asia. In October 2017, as per the monthly oil market reports of the IEA, OPEC members reduced production more than they had initially agreed to. Further, the internal power struggle in Saudi Arabia has added to this uncertainty. According to the IMF, Saudi Arabia may need oil prices to be at US$70/ bbl. for fiscal break-even in 2018 (Regional Economic Outlook, Middle East and Central Asia, October 2017). Members of OPEC will meet on 30 November 2017 and it is likely that they may work to push oil prices to around the US$70/bbl. mark in 2018.

More recently, in October 2017 global crude prices recovered to US$54.9/bbl. from US$46.2/bbl. in June 2017. This was because of a sharp fall in OPEC crude output in October mainly due to lower supply from Algeria, Iraq and Nigeria. Moreover, tensions continue to persist in Saudi Arabia. The compliance rate with supply cuts in October 2017 was 96% and for the year-to-date, it was 87%. Hurricane-related disruptions led to a fall in the global oil stocks, which dropped in 3QCY17. In October 2017, stocks also declined in the US (IEA, Monthly Oil Market Report, 14 November 2017).

According to Rystad Energy[98], since 2013, the average wellhead breakeven price (BEP) for key shale plays[99] has decreased from US$80/bbl to US$35/bbl. This represents a decrease of over 55% on average. In their analysis, the drop is partly attributable to structural changes such as improved well performance (which can be measured by improvements in the estimated ultimate recovery[100]) and the improved efficiency gains (which can be measured by the effect of lower drilling and completion cost, a result of more effective operations).

98 Article entitled "North American Shale breakeven prices" by Sona Mlada, Rystad Energy, published in Oil and Gas Financial Journal (February 2017)

99 Shale gas is found in shale "plays," which are shale formations containing significant accumulations of natural gas and which share similar geologic and geographic properties.

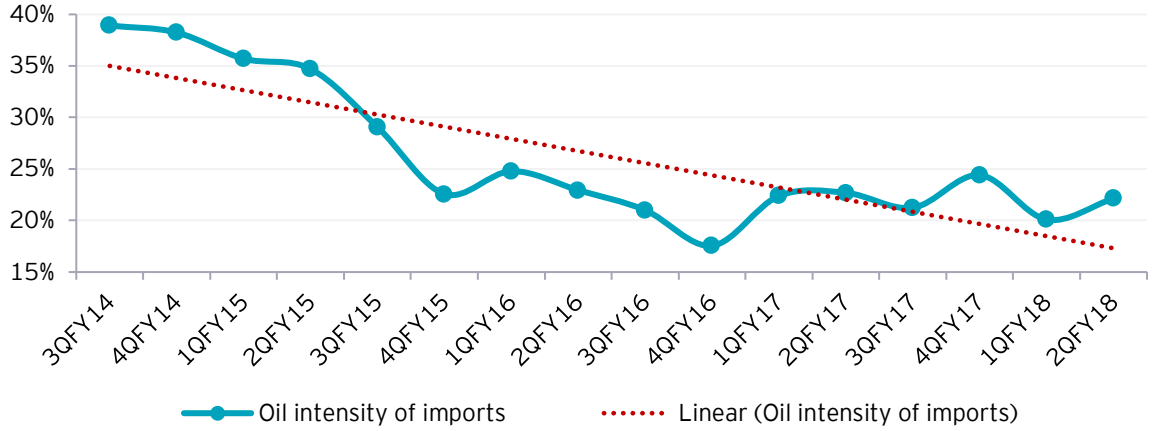
100 Estimated ultimate recovery (EUR) is an approximation of the quantity of oil or gas that is potentially recoverable or has already been recovered from a reserve or well. In the oil and gas industry, it is of the utmost importance that drilling projects meet an acceptable estimated EUR threshold for a project to be considered viable and profitable.

Further, they analyze that activity-wise, in the main shale oil plays (EFS, Bakken, Permian and Niobrara), there are approximately 335 horizontal rigs drilling currently, representing a nearly 100% increase compared to the bottom rig count in May 2016 at 168 Hz rigs for the same plays. Shale operators are also entering 2017 with more balanced cash flow from shale operations. Shale companies have been able to reduce the imbalance between cash from operations and investment from US$16 billion in 1Q15 to 0 in 3Q16 with a considerable reduction in investments. For 2017, Rystad Energy forecasts an average WTI oil price of US$60/bbl., which implies a 40% improvement in the cash from operations, which may result in higher investments by shale operators. The growing role of shale-based oil and gas provides a natural buffer against large spikes in global crude prices, which augers well for India.

A viable long-term strategy for India

India's long-term economic purposes may be served by reducing its dependence on imported crude by developing its oil and shale fields and by moving progressively to non-conventional energy sources. Fortunately, the recent initiatives of the Government of India are beginning to pay off as the oil intensity of Indian imports has started to fall quite tangibly from 39% in 3QFY14 to 22% in 2QFY18 (**Chart 20.7**).

Chart 20.7: Oil intensity of India's imports



Source: RBI and EY estimates

In spite of certain countervailing forces, the net impact of an increase in global crude prices is bound to be adverse for the Indian economy with respect to growth, inflation and macro imbalances. The quicker India moves toward non-conventional energy sources and shifts from petroleum and diesel driven vehicles to electricity driven vehicles, the easier it may be for India to adjust to global crude price volatility with minimum adjustment costs. Both taxation and subsidies as well as direct policy support may be provided by the Government of India to induce the economy to move in this direction at an accelerated pace.

Chapter 21

Managing India's exchange rate (September 2018)

Abstract

India initially followed a fixed exchange rate system. Until the early 70s, the Rupee was linked to Pound Sterling. With the breakdown of the Bretton Woods System in 1971, the Rupee was linked to a basket of currencies, called a basket peg. In the 1970s, it evolved further into a managed float exchange rate system. From September 1975 till the early 1990s, the Rupee remained pegged to a basket of currencies. In March 1992, the Liberalized Exchange Rate Management System (LERMS) was put in place. For some time, it involved a dual exchange rate system. This was replaced by a unified exchange rate system in March 1993 where the exchange rate became market determined based on demand and supply of foreign exchange. The RBI now follows an exchange rate policy, which aims at ensuring orderly conditions and containing volatility in the foreign exchange market. Countries that have domestic macro weaknesses in terms of high fiscal and current account deficits or large debts denominated in US$ are assessed to be quite vulnerable to the movement of US$ in the foreign exchange market. However, since India's macro policies were quite robust, it was in a relatively strong position in view of the low public and private debt relative to GDP. India's fiscal and current account deficits were also not too far removed from sustainable levels. We assessed that the pressure on the Indian Rupee may moderate if the global crude prices stabilized at around US$70/bbl. or fell to lower levels.

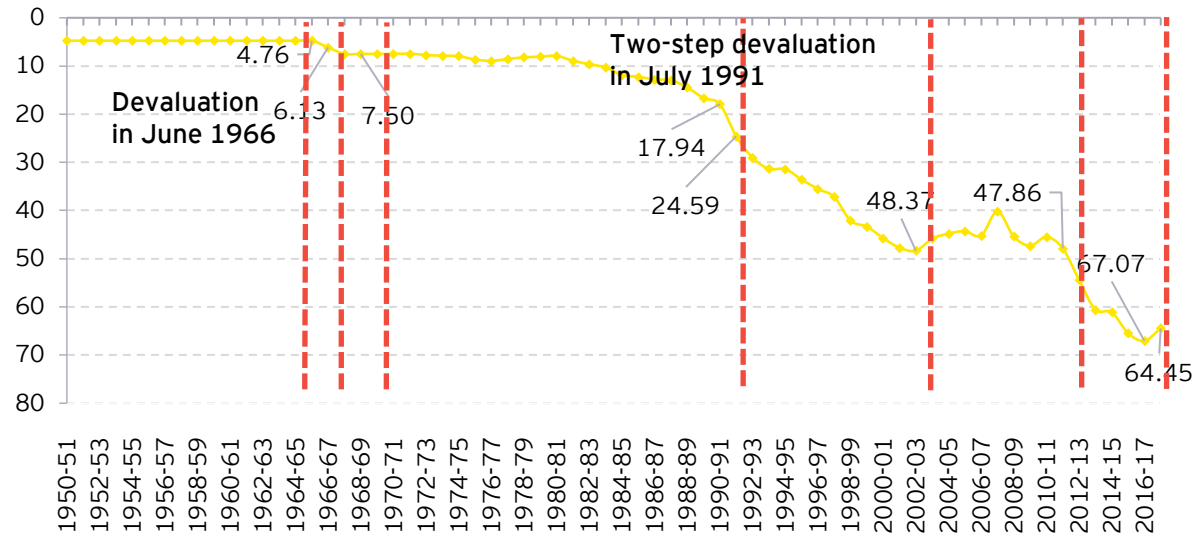
Introduction

The Indian Rupee along with the currencies of other EMEs has been under severe pressure in recent times. The Rupee had remained stable at just above INR68/US$ up till 13 August 2018. Since then, it has been depreciating sharply. By 23 August 2018, Rupee had crossed the level of INR70/US$ and by 10 September 2018, it crossed INR72/US$. By 18 September 2018, it fell close to INR73/US$. Currencies of other EMEs are also depreciating with many of them being comparatively worse off compared to the Rupee. Most of this pressure is being driven by international configuration of forces that includes the US initiated tariff wars as well as sustained pressure on global crude prices. India is particularly vulnerable to the latter. In this write-up, we review India's policy options in the context of the evolution of its exchange rate policy and its increased integration with the global economy.

Evolution of exchange rate in India: A brief history

India initially followed a fixed exchange rate system. Until the early 70s, the Rupee was linked to Pound Sterling. With the breakdown of the Bretton Woods System in 1971, the Rupee was linked to a basket of currencies, called a basket peg. In the 1970s, it evolved further to a managed float exchange rate system. From September 1975 till the early 1990s, the Rupee remained pegged to a basket of currencies. In March 1992, the Liberalized Exchange Rate Management System (LERMS) was put in place. For some time, it involved a dual exchange rate system. This was replaced by a unified exchange rate system in March 1993 where the exchange rate became market determined based on demand and supply of foreign exchange. The RBI now follows an exchange rate policy which aims at ensuring orderly conditions and containing volatility in the foreign exchange market. It intervenes in the market by buying or selling foreign currencies. These operations are undertaken either directly or through the public sector banks (PSBs).

Chart 21.1: Annual average exchange rate movements (INR/USD)

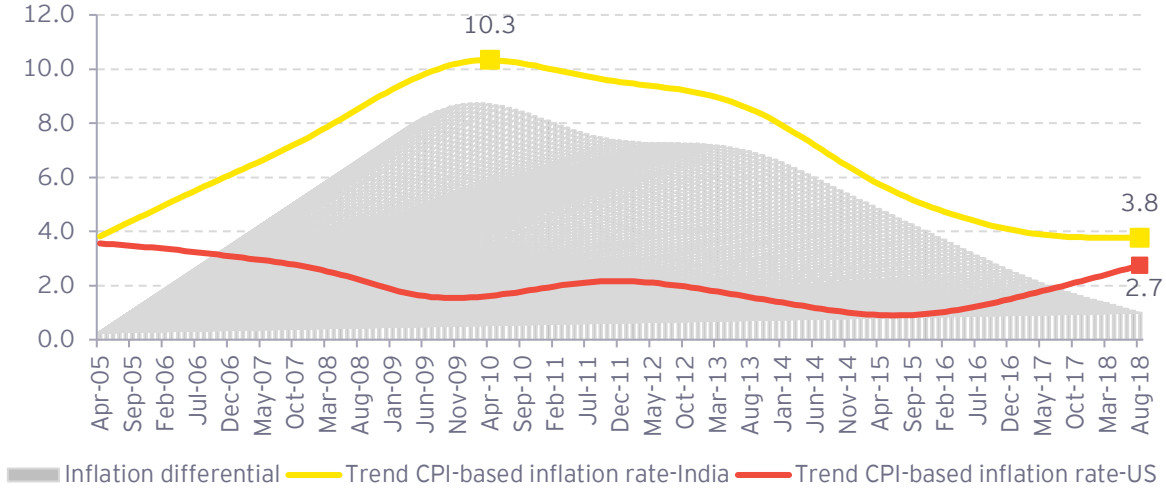


Source (Basic data): External Sector Statistics, RBI

During 1951 to 1991, a major devaluation took place in June 1966 when rupee was devalued from INR4.76/US$ to INR7.5/US$ (**Chart 21.1**). Rupee was allowed to depreciate in the latter half of the 80s from INR10.3/US$ in 1983-84 to INR14.5/US$ in 1988-89. After that, the two-step devaluation in 1991 which heralded the introduction of major economic reforms in India was undertaken. Rupee steadily depreciated from an average of INR24.6/US$ in 1991-92 to INR48.4/USD in 2002-03. After that, there followed a relative period of stability when Rupee remained at an average of INR45.2/US$ during 2003-04 to 2011-12. This period also saw a major upsurge in India's foreign exchange reserves (**Chart 21.4**), which reached a peak amounting to 25.6% of GDP in 2007-08. Subsequently, a period of sharp depreciation followed when the Rupee

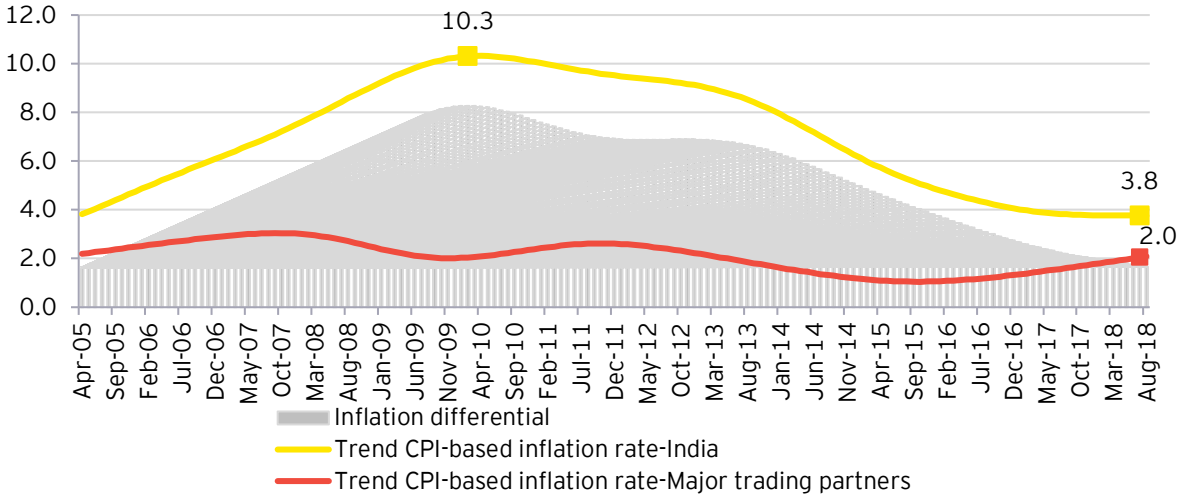
fell steadily from around INR46/US$ to INR67/US$ up to 2016-17. Subsequently the Rupee actually appreciated and rose to an average of INR64.5/US$ in 2017-18. In 2018, the Rupee started to depreciate sharply.

Chart 21.2: Trend inflation rate differential between India and the US



Source (basic data): IFS, IMF

Chart 21.3: Trend inflation differential between India and its major trading partners*



Source (basic data): IFS, IMF; * China, EU, Hong Kong, Japan, UK, US

An important determinant of the exchange rate movement is the inflation differential between India and its major trading partners. If the Indian inflation rate is relatively higher than that of its trading partners, the purchasing power of the Rupee within the domestic economy falls faster than the purchasing power of the currencies of the trading partners. In that case, for periods for which this differential remains high, the Rupee is expected to depreciate. **Charts 21.2** and **21.3** show the trend CPI inflation rate differentials for India vis-à-vis the US and India vis-à-vis a weighted average of the CPI inflation rates of selected countries. The weights are in accordance with relative trade weights. There is a long phase during 2005-06 to 2010-11 in which despite the existence of a high differential of the inflation rates, the Rupee did not depreciate. The reason for this was large capital account surpluses. Had the RBI allowed the Rupee to depreciate in those years, it would have necessitated a much larger absorption of foreign exchange reserves.

Managing foreign exchange reserves in India

Foreign exchange management in India has also evolved over time. In the early stages, the focus was on control of foreign exchange by regulating its demand. Exchange control started in India way back in 1939 under the Defence of India Rules. The statutory power for exchange control was provided later in 1947 by the Foreign Exchange Regulation Act (FERA). This Act was subsequently replaced by a more comprehensive Foreign Exchange Regulation Act of 1973, which empowered the RBI to control and regulate dealings in foreign exchange payments outside India, export and import of currency notes and Bullion, transfer of securities between residents and non-residents, acquisition of foreign securities, and acquisition of immovable property in and outside India among other transactions. In the post 1991 liberalization regime, this Act was further amended with a new Foreign Exchange Regulation (Amendment) Act 1993. This Act recognized significant changes in India's external sector including substantial increase in foreign exchange reserves, growth in foreign trade, rationalization of tariffs, current account convertibility, liberalization of India's investments abroad, increased access to external commercial borrowing (ECB) by Indian corporates and participation of Foreign Institutional Investors (FIIs) in the Indian stock market. The Foreign Exchange Management Act (FEMA) was enacted in 1999, which became effective from 1 June 2000.

In the post-liberalization regime, the RBI issues licenses to banks and other institutions to act as authorized dealers in the foreign exchange market. The RBI has now provided exchange facility for travel abroad for a variety of purposes including conducting business, attending international conferences, undertaking technical study tours, setting up joint ventures (JVs) abroad, negotiating foreign collaboration, pursuing higher studies and training and medical treatment. Residents can now also open foreign currency accounts in India and credit-specified foreign exchange receipts into these. The RBI has permitted foreign investment in almost all sectors.

In many sectors, no prior approval from GoI or the RBI is required for non-residents investing in India. FIIs are allowed to invest in all equity securities traded in the primary and secondary markets. They have also been permitted to invest in GoI Treasury Bills and dated securities, corporate debt instruments and mutual funds. The non-resident Indians (NRIs) have the flexibility of investing under the options of repatriation and non-repatriation. At the same time, Indian entities can also make investment in an overseas JV or in a wholly-owned subsidiary abroad up to certain limit. Indian companies are allowed to raise ECBs including commercial bank loans, buyer's credit, supplier's credit and securitized instruments. Under the ECB guidelines, foreign currency convertible bonds and foreign currency exchangeable bonds are also governed. The RBI has also permitted resident individuals to freely remit abroad up to a liberal amount per financial year for any permissible purposes.

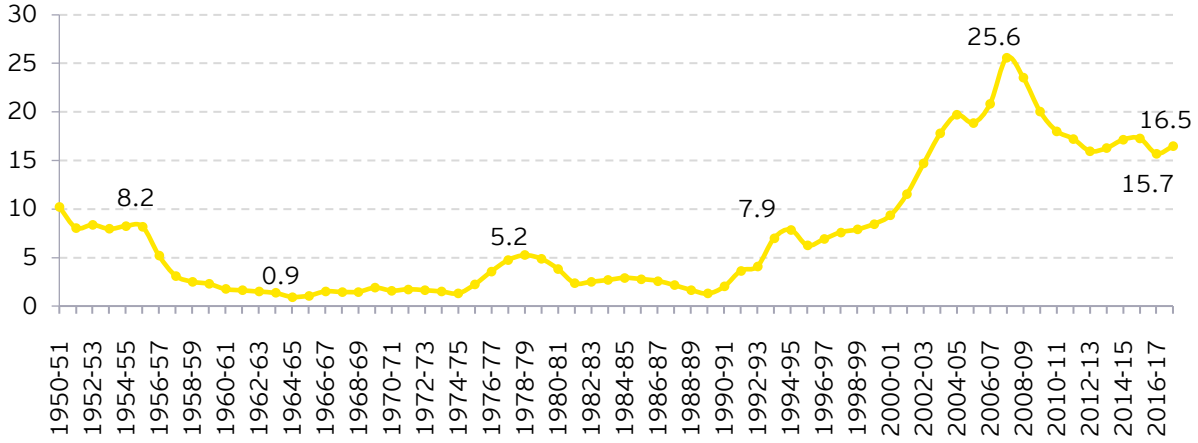
A variety of instruments have also been developed in the foreign exchange market. These include exchange traded currency futures and a number of different kinds of derivatives such as forward and swap contracts, foreign currency rupee options, cross currency options, interest rate swaps, currency swaps, forward rate agreements and currency futures. Thus, India's foreign exchange market has matured over the years. In a recent article, Dua and Ranjan (2010)[101] observe that the daily average turnover in India's foreign exchange market had increased almost tenfold during the 10-year period from 1997-98 to 2007-08. After the crises of 2008, the volume of turnover has varied substantially from year to year. Dua and Ranjan also note that the foreign exchange market in India has progressively matured and may now be considered as a "deep, liquid, and efficient market".

India's foreign currency assets include (1) deposits with other central banks, (2) deposits with the Bank of International Settlements (BIS), (3) balances with foreign branches of commercial banks, (4) investment in foreign treasury Bills and securities and (5) Special Drawing Rights (SDRs). Investments are also made in Special Oil Bonds. The RBI is the custodian of India's foreign exchange reserves and is responsible for managing their investment. RBI's management of foreign exchange

[101] Dua, P., & Ranjan, R. (2012). Exchange rate policy and modelling in India. *OUP Catalogue*.

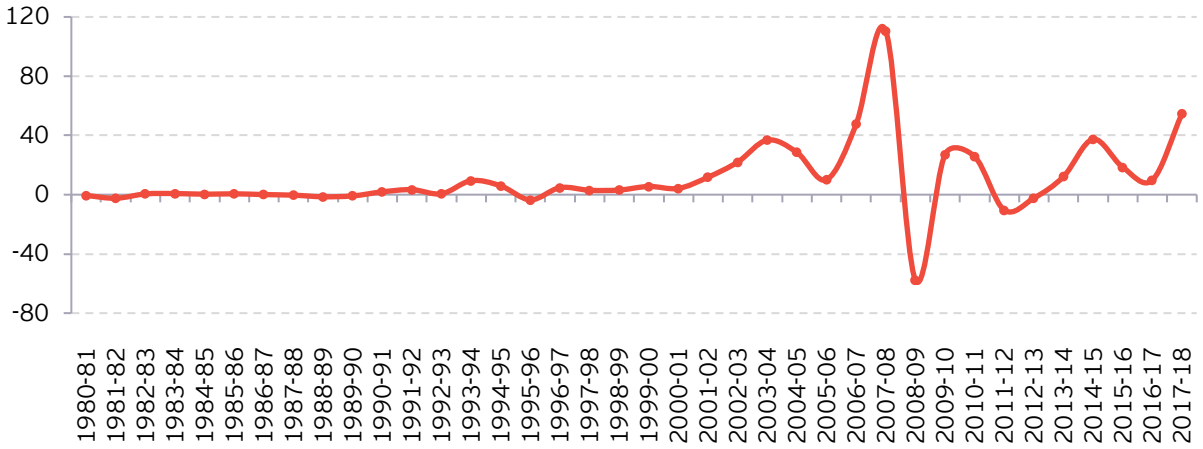
reserves is guided by three objectives namely, safety, liquidity and returns. The optimization of returns is part of an embedded strategy subject to the considerations of maintaining safety and required liquidity. The RBI buys and sells foreign exchange in order to check excessive volatility in the exchange rate market. India's foreign exchange reserves consists of foreign currency assets in addition to gold and the Reserve Tranche Position (RTP). The RTP represents India's quota contribution to the IMF in foreign currency. From the foreign currency assets, the RBI is able to earn certain returns. The rate of earnings on foreign assets to the RBI was 1.09% in 2017-18 and 0.80% in 2016-17 (RBI Annual Report, August 2018). These earnings arise mainly from interest income, income from discounting of bills, gains or losses arising from exchange of currency and capital gains or losses on securities.

Chart 21.4: Foreign exchange reserves as % of GDP



Source (basic data): RBI, MOSPI

Chart 21.5: Change in FX reserves (USD billion)



Source (basic data): RBI

Chart 21.4 shows India's foreign exchange reserves (end of fiscal year) as percentage of GDP at current market prices. For a long stretch of time covering the period from 1956-57 to 1992-93, India's foreign exchange reserves averaged only 2.4% of GDP. From 1993-94, the foreign exchange reserves started to rise steadily to reach a peak of close to 25% of GDP by 2007-08. After the global economic and financial crises in 2008, India's foreign exchange reserves fell sharply to 15.7% of GDP by 2016-17. These are currently languishing at 16.5% of GDP in 2017-18.

Chart 21.5 shows annual change in foreign exchange reserves in US$ billion. After a relatively long stretch of stability, when these annual changes remained close to the horizontal axis, there is a clear onset of increased volatility starting 2007-08. Prior to that, signs of increased volatility had

already become visible. Since the 2008 crises, there have been sharp ups and downs in the level of annual change in India's foreign exchange reserves.

Recent pressure on the INR in the context of EMEs

Determination of exchange rate in India depends both on trade volumes and the volume of capital flows. The trade volumes are sensitive to the exogenously determined crude oil prices. Periods when crude oil prices show a surge, Indian Rupee relative to the US$ also falls. Capital flows, on the other hand, are also largely exogenous as these are driven by economic and financial policies of the developed world particularly the US. While increasing the US Fed rate is an ongoing policy, the current US government reduced sharply, the corporate tax rate as well as unleashed a tariff war with China and other countries. These policies have induced a significant inflow of US$ into the US. This is putting pressure on the EMEs as well as other developed economies.

The tax reforms bill, considered as the biggest overhaul of the US tax system in more than 30 years, was signed into law on 22 December, 2017. The bill provides an estimated net tax reduction of approx. US$1.5 trn through both corporate income tax (CIT) and personal income tax (PIT) measures over 10 years according to the Joint Committee on Taxation (JCT). The progressive CIT rate structure with a top marginal rate of 35% was brought down to a flat 21% effective 1 Jan 2018. On 9 February 2018, the President also signed a bill suspending the debt ceiling until 1 March 2019. As a result, the limit will be whatever level the debt is on that day. The total stimulus is likely to raise the U.S. Budget deficit to more than 4.5% of GDP according to the IMF. The stimulus is likely to provide a significant boost to the US economy, especially in the medium term.

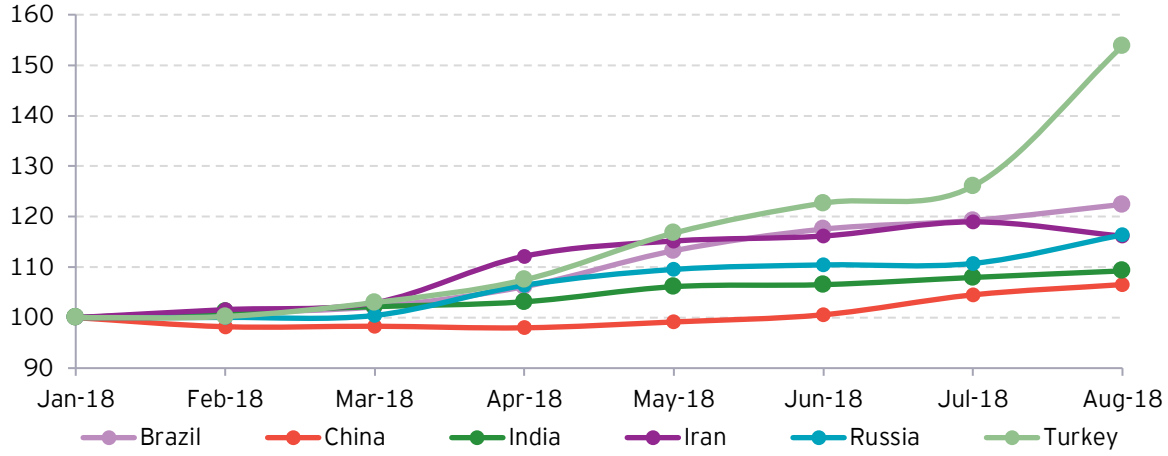
At the same time, the US has waged aggressive tariff wars with China as well as other countries in order to achieve better balance on their trade account. Some of the significant steps in the unfolding US tariff war with China are summarized in **Table 21.1**.

Table 21.1: US tariff war with China: Actions and reactions

23-Mar	▸Trump raises import taxes on steel and aluminium by 25% and 10%, respectively exempting selected countries
15-Jun	▸Trump announces 25% tariffs on US$50b of Chinese goods – US$34b starting 6 July primarily on intermediate inputs
06-Jul	▸US levies 25% tariffs on US$34b of Chinese imports on mainly intermediate inputs such as water boilers, X-ray machine components, airplane tires and various other industrial parts
06-Jul	▸China retaliates with equivalent 25% tariff on US$34b worth of US imports, including agricultural goods such as soybeans and pork, and electric vehicles
10-Jul	▸USTR releases a list of US$200b of imports from China to be subjected to 10% tariffs after public hearings in August. List primarily targets intermediate goods, like computer and auto parts
03-Aug	▸Chinese government proposes retaliatory tariffs on US$60b worth of US goods, mostly intermediate goods such as machinery and electric equipment at four different rates: 25%, 20%, 10% and 5%
23-Aug	▸Trump administration imposes 25% tariff on US$16b worth of Chinese imports covering 279 product categories such as semiconductors, plastics, chemicals and railway equipment ▸China immediately responds with its own revised tariffs on US$16b of US imports covering 333 product categories such as coal, copper scrap, fuel, steel products, buses and medical equipment.
24-Sep	▸Trump administration imposes additional 10% tariff on US$200b worth of Chinese imports covering 6,000 products, including consumer products such as handbags, rice and textiles. ▸In response, China imposes additional tariffs on US$60b of US imports including an additional 5% duty on about 1,600 kinds of US products such as computers and textiles and an extra 10% on 3,500+ items, including chemicals, meat, wheat and liquefied natural gas.

Source (basic data): 'Trump's Trade War Timeline: An up-to-date Guide', Chad P. Bown and Melina Kolb, Peterson Institute for International Economics (August 2018); https://www.bloomberg.com/news/articles/2018-09-24/trump-imposes-next-

Chart 21.6: Currency movements of selected EMEs



Source (Basic Data): International Financial Statistics, IMF
Notes: Exchange rate vis-à-vis US$ for each country in January 2018 is indexed to 100. Chart depicts the monthly movements in this index in reverse scale

Table 21.2: Percentage depreciation in currencies of selected EMEs

Currency	Depreciation from January 2018 (monthly average) to mid-August 2018
Turkish Lira	80%
Chinese Yuan	7%
Brazilian Real	22.7%
Russian Rubble	18.4%
Iranian Rial	15.1%
Indian Rupee	10%

Source: Respective central banks' websites

These developments are similar to the 1997 Asian economic crises. But this time around, it is all the EMEs that appear to be affected. Besides Venezuela, Turkey and Argentina which are at significant risk also due to geopolitical reasons, other EMEs at risk include India, Indonesia, China, Brazil, Malaysia and South Africa, Iran and Bolivia. **Chart 21.6** and **Table 21.2** show the differential rates of depreciation of selected EME currencies. Total EME borrowing has increased from 145% of GDP in 2007 to 210% in 2017 with foreign currency debt doubling to US$9t over the period[102]. Most EMEs also have high general government fiscal deficit to GDP ratios, with Brazil leading at an estimated 8.3% in 2018 followed by India at 6.5%.

Recent policy interventions to curb INR depreciation

The Indian government in September 2018, announced a slew of measures[103] as a first step to arrest the continuing fall in the rupee. These measures include the following.

1. **Encouraging more capital inflows:** Incentivizing Masala bonds (exempting them from withholding tax and allowing Indian banks to become market-makers) and corporate bonds

[102] https://www.bloomberg.com/view/articles/2018-09-03/we-may-be-facing-a-textbook-emerging-market-crisis;
[103] https://www.bloombergquint.com/business/2018/09/14/finance-minister-arun-jaitley-announces-5-measures-to-control-indias-current-account-deficit#gs.dD0hRAA

(removal of the single-exposure limit of 20% on foreign portfolio investors (FPIs) in corporate bonds); facilitating manufacturing firms to raise short-term ECBs.

2. **Curbing non-essential imports:** First list includes 19 items.
3. **Encouraging exports:** Exact measures to be announced soon.
4. **Fiscal consolidation to remain on course:** The central government continues to adhere to the fiscal deficit target of 3.3% of GDP in FY19.

These measures aim at improving the trade balance as also the capital flows.

Conclusion

Analysts warn of a possibility of a contagion developing due to the aggressive postures of both the US and Chinese trade and tariff policies. In the assessment of Christine Lagarde (IMF), the evolving scenario can best be described as a case not of a contagion but fragmented vulnerabilities. Among the most vulnerable countries, one may list Argentina and Turkey followed by South Africa, Indonesia and Brazil. Countries that have domestic macro weaknesses in terms of high fiscal and current account deficits or large debts denominated in US$ are in the forefront of this vulnerability. India is relatively strong because of its comparatively low public and private debt relative to GDP and with its fiscal and current account deficits being close to sustainable levels. The pressure on the Indian Rupee is likely to moderate if the global crude prices stabilize at around US$70/bbl. or fall to lower levels.

Chapter 22

India's external sector imbalances: Minimizing vulnerability of the domestic economy (September 2022)

Abstract

In the wake of the geopolitical developments after the COVID-induced economic shock, major structural changes are happening in terms of international trade and capital flows. These changes may have long-term effects on India and hence call for major adjustments in relation to sourcing and composition of imports as well as destination and composition of exports, supplemented by substantive policy support. India's external sector imbalances have persisted over a long period of time. The vulnerability of inflation, GDP growth, current account deficit, and fiscal deficit to global crude price shocks are well-recognized. In this backdrop, we undertook a review of trends in international trade and capital flows with a view to capturing their changing contours which may impact India's medium to long-term growth performance. We also considered three feasible and desirable ways by which the exposure to cyclicality of global crude prices may be evened out for the domestic economic players: (1) establishing an 'Oil Price Stabilization Fund', (2) expansion and diversification of sources of oil and gas imports with a view to reducing average price of the Indian crude basket, and (3) accelerated efforts to switch to non-conventional energy sources.

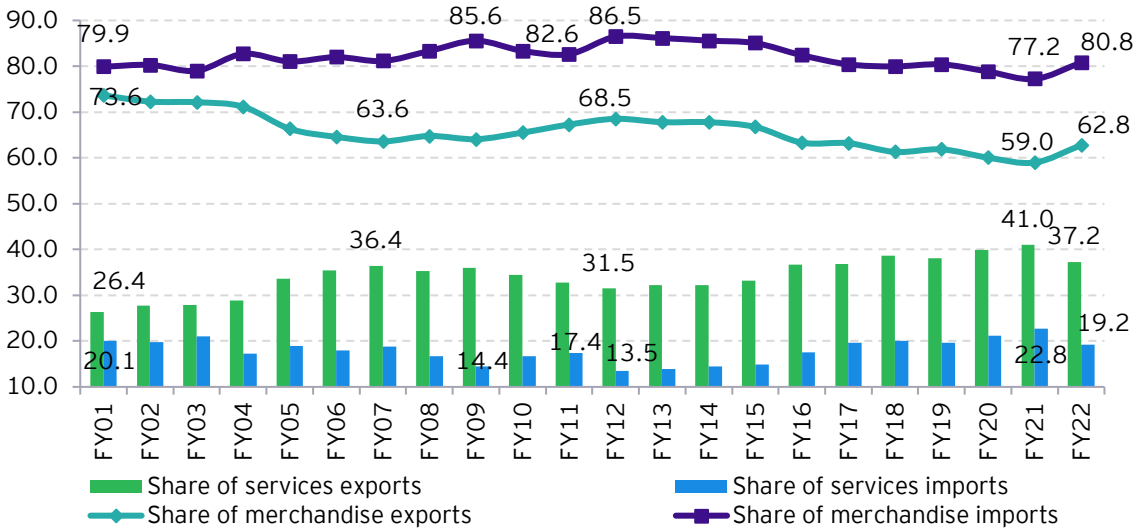
Introduction

In the wake of the ongoing geopolitical developments subsequent to the COVID-induced economic shock, major structural changes are happening in terms of international trade and capital flows. These changes may have long-term effects on India and hence call for major adjustments in relation to sourcing and composition of imports as well as destination and composition of exports, supplemented by substantive policy support. India's external sector imbalances have persisted over a long period of time. The vulnerability of inflation, GDP growth, current account deficit, and fiscal deficit to global crude price shocks are well-recognized. In this backdrop, we undertake a review of recent trends in international trade and capital flows with a view to capturing their changing contours which is likely to impact India's medium to long term growth performance. We also consider ways by which the exposure to cyclicality of global crude prices may be evened out for the domestic economic players.

Trade flows: Goods and services

International trade in goods is usually summarized in terms of merchandise imports and exports.

Chart 22.1: Relative shares of goods and services in total exports and imports (%)



Source (basic data): RBI

Correspondingly, services are also exported and imported. In recent years, the share of services in total exports has been increasing. Exports of services accounted for a share of 40% in FY20, 41% in FY21 and 37.2% in FY22. In contrast, the share of imports of services accounted for 21.2% in FY20, 22.8% in FY21 and 19.2% in FY22 **(Chart 22.1)**. In fact, in terms of their value in USD, exports of services have exceeded imports of services by a substantial margin. Considering the relative shares of merchandise and services exports and imports since FY01, some patterns are clearly visible. First, the merchandise trade is characterized by a deficit while trade in services is characterized by a surplus. There is however a net deficit on their combined account. Second, the share of merchandise exports in total exports has been falling and that of export of services in total exports has been increasing, resulting in a narrowing of the gap between them over time. This gap was 47.3% points in FY01, which has fallen to 18% points and 25.5% points in FY21 and FY22 respectively. Third, among these four variables, the lowest share pertains to imports of services. It was at its lowest at 13.5% in FY12, a year where India's real GDP growth had reached a local trough. Fourth, the share of merchandise exports, having reached a peak of 68.5% in FY12, started to fall reaching a trough of 59% in FY21. After this, in FY22, it increased again. Fifth, the share of services exports, having reached a trough of 31.5% in FY12, started to rise, reaching a peak of 41% in FY21, after which it fell. Sixth and in a similar manner, the share of services imports, having reached a trough of 13.5% in FY12, started to rise until FY21, after which it fell. Considering these patterns together, with a view to eliminating the net trade deficit on account of merchandise and

services, there may be continued emphasis on reduction of imports of goods and increase in exports of services.

Contribution of net exports to GDP growth

Based on recent quarterly data on exports from and imports to India, it is clear that growth in imports started exceeding growth in exports on a consistent basis since 4QFY21, that is the time when the Indian economy started to recover from COVID. The supply shortages of raw materials and intermediate products and their adverse impact on growth during the COVID-affected quarters made it clear that going forward, India may have to increasingly rely on domestic production for domestic consumption. For this purpose, additional capacity is required to be set up for producing intermediate and final goods within India.

Table 22.1: Growth in exports and imports and contribution of net exports to GDP growth

	Exports growth (%)	Imports growth (%)	*Contribution of net exports (% points)*
Quarterly trends			
1QFY21	-25.5	-41.1	5.1
2QFY21	-6.4	-17.9	2.9
3QFY21	-8.6	-5.2	-0.5
4QFY21	3.7	11.7	-1.8
1QFY22	40.8	61.1	-3.8
2QFY22	20.7	41.0	-4.4
3QFY22	23.1	33.6	-3.0
4QFY22	16.9	18.0	-1.0
1QFY23	14.7	37.2	-6.2
Annual trends			
FY18	4.6	17.4	-2.8
FY19	11.9	8.8	0.3
FY20	-3.4	-0.8	-0.5
FY21	-9.2	-13.8	1.4
FY22	24.3	35.5	-2.9

Source (Basic data): MoSPI

In the short to medium term, for setting up this capacity, machinery and equipment may require to be imported at prices higher than normal. Furthermore, with the onset of geopolitical tensions in Europe, the supply of crude became constrained, adversely affecting mainly the European economies, but prices of global crude surged for all net importers of crude including India. As a result, net exports became negative, and its magnitude increased sharply. The contribution of net exports to growth has consistently remained negative since 3QFY21. In fact, in 1QFY23, this negative contribution of net exports at (-)6.2% points was at its highest since FY12 **(Table 22.1).** We expect this trend to continue for some more years and therefore GDP growth in India may have to rely relatively more on the growth of domestic demand.

Merchandise imports and exports: Composition and direction

Important countries for Indian imports include China, UAE, US, Saudi Arabia and Russia. While China may be the provider of raw materials, intermediate and final products, UAE, Saudi Arabia and Russia have proved to be important sources for procuring oil. The US, apart from being a source of oil and gas, also serves as a source of machinery and equipment, chemicals, and pearls and jewelry.

Table 22.2 shows that the shares of imports (in value terms) from China and the US have fallen while those of UAE, Saudi Arabi and notably Russia have increased largely reflecting changing patterns of sourcing global crude. In terms of major imported commodities, the share of machinery and electronics has noticeably fallen in 1QFY23. The share of more conventional imports such as

pearls etc. has also fallen. The share of imports of mineral products including oil and coal has increased significantly.

Table 22.2: Source-wise and commodity wise merchandise import shares

	Major sources of imports (% share)					Major import commodities (% share)			
	China	UAE	US	Saudi Arabia	Russia	Mineral products	Machinery and electronics	Pearls, precious stones & metals	Chemicals et.al
1QFY20	13.3	5.7	8.3	5.4	1.6	33.7	18.0	14.4	9.7
2QFY20	16.1	6.0	7.5	5.6	1.2	31.1	22.8	9.3	10.4
3QFY20	13.5	7.0	7.0	5.9	1.3	32.8	19.0	11.7	9.5
4QFY20	12.1	6.9	7.3	5.8	1.9	36.5	18.3	10.1	8.7
1QFY21	18.0	4.5	8.6	4.3	1.7	28.6	20.1	2.4	15.6
2QFY21	18.0	6.2	7.2	4.2	1.6	26.5	23.7	10.8	13.4
3QFY21	16.2	7.1	6.3	4.4	1.2	25.4	21.0	15.2	11.4
4QFY21	15.1	7.8	7.7	3.7	1.3	26.8	19.6	19.2	9.5
1QFY22	16.3	7.3	7.9	4.6	1.5	30.8	18.2	12.2	12.5
2QFY22	14.0	7.7	6.6	4.9	1.5	32.1	18.2	16.5	10.7
3QFY22	15.2	7.3	6.5	5.6	1.4	33.6	17.6	13.9	11.1
4QFY22	15.5	7.3	7.1	5.8	1.7	36.3	19.5	10.9	10.9
1QFY23	12.8	7.5	7.1	6.2	4.9	42.7	15.2	10.8	10.6
1QFY23 minus 1QFY20 (% pts.)	**-0.5**	**1.8**	**-1.2**	**0.9**	**3.3**	**9.1**	**-2.9**	**-3.5**	**0.8**

Source (basic data): Export-Import data bank, Ministry of Commerce and Industry

With respect to destination of exports (in value terms), important countries for India are US, UAE, China and Indonesia among others. Exports to the US alone accounted for a share of 15% to 19% during 1QFY20 to 1QFY23 **(Table 22.3)**. Export shares to the US and Indonesia have increased in 1QFY23 as compared to those in 1QFY20 whereas export shares to UAE and China have fallen. In the case of mineral (including refined petroleum) products, the share of exports has increased noticeably primarily because of India being able to charge high prices for its exports of refined petroleum products. There has been a fall in the share of the relatively more traditional items such as chemicals, textiles and pearls etc.

Table 22.3: Destination-wise and commodity wise merchandise exports shares

Major export destinations (% share)					Major export commodities (% share)				
	US	UAE	China	Indonesia	Mineral products	Chemicals et.al	Machinery and electronics	Pearls, precious stones & metals	Textiles etc.
1QFY20	16.5	9.8	5.1	1.2	15.8	14.7	10.6	11.8	10.8
2QFY20	17.1	8.9	5.4	1.1	15.4	15.2	11.4	12.6	10.4
3QFY20	17.1	9.1	5.7	1.2	15.6	15.2	12.2	11.1	10.6
4QFY20	17.1	9.0	4.9	1.8	14.3	15.3	11.8	10.6	12.0
1QFY21	15.8	5.5	10.8	1.9	13.8	23.6	8.1	3.7	5.9
2QFY21	18.6	5.2	6.9	1.4	12.2	17.5	11.5	7.9	10.6
3QFY21	18.9	6.1	6.1	1.2	9.7	17.0	12.1	10.9	11.6
4QFY21	17.0	5.9	6.6	2.3	12.6	15.1	11.6	10.2	11.3
1QFY22	17.3	6.7	7.1	2.2	17.9	13.7	9.8	9.8	10.2
2QFY22	19.0	6.4	5.4	1.9	16.9	14.0	10.7	9.9	10.3
3QFY22	18.5	6.7	4.5	1.9	17.8	14.2	11.2	9.0	10.3
4QFY22	17.4	6.8	3.5	2.1	20.1	13.3	11.2	8.8	10.4

Major export destinations (% share)					Major export commodities (% share)				
	US	UAE	China	Indonesia	Mineral products	Chemicals et.al	Machinery and electronics	Pearls, precious stones & metals	Textiles etc.
1QFY23	17.9	6.8	3.8	2.6	24.3	12.8	10.5	8.5	8.4
1QFY23 minus 1QFY20 (% pts.)	**1.4**	**-3.0**	**-1.3**	**1.3**	**8.5**	**-1.9**	**-0.1**	**-3.3**	**-2.4**

Source (basic data): Export-Import data bank, Ministry of Commerce and Industry

Exports and imports of services: Composition and trends

In the case of services exports, the highest share is that of computer services followed by professional and management consulting services. In the case of services imports, the highest share pertains to the group called 'technical, trade-related and other business services' followed by transport services, whose share has been increasing in recent years **(Table 22.4)**. Reflecting the continued impact of COVID, the export and import shares of personal travel continue to remain significantly below their pre-COVID levels.

Table 22.4: Share of key components of services and exports and imports

Quarter	Exports of major services (% share)					Imports of major services (% share)				
	Computer services	Professional and management consulting services	Transport	Personal Travel	Financial services	Technical, trade-related, and other business services	Transport	Professional and management consulting services	Business travel	Personal Travel
1QFY20	43.7	12.2	10.2	12.4	2.5	26.3	19.0	9.9	4.8	14.5
2QFY20	44.0	11.4	9.8	13.1	2.3	26.3	18.9	8.5	4.7	14.3
3QFY20	43.1	12.8	9.9	13.1	2.1	26.3	19.3	9.4	4.4	12.3
4QFY20	43.9	12.5	9.5	11.9	1.9	28.4	18.6	9.5	3.9	9.6
1QFY21	48.2	14.1	10.2	3.2	2.1	32.5	16.1	10.8	4.5	6.1
2QFY21	49.8	13.9	10.8	3.9	2.0	32.4	16.6	10.1	3.4	6.2
3QFY21	48.3	14.7	10.5	3.8	2.0	31.6	17.1	10.4	3.4	6.0
4QFY21	47.9	14.4	10.9	3.8	2.2	28.8	17.3	10.2	3.3	6.4
1QFY22	49.1	14.2	12.0	2.6	2.1	29.5	21.8	8.3	3.5	6.0
2QFY22	48.8	13.9	12.3	3.2	2.1	27.1	22.8	7.2	3.4	7.5
3QFY22	47.4	14.1	13.4	3.7	2.0	26.1	25.6	8.5	3.5	7.5
4QFY22	46.9	15.7	13.4	3.8	2.3	25.5	26.5	7.4	3.5	8.9
4QFY22 minus 4QFY20	**3.0**	**3.2**	**4.0**	**-8.1**	**0.4**	**-2.9**	**7.9**	**-2.1**	**-0.5**	**-0.7**

Source (Basic data): RBI

Prospects of export promotion and import substitution

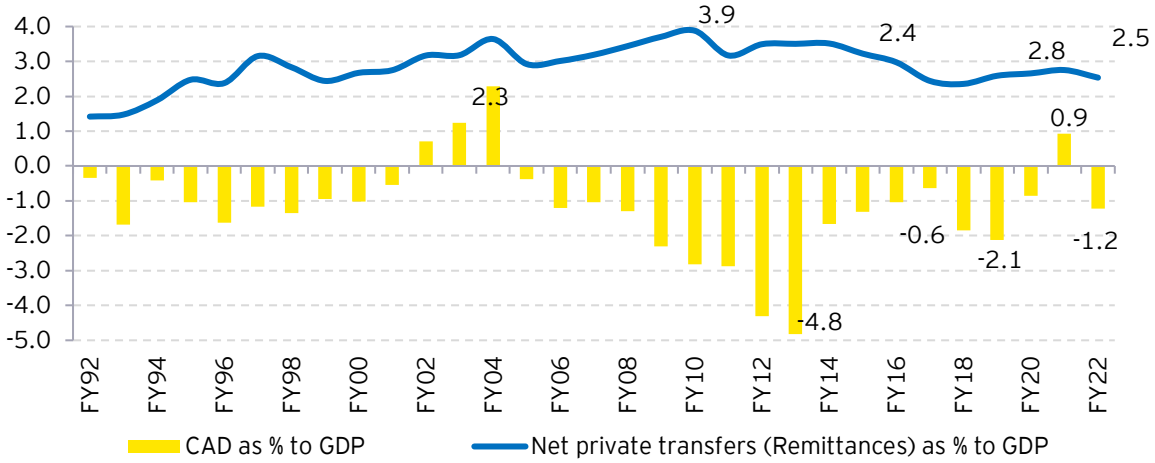
Looking towards the future, it is important to consider that with a view to making India relatively less dependent on imported supply of goods and services, a lot of capacity may have to be established within India. This calls for a massive increase in public sector investment. These new establishments are likely to require importing, relatively more, raw materials and machinery and equipment which may continue to be sourced from China for some more time. The global environment is presently making investment shift away from China and a good part of that can be attracted towards India. To take full advantage of these changing perceptions, India is keen to provide active policy support.

Capital flows

Recent trends in current and capital account balances

Major upheavals are also occurring in capital flows affecting India's current and capital account balances which in turn may have an impact on domestic inflation and current account sustainability. These trends have been accelerated because of high CPI inflation rates in many of the developed countries including US, UK and many EU countries.

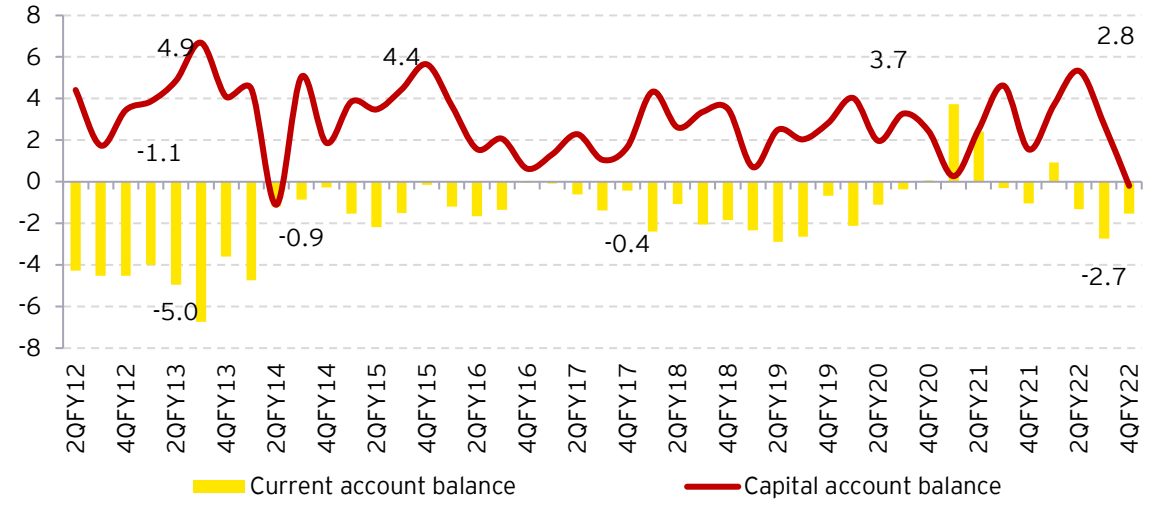
Chart 22.2: Current account balance and remittances as % of nominal GDP: Long-term perspective



Source (basic data): RBI
Note: -ve shows a deficit and +ve indicates a surplus

Chart 22.2 provides a relatively longer-term perspective in the movement of current account balance and that of net private transfers (remittances). Most years show a deficit on the current account while there have been only four years characterized by a surplus. The current account deficit had reached a peak of (-)4.8% of GDP in FY13 after which it had started to fall. The long period average of current account balance as percentage of GDP over the period FY91 to FY22 is (-)1.2%. In fact, there is a noticeable correlation between global crude prices and the size of India's current account deficit. With a minimization of exposure to crude price volatility, the volatility of current account deficit may also be contained.

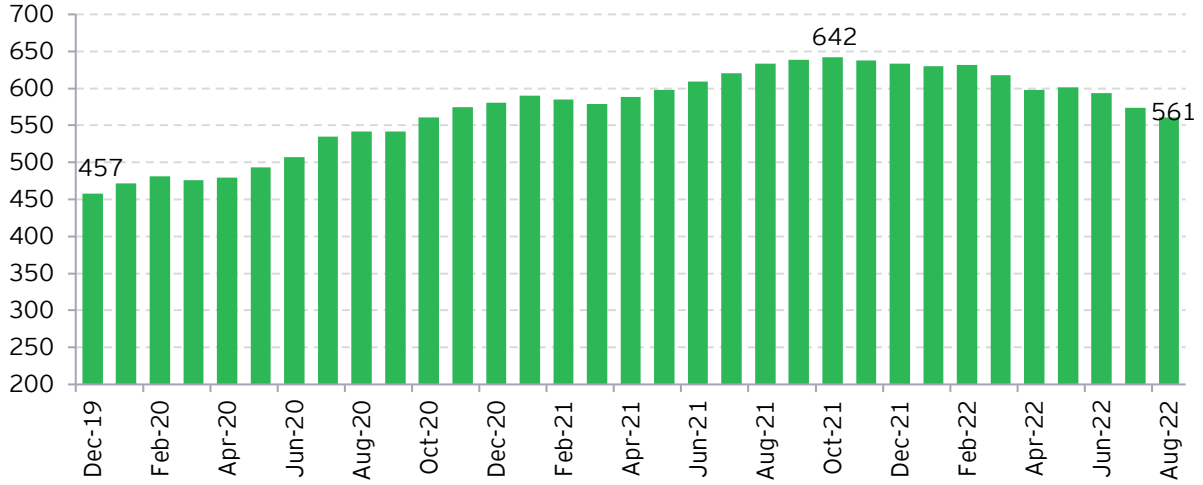
Chart 22.3: Current and capital account balance as % of nominal GDP: Quarterly perspective



Source (basic data): RBI
Note: -ve shows a deficit and +ve indicates a surplus

Chart 22.3 provides a more recent perspective in the movement of India's current and capital account balances. The cyclicality of the current account balance is quite marked in the quarterly data. This is contrasted with the corresponding movement of capital account surplus. These two match each-other precisely except for the impact of change in foreign exchange reserves. The current account balance started falling from a peak surplus of 3.7% of GDP in 1QFY21 turning into a deficit of (-)2.7% of GDP in 3QFY22 and continuing in 4QFY22. We expect that the annual current account deficit in FY23 may be close to (-)3% of GDP.

Chart 22.4: Trends in foreign exchange reserves (US$ billion)



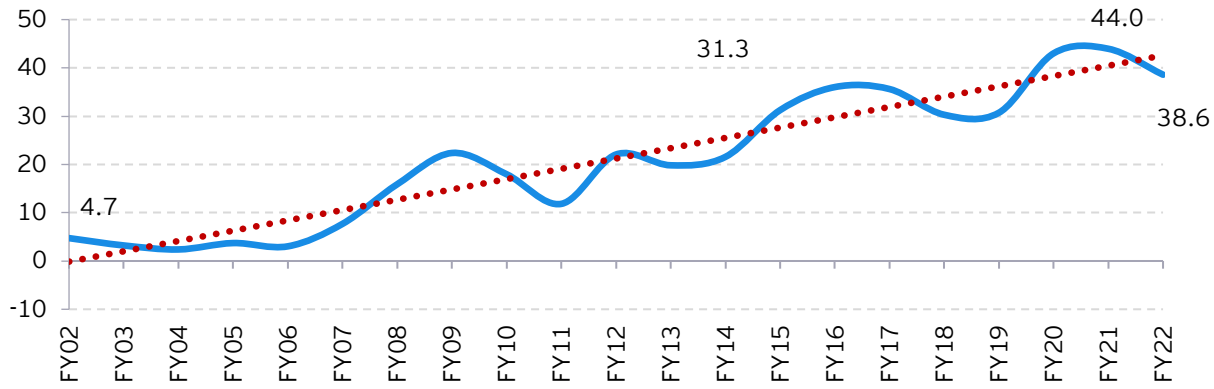
Source (basic data): RBI

In periods when current account deficit is relatively high, the INR depreciates faster vis.-a-vis. the USD and other major currencies. In order to stem the rate of depreciation of the INR vis.-a-vis. USD, the RBI had to sell some of its foreign exchange reserves. As a result, India's foreign exchange reserves which had reached a peak level of US$642 billion in end-October 2021, has fallen to US$561 billion as on 26 August 2022, that is, a depletion of US$81 billion during these 10 months **(Chart 22.4)**.

Trends in foreign direct investment (FDI)

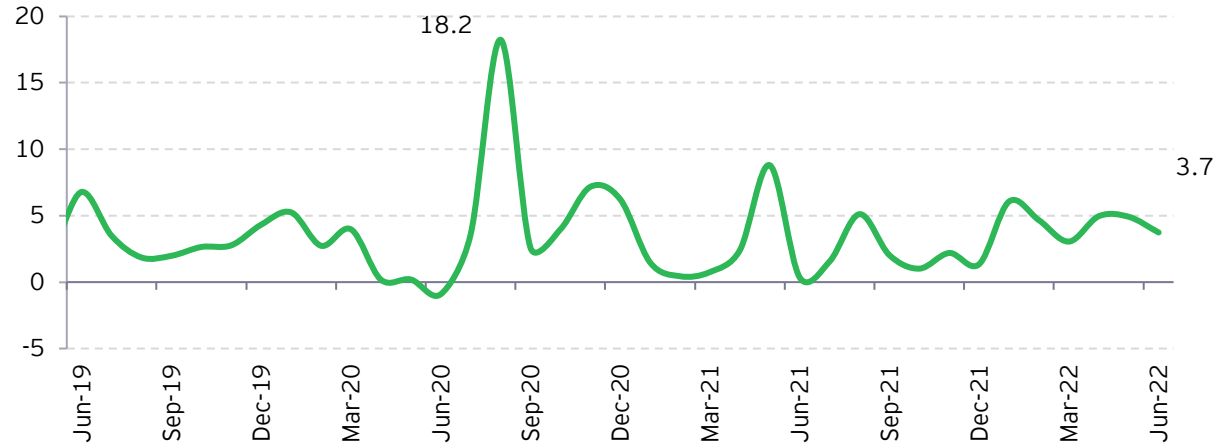
FDI has remained critical for India's growth performance. It brings a dual advantage for India in terms of not only additional investment but also induction of new technologies. This has shown a steady upward movement on an annual basis since the early years of the previous decade **(Chart 22.5)**. More recently however, it has been somewhat volatile (Chart 22.6).

Chart 22.5: Movements in net FDI flows (US$ billion): Annual



Source (basic data): RBI

Chart 22.6: Trends in net FDI flows (US$ billion): Monthly

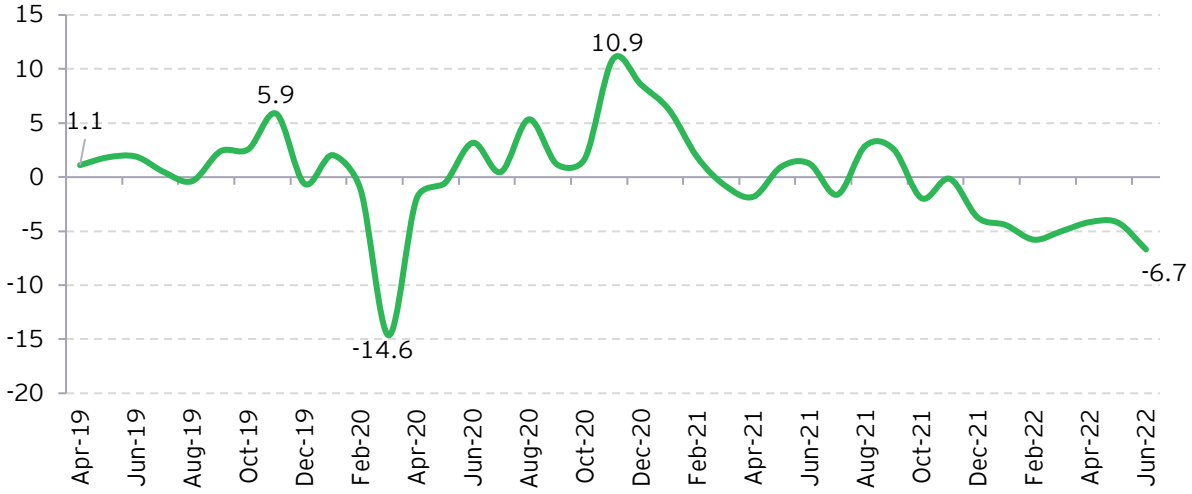


Source (basic data): RBI

Trends in foreign portfolio investment (FPI)

Total foreign investment flows into India come in two forms namely, FDI and FPIs, that is, investment in Indian portfolios by way of subscription to Indian stocks and other financial instruments. Net FPI flows have been volatile and in recent months have fallen somewhat sharply **(Chart 22.7)** reflecting increased outflows from India leading to a depletion of foreign exchange reserves.

Chart 22.7: Trends in net FPI flows (US$ billion)



Source (basic data): RBI

Managing capital flows

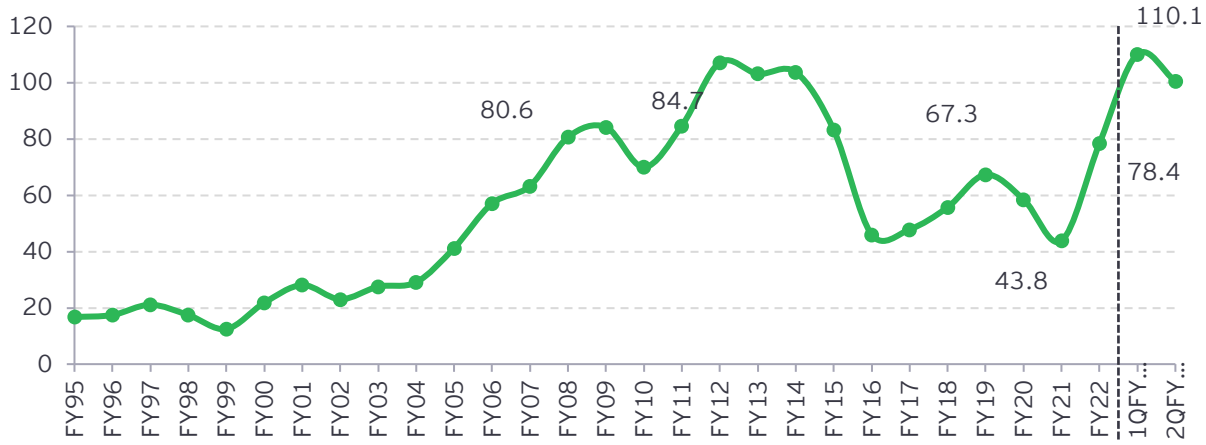
As part of India's medium term growth strategy, it may be useful to acknowledge that for some more years, a current account deficit may be considered welcome if it is financed largely by FDI inflows as long as the current account deficit as a percentage of GDP remains sustainable. India continues to carry a significant volume of foreign exchange reserves and it may be useful to ensure that these reserves are managed in a way that provides a reasonable return on them in terms of foreign exchange. Earlier studies have shown that a current account deficit of about (-)2.3% of GDP annually may be sustainable[104].

[104] https://www.epw.in/journal/2013/07/insight/indias-external-sector.html.

Global crude prices: Minimizing impact on domestic economy

Movement of global crude prices affects both current and capital account balances. The value of merchandise imports increase and correspondingly, the level of current account deficit increases, calling for additional borrowing from abroad or inducing additional investment from abroad or drawing from the foreign exchange reserves. After global crude prices are translated into an average price for the Indian crude basket, India's domestic inflation, exchange rate movements, current account deficit and fiscal deficit and finally GDP growth are affected in a significant way. For imparting relative stability to these critical macro parameters, it is important to minimize volatility of the Indian crude basket with a view to sheltering domestic economic players from the global upheavals of crude prices. This is discussed in detail subsequently in this write-up.

Chart 22.8: Trends in global crude oil prices (US$/bbl.)



Source (basic data): World Bank
Note: For 2QFY23, global crude prices have been averaged for July and August 2022

Chart 22.8 shows crude price movements beginning the mid-1990s. After remaining subdued during FY96 to FY04, global crude prices witnessed a long stretch of price surge up to FY09. Following a price crash in FY10 in the aftermath of the global economic and financial crisis, there was a second phase of increase in global crude prices wherein prices crossed US$100/bbl., reaching a peak of US$107.2/bbl. in FY12. These remained at an elevated level up to FY14. This was the period when India's macro-balances, particularly the current account deficit relative to GDP, deteriorated sharply. Beginning FY15, global crude prices crashed again, reaching a trough of US$46/bbl. in FY16. Subsequently, prices recovered to US$67.3/bbl. by FY19 post which, there was a sharp fall in FY20 continuing in FY21 due to COVID-induced demand slowdown. In FY22, prices recovered as there was a release of pent-up demand along with significant supply rigidities. The third and the most recent phase of price upsurge began in FY23 on account of the ongoing geopolitical tensions. Global crude prices averaged US$110.1/bbl. in 1QFY23 and have remained elevated in the first two months of 2QFY23 as well.

The RBI (2019, 2021) has provided some estimates of an increase in the price of Indian crude basket on key macro parameters. **Column 2 of Table 22.5** shows the estimated impact of an increase in the price of Indian crude basket on real GDP growth, CPI inflation, current account deficit (CAD) and GoI's fiscal deficit relative to GDP. The RBI used US$75/bbl. as the benchmark price of the Indian crude basket and the quantified effects relate to an increase of US$10/bbl. over this benchmark price.

Table 22.5: Impact of a US$10/bbl. increase in price of Indian crude basket on India's key macro parameters

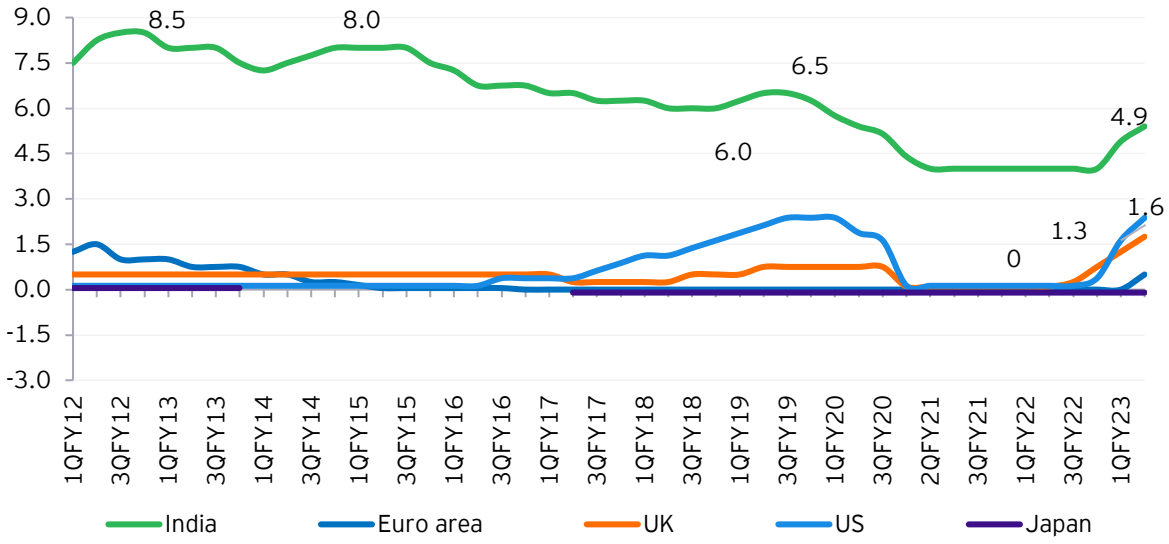
Impacted parameter	RBI (2021) – in % points	Estimated impact of avg. crude price at US$105/bbl. – in % points
(1)	*(2)*	*(3)*
Real GDP growth (reduction)	0.27	0.81
CPI inflation (increase)	0.40	1.20
CAD as % of GDP (deterioration)	0.43*	1.29
GoI's fiscal deficit to GDP ratio (widening)#	0.43*	1.29

Notes: (1) For RBI (2021), source is Monetary Policy Report, October 2021 – In the original study, a baseline assumption for Indian crude basket at US$75/bbl. for 2HFY22 is considered. RBI estimates the impact of a 10% increase in Indian crude basket at (-)0.2% points for growth and (+)0.3% points for CPI inflation.
*https://www.rbi.org.in/Scripts/MSM_Mintstreetmemos17.aspx (RBI, 2019); # For Centre's fiscal deficit, the assumption is that the burden of increased price is not passed on to the consumers

We have provided an assessment of the impact of the average price of US$105/bbl.[105] which is 30 basis points above the benchmark used in RBI's assessment (2021). Accordingly, the estimated effects for FY23 are summarized in **Column 3 of Table 22.5**. Thus, in FY23, had India not faced the global crude price upsurge, our expected GDP growth could have been higher by nearly 1% point as compared to the present expectation of about 7%[106].

Given the supply constraints on global crude and other commodities, inflationary pressures have mounted in many of the western economies including the US, UK and the EU countries. In order to combat these inflationary trends, many of these countries have started raising interest rates **(Chart 22.10)**.

Chart 22.10: Central bank policy rates



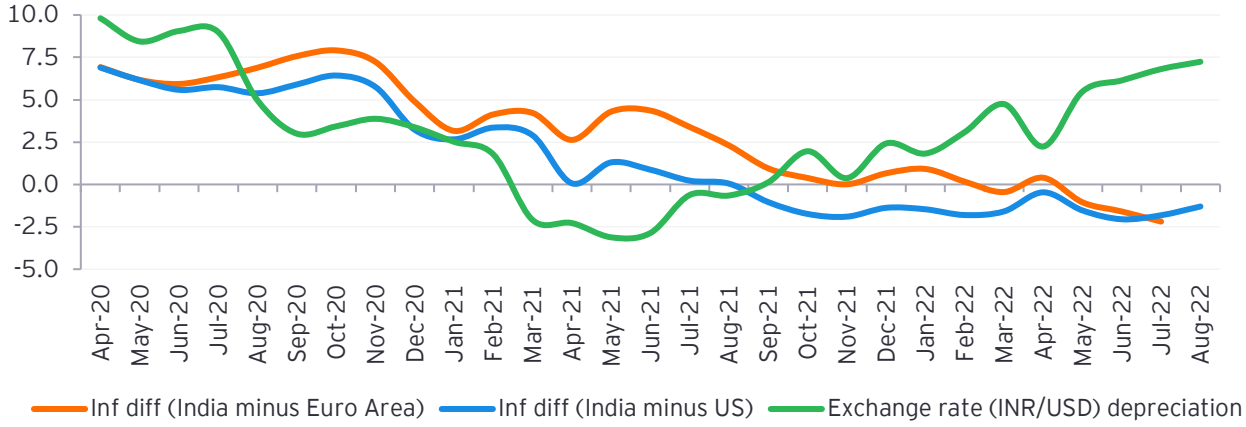
Source (basic data): IFS-IMF, Fred Economic Data and BIS

The differential inflation trends are generally expected to guide exchange rate movements. However, the exchange rate depreciation has accelerated for the Indian Rupee with respect to the

[105] In the August 2022 monetary policy review, the RBI forecasted the price of Indian crude basket at US$105/bbl. for FY23 (https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=54148#:~:text=On%20the%20basis%20of%20an,per%20cent%20with%20immediate%20effect.)
[106] https://www.thehindu.com/opinion/lead/india-7-plus-annual-growth-and-the-realities/article65858194.ece

US Dollar even as the inflation differential has turned negative **(Chart 22.9)**. This is so because even though CPI inflation in the US has been higher in recent months as compared to that in India, the US Fed has been increasing the Federal Funds Rate in a consistent manner. The anticipation of higher returns in the US market has triggered a substantive flow of USD back into the US economy especially from countries like India and China. On the other hand, while India's CPI inflation has also remained lower than that in the UK and the EU countries, similar outflow of funds has not been triggered towards these countries. In fact, the INR has appreciated against the British Pound and the Euro in recent months.

Chart 22.9: CPI inflation differentials and exchange rate depreciation: Selected currencies



Source (basic data): IFS-IMF, Fred Economic Data and BIS

With a view to minimizing India's multidimensional vulnerability to global crude supply and price shocks, a reconsideration of our strategy is required. In the short to medium term, it may be useful to revive the idea of an **'Oil Price Stabilization Fund'**. Many countries have taken recourse to such a fund[107]. We used to have a system of Oil Pool Accounts until the late 1990s which were meant to serve this purpose. However, that system failed because these accounts became unsustainable due to lack of fiscal discipline. In particular, these accounts were not replenished in years when the oil prices were lower than their long-term average. For a successful working of stabilization funds, significant fiscal discipline needs to be exercised to ensure that such an account does not go into accumulated deficit. The accumulated balance in the fund, which is carried forward from year to year, may be invested in global and domestic oil related assets including oil bonds, oil exploration companies etc. In the medium term, the capacity for storage of oil needs to be expanded so that more options are available for absorbing external price shocks. In the long run, there is a need to reduce India's dependence on imported oil by accelerating the pace of the pursuit of non-conventional energy sources. There is also a need to accelerate unexploited domestic oil and gas reserves, both offshore and on land.

Conclusion

Ongoing geopolitical developments appear to lead to a reversal of the paradigm of promoting barrier-free trade across countries. Barriers to international trade according to sources of supply have affected existing trade patterns[108]. India has had to substitute costly global crude with relatively cheaper crude from non-traditional sources such as Russia with a view to keeping the average price of Indian crude basket relatively moderate. Alongside, international payment systems have also been disturbed. Many large countries such as Russia and China as well as India are now

[107] "Several countries including Argentina (for LPG and natural gas), Chile, Colombia, Ethiopia, Peru and Thailand have Price Stabilization Funds". The Expert Group on A
Viable and Sustainable System of Pricing of Petroleum Products (2010, para no. 3.7)
[108] https://www.oecd.org/ukraine-hub/policy-responses/the-supply-of-critical-raw-materials-endangered-by-russia-s-war-on-ukraine-e01ac7be/

actively promoting their individual currencies for trade with a number of other countries[109]. The Indian Rupee has continued to depreciate against the US Dollar while it has appreciated against the British Pound and the Euro. These may reflect structural and long-lasting changes in international trade flows, capital flows and exchange rates. India's domestic economy remains vulnerable to global crude price upsurges affecting critical macroeconomic parameters such as growth, inflation, current account and fiscal deficits. With a view to reducing the exposure of the Indian economic players to global crude price volatility, three steps may be considered feasible and desirable. First, an 'Oil Price Stabilization Fund' may be established. Second, sources of oil and gas imports may be expanded and diversified with a view to reducing average price of the Indian crude basket. Third, efforts to switch to non-conventional energy sources may be accelerated.

NSO's recently released GDP data showed a real growth of 13.5% for India in 1QFY23. This contained a base effect which may not be available in subsequent quarters. The RBI had estimated a growth of 6.2%, 4.1%, and 4% in the subsequent quarters respectively. If these growth rates are realized, India could have a growth of 6.7% in FY23. However, with suitable fiscal policy support, it may be possible to uplift growth to close to 7%. This may be facilitated by buoyant tax revenues which are linked to high nominal GDP growth. Given current inflationary trends, we expect that GoI's gross tax revenues may exceed the budget estimates by a margin of nearly INR3.6 lakh crore in FY23.

[109] https://www.fortuneindia.com/macro/russia-ukraine-war-triggers-war-against-dollar/107471; https://www.inventiva.co.in/trends/rbi-aims-to-turn-the-rupee-global/

Part – 6

Towards Viksit Bharat: Other underlying reforms

Chapter 23

Robotics and artificial intelligence: Western concerns; India's challenges (March 2017)

Abstract

There has been a sudden spurt in discussions and scholarly articles on the role of robotics and AI in the developed world, voicing concerns about large job losses to new generations of robots in these economies, which are otherwise slowing down. A January 2017 McKinsey Global Institute (MGI) study titled "A Future that Works: Automation, Employment and Productivity" asserted that advances in robotics, AI and machine learning are ushering in a new age of automation as machines match/outperform human performance in a range of activities. This report estimated that almost half the activities for which people are paid about US$16 trillion in wages in the global economy have the potential to be automated by adapting currently demonstrated technologies, covering more than 2,000 work activities across 800 occupations. Activities most susceptible to automation involve physical activities in structured and predictable environments, as well as the collection and processing of data. In the US, these activities make up 51% of the total activities in the economy. While such automation clearly has productivity-enhancing effects for businesses, they pose major policy challenges for finding work for humans replaced by such automation.

Advances in automation also imply that emerging economies may lose their advantage of low-cost labor as costs of automation fall. Populations in a good part of the western world as well as China have started aging. The MGI study (2017) argued that the aging and shrinking of the workforce is unprecedented in modern history. It implies that the number of retirees may grow more than twice as fast as the employed, leaving fewer workers to support the elderly. Automation could help fill up the gap. Countries experiencing population decline/stagnation may make use of robots to help maintain living standards. On the other hand, countries with high working age population growth, including India, may have to worry about creating new jobs in the new machine age. Since robots may increase the profitability of businesses, they may further accentuate inequalities in the economy. Trade in goods is also likely to come down because of the advancement of AI and 3D printing. Overall export growth may also come down, although services export growth may remain significantly higher than that of goods. Given India's young population and talent pool, India can potentially benefit from the unfolding robotic and AI revolution, provided there is adequate government investment in skilling, education and health.

Introduction

There has been a sudden spurt in discussions and scholarly articles on the role of robotics[110] and AI in the developed world, voicing concerns about large job losses to new generations of robots in these economies, which are otherwise slowing down. A January 2017 McKinsey Global Institute (MGI) study titled "*A Future that Works: Automation, Employment and Productivity*" asserts that advances in robotics, AI and machine learning are ushering in a new age of automation as machines match/outperform human performance in a range of activities. It estimates that almost half the activities for which people are paid about US$16 trillion in wages in the global economy have the potential to be automated by adapting currently demonstrated technologies, covering more than 2,000 work activities across 800 occupations. Activities most susceptible to automation involve physical activities in structured and predictable environments as well as the collection and processing of data. In the US, these activities make up 51% of the total activities in the economy. While such automation clearly has productivity-enhancing effects for businesses, they pose major policy challenges for finding work for humans replaced by such automation.

Advances in automation also imply that emerging economies may lose their advantage of low-cost labor as costs of automation fall. Populations in a good part of the western world as well as China have started aging. The MGI paper cited above argues that the aging and shrinking of the workforce is unprecedented in modern history. It implies that the number of retirees may grow more than twice as fast as the employed, leaving fewer workers to support the elderly. Automation could help fill up the gap. Countries experiencing population decline/stagnation may make use of robots to help maintain living standards. On the other hand, countries with high working age population growth, including India, may have to worry about new jobs in the new machine age.

Development's history lessons: Paradigm shift

Starting in the 1880s in Japan, country after country around the world including South Korea, Taiwan and China have followed a familiar pattern of development. Shifting labor from low-wage agriculture to manufacturing created jobs, leading to an increase in household incomes. Rural population urbanized at a fast pace and workers in the urbanized centers with large disposable incomes enabled an upsurge in the saving rate. This model of development based on an investment-led and export-led strategy may be rendered irrelevant by automation.

However, automation may create new opportunities for higher value manufacturing and services. Some countries could leapfrog to become active in high value-added industries and selected service sectors where robots have a low probability of replacing the human workforce.

What jobs are under threat?

A widely cited study by Carl Benedikt Frey and Michael Osborne of Oxford University published in 2013 found that 47% of jobs in America were at high risk of being "substituted by computer capital" soon. A recent Bank of America Merryl Lynch prediction says that by 2025, "the annual creative disruption impact could amount to US$14 trillion to US$33 trillion, including a US$9 trillion reduction in employment cost, thanks to the AI-enabled automaton of knowledge work, cost reduction of US$8 trillion in manufacturing and healthcare, and US$2 trillion from efficiency gains from the deployment of self-driving cars and drones." **Table 23.1** shows the threat to groups of jobs according to ranges of probability of their replacement by robots and AI. Jobs with the highest risk of replacement include salespersons, auditors and accountants, postal service clerks, cooks and insurance agents.

Jobs that face the least threat from automation include healthcare social workers, dieticians and nutritionists, physicians and surgeons, medical and health services managers, nurses and pharmacists, which are health-related services. Many others relate to education, information

research scientists, multimedia artists, and animators and editors. These mostly relate to education.

The concern with machinery displacing workers is an old one. It arose first at the time of the industrial revolution. David Ricardo, in 1821, referred to it as the machinery question. But this time round, the dimensions have been significantly scaled up. The MGI study observes that AI is 300 times the scale and roughly 3,000 times the impact of the industrial revolution. The question being raised is: Will smarter machines cause mass unemployment? (The Economist, 25 June 2015, Special Report)

Table 23.1: Group of jobs according to ranges of probability of their replacement by robots and AI

Probability range	Selected occupation
0 - 0.1	Healthcare Social Workers, Dietitians and Nutritionists, Physicians and Surgeons, Dentists, General, Human Resources Managers, Medical and Health Services Managers, Clergy, Educational, Guidance, School, and Vocational Counsellors, Registered Nurses, Mechanical Engineers, Pharmacists, Marketing Managers, Engineers, Biological Scientists, All Other, Multimedia Artists and Animators, Computer and Information Research Scientists, Chief Executives, Civil Engineers, Photographers, Interior Designers, Industrial Engineers, Database Administrators, Purchasing Managers, Lawyers, Veterinarians, Writers and Authors, Political Scientists, Editors, Financial Managers, Electrical Engineers, Chemists
> 0.1 - 0.2	Software Developers, Systems Software, Electricians, Desktop Publishers, Public Relations Specialists, Commercial Divers
> 0.2 - 0.3	Actuaries, Statisticians, Survey Researchers
> 0.3 - 0.4	Plumbers, Pipefitters, Steamfitters, Mechanical Engineering Technicians
> 0.4 - 0.5	Economists, Historians, Computer Programmers
> 0.5 - 0.6	Massage Therapists, Commercial Pilots, Chemical Technicians
> 0.6 - 0.7	Librarians, Statistical Assistants, Bus Drivers, Transit and Intercity
> 0.7 - 0.8	Carpenters, Painters, Construction and Maintenance, Bartenders
> 0.8 - 0.9	Word Processors and Typists, Printing Press Operators, Tool and Die Makers, Security Guards, Power Plant Operators, Real Estate Sales Agents, Construction Laborers, Bakers, Medical Transcriptionists, Technical Writers, Taxi Drivers, Chauffeurs
> 0.9 - 1	Insurance Sales Agents, Retail Salespersons, Accountants and Auditors, Waiters and Waitresses, Budget Analysts, Cement Masons and Concrete Finishers, Bicycle Repairers, Electrical and Electronic Equipment Assemblers, Postal Service Clerks, Cooks, Restaurant, Cashiers, Real Estate Brokers, Tellers, Umpires, Referees, and Other Sports Officials, Insurance Claims and Policy Processing Clerks, Data Entry Keyers, Telemarketers

Source: Based on Frey and Osborne (September 2013), 'The Future of Employment: How Susceptible are Jobs to Computerization'

Taxing robots

EU lawmakers had considered a proposal to tax robots, although the idea was finally rejected by the legislators. Taxing robots is an idea endorsed by Bill Gates. Coming from a person who benefited considerably from the use of advanced technology, this idea is attracting more and more attention. Since robots increase productivity and profits, the income tax on corporate profits would in any case tax the contribution of the robots to those profits. But the idea seems to advocate an extra tax on the use of robots itself so that the funds can be used for compensating or training the workers who may be displaced. Those opposed to the idea argue that such a tax may impede growth and constrain increase in productivity in developed countries where growth may otherwise be slowing

down. In any case, robots may only be replacing the aging and falling populations that is not available for work. Furthermore, the use of AI may come in many forms other than robots.

Recent slowdown of global growth and productivity

Over the past decade, there have been sharp slowdowns in measured output per worker and total factor productivity — which can be seen as a measure of innovation. In advanced economies, for example, productivity growth has dropped to 0.3%, down from a pre-crisis average of about 1%. This trend has also affected many emerging and developing countries, including China.

Table 23.2: Global economy — prospects of long-term growth

Sources of growth	Performance (1964 to 2014)	Prospects (next 50 years)	
	% points		
Employment growth	1.7	0.3*	
Productivity growth	1.8	?	3.2**
Global GDP growth	3.5		3.5

Source: McKinsey Report titled 'Global growth: Can productivity save the day in an aging world', January 2015
Notes: *due to ageing population
**productivity needs to increase by 80% over past achievement to achieve a 3.5% growth

Table 23.2 shows that growth performance averaging 3.5% during the past 50 years (1964 to 2014) was due to employment and productivity growth at 1.7% and 1.8% points, respectively. If the contribution of employment in the next 50 years falls to 0.3% points and productivity also falls, there may be a considerable erosion of global growth prospects.

Another decade of weak productivity growth may seriously erode the rise in global living standards. Slower growth could also make reducing excessive inequality and sustaining private debt and public expenditures more difficult.

In a recent speech by Christine Lagarde, IMF (3 April 2017) titled *"Reinvigorating Productivity Growth,"* she pointed to three major reasons for the productivity growth slowdown:

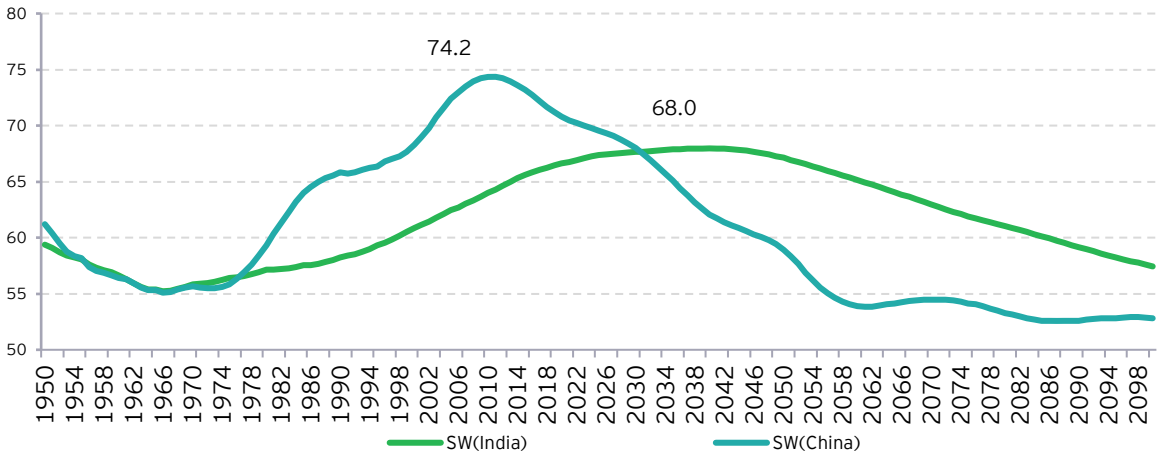
"One is population aging in most advanced economies. Research suggests that worker skills tend to increase until a certain age and then to decline — with negative effects on innovation and productivity, although this remains an issue still subject to debate. A second headwind is the slowdown in global trade. We know from well-established research that trade encourages firms to invest in new technologies and more efficient business practices. It also encourages the sharing of new technologies across borders. The lack of global demand and the gradual increase in trade restrictions have led to a slowdown in trade growth in recent years. This, in turn, has hurt the productivity and living standards of all citizens. A third productivity headwind is the unresolved legacy of the global financial crisis in some major economies."

The combination of aging population, low productivity growth and displacement of human labor can lead to a substantial fall in consumption growth. Growth in developed economies may then be constrained by growth of consumption. Since robots may increase the profitability of businesses, they may further accentuate inequalities in the economy. Robots can themselves consume only energy and not the general basket of goods and services consumed by the humans. As such, the future of the developed world may well be characterized by slow growing economies with high income inequalities. Trade in goods is also likely to come down as a result of the advancement of AI and 3D printing. Normally where goods used to be exported, only information may need to travel and the goods may be produced in the destination country. Overall export growth may also come down, although services export growth may remain significantly higher than that of goods.

India: re-strategizing growth

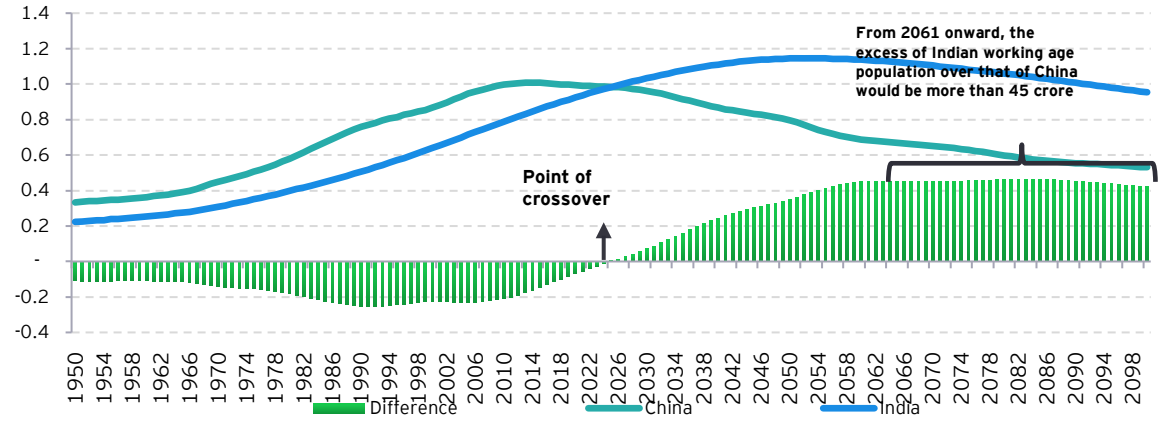
In such a scenario, India may have to re-align its growth strategy as it continues to reap the benefit of its demographic dividend and its working age population may continue to grow at a fast pace. India may find a global economy where export growth may have significantly slowed down and the potential of exporting services may be available in only a limited number of sectors. The sectors that are likely to still grow at a fast pace may generally relate to services such as IT, management, healthcare services, education and entertainment. In particular, jobs listed with low probability of replacement in **Table 23.1** are the jobs for which India may prepare its explosively growing working-age population who may need to be trained and educated. A massive investment in health and education now is expected to pay off in the next few decades. This may be a challenge unless India's tax-GDP ratio increases significantly and soon.

Chart 23.1: Share of working age population in total population — India and China (%)



Source: World Population Prospects, United Nations, 2015

Chart 23.2: Working age population — India and China (billion)



Source: World Population Prospects, United Nations, 2015

As indicated by **Chart 23.1**, the share of working population (15-65 years) in total population in India is expected to peak at 68% around 2040 while in China it peaked at 74% around 2010. From 2023 onward, India will have, in absolute numbers, a larger number of working age people than China (**Chart 23.2**). The absolute number of working age people in India will exceed that of China at its peak by margins close to 0.5 billion. This excess will last up to 2100 and beyond. Without massive investment and skill training, the potential asset of fast-growing working age population could well become a large liability of social unrest.

Chapter 24

Increasing mileage from recent reform milestones (June 2017)

Abstract

In this chapter, we attempted to summarize the impact of economic reforms undertaken since May 2014 until June 2017. In fact, India has been on a journey of aggressive economic reforms since the early 1990s. The last three years (FY15 to FY17) under the NDA Government were particularly eventful, with a succession of reforms at breakneck speed. Yet, beset by both short- and long-term constraints, their positive outcomes remained significantly below their potential. At the end of three years, the growth rate had fallen and the share of manufacturing in output was stagnant in spite of Make in India.

We divided major reforms undertaken during this period into six broad categories: fiscal, monetary, large platform, financial inclusion and safety net, sectoral, governance and socio-economic reforms. The essence of these key reforms was their focus on increasing productivity in the economy. Their full effects may only be visible in the longer run. However, to realize their full potential, India's saving and investment rates may have to be increased. Realizing the full potential of the unfolding demographic dividend calls for massive investment in health and education and skill development. This can be facilitated by an increase in the tax-GDP ratio by 3% to 4% points and a corresponding increase in the relative shares of health and education expenditures in the Central Government's budget. The state governments may also have to be taken on board. We assessed that as the global economy and India's exports prospects improve, a virtuous cycle can be set up. Increased productivity of resources may lead to a lower capital-output ratio and improved competitiveness for Indian exports, which may also be assisted by GST.

Introduction

India has been on a journey of aggressive economic reforms since the early 90s. The last three years under the current NDA Government have been particularly eventful with a succession of reforms at breakneck speed. Yet, beset by both short- and long-term constraints, their positive outcomes have remained significantly below their potential. At the end of three years, the growth rate has fallen and the share of manufacturing in output is stagnant in spite of Make in India. It is time to take stock of the promise and potential of these reforms.

Reform milestones

While each major reform can be viewed as an individual milestone, it is useful to group these into suitable broad categories. **Table 24.1** lists these reforms grouped in six categories: fiscal, monetary, large platform reforms, financial inclusion and safety net, sectoral, governance and socio-economic reforms.

Table 24.1: Reform milestones

Fiscal reforms	Governance reforms	Large platform reforms
GST	Bankruptcy and insolvency law	Make in India
Subsidy reforms: direct benefit transfer	Real Estate Regulation and Development Law	Digital India
Advancement of budget presentation	Land reforms	Start-up India
Centrally sponsored schemes	Defense procurement and production	Skill India
FRBMA reform	Ordinance on NPAs	Smart Cities
Sharing of central taxes	Corruption and black money reforms	Easing of FDI norms
Other tax reforms	Ease of doing business reforms	Niti Aayog
Financial inclusion and safety nets	**Sector-specific reforms**	**Monetary reforms**
Jan Dhan Yojana	Mining sector reforms	Demonetization
Crop insurance	Power sector reforms	Mudra Loan Scheme
Health insurance	Telecommunications	Monetary Policy Framework
Housing for All	Surface Transport	Monetary Policy Committee
Namami Gange	Railways modernization	
Swachh Bharat	Privatization of defense production	

Source: Compiled by EY team

A key feature of these reforms is that these were largely visualized as standalone reforms with no explicit inter-linkage among them. Their targets were projected several years into the future, making it difficult to track their progress. These are largely supply-side reforms aimed at improving productivity of resources over the medium to long term. Clearly, some reforms also worked at cross-purposes. Thus, the effect of demonetization aimed at capturing black cash was diluted by the large number of Jan Dhan accounts, which was otherwise an effective financial inclusion scheme. Some reforms proved to be ineffective. Farmers across the states are agitating in spite of the crop insurance scheme, which could have given them some protection against output failure but not against income failure due to crashing prices.

Macro outcomes

Some macro-outcomes resulting from these reforms can be assessed based on changes during FY14–FY17. We look at impact on growth, inflation, creation of additional fiscal space and impact on share of manufacturing in GVA among other indicators. In terms of growth, after an increase in GVA growth from 6.2% in FY14 to 7.9% in FY16, the economy lapsed back to 6.6% in FY17 (**Table 24.2**). A slowdown was already visible before demonetization. Neither fiscal nor monetary policy has been successful in stimulating private investment demand. Investment in fixed assets as measured by the annual growth in GFCF is languishing at 2.4% in FY17. In the last quarter of FY17, its growth rate on a y-o-y basis was in fact negative. The quarter-wise figures show that while investment demand had fallen in the second quarter, this fall gathered further momentum in the post-demonetization period.

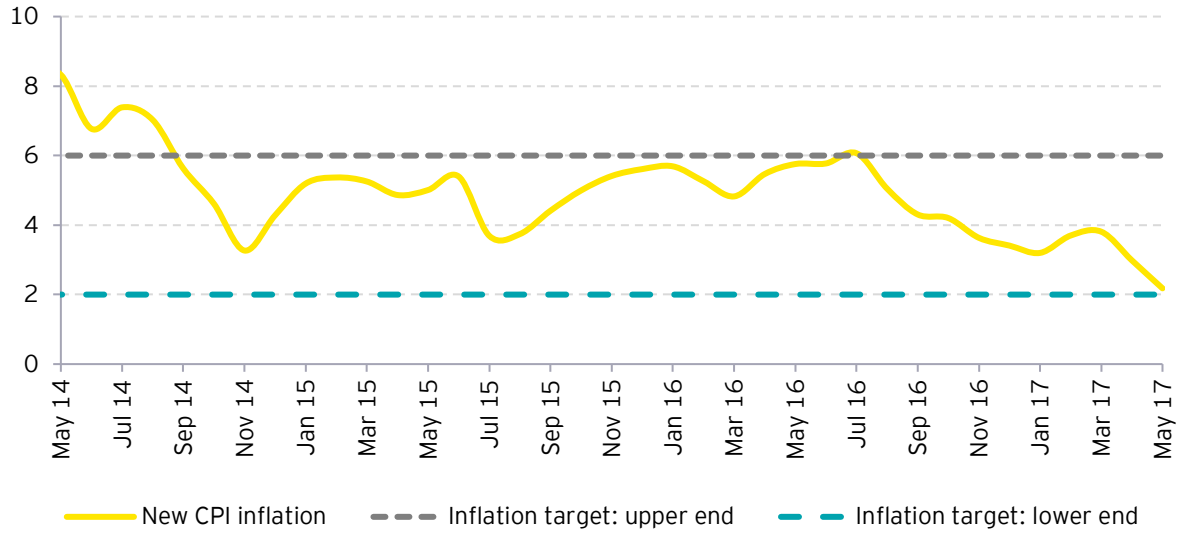
Table 24.2: Growth and fixed Investment – visible slowdown (%, y-o-y)

Sector	1Q FY17	2Q FY17	3Q FY17	4Q FY17	FY14	FY15	FY16	FY17
GVA *of which:*	7.6	6.8	6.7	5.6	6.2	7.0	7.9	6.6
Agr.	2.5	4.1	6.9	5.2	5.6	-0.2	0.7	4.9
Mfg.	10.7	7.7	8.2	5.3	5.1	7.7	10.8	7.9
Cons.	3.1	4.3	3.4	-3.7	3.0	4.1	5.0	1.7
Fin.	9.4	7.0	3.3	2.2	11.0	11.3	10.8	5.7
Publ.	8.6	9.5	10.3	17.0	3.8	8.1	6.9	11.3
GDP *of which:*	7.9	7.5	7.0	6.1	6.5	7.3	8.0	7.1
GCE	16.6	16.5	21.0	31.9	0.6	9.6	3.3	20.8
GFCF	7.4	3.0	1.7	-2.1	1.8	3.2	6.5	2.4

Source (Basic Data): National Income Accounts, Ministry Of Statistics and Programme Implementation (MOSPI)

In the monetary sector, new institutional structure for policymaking was established with an agreement on a monetary policy framework. This framework envisaged a CPI inflation target of 4% with a band of plus/ minus 2% points. A Monetary Policy Committee has also been constituted to make monetary policy formulation both autonomous and objective. While the inflation rate has trended down (**Chart 24.1**), some of the success has been due to global factors, particularly the movement of oil prices, which have largely remained in the range of US$45–50/bbl.

Chart 24.1: Secular fall in CPI inflation rate



Source (Basic Data): CSO, MOSPI

At the same time, in spite of the emphasis on manufacturing under Make in India, the share of manufacturing has fallen marginally in FY17 compared to FY14 (**Table 24.3**).

Table 24.3: Near stagnant share of manufacturing

Fiscal year	Share of manufacturing in GVA (%)
2013-14	16.53
2014-15	16.41
2015-16	16.57
2016-17	16.51
FY17–FY14 (% points)	-0.02

Source (Basic Data): National Income Accounts, CSO, MOSPI

On the fiscal front, there have been a number of initiatives but the net gain has been limited. While the gross tax revenue relative to GDP increased from 10.1% in 2013–14 to 11.3% in 2016–17 (**Table 24.3**), there was no net increase in the GoI's net tax-GDP ratio because of the sudden increase in the share of the states following the recommendations of the 14th Finance Commission. Non-tax revenues do not show any increase in spite of the gains through sale of spectrum and mining auctions. The main success resulting in a tangible gain of 0.56% points of GDP during FY14–FY17 was from the reduction of explicit subsidies. This partially enabled the reduction in the fiscal deficit to GDP ratio by 1% points over the same period. In the net, the share of central government expenditure fell as a % of GDP during these three years.

Table 24.3: Central Government finances: Net fiscal space created (as a % of GDP)

Fiscal year	Gross tax revenues	Net tax revenues	Non-tax revenues	Explicit subsidies	Fiscal deficit
2013-14	10.1	7.3	1.8	2.27	4.52
2014-15	10.0	7.3	1.6	2.08	4.04
2015-16	10.6	6.9	1.8	1.93	3.89
2016-17	11.3	7.3	1.8	1.71	3.52
2017-18 (BE)	11.3	7.3	1.7	1.62	3.24

Source (Basic Data): Union Budget documents, various years

Overcoming long-term constraints; minimizing short-term disruptions

The factors holding back positive outcome of the reforms can be categorized as long-term constraints and short-term disruptions (**Table 24.4**). Falling saving and investment rates, banking sector NPAs, low employment elasticity of growth, tepid global growth conditions and lack of adequate attention to health and education in terms of budgetary allocation as well as sector-specific reforms are clearly long-term constraints. Inward looking global policies are a constraint on growth on Indian exports. Indian IT services, particularly demand from abroad, are also under threat. These constitute major hurdles to India reaching its potential growth, requiring policy makers' attention.

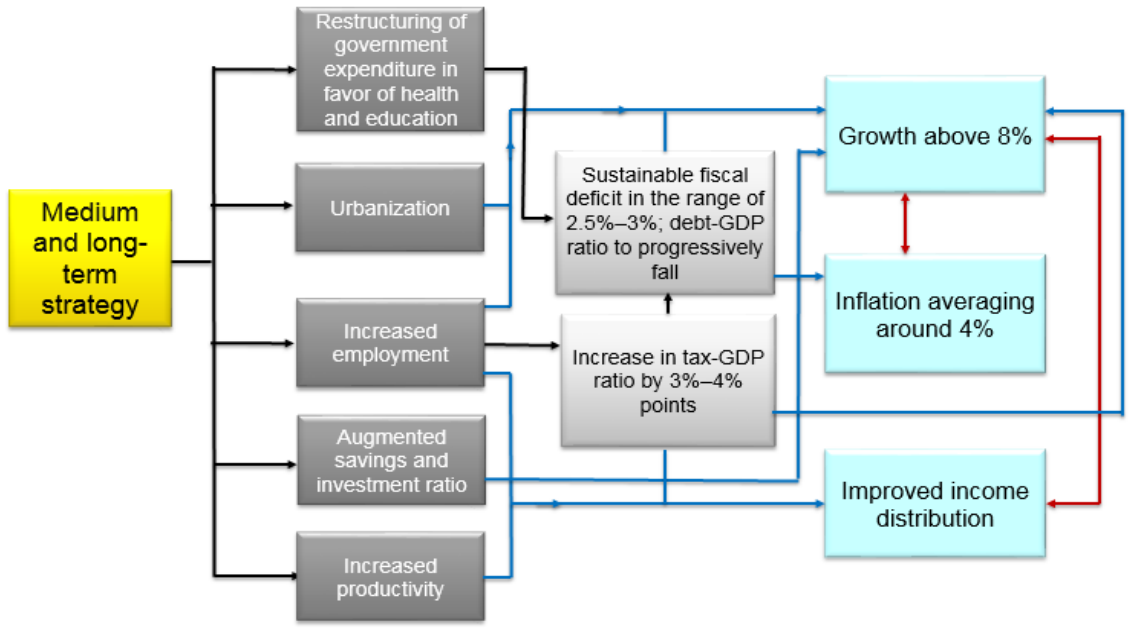
Table 24.4: Long-term constraints and short-term disruptions

Long-term constraints	Short-term disruptions
1. Falling saving and investment rate 2. Low employment elasticity of growth 3. Global economy slowdown 4. Rising NPAs in the banking sector 5. Slow progress in health and education	6. Adverse growth effect of demonetization 7. Jan-Dhan accounts as a source of diluting success in curbing black money 8. GST (transitional issues)

In terms of short-term disruptions, demonetization has already had its adverse effect. Most analysts agree that GST is likely to also cause a temporary disruption at least for a few quarters. Two major

disruptions in succession, although both temporary, may take a toll on India's growth performance in FY18 as well.

Flow chart 24.1: A potential virtuous cycle



Source (basic data): EY team

India's potential growth prospects

The essence of the key reforms during the past three years has been their focus on increasing productivity in the economy. Their full effects may only be visible in the longer run. However, to realize their full potential India's saving and investment rates may have to increase. Realizing the full potential of the unfolding demographic dividend calls for massive investment in health and education and skill development. This can be facilitated by an increase in the tax-GDP ratio by 3% to 4% points and a corresponding increase in the relative shares of health and education expenditures in the Central Government's budget. The state governments may also have to be taken on board. As the global economy and India's exports prospects improve, a virtuous cycle can be set up (**Flow chart 24.1**).

Increased productivity of resources may lead to a lower capital-output ratio and improved competitiveness for Indian exports, which may also be assisted by GST. The long-term effects of demonetization can increase India's tax-GDP ratio, leading to an increase in the shares of education and health outlays. Together, these can lead to a sustained growth of over 8% and inflation averaging around 4%.

Chapter 25

On the health of India's health sector (March 2018)

Abstract

In India's federal set-up, health is largely a responsibility of the state governments, with public health and sanitation and hospitals and dispensaries being part of the State List. In the Union List, most of the responsibilities relate to research and teaching in institutions of higher learning and setting up of standards. It is well known that for a low-income country like India, the government may have to play a key role in providing health services, which are merit services since they are associated with large positive externalities. The provision of health services in India has remained in adequate, mainly due to supply-side deficiencies reflected in the shortages of hospitals, beds and doctors, especially in the government sector. These shortages are particularly sharp for rural areas. While the incidence of diseases is high across the country, the supply-side deficiencies result in undesirable outcomes. First, the inadequacy of publicly provided services drive people to costly private hospitals and doctors. Second, a strong migration from rural to urban areas is triggered around incidences of a family member falling ill. Often in these cases, the financing of health expenses is done based on borrowing, which leads to a vicious cycle.

In the FY19 Union Budget, a strong emphasis on health services was provided with an umbrella scheme under the name of Ayushman Bharat, which envisaged setting up of many Wellness Centres and extending coverage to more than 10 crore poor and vulnerable families for providing up to INR5 lakh per family per year for secondary and tertiary care hospitalization. In addition, there was a considerable supply-side thrust with plans for opening 24 new government medical colleges and hospitals. These initiatives were meant to supplement some of the earlier schemes of the GoI.

In this chapter, we analyzed the (a) allocation of government resources for the health sector in the light of international norms, (b) status of health-related facilities, (c) progress in terms of achieving the health-related Sustainable Development Goals (SDGs) and (d) health sector prospects. We assessed that in order to realize its growth potential to a fuller extent and also align its growth priorities not only to its own changing age profile but also to that of the world, India might have to shift gears in prioritizing the health sector. A healthier population uplifts economic activity and increases potential growth. Further, as India's population begins to age, it is likely to require larger health-related expenses from the governments.

Introduction

In India's federal set-up, health is very largely a responsibility of the state governments with public health and sanitation and hospitals and dispensaries being part of the State List. In the Union List, most of the responsibilities relate to research and teaching in institutions of higher learning and setting up of standards. It is well known that for a low-income country like India, the Government may have to play a key role in providing health services, which are merit services since they are associated with large positive externalities. The provision of health services in India is unsatisfactory, mainly due to supply-side deficiencies reflected in the inadequacies of availability of hospitals, beds and doctors especially in the government sector. These shortages are particularly sharp for rural areas. While the incidence of diseases is high across the country, the supply-side deficiencies result in undesirable outcomes. First, the inadequacy of publicly provided services drive people to costly private hospitals and doctors. Second, a strong migration from rural to urban areas is triggered around incidences of a family member falling ill. Often in these cases, the financing of health expenses is done based on borrowing, which leads to a vicious cycle.

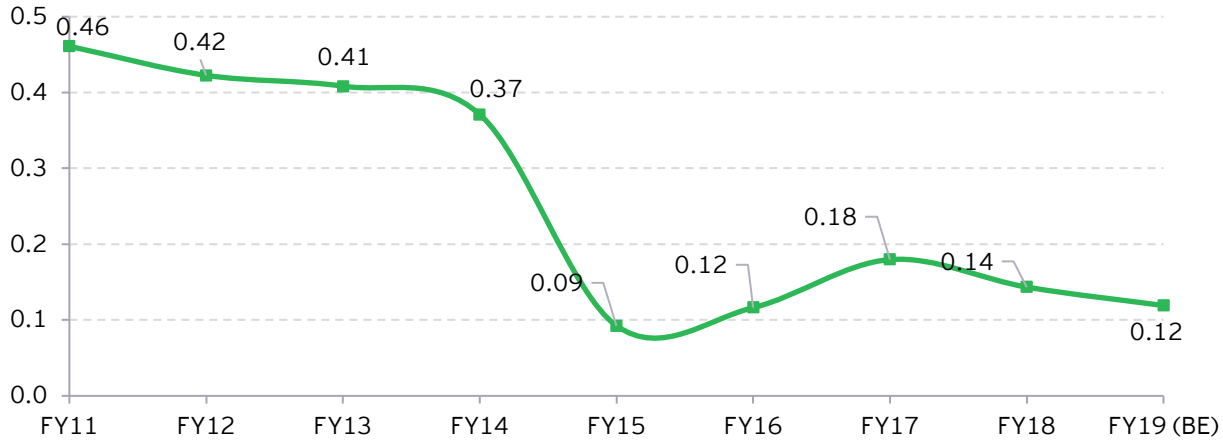
In the Union Budget of FY19, a strong emphasis on health services has been provided with an umbrella scheme under the name of Ayushman Bharat, which envisages setting up of a large number of Wellness Centres and extending coverage to more than 10 crore poor and vulnerable families for providing up to INR5 lakh per family per year for secondary and tertiary care hospitalization. In addition, there is a considerable supply-side thrust with plans for opening 24 new government medical colleges and hospitals. These initiatives are meant to supplement some of the earlier schemes of the present Government such as Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY) and Atal Pension Yojana (APY).

In this write-up, we look at the (a) allocation of government resources for the health sector in the light of international norms, (b) status of health-related facilities, (c) progress in terms of achieving the health-related Sustainable Development Goals (SDGs) and (d) health sector prospects.

Budgetary resources for health sector in India

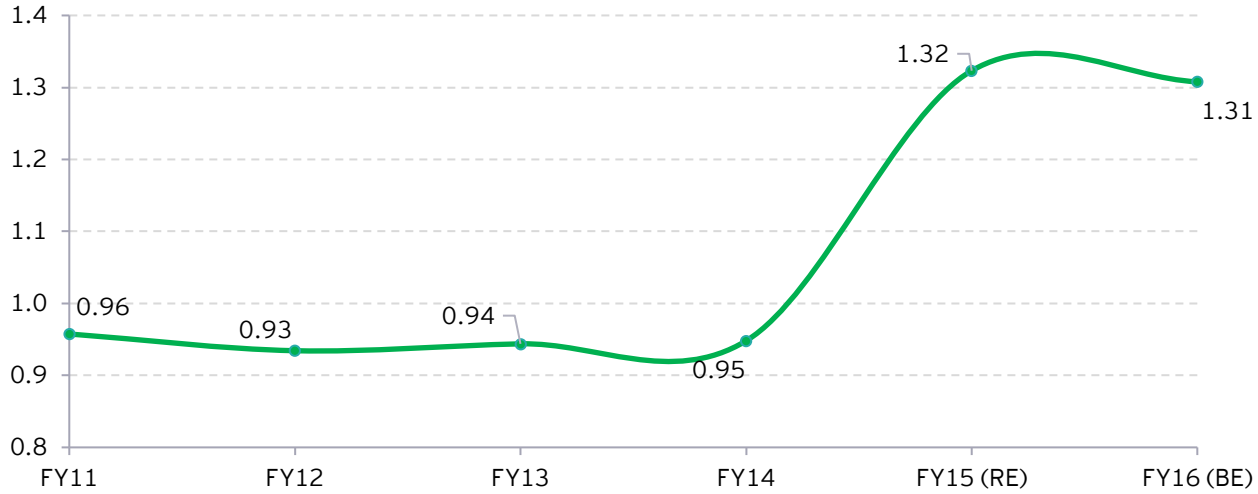
As a percentage of GDP, the GoI's expenditure is estimated to fall from 0.46% in FY11 to 0.12% in FY19 (BE) (**Chart 25.1**). The average expenditure level since FY15 has been much lower as compared to the average level that prevailed in the 90s.

Chart 25.1: GoI's health expenditure as a % of GDP



Source: Indian Public Finance Statistics, Union Budget, various years

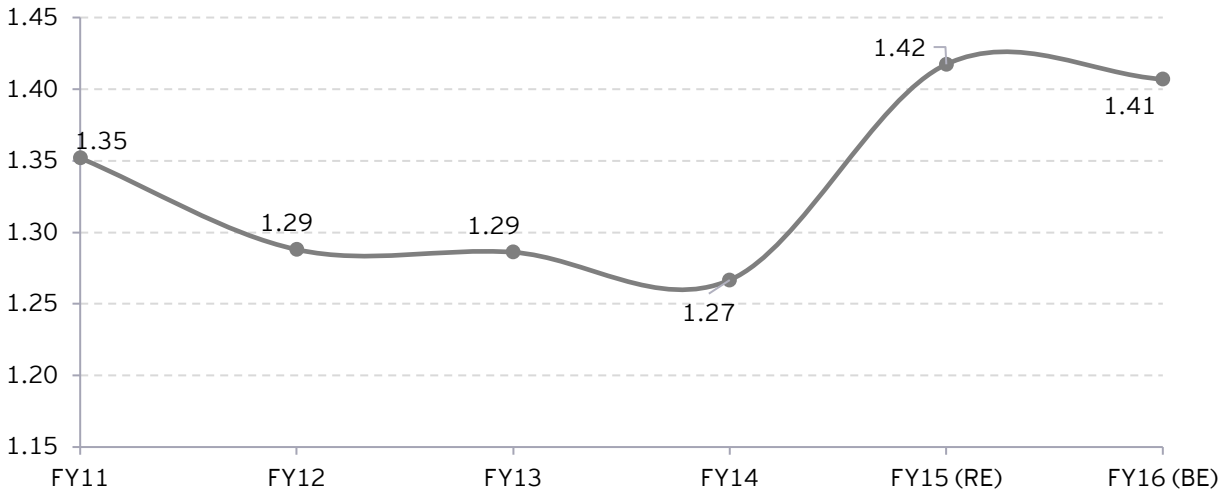
Chart 25.2: All states' health expenditure as a % of GDP



Source: Indian Public Finance Statistics, Union Budget, various years

As far as states are concerned, their expenditures on health was close to 1% during FY11 to FY14. They are estimated to increase to just above 1.3% in FY15 and FY16 (**Chart 25.2**). In terms of combined expenditure, it has ranged from 1.27 to 1.42 over the period from FY11 to FY16 (BE) (**Chart 25.3**).

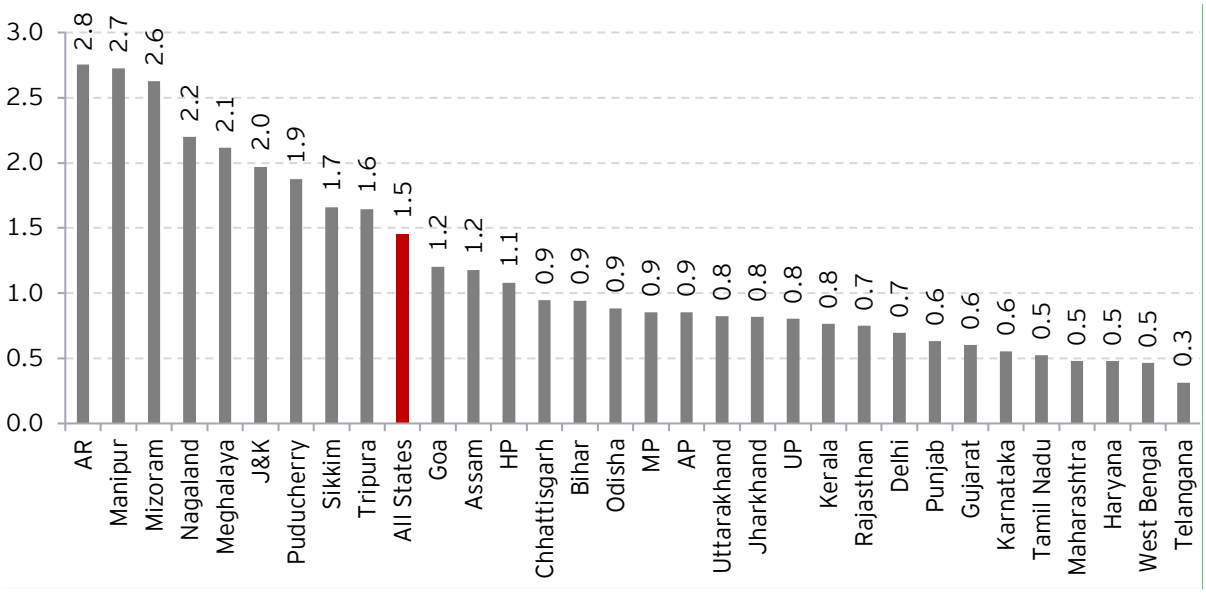
Chart 25.3: Combined central and state government health expenditure as a % of GDP



Source: Indian Public Finance Statistics, Union Budget, various years

Chart 25.4 shows inter-state variations in state government health-related expenditure relative to GDP. It indicates that some of the smaller states, particularly the north-eastern states, show a relatively larger share of health expenditures in their GSDP whereas some of the larger states like Bihar and Uttar Pradesh show the lowest expenditure shares of 0.9% and 0.8% respectively in their respective GSDP. Some of the higher income states devote an even lower share of their GSDP toward health expenditure. States with a share of less than 0.7% of GSDP are Punjab, Gujarat, Karnataka, Tamil Nadu, Maharashtra, Haryana, West Bengal and Telangana.

Chart 25.4: State government's expenditure on medical and public health as a % of respective GSDP



Source (Basic Data): RBI, MOSPI
Note: State government's health expenditure as % of GSDP is the average over the period from FY15 to FY17

Table 25.1: Private and public expenditure on health – cross-country comparison

Country	Domestic private health expenditure				Domestic government health expenditure incl. capital expenditure				Total health expenditure			
	2000	2005	2010	2015	2000	2005	2010	2015	2000	2005	2010	2015
Brazil	4.8	4.7	4.4	5.0	3.5	3.3	3.6	3.8	8.3	8.0	7.9	8.8
China	3.5	2.9	2.1	2.1	1.1	1.7	2.8	3.7	4.6	4.6	4.9	5.9
Indonesia	1.4	1.9	2.4	2.0	0.6	1.0	1.2	1.5	2.0	2.9	3.5	3.5
South Africa	4.6	3.9	3.3	3.6	2.9	2.9	4.2	4.6	7.4	6.8	7.4	8.2
EME average (selected countries)	**3.6**	**3.4**	**3.1**	**3.2**	**2.0**	**2.2**	**3.0**	**3.4**	**5.6**	**5.6**	**5.9**	**6.6**
Canada	2.2	2.4	2.9	2.8	6.4	7.1	8.3	8.1	8.6	9.5	11.2	10.9
Germany	2.0	2.4	1.8	1.7	7.8	7.8	9.2	9.4	9.8	10.3	11.0	11.2
UK*	1.1	1.2	1.3	1.9	5.2	6.4	7.6	8.3	6.3	7.6	8.9	10.2
USA	7.0	7.9	8.4	8.4	6.1	7.2	8.6	9.1	13.1	15.2	17.0	17.4
Average- selected advanced countries	**3.1**	**3.5**	**3.6**	**3.7**	**6.4**	**7.1**	**8.4**	**8.7**	**9.5**	**10.7**	**12.0**	**12.4**

Source (Basic Data): World health Organization
*includes Northern Ireland
Note: Capital expenditure is assumed to be undertaken by the Government and as such clubbed with it

Table 25.1 gives estimates of private and government health expenditure relative to GDP for selected emerging market and advanced economies. Two patterns are clear. First, advanced economies spend a relatively larger share of their GDP on health compared to EMEs. Second, most of this difference is due to government expenditure on health. Thus, as far as private expenditures are concerned, the average health expenditure for EMEs was 3.2% of GDP in 2015 while in advanced economies it was only slightly higher at 3.7% of GDP. In the case of government expenditure, the EME average was 3.4% of GDP in 2015 while that of the advanced economies was much higher at 8.7%. In India's case, government health expenditure at about 1.5% of GDP is lower by at least 2 percentage points from the comparable EME average.

Status of key health indicators in India

Deficiency of finances as well as the size and age structure of population constrained further by limited access to health services of reasonable quality in the rural areas has led to this situation where on various critical parameters, India is still tangibly behind international norms. For this purpose, we look at the following indicators: Infant mortality rate (IMR), life expectancy, number of physicians and number of hospital beds per 1,000 population.

Table 25.2: IMR (per 1,000 live births) – selected countries

Country	1990	2000	2010	2016
India	88.4	66.6	45.5	34.6
South Africa	44.6	46.3	37.3	34.2
Brazil	53.4	31.3	17.7	13.5
China	42.2	30.1	13.5	8.5
Russia	18.4	16.6	8.6	6.6
US	9.4	7.1	6.2	5.6
UK	7.9	5.5	4.4	3.7
World	**64.8**	**53.9**	**37.4**	**30.5**
High income	10.3	6.5	5.1	4.5
Middle income	65.2	52.8	36	29.1

Source (Basic data): World Bank

Table 25.3: Life expectancy, total (years) – selected countries

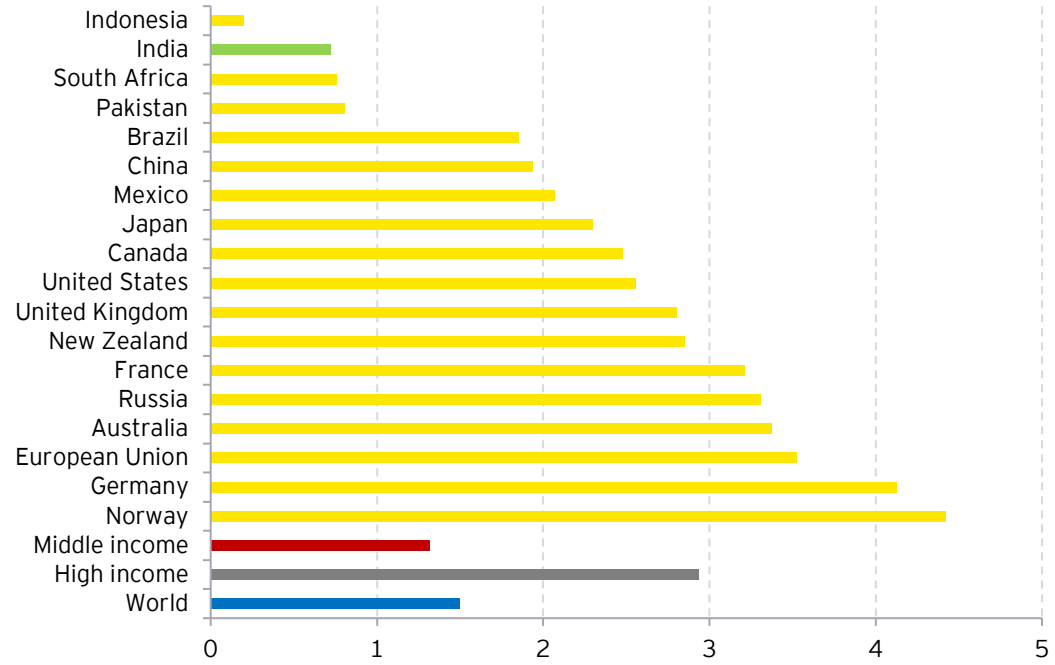
Country	1990	2000	2010	2016
India	57.9	62.6	66.6	68.3
South Africa	62.1	56.4	55.9	61.9
Brazil	65.3	70	73.8	75.2
China	69.3	72	75.3	76.1
Russia	68.9	65.5	68.8	70.9
US	75.2	76.6	78.5	78.7
UK	75.9	77.7	80.4	81.6
World	**65.4**	**67.7**	**70.7**	**71.9**
High income	75.4	77.6	79.8	80.7
Middle income	64.2	66.8	69.9	71.1

Source (Basic data): World Bank

With respect to IMR, in comparison to the world average at 30.5 in 2016, India's 34.6 is still higher (**Table 25.2**). However, time-series data indicate that India has been improving fast and may soon catch up with the world average. High-income countries show a low IMR at 4.5 only. China among the EMEs shows a performance that is only slightly lower than that of advanced economies. With respect to life expectancy, India has improved considerably over time to 68.3 in 2016 compared to 57.9 in 1990 (**Table 25.3**). In this case also, it has come close to the world average of 71.9 years. In advanced countries, life expectancy tends to be higher by nearly 9 years compared to the world average. These differences are partly due to supply-side constraints.

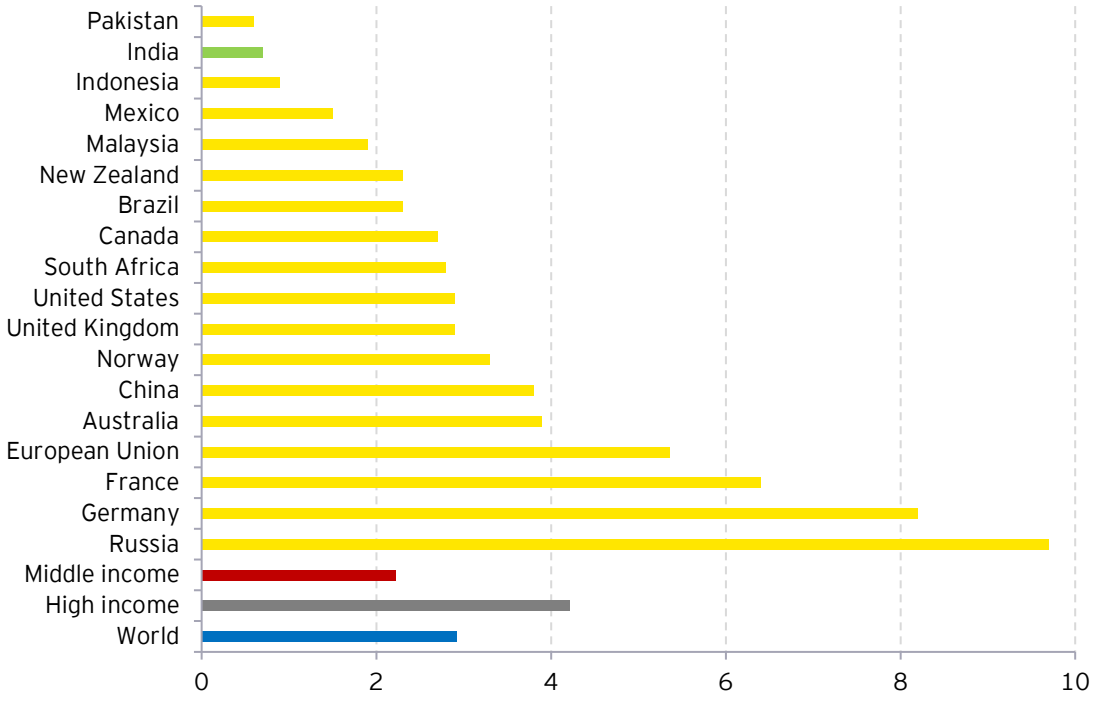
We look at some of the supply-side indicators as reflected in **Charts 25.5 and 25.6**. In terms of availability of physicians per 1,000 population, India is shown to have a relatively disadvantaged position with only 0.7 physicians per 1,000 population (2012-14) as compared to 2.9 for high-income countries and 1.5 for the world. Similarly, in case of hospital beds per 1,000 population, India has 0.7 beds (2005-16). This compares quite unfavorably in relation to the world average at 2.9 and 4.2 for high-income countries.

Chart 25.5: Number of physicians per 1,000 population – 2012-14



Source (Basic data): World Bank

Chart 25.6: Number of hospital beds per 1,000 population – 2005-16



Source (Basic data): World Bank

SDGs: India's progress

India is making steady progress toward achieving the health-related SDGs. **Table 25.4** indicates the SDG list under Goal 3 covering health-related targets vis-à-vis an overview of the current status as per the Civil Society Report, 2017 (Sustainable Development Goals: Agenda 2030).

Table 25.4: Health targets under SDG Goal 3 and current status

#	SDG target	Current status[111]
1.	Reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030	Maternal mortality ratio has declined from 254 (2004-06) to 167(2011-13) per 100,000 live births; however, there are large inequities and variations between and within states, and across social and economic groups.
2	By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	The current rate of under-five mortality in India is 48 per 1,000 live births, IMR is 39 per 1000 live births and neonatal mortality is 28 per 1,000 live births. Infant mortality accounts for over 80% of under-five mortality; and neonatal mortality accounts for over 71% of IMR.
3	By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	1. India had 1.96 lakh new cases of HIV infection in 2015. 2. Incidence of malaria in India in 2014 was 0.89 per 1,000 population at risk per year. It also states that the total malaria cases decreased by 42% since 2004. 3. Tuberculosis incidence per lakh population decreased from 216 in 1990 to 167 in 2014. India has framed its TB strategic plan in alignment with the WHOs End TB Strategy, which promotes improvement of TB reporting, engaging private sector and also reducing the MDR regimen.
4	By 2030, reduce by one-third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	Data from poor parts of the country clearly states that the predominant diseases of poor are not confined to ischemic heart diseases, cancer and diabetes but also encompass diseases such as rheumatoid disorders, sickle cell anemia and epilepsy.
5	Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	----
6	By 2020, halve the number of global deaths and injuries from road traffic accidents	1. In 2015, 146,133 deaths due to road traffic accidents were reported, an increase of 53% since 2005. This represents more than half of the total injury mortality burden in India. 2. Studies show that these figures are underreported, with the WHO estimating nearly 111% underreporting.
7	By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	1. Although abortion is legal in India, safe abortion continues to be inaccessible to a large number of women. It is believed that unsafe abortions contribute to 9%–13% of the maternal mortality in India and as much as 50% of the maternal mortality in some of the districts. 2. There is a gross dearth of safe abortion facilities, which is a major reason why women resort to informal untrained providers.
8	Achieve universal health coverage, including financial risk protection, access to quality essential healthcare	In India, the Government bears less than a fourth of health spending — among the lowest in the world — while households spend two-thirds.

[111] Sustainable Development Goals: Agenda 2030 – India (2017), Civil Society Report

#	SDG target	Current status[111]
	services and access to safe, effective quality and affordable essential medicines and vaccines for all	The Union Government is continuously cutting back the health budget – what has been allocated for 2017-18 is less than the expenditure for the year 2011-12, when adjusted for inflation. Though the government-sponsored insurance schemes continue to remain popular among policy makers and politicians, evidence suggests that their impact on financial protection has been minimal.
9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Air pollution is a major health concern in India. Mortality due air pollution (indoor and outdoor) is high: Estimated at over 2.3 million deaths in the year 2015 (out of a total of 9.57 million deaths in India), constituting a staggering 24% of total deaths in India, making it a top risk factor. Of the 15 most polluted cities worldwide, 7 are located in India. Water pollution of surface and ground water is rampant, with over 50% of rivers declared polluted, mainly due to sewage. Diarrheal diseases cause approximately 1.2 lakh deaths of under-five children each year.

Source (basic data): Civil Society Report, 2017 (Sustainable Development Goals: Agenda 2030)

Future prospects

To realize its growth potential to a fuller extent and also align its growth priorities not only to its own changing age profile but also that of the world, India might have to shift gears in prioritizing the health sector. A healthier population is expected to uplift economic activity and increase potential growth. Further, as India's population begins to age, it may require larger health-related expenses from the governments.

The global population has already begun to age at a significant pace. It may require health services from countries where a surplus of trained and skilled health service personnel is available. It is some of the service sectors like health services that may not be crowded out by the growing shadow of robotics on the world economy. India may therefore strategize to invest heavily in the supply side of the health sector not only to cater to the domestic needs but also for exporting the health services abroad particularly to the advanced countries and to the relatively rich middle-eastern countries. In this context, the Central Government's announcements to increase health expenditure from 1.15%[112] of GDP to 2.5% of GDP by 2025 and increase the spending by the states so as to account for 8% of their budgets by 2020 are timely initiatives.

[112] National Health Mission, 2017

Chapter 26

Government expenditures on education and health: Profiling inter-state disparities (July 2018)

Abstract

Education and health are known to be two critical merit goods, that is, private goods with large associated positive externalities, the provision of which has been considered a key responsibility of the governments. In these sectors, expenditures are incurred both by the private and public sectors, on the demand as well as on the supply sides. The users of these services incur a significant portion of the costs from their own pockets. At the same time, governments also provide these services at subsidized prices. These subsidies, whether explicit or implicit, are justified on grounds of externalities since the benefit to the society is more than the sum of the benefits to the individual users of these services. Governments tend to often directly participate in the supply of these services by running educational institutions as well as hospitals and other health-related institutions. Among the three tiers of the government in India's federal framework, the key intervention comes from the state governments. While education is in the concurrent list of the Seventh Schedule of the Constitution, public health and sanitation remains in the state list. The central government incurs a large portion of its expenditures on these services through various centrally sponsored schemes. In the public finance literature, from the viewpoint of both equity and efficiency, it is considered desirable that the standards of health and education services be equalized across the country. Given considerable inter-state differentials in the level of education and health services, and the need to ensure near equalization of health and education services across states, we argued in favor of an active program of equalization transfers with a view to equalizing the levels of these services across states.

Introduction

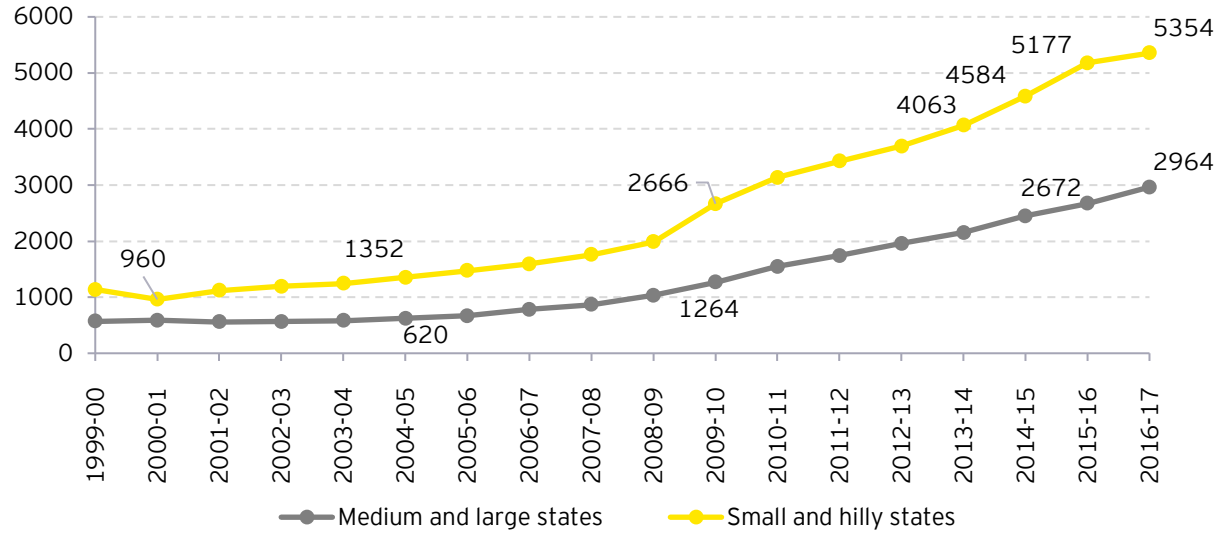
Education and health are known to be two critical merit goods, that is, private goods with large associated positive externalities, the provision of which has been considered a key responsibility of the governments. In these sectors, expenditures are incurred both by the private and public sectors, on the demand as well as on the supply sides. The users of these services incur a significant portion of the costs from their own pockets for both of these services. At the same time, governments also provide these services at subsidized prices. These subsidies whether explicit or implicit, are justified on grounds of externalities since the benefit to the society is more than the sum of the benefits to the individual users of these services. Governments tend to often directly participate in the supply of these services by running educational institutions as well as hospitals and other health-related institutions. Among the three tiers of governments in India's federal framework, the key intervention comes from the state governments. While education is in the concurrent list of the Seventh Schedule of the Constitution, public health and sanitation remains in the state list. The central government incurs a large portion of its expenditures on these services through the state governments by channeling resources under various centrally sponsored schemes.

In the public finance literature, from the viewpoint of both equity and efficiency, it is considered desirable that the standards of health and education services be equalized across the country. It serves the objective of equity since a large segment of the needy population with respect to these services namely, the young population and the old population, is relatively immobile and requires these services wherever they reside in the country. It serves the purpose of efficiency since differences in the standards of these services should not become a reason for migration. The relatively mobile population is the population in the working age group of 15 to 64 years of age which may move in search of productive opportunities rather than incur costs for accessing better health and education services

Per-capita expenditure of states on education: Growth and inter-state disparity

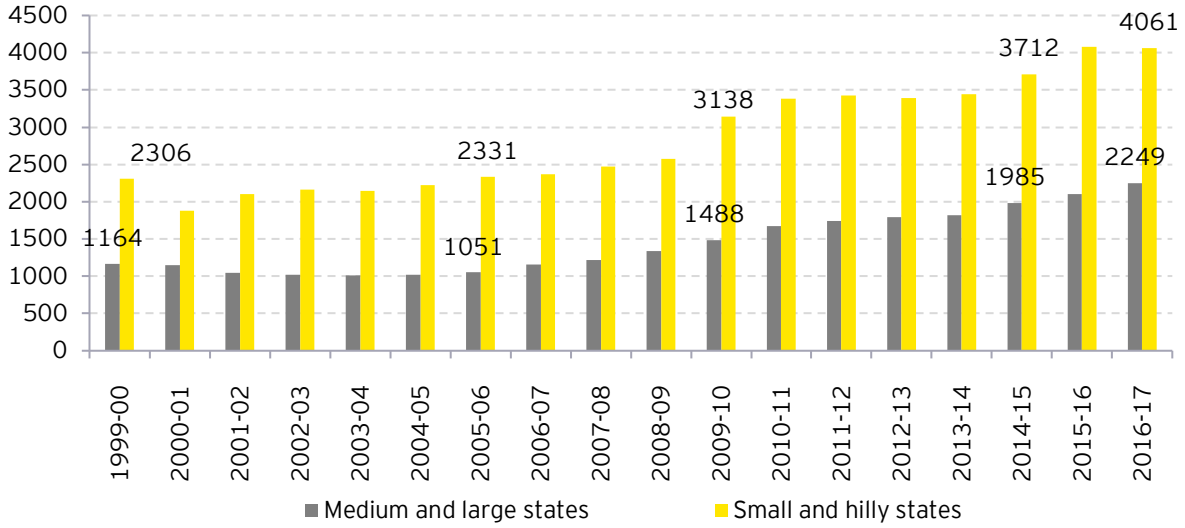
Per-capita expenditure on education, both at constant and current prices, has increased on an average for the two groups of states namely, medium and large states and hilly and small states (**Charts 26.1 and 26.2**). The former covers all the states in the group of states known as the 'general category states', leaving Goa and including Assam. The second group consists of hilly and small states, which is similar to the states until recently called 'special category states' but this group includes Goa and excludes Assam.

Chart 26.1: Per-capita education expenditure (nominal)



Source (Basic data): RBI, MOSPI

Chart 26.2: Per-capita education expenditure (real)



Source (Basic data): RBI, MOSPI

Since government expenditure numbers are available at current prices, these are deflated by the implicit price deflator of government final consumption expenditure (GFCE) using the 2011-12 base series. The relevant deflator values for earlier years were obtained by splicing the 2004-05 series. In real terms, population weighted per-capita education expenditure of the medium and large states increased from INR1,164 in 1999-2000 to INR2,249 in 2016-17. In the case of small and hilly states, the increase is from INR2,306 to INR4,061 during the same period. Thus, for medium and large states, per-capita education expenditure almost doubled during this period, while in the case of small and hilly states, average per-capita expenditure on education increased by almost 76% in the same period.

The level of per-capita expenditures incurred by the state governments on education for the periods covered by the 11th to 14th Finance Commissions (FCs) that is, from 2000-2001 to 2016-17 have been examined in **Table 26.1**. For the purpose of this analysis, the commission's period averages have been taken. In Table 4, the per-capita education expenditures of individual states as well as simple and population weighted averages are given. The population weighted average is lower than the simple average as states with larger populations spend relatively less compared to the states with smaller populations. Furthermore, within the two categories of states, both simple and population weighted averages are higher for small and hilly states as compared to those for medium and large states. The relevant average is the population weighted average. The average per-capita expenditure of the states in the respective categories have been compared to the respective population weighted category averages for the 13th and 14th FC period.

Table 26.1: State-wise per-capita expenditure on education over 11th to 14th FC period

#	State	Per-capita expenditure on education (INR)				Per-capita expenditure relative to group average/group average relative to all-states average	
Medium and large states		FC11	FC12	FC13	FC14	FC13	FC14
1	Andhra Pradesh	535	817	2,110	3,309	107.2	117.4
2	Assam	781	1,069	2,405	3,505	122.1	124.4
3	Bihar	396	627	1,184	1,674	60.1	59.4
4	Chhattisgarh	348	834	2,325	4,218	118.1	149.7
5	Gujarat	700	994	2,164	2,827	109.9	100.3
6	Haryana	683	1,329	2,759	3,850	140.1	136.6

#	State	Per-capita expenditure on education (INR)				Per-capita expenditure relative to group average/group average relative to all-states average	
7	Jharkhand	544	884	1,321	2,177	67.1	77.3
8	Karnataka	691	1,198	2,317	3,006	117.7	106.6
9	Kerala	893	1,416	3,044	4,553	154.6	161.5
10	Madhya Pradesh	388	549	1,579	2,559	80.2	90.8
11	Maharashtra	953	1,398	2,938	3,696	149.2	131.1
12	Orissa	492	897	1,807	2,587	91.8	91.8
13	Punjab	794	1,014	2,090	2,929	106.1	103.9
14	Rajasthan	601	989	1,974	3,090	100.2	109.7
15	Tamil Nadu	683	1,133	2,527	3,486	128.3	123.7
16	Telangana	NA	NA	1,851	3,003	94.0	106.6
17	Uttar Pradesh	370	636	1,379	2,166	70.0	76.9
18	West Bengal	562	893	1,875	2,311	95.2	82.0
	Weighted average	**582**	**922**	**1,969**	**2,818**	**96.6**	**96.8**
	Simple average	**613**	**981**	**2,092**	**3,053**	-	-
	Small and hilly states						
1	Arunachal Pradesh	1,359	2,744	4,988	8,764	132.0	166.4
2	Goa	1,912	3,008	7,012	9,974	185.5	189.4
3	Himachal Pradesh	1,501	2,362	4,849	6,316	128.3	120.0
4	Jammu and Kashmir	866	1,317	2,678	4,113	70.9	78.1
5	Manipur	1,228	1,567	2,695	3,481	71.3	66.1
6	Meghalaya	1,087	1,498	3,341	4,368	88.4	83.0
7	Mizoram	2,259	3,405	7,328	9,525	193.9	180.9
8	Nagaland	1,086	2,002	4,268	6,820	112.9	129.5
9	Sikkim	2,425	4,550	9,479	11,981	250.8	227.6
10	Tripura	1,392	1,649	2,868	4,480	75.9	85.1
11	Uttarakhand	916	1,900	3,721	4,768	98.4	90.6
	Weighted average*	**1,174**	**1,896**	**3,780**	**5,265**	**185.4**	**180.8**
	Simple average	**1,457**	**2,364**	**4,839**	**6,781**	-	-
	All states weighted average*	**605**	**959**	**2,038**	**2,913**	**100.0**	**100.0**
	All states - Simple average	**944**	**1,524**	**3,134**	**4,467**	-	-

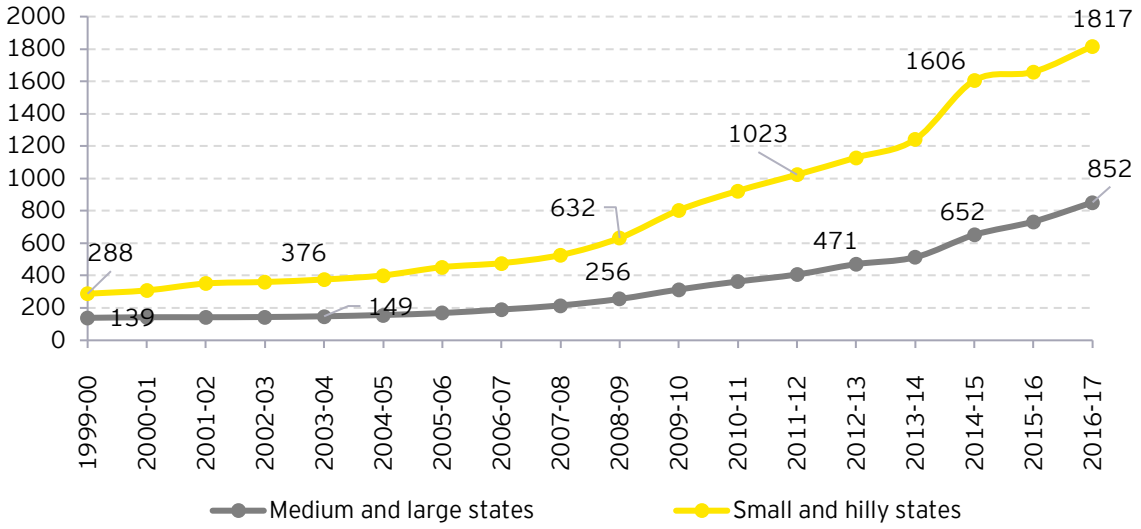
Source (Basic data), RBI and MOSPI, CAG; *Weighted by respective population

Extensive disparities are seen within each group. In the group of medium and large states, in per-capita terms, Bihar has been able to spend only about 60% of the population weighted average of the group. Other states which have been able to spend less than the group average are Jharkhand, Uttar Pradesh, Madhya Pradesh, West Bengal, Telangana and Odisha. These are low average per-capita Gross State Domestic Product (GSDP) states with large populations. In the group of small and hilly states, Jammu and Kashmir, and Manipur happen to be the lowest education expenditure states relative to the group average. Other states that are below the group average are Tripura, Meghalaya and Uttarakhand. Comparing the group averages with the all-state population weighted average, the all-state average is heavily dominated by the average of medium and large states. This is because these account for nearly 97% of the all-state per-capita education expenditure even though the simple group averages for the 14th FC period at INR3,053 for medium and large states is less than half of that for small and hilly states at INR6,781.

Per-capita expenditure of states on health: Growth and inter-state disparity

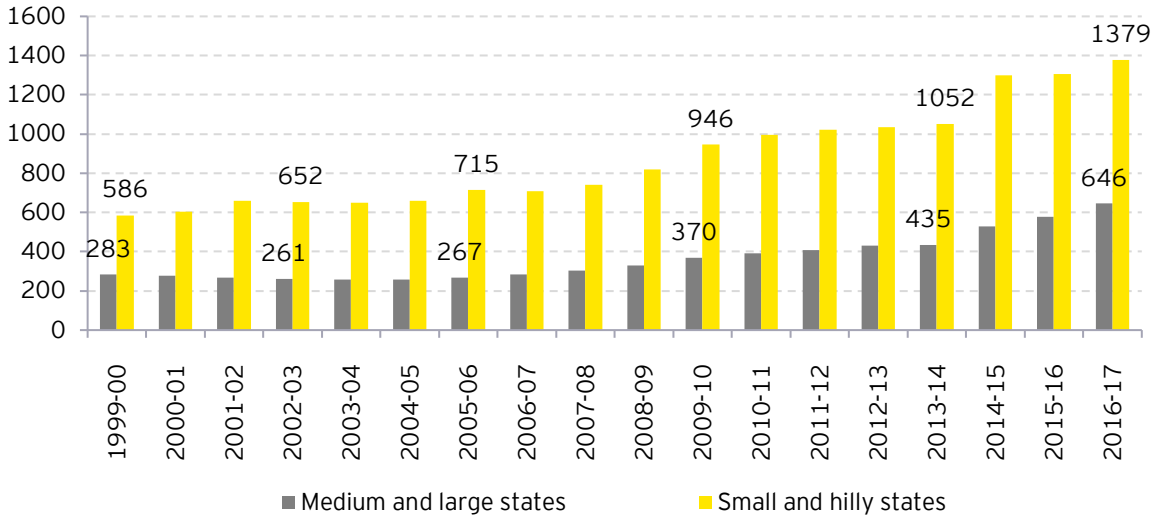
Charts 26.3 and 26.4 shows comparative trends in per-capita expenditure on health by medium and large states vis-à-vis small and hilly states in nominal and real terms. In real terms, population-weighted per-capita health expenditure of the medium and large states has increased from INR283 in 1999-2000 to INR646 in 2016-17. In case of small and hilly states, the increase is from INR586 to INR1,379 during the same period. For both the groups, per-capita health expenditure more than doubled during this period.

Chart 26.3: Per-capita health expenditure (nominal)



Source (Basic data): RBI, MOSPI

Chart 26.4: Per-capita health expenditure (real)



Source (Basic data): RBI, MOSPI

Table 26.2 shows per-capita expenditures on health by individual states as well as simple and population weighted averages of the two groups of medium and large states and hilly and small states. In general, per-capita health expenditures are significantly lower than the per-capita expenditures on education across all states. As in the case of education, here also, within the two categories of states, both simple and population weighted averages are higher for small and hilly states as compared to those for medium and large states. Examining the per-capita health expenditure of the states in a similar way as in the case of education, it is seen that in the group of

medium and large states, Bihar has been able to spend on an average, only about 45% of the population weighted average of the group in the 14th FC. Other states which have been able to spend less than the group average are Jharkhand, Uttar Pradesh, Madhya Pradesh, West Bengal and Odisha. In the group of small and hilly states, Tripura, Uttarakhand, Manipur, Jammu and Kashmir, and Meghalaya in this order have been the states with the lowest health-expenditure states relative to the group average. Again, comparing the group weighted averages with the all-state population weighted average, the all-state average is dominated by the average of medium and large states.

Table 26.2: State-wise per-capita expenditure on health over 11th to 14th Finance Commission period

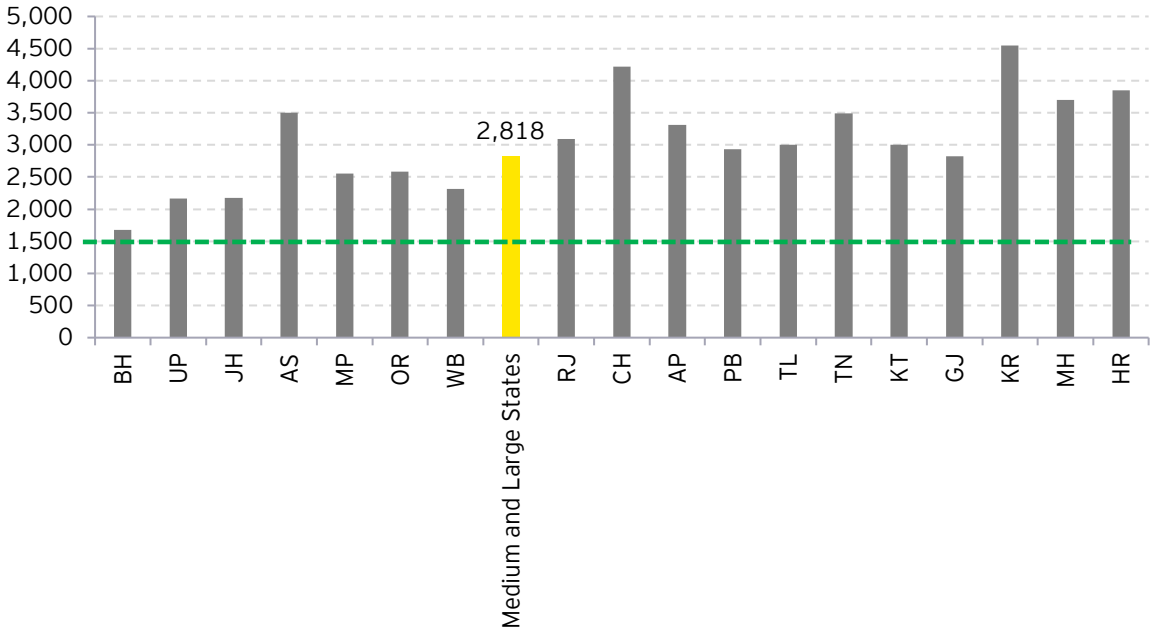
#	State	Per-capita expenditure on health (INR)				Per-capita expenditure relative to group average/group average relative to all-states average	
Medium and Large States		FC 11	FC 12	FC 13	FC 14	FC13	FC14
1	Andhra Pradesh	178	293	667	1,092	138.6	137.7
2	Assam	130	266	499	903	103.8	113.9
3	Bihar	88	120	198	359	41.2	45.3
4	Chhattisgarh	102	188	482	1,102	100.2	138.9
5	Gujarat	164	242	531	887	110.4	111.9
6	Haryana	153	264	594	971	123.5	122.5
7	Jharkhand	131	272	287	576	59.6	72.6
8	Karnataka	179	262	580	863	120.6	108.9
9	Kerala	241	393	914	1,501	189.9	189.3
10	Madhya Pradesh	124	150	413	713	85.8	90.0
11	Maharashtra	175	258	535	816	111.1	102.9
12	Orissa	128	190	413	816	85.8	102.9
13	Punjab	245	287	614	923	127.6	116.4
14	Rajasthan	165	253	564	1,012	117.3	127.6
15	Tamil Nadu	191	302	706	1,063	146.7	134.0
16	Telangana	NA	NA	674	1,104	140.1	139.2
17	Uttar Pradesh	94	179	358	567	74.4	71.5
18	West Bengal	165	229	445	679	92.5	85.6
	Weighted average*	**147**	**229**	**481**	**793**	**94.7**	**95.6**
	Simple average	**156**	**244**	**526**	**886**	-	-
Small and hilly states							
1	Arunachal Pradesh	563	1,002	2,173	3,851	183.4	221.6
2	Goa	668	1,134	2,712	4,240	229.0	244.0
3	Himachal Pradesh	449	690	1,364	1,949	115.2	112.2
4	Jammu and Kashmir	405	582	1,097	1,411	92.6	81.2
5	Manipur	272	355	966	1,361	81.6	78.3
6	Meghalaya	337	469	1,124	1,688	94.9	97.1
7	Mizoram	724	1,271	2,020	3,070	170.5	176.6
8	Nagaland	395	683	1,382	2,495	116.7	143.5
9	Sikkim	725	1,291	2,404	3,135	203.0	180.4
10	Tripura	264	387	799	1,324	67.5	76.2
11	Uttarakhand	160	367	826	1,257	69.7	72.3

#	State	Per-capita expenditure on health (INR)				Per-capita expenditure relative to group average/group average relative to all-states average	
	Weighted average*	359	578	1,185	1,738	233.1	209.6
	Simple average	451	748	1,533	2,344	-	-
	All-states - Weighted average*	155	242	508	829	100.0	100.0
	All-states - Simple average	272	442	908	1,439		

Source (Basic data): RBI, MOSPI and CAG; *Weighted by respective population

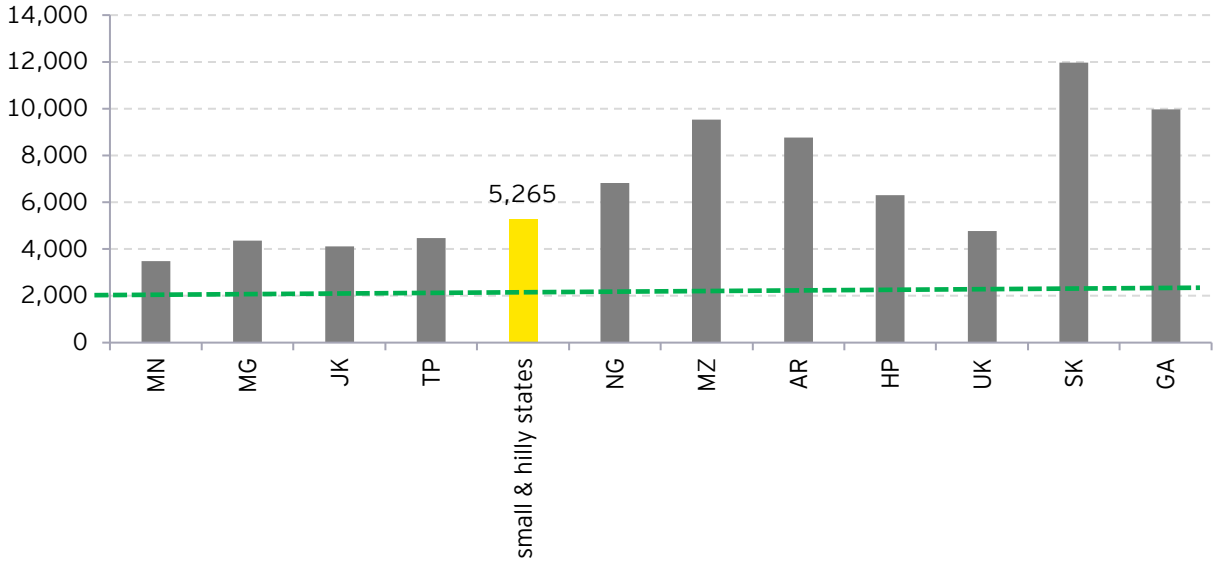
Differences in per-capita expenditures by the states on education/health may arise due to a number of reasons. The per-capita expenditures may be lower than the corresponding averages due to (a) Lower per-capita GSDP or lower per-capita fiscal capacity, (b) Lower preference for the respective service, (c) Higher user disability and (d) Higher cost disability. All factors may be considered in per-capita terms. User disability may arise because of the demographic structure such as the large share of tribal or backward population. Cost disability may arise due to higher unit cost of providing these services resulting from the nature of terrain such as hilly areas and remote districts. In order to ensure equalization in the level of per-capita expenditures of these critical services, policymakers may focus on states with below-average expenditure and attempt to neutralize their fiscal capacity deficiency or their user or cost disability.

Chart 26.5: Per-capita education expenditure (medium and large states) during FY16-17



Source (Basic data): RBI, MOSPI and CAG; Note: Scales are different for the two charts

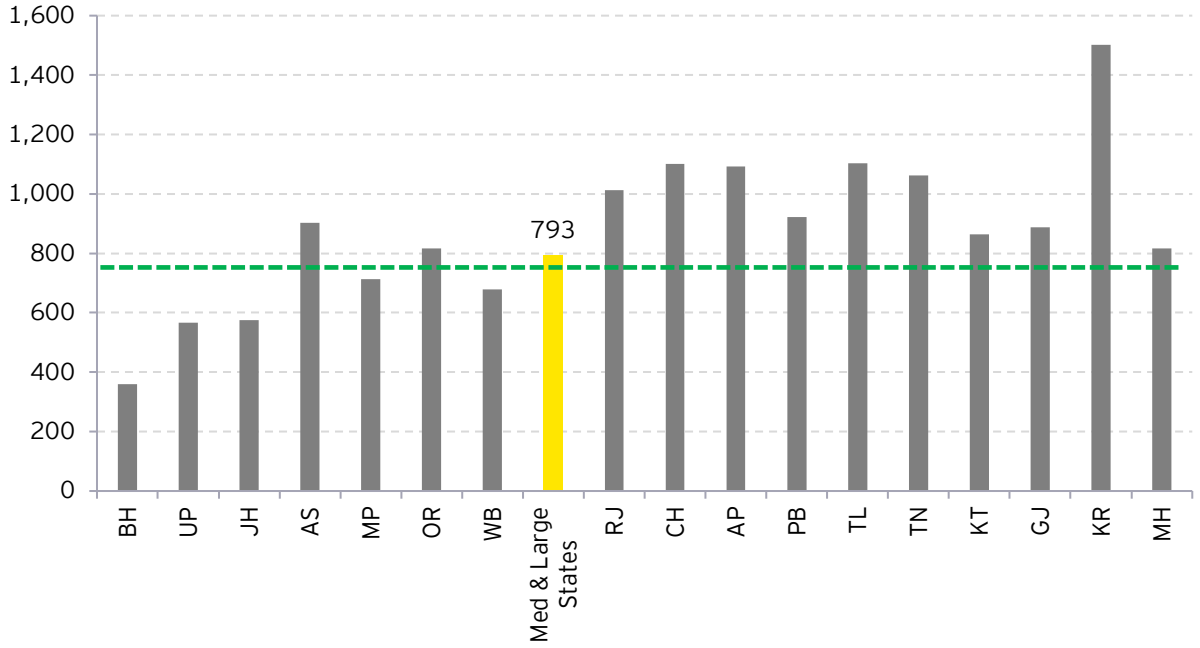
Chart 26.6: Per-capita education expenditure (hilly and small states) during FY16-17



Source (Basic data): RBI, MOSPI and CAG; Note: Scales are different for the two charts

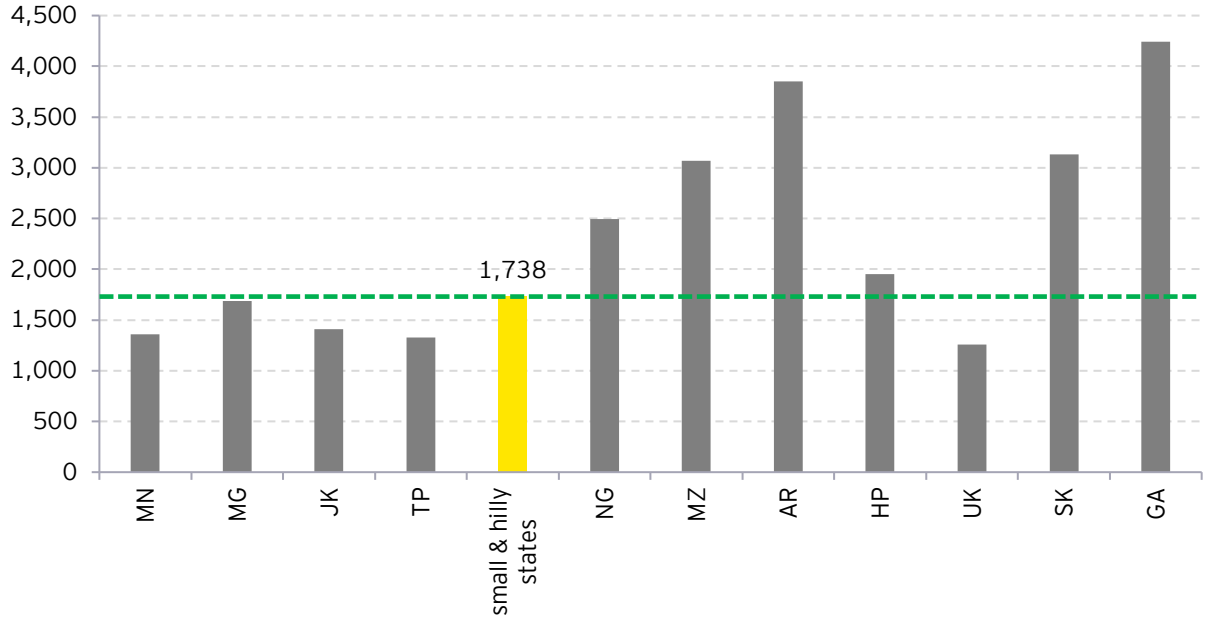
In **Charts 26.5, 26.6, 26.7 and 26.8**, states in their respective groups are arranged in increasing order of their per-capita GSDP during the 14th FC period. It can be broadly inferred that states with relatively lower per-capita GSDP have lower per-capita health and education expenditures.

Chart 26.7: Per-capita health expenditure (medium and large states) during FY16-



Source (Basic data): RBI, MOSPI and CAG; Note: Scales are different for the two charts

Chart 26.8: Per-capita health expenditure (hilly and small states) during FY16-17



Source (Basic data): RBI, MOSPI and CAG; Note: Scales are different for the two charts

A key task before the 15th FC is to design a scheme of fiscal transfers so as to uplift the state expenditures on education and health in states like Bihar, Uttar Pradesh, Jharkhand, Madhya Pradesh, West Bengal and Odisha in the case of medium and large states. The corresponding states for the group of small and hilly states are Manipur, Meghalaya, Jammu and Kashmir and Tripura.

Chapter 27

India's digital leap: Providing a growth edge to Indian economy (April 2023)

Abstract

The term digital economy, coined in the 1990s, has expanded in consonance with the rapidly changing nature of technology to include digital technologies, products and services across a wide spectrum of sectors. Digitalization in India has been progressing in discrete steps, first covering large urban areas, followed by smaller urban areas and then rural areas. Models like Direct to Consumer (DTC) and social commerce have improved the accessibility of the digital players to the Indian market by reducing barriers to entry. Digitalization is affecting both formal and informal sectors in India. India's digital leap distinguishes the Indian economy as compared to those of its peer countries. India's digital payment platforms have become quite popular amongst its general population. The digital economy, however, has broader connotations due to its backward and forward linkages with other sectors in the economy. Digitally enabling products reflect backward linkages of the core digital economy while digitally enabled products capture forward linkages.

As per the RBI, industries with the highest forward linkages in India from the aggregate core digital economy in 2019 were construction (6.1%), renting of machinery and equipment (4.2%), food beverages and tobacco (3.8%), textiles and textile products (3.6%), and electrical and optical equipment (3.5%). It estimated the size of India's core digital economy at US$222.5 billion in 2019, exhibiting a growth rate of 15.6% over the period 2014 to 2019. Its share in overall GVA was estimated to have increased from 5.4% in 2014 to 8.5% in 2019. Further, the share of digitally dependent economy (digitally enabled sectors) was estimated at 22.4% in 2019. Another study by MeiTY (2019) projected the size of India's digital economy to rise to US$500 billion by 2025 in their 'business as usual' scenario. However, it also pointed out that potentially, the size of India's digital economy can be increased up to US$1 trillion by following a set of policy initiatives.

This chapter traces the progress of digitalization in India and highlights that the growing digitalization of India's economy may itself serve as a major factor for sustaining a robust growth over a long period of time. Thus, digitalization is a critical and distinguishing feature of India's unfolding growth story in the 21st century.

Introduction

According to data provided by the European Commission, the pace of digitalization in India was the fastest among most major economies in the world during 2011 to 2019. Its growth in India ran neck to neck with China at 11%. Digitalization is getting a further fillip in India now and is expected to become a major factor in sustaining India's long-term growth story.

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Digitalization: definition and scope

Digitalization is by nature multidimensional. It requires a broad definition to cover activities that use digitized data as a part of the digital economy (IMF, 2018). Joint collaborative research by Huawei and Oxford Economics pegged the size of the global digital economy to be around US$11 trillion i.e., 15.5% of global gross domestic product (GDP) in 2016[114], which is expected to reach US$23 trillion (24.3% of global GDP) by 2025.

The ADB (2021) framework identifies **core digital products** classified under the following five product groups namely: (a) hardware, (b) software publishing, (c) web publishing, (d) telecommunications services, and (e) specialized and support services. It defines digital economy as the contribution of economic transactions that involve both digital products and digital industries to GDP (or Gross Value Added (GVA)). Digital products are the goods and services that primarily generate, process, and/or store digitized data. ADB's framework makes a distinction between the core digital economy with digitally enabling and digitally enabled products. Digitally enabling products reflect backward linkages of the core digital economy while digitally enabled products capture forward linkages. These concepts are summarized in **Table 27.1**. Digital products and industries are identified from international industry and product classification systems – the International Standard Industrial Classification System (ISIC Rev. 4) and the Central Product Classification System (CPC 2.1), which are used to construct official economic statistics.

Table 27.1: Tiers of digital economy

1	Core measure	Economic activity from ICT goods and digital services producers
2	Narrow measure	Core measure + economic activity from firms reliant on digital inputs
3	Broad measure	Narrow measure + economic activity from firms significantly enhanced by the utilization of digital inputs
4	Digital society	Broad measure + digitalized interactions and activities, e.g., use of digital platforms
5	Digitally ordered and/ or delivered	Ordering and delivering methods of digital economy

Source: Report for the G20 Digital Task Force (OECD)

Examples of digitally enabling products include semiconductors used for electrical conductivity that are integral components of computer manufacturing but, by themselves, do not have a direct

[113] https://timesofindia.indiatimes.com/blogs/voices/direct-to-a-billion-consumers-unlocking-indias-100-billion-opportunity/
[114] Huawei and Oxford Economics (2017), Digital Spillover, Measuring the true impact of the digital economy, Huawei Technologies Co., Ltd. (https://www.huawei.com/minisite/gci/en/digital-spillover/files/gci_digital_spillover.pdf)

function in relation to digitized data[115]. Examples of digitally enabled products include car manufacturing, which uses digital components into the vehicles, such as in-car entertainment, vehicle systems management, self-driving capabilities. Digitally enabled sectors also include media content and retail sales.

As per the RBI[116], industries with the highest forward linkages in India from the aggregate core digital economy in 2019 were construction, renting of machinery and equipment, food beverages and tobacco, textiles and textile products, and electrical and optical equipment (**Table 27.2**).

Table 27.2: Digitally enabled sectors

Sector	2014	2019
Construction	5.4	6.1
Renting of Machinery and Equipment and other business activities	2.2	4.2
Food, beverages, and tobacco	3.2	3.8
Textiles and textile products	3.3	3.6
Electrical and optical equipment	3.6	3.5
Transport equipment	3.5	2.9
Financial intermediation	1.3	2.6
Retail trade, except of motor vehicles and motorcycles; repair of household goods	1.3	2.2
Other community, social, and personal services	1.2	2.2
Education	0.5	2.0
Machinery, not elsewhere classified (n. e. c.)	2.0	1.9
Manufacturing, n. e. c.; recycling	2.9	1.8
Real estate activities	1.0	1.7
Chemicals and chemical products	1.3	1.7
Air transport	0.2	1.5
Wholesale trade and commission trade, except of motor vehicles and motorcycles	0.8	1.4
Other supporting and auxiliary transport activities; activities of travel agencies	0.4	1.3
Basic metals and fabricated metal	1.7	1.2
Health and social work	0.8	1.2
Inland transport	4.7	1.0
Agriculture, hunting, forestry, and fishing	0.7	0.9
Coke, refined petroleum, and nuclear fuel	0.5	0.9
Rubber and plastics	0.5	0.5
Pulp, paper, paper products, printing, and publishing	0.5	0.4
Hotels and restaurants	0.8	0.4
Electricity, gas and water supply	0.3	0.4
Mining and quarrying	0.1	0.3
Leather, leather products and footwear	0.3	0.3
Other non-metallic minerals	0.2	0.2
Sale, maintenance, and repair of motor vehicles and motorcycles; retail sale of fuel	0.1	0.2
Wood and products of wood	0.2	0.2
Water transport	0.1	0.2
Postal and Courier	0.0	0.1

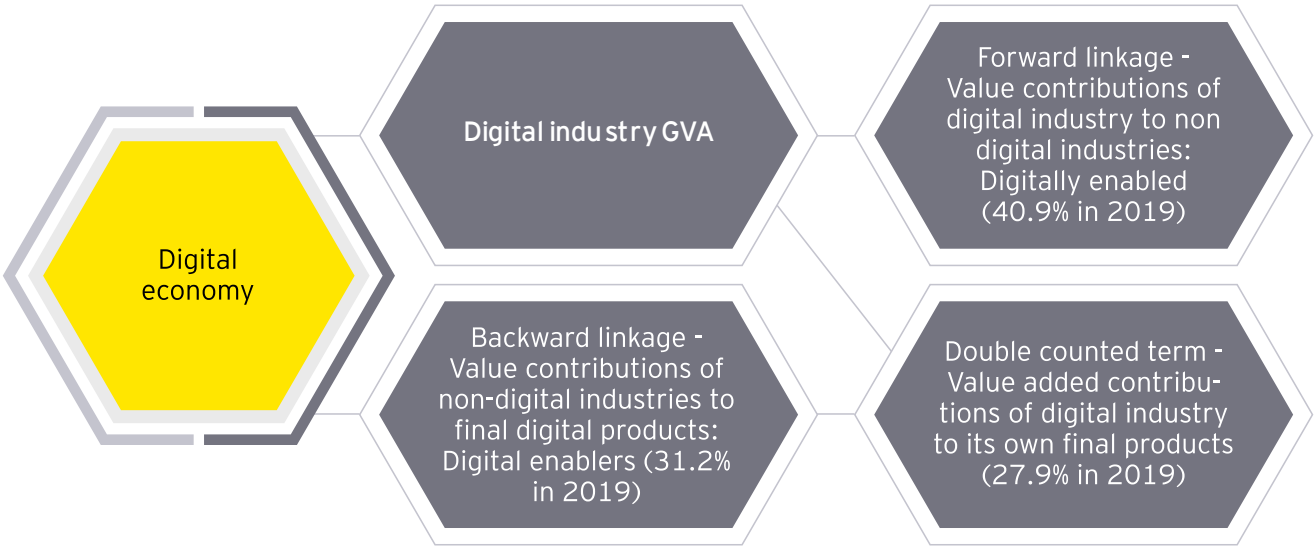
Source: RBI (December 2022)

[115] ADB (2021), Capturing the Digital Economy: A Proposed Measurement Framework and its Applications.
[116] Measuring India's Digital Economy, RBI Bulletin, December 2022

Note: For more details see ADB (2021), Capturing the Digital Economy - A Proposed Measurement Framework and its Applications, A special supplement to Key Indicators for Asia and the Pacific 2021, Asian Development Bank

Chart 27.1 highlights linkages between the core digital economy with the digitally enabling sectors (backward linkages) and the digitally enabled sectors (forward linkages). It shows that a major proportion of the digital GVA for India is attributed to forward linkages, implying that the digital economy acts as a supplier of value-added to the non-digital sectors. The digital sector contributes around 28% of its own value added (the double-counted term).

Chart 27.1: Digital economy measurement framework

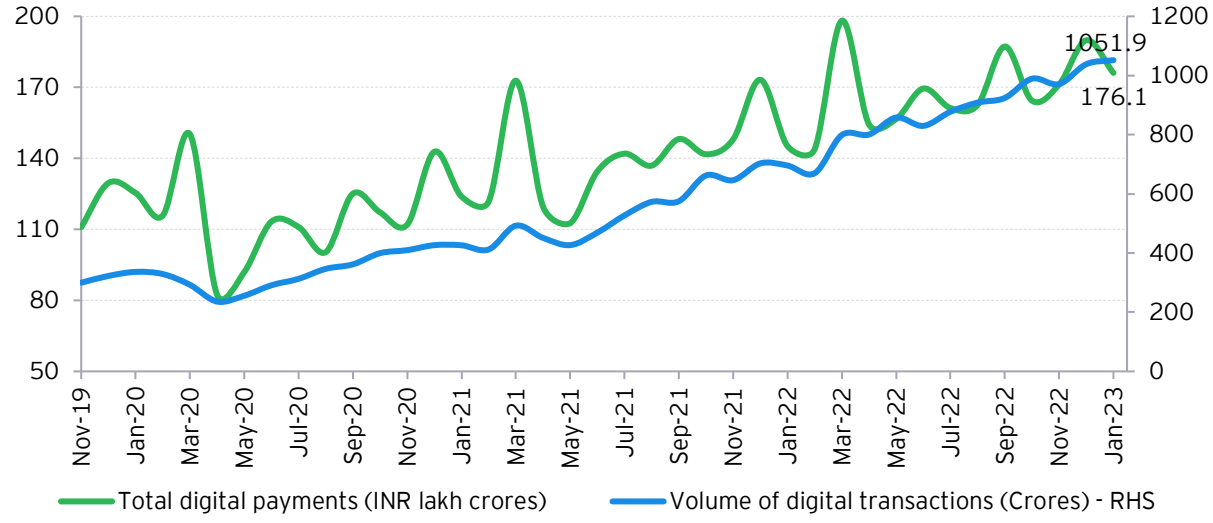


Source (basic data): Capturing the Digital Economy: A Proposed Measurement Framework and its Applications, ADB (2021)

Progress of digitalization in India: An overview

Both the value and volume of digital payments in India have grown at a fast pace in recent months including the COVID affected months covering the period November 2019 to January 2023 as shown in **Chart 27.2**. The number of digital transactions increased more than three times from 300 crore in November 2019 to 1,052 crore by January 2023.

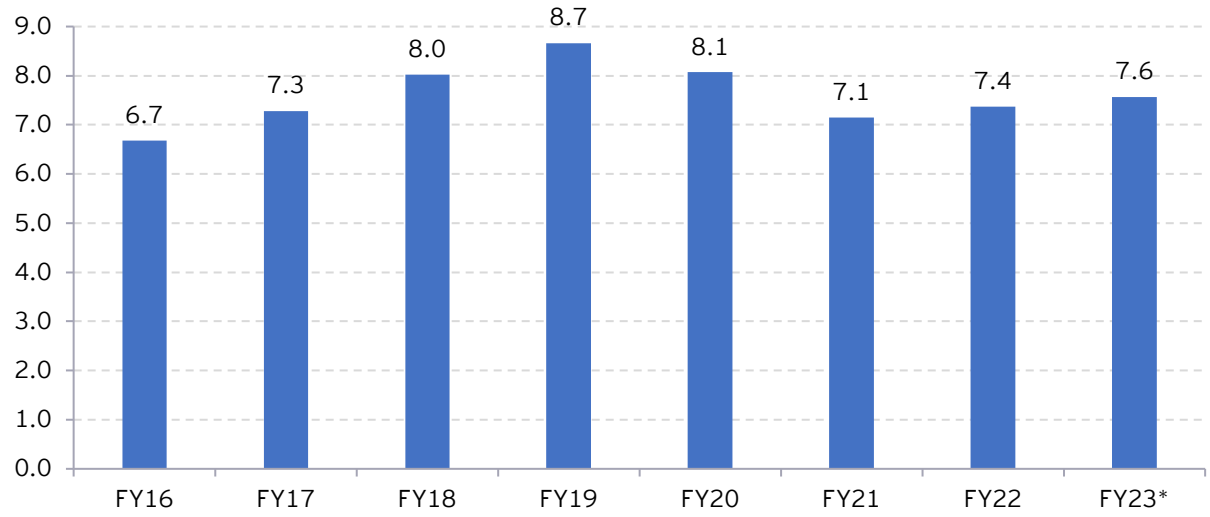
Chart 27.2: Volume and value of digital payments



Source: RBI
Note: Monthly average exchange rates from the RBI-FBIL have been used for conversion into US$ terms

Chart 27.3 shows the value of total digital payments relative to nominal GDP. It was 8.7 times the nominal GDP in FY19. Although it fell during the COVID-19 year, this multiple is rising again. This chart shows that the value of total digital payments is a multiple of nominal GDP indicative of the velocity of digital transactions.

Chart 27.3: Value of total digital payments relative to nominal GDP



Source: RBI
*Note: Pertains to the period April-December FY23

Measuring the size of India's digital economy

As per the RBI,[117] the share of India's core digital economy[118] increased from 5.4% of GVA in 2014 to 8.5% in 2019 (**Table 27.3**). In US dollar terms, India's digital economy exhibited a growth rate of 15.6% over the period 2014 to 2019, which was 2.4 times the growth of the Indian economy. Further, the share of digitally dependent economy (digitally enabled sectors) is estimated at 22.4% in 2019.

Table 27.3: Size of the Digital Economy at current prices

Year	Size (US$ billion)	Share (%)
2014	107.7	5.40
2019	222.5	8.49

Source: RBI (December 2022)

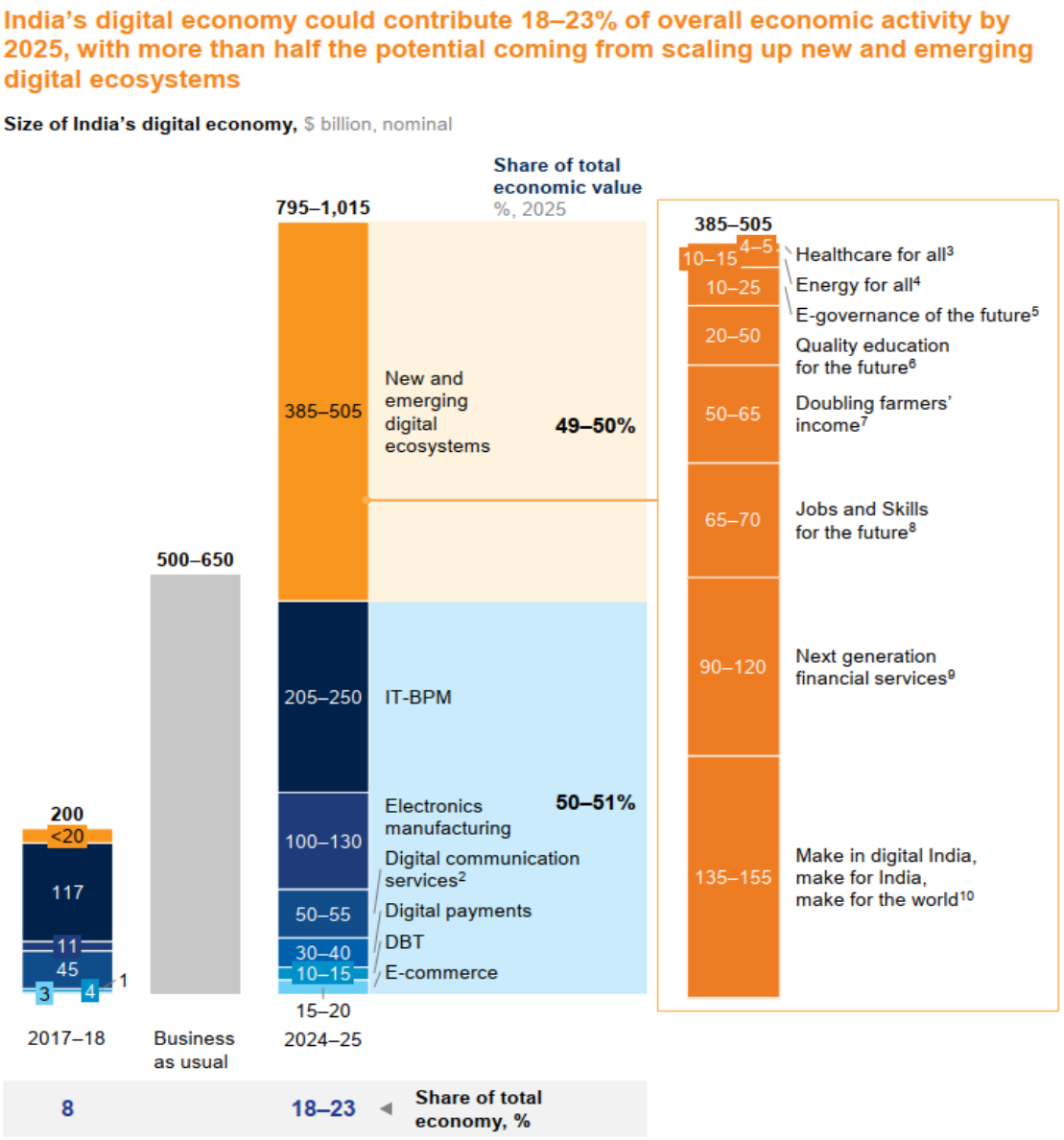
RBI has also decomposed the overall output multiplier into digital and non-digital output multipliers. The output multiplier is defined as capturing the direct and indirect impact of a unit change in final demand covering digital and non-digital sectors on the economy's total output. The RBI then estimated separately the digital and non-digital output multipliers for 2014 and 2019. It is shown that while the non-digital output multiplier fell from 1.68 to 1.57 during this period, the digital multiplier increased from 1.34 to 1.50.

[117] December 2022 monthly bulletin of the RBI
[118] Constitutes economic activity from ICT goods and digital services producers

Estimation of India's potential digital economy by 2025: MeiTY report (2019)

A recent study by MeiTY (2019) has estimated the size of India's digital economy at US$200 billion in 2019, which is expected to rise to US$500 billion by 2025 in their 'business as usual' scenario (Chart 27.4).

Chart 27.4: Composition of the potential uplift in economic value added of size of India's digital economy



Source: Meity (2019)
Note: See Exhibit 16 Page 110 for more details

However, they also point out that potentially, the size of India's digital economy can be increased up to US$1 trillion by following a set of policy initiatives covering 30 digital themes under nine national goals. These goals are listed below:

1. 21st-century IT infrastructure and software capabilities
2. E-governance of the future
3. Healthcare for all

4. Quality education for all
5. Energy for all
6. Next-generation financial services
7. Doubling farmers' income
8. Make in digital India, make for India, make for the world
9. Jobs and the skills of the future

The main findings of the report are highlighted in **Chart 27.4**.

Employment in the digital sector

The RBI report points out that employment in the digital sectors of the Indian economy is still quite limited. Based on India's current population (2022) and the worker population ratio in 2019-20 as per PLFS (at 38.2%), the total employed workers in the core digital economy was estimated at 4.9 million. **Table 27.4** gives the relative share of employment in the digital sectors. The highest share at 59.8% pertains to computer programming consultancy and related activities followed by telecommunication services at 15.2%.

Table 27.4: Sector-wise employment distribution in digital sector (%)

Sector	Share
Computer programming consultancy and related activities	59.8
Telecommunications	15.2
Manufacturing, nec; recycling	9.8
Data processing, hosting and related activities	7.6
Software publishing	2.2
Motion pictures, videos, TV	2.2
Computer manufacturing	1.1
Web portals	1.1
Tapes, CDs	1.1
Total	100

Source: RBI (December 2022)

Accelerating growth of digital economy in India: Role of policy interventions

In July 2015, the GoI launched the 'Digital India' initiative to improve online infrastructure and increase internet accessibility for citizens, empowering them to become more digitally advanced. This initiative encompasses three key dimensions namely, a) establishing a secure and stable digital infrastructure, b) delivering digital services and c) ensuring that every citizen has access to the Internet. GoI's persistent effort to digitalize the Indian economy and make India's population at large participate in it, is already showing results.

Some notable GoI initiatives for creating public digital infrastructure include the UPI and Open Network of Digital Commerce (ONDC). The latter is based on open-sourced methodology, using open specifications and network protocols independent of any specific platform. In the financial sector, digitalization is taking advantage of a large set of Application Programming Interfaces (APIs) which allows the government and private companies to deploy cashless and paperless technology products. In the health sector, a notable initiative pertains to Ayushman Bharat Digital Mission (ABDM) which involves extensive digitization of various health records and related data. Public health stack includes linking historical records of patients, offering a network of doctors and

medical service providers, and a linked registry of drugs[119]. The main initiatives affecting the growth of digitalization in India include Aadhaar, Common Services Centres, DigiLocker, Unified Mobile Application for New-age Governance (UMANG), e-Sign, MyGov, MeriPehchaan, Digital Village, National Rollout of eDistrict MMP, Open Government Data Platform, eHospital/ Online Registration System (ORS), CoWIN etc[120].

Increased allocation in education

Digital sectors of the economy are technical skill intensive. They require a minimum foundation of education supplemented by further training and skilling. The central and state governments need to prioritize the education sector as a whole and within that, education oriented toward participation in the digitalization process even more with a view to increasing employment in this sector.

Education has a two-way relationship with digitalization. The more educated the population of a country, the easier it is to popularize digitalization in that country. At the same time, the more digitalized an economy, the easier it is to educate its population by using digital delivery models to improve the quality and reach of classroom education. In the new wave of digital delivery of education in India, teachers are routinely using online lessons, videos, and digital examples and applications to impart quality education to their students. Internet is proving to be a great facilitator for augmenting the quality and quantity of content for the students. Internet also enables cross-country comparisons and compilation of relevant case studies for enriching classroom education.

Role of digital economy in India's economic future: Digitalization as a growth enabler

India's explosive growth of the digital economy is itself going to serve as a significant enabler of India's overall economic growth. As compared to developed countries, India's pace of digitalization has been very high in recent years, particularly over the period from 2011 to 2019 (**Table 27.5**). The pace of digitalization as measured by CAGR in the ICT sector during this period has been as high as 10.6% with only China exceeding India's growth marginally. With the advent of 5G and the setting up of semiconductor industries in the country, India is expected to accelerate further its pace of digitalization in the next few decades.

Table 27.5: Pace of digitalization: A cross-country perspective (% CAGR in the ICT sector)

	CAGR (2001 to 2011)	CAGR (2011 to 2019)	CAGR (2001 to 2019)
China	17.8	11.0	14.7
India	11.0	10.6	10.8
South Korea	6.4	2.5	4.7
Taiwan	5.3	3.3	4.4
Brazil	9.8	-2.1	4.3
Germany	2.3	4.1	3.1
EU	2.4	3.2	2.8
France	1.7	3.0	2.2
United States	-3.0	6.8	1.2
United Kingdom	-0.9	3.9	1.2
Japan	-0.5	-0.3	-0.4

Source (basic data): European Commission, PREDICT database

India is projected to become one of the largest economies by the middle of this century in market exchange rate terms. This has been highlighted in EY's recent publication titled "*India@100:*

[119] Prime Minister Narendra Modi (BRICS Business Forum 2022 held in June 2022)
[120] https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1885962

realizing the potential of US$26 trillion economy". In this growth journey, digitalization is expected to play a key role.

According to a recent study published by ACI Worldwide[121] in collaboration with GlobalData, India is way ahead even in comparison with China in terms of the number of digital payments. According to this source, the number of real time payments in 2021 was at 48.6 billion in India as compared to 18.5 billion in China and 8.7 billion in Brazil. This is indicative of the ease with which the Indian population has adopted digital platforms for making payments even if the average value of such payments may be rather low.

Conclusion

India's digital leap distinguishes the Indian economy as compared to those of its peer countries. India's digital payment platforms have become quite popular amongst its general population. The digital economy, however, has broader connotations due to its backward and forward linkages with other sectors in the economy.

The RBI estimates the size of India's core digital economy at US$222.5 billion in 2019, exhibiting a growth rate of 15.6% over the period 2014 to 2019. Its share in overall GVA is estimated to have increased from 5.4% in 2014 to 8.5% in 2019. Further, the share of digitally dependent economy (digitally enabled sectors) is estimated at 22.4% in 2019. Another recent study by MeiTY (2019) projects the size of India's digital economy to rise to US$500 billion by 2025 in their 'business as usual' scenario. However, it also points out that potentially, the size of India's digital economy can be increased up to US$1 trillion by following a set of policy initiatives.

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[121] https://investor.aciworldwide.com/news-releases/news-release-details/india-surges-ahead-worlds-leader-real-time-payments-boosting

List of abbreviations

Sr. no.	Abbreviations	Description
1	AD	aggregate demand
2	AEs	advanced economies
3	Agr.	agriculture, forests and fishing
4	AY	assessment year
5	Bcm	billion cubic meters
6	bbl.	barrel
7	BE	budget estimate
8	CAB	current account balance
9	CGA	Comptroller General of Accounts
10	CGST	Central Goods and Services Tax
11	CIT	corporate income tax
12	Cons.	construction
13	CPI	Consumer Price Index
14	COVID-19	Coronavirus disease 2019
15	CPSE	central public-sector enterprise
16	CRAR	Credit to Risk- weighted Assets Ratio
17	Disc.	discrepancies
18	ECBs	external commercial borrowings
19	Elec.	electricity, gas, water supply and other utility services
20	EMDEs	Emerging Market and Developing Economies
21	EXP	exports
22	FAE	first advance estimates
23	FC	Finance Commission
24	FII	foreign investment inflows

Sr. no.	Abbreviations	Description
25	Fin.	financial, real estate and professional services
26	FPI	foreign portfolio investment
27	FRBMA	Fiscal Responsibility and Budget Management Act
28	FRL	Fiscal Responsibility Legislation
29	FY	fiscal year (April–March)
30	GDP	Gross Domestic Product
31	GFCE	government final consumption expenditure
32	GFCF	gross fixed capital formation
33	GoI	Government of India
34	G-secs	government securities
35	GST	Goods and Services Tax
36	GVA	gross value added
37	IAD	Index of Aggregate Demand
38	IBE	interim budget estimates
39	ICRIER	Indian Council for Research on International Economic Relations
40	IEA	International Energy Agency
41	IGST	Integrated Goods and Services Tax
42	IIP	Index of Industrial Production
43	IMF	International Monetary Fund
44	IMI	Index of Macro Imbalance
45	IMP	imports
46	INR	Indian Rupee
47	IPD	implicit price deflator
48	MCLR	marginal cost of funds-based lending rate
49	Mfg.	manufacturing
50	MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
51	Ming.	mining and quarrying
52	m-o-m	month-on-month
53	Mt	metric ton
54	MoSPI	Ministry of Statistics and Programme Implementation

Sr. no.	Abbreviations	Description
55	MPC	Monetary Policy Committee
56	MPF	Monetary Policy Framework
57	NEXP	net exports (exports minus imports of goods and services)
58	NSO	National Statistical Office
59	NPA	non-performing assets
60	OECD	Organization for Economic Co-operation and Development
61	OPEC	Organization of the Petroleum Exporting Countries
62	PFCE	private final consumption expenditure
63	PIT	personal income tax
64	PMI	Purchasing Managers' Index (reference value = 50)
65	PoL	petroleum oil and lubricants
66	PPP	Purchasing power parity
67	PSBR	public sector borrowing requirement
68	PSU/PSE	public sector undertaking/public sector enterprises
69	RE	revised estimates
70	RBI	Reserve Bank of India
71	SLR	Statutory Liquidity Ratio
72	Trans.	trade, hotels, transport, communication and services related to broadcasting
73	US$	US Dollar
74	UTGST	Union Territory Goods and Services Tax
75	WALR	weighted average lending rate
76	WHO	World Health Organization
77	WPI	Wholesale Price Index
78	y-o-y	year-on-year
79	1HFY20	first half of fiscal year 2019-20, i.e., April 2019-September 2019

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