

ENTER

Economy Watch

Monitoring India's
macro-fiscal performance

May 2021

The EY logo consists of the letters 'EY' in a bold, white, sans-serif font. A yellow diagonal line is positioned above the 'Y', extending from the top right towards the center of the 'Y'.

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Contents



Foreword: growth erosion, expenditure restructuring and vaccination strategy	4
1. Growth: IIP posted a double-digit growth of 22.4% in March 2021	6
2. Inflation: CPI inflation eased to 4.3% in April 2021	7
3. Fiscal performance: Center's gross tax revenues during Apr-Feb stood at 87.6% of FY21 RE	8
4. Comparative global perspective: India's combined fiscal deficit estimated at 12.3% of GDP in FY21	10
5. In focus: India's experience with COVID – people's and economy's health	11
6. Money and finance: growth in bank credit fell to 5.6% in March 2021	20
7. Trade and CAB: merchandise trade deficit widened to US\$15.1 billion in April 2021	22
8. Global growth: developing Asia projected to grow by 7.3% in calendar year 2021	23
9. Index of Aggregate Demand (IAD): grew by 11.5% in March 2021	24
11. Capturing macro-fiscal trends: data appendix	25

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Highlights

1. IIP growth (y-o-y) accelerated to 22.4% in March 2021 from a contraction of (-)3.4% in February 2021 led by a strong positive base effect. On an annual basis, IIP growth averaged (-)8.6% in FY21 as compared to (-)0.8% in FY20.
2. Reflecting the current COVID crisis, PMI manufacturing remained nearly stagnant at 55.5 and PMI services fell to 54.0 in April 2021.
3. CPI inflation eased to 4.3% in April 2021. WPI inflation accelerated to an all-time high of 10.5% in April 2021 primarily due to elevated global crude and commodity prices partially reflecting a low base effect.
4. As per the CGA, the Center's gross taxes during April-February FY21 stood at 87.6% of the annual RE as compared to the corresponding average of 81.3% relative to actuals during FY18 to FY20.
5. During April-February FY21, while Center's capital expenditure stood at 92.3% of the annual RE, the corresponding ratio for revenue expenditure was lower at 80.1%.
6. Center's fiscal deficit stood at 76.0% of the annual revised estimate while the corresponding ratio for revenue deficit was at 71.6% during April-February FY21.
7. Reflective of weakness in demand conditions, growth in bank credit averaged 6.0% in FY21, lower than 9.4% in FY20.
8. Merchandise exports and imports growth (y-o-y) increased to 195.7% and 167.1% respectively in April 2021 due largely to favorable base effects. However, on a m-o-m basis, exports and imports contracted by (-)11.1% and (-)5.5% respectively in April 2021 as compared to March 2021.
9. The ADB projected a growth of 7.3% in developing Asia in calendar year 2021 following a contraction of (-)0.2% in 2020. India's FY22 growth is projected at 11.0%.



Foreword

Growth erosion, expenditure restructuring and vaccination strategy

The month of March 2021 started with positive news for the Indian economy with the IIP showing high positive growth of 22.4% after a contraction of (-)0.9% and (-)3.4% in January and February 2021 respectively reflecting a turnaround in the manufacturing sector of the economy. April 2021 became more challenged with the onset of COVID's second wave. Although CPI inflation was still contained at 4.3% in April 2021, the WPI inflation shot up to 10.5%, its highest level since 2011-12 which is the base year of this series, primarily due to higher global crude and commodity prices partially reflecting a low base effect. This led to an increase in the inflation in fuel and power to a 49-month high of 20.9% in April 2021 from 10.3% in March 2021.

Growth in 1QFY22 would be adversely affected by the impact of COVID's second wave. Analysts have started revising their earlier FY22 growth forecasts downwards. While the IMF (23 March 2021) was the most optimistic in terms of India's FY22 growth prospects projecting it at 12.5%, the RBI (7 April 2021) considered 10.5% to be feasible. S&P in its recent release (5 May 2021*), considered a feasible growth range of 8.2% and 9.8% under their severe and moderate impact scenarios. Moody's (11 May 2021**) projected India's FY22 growth at 9.3%. In the context of the ongoing uncertainty about the full impact of COVID's second wave, a benchmark growth rate of 8.7% may be considered relevant. If at least this growth is protected, India's FY22 GDP at 2011-12 prices would be at the same level as in FY20, that is, INR145.7 lakh crore. Policy effort should be made to protect at least this level of growth.

There is clearly a trade-off between the duration and spread of the lockdowns on the one hand and the erosion of growth on the other. The more extensive the lockdowns, the larger would be the loss in GDP growth. Although COVID has now started affecting rural areas, agricultural growth may still remain broadly intact. Further, the maximum impact of the lockdown would be in 1QFY22 and if vaccination gathers pace at least June 2021 onwards, the damage to the economy in the second and subsequent quarters can be contained. The worst affected sectors may be the same as in FY21 namely, construction, trade, transport, hotels et.al., followed by manufacturing and mining. The public administration, defence and other services sector had also faced a contraction of (-)4.1% in FY21. Suitable policy intervention in 1QFY22 can ensure that this sector does not contract. This would require frontloading of government's budgeted FY22 expenditures particularly the capital expenditures.

We recognize that the fiscal arithmetic of Center's FY22 budget may get disturbed with the erosion of real and consequently nominal growth rates. The real GDP in FY21 had fallen to INR134.1 lakh crore, implying a contraction of (-)8.0%. The corresponding nominal GDP was INR195.9 lakh crore. The nominal GDP growth also requires to be revised downwards in FY22. Assuming a real GDP growth of 8.7% and an implicit price deflator (IPD) based inflation of 3%, the FY22 nominal GDP growth may be close to 12%. This is premised on IPD-based inflation remaining lower than the CPI inflation of about 4.5%, as has been the trend in recent years. The budgeted FY22 nominal growth was 14.4%. The budgeted buoyancy for Center's gross tax revenues (GTR) at 1.2 may also not hold. We consider a buoyancy of 0.9, which is the average for the five years preceding the COVID year that is FY21, to be more realistic. A combination of a 12% nominal growth and a buoyancy of 0.9 would result in a growth of 10.7% in Center's GTR. This would imply a shortfall in Center's budgeted net tax revenues of about INR0.8 lakh crore in FY22.



Budgeted magnitudes for non-tax revenues and non-debt capital receipts at INR2.4 lakh crore and INR1.9 lakh crore respectively may also need to be revised downwards. In these cases, the budgeted growth rates were 15.4% and 304.3% respectively. The excessively high growth for the non-debt capital receipts was premised on implementing an ambitious asset monetization and disinvestment program. The COVID-disturbed year may make achieving these targets extremely difficult. The budgeted growth in non-tax revenues is largely dependent on an assumed growth of 60% in revenues from communication services and of 44.1% in dividends and profits from non-departmental undertakings. We consider that a shortfall of INR1.5 lakh crores in non-tax revenues and non-debt capital receipts together with a shortfall of nearly INR0.8 lakh crore in Center's net tax revenues may lead to a total shortfall of INR2.3 lakh crores in the total non-debt receipts. This, together with the lowering of the nominal GDP as compared to the budget assumptions, may imply a higher fiscal deficit at 7.9% of GDP, that is, a slippage of 1.1% points from the budgeted fiscal deficit at 6.8% of GDP. We consider it desirable that total budgeted expenditure should not be compressed so as to support demand although expenditure should be reprioritized strongly in favor of augmenting health expenditure and health infrastructure. The Center's capital expenditure provision for the department of health and family welfare was quite low at INR2,508.7 crores for FY22. This requires to be enhanced substantially. Building hospital capacity perhaps at every district headquarters, would not only cover for the current deficiency in hospital beds but would also increase construction activities and absorb a lot of currently unemployed migrant labour.

The Center, in its FY22 budget, had allocated INR35,000 crore for vaccination. This amount is meant to be transferred to the states***. Given that vaccination is associated with strong positive externalities, the Center has a primary role in ensuring country-wide coverage. If Center becomes the only governmental agency to procure vaccines, the average price per vaccine would 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 108.5 crore, total required doses would be 217.0 crore considering two doses per person. At an average price of INR300 per dose, the total vaccination cost would be INR65,108 crore. If states' involvement pushes up the average price to say INR500 per dose, total vaccination bill to the country would unnecessarily go up to INR1.09 lakh crore. This cost enhancement, which may 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.

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* https://www.business-standard.com/article/economy-policy/india-s-sovereign-rating-to-remain-at-current-level-for-next-2-years-s-p-121050700794_1.html

** <https://www.livemint.com/economy/moodys-slashes-fy22-gdp-forecast-for-india-to-93-11620735739715.html>

*** As per the Demand for Grants No.40, Department of Finance, FY22 Union Budget

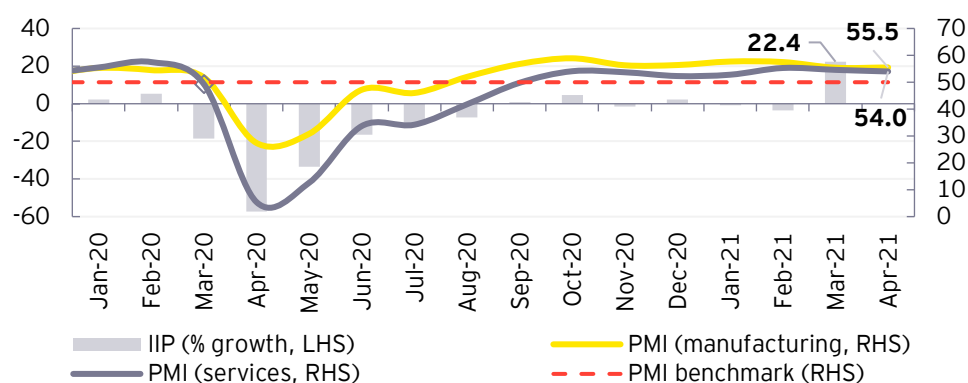


1. Growth: IIP posted a double-digit growth of 22.4% in March 2021

A. IIP: contracted sharply to (-)8.6% in FY21 from (-)0.8% in FY20

- ▶ As per the quick estimates of IIP released by the MoSPI on 12 May 2021, IIP growth accelerated to 22.4% in March 2021 as compared to a contraction of (-)3.4% (revised) in February 2021 (Chart 1). This was attributable partly to a favorable base effect and partly to a strong growth in the output of all sub-industries (Table A1 in data appendix). In FY21, IIP contracted for the second successive year by (-)8.6% from (-)0.8% in FY20.
- ▶ The output of manufacturing sector posted a double-digit growth of 25.8% in March 2021 as compared to a contraction of (-)3.7% in February 2021. Similarly, output of electricity grew by 22.5% in March 2021 from 0.1% in February 2021. Mining output grew by 6.1% in March 2021 as compared to a contraction of (-)4.4% in February 2021.
- ▶ Among the “use based” classification of industries, output of capital goods grew by 41.9% in March 2021 as compared to a contraction of (-)3.8% (revised) in February 2021. Growth in the output of consumer durables accelerated to 54.9% in March 2021 from 6.6% in February 2021 while that of consumer non-durables grew by 27.5% from a contraction of (-)4.5% over the same period. Output of infrastructure/construction goods also grew by 31.2% in March 2021 as compared to a contraction of (-)4.0% in February 2021.
- ▶ According to provisional estimates, output of eight core infrastructure industries (core IIP) grew by 6.8% in March 2021 from a contraction of (-)3.8% (revised) in February 2021 led by a favorable base effect. Four out of the eight sectors namely, cement (32.5%), steel (23.0%), electricity (21.6%) and fertilizers (12.3%) showed a strong growth while the remaining four sectors namely, coal ((-)21.9%), fertilizers ((-)5.0%), crude oil ((-)3.1%) and petroleum refinery products ((-)0.7%) continued to post a contraction in March 2021.

Chart 1: IIP growth and PMI



Led by a strong positive base effect, particularly in the month of March 2021, growth in IIP averaged 5.2% in 4QFY21 as compared to 1.7% in 3QFY21.

Source: MoSPI and IHS Markit

B. PMI: signaled nearly stagnant expansion in manufacturing and a fall in the pace of expansion in services in April 2021

- ▶ Headline manufacturing PMI (seasonally adjusted (sa)) at 55.5 in April 2021 remained close to the seven-month low of 55.4 in March 2021 (Chart 1). Growth in new orders and output eased to eight-month lows in April 2021 due to intensification of the COVID crisis.
- ▶ PMI services fell for the second consecutive month to 54.0 in April 2021 from 54.6 in March 2021. At a sub-sectoral level, expansion in activity was led by transport and storage sector while information and communication and real estate and business services witnessed a decline in April 2021.
- ▶ Reflecting a nearly stagnant pace of expansion in PMI manufacturing and a fall in the pace of expansion in PMI services, the composite PMI Output Index (sa) fell to 55.4 in April 2021 from 56.0 in March 2021.

Reflecting the current COVID crisis, PMI manufacturing remained nearly stagnant at 55.5 and PMI services fell to 54.0 in April 2021.

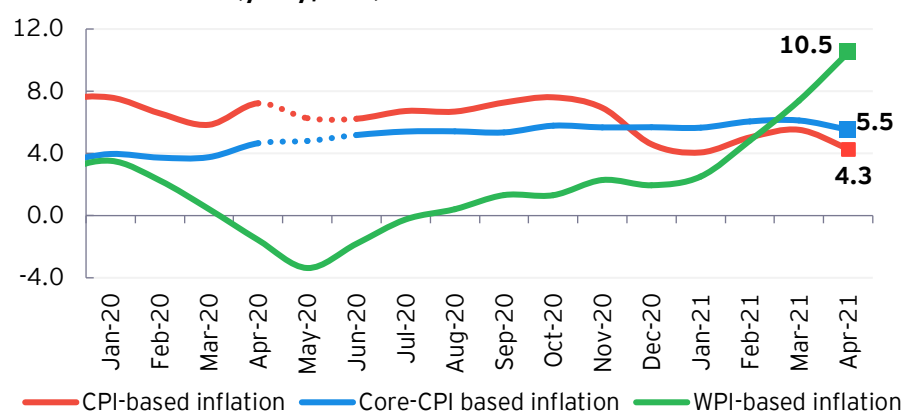


2. Inflation: CPI inflation eased to 4.3% in April 2021

CPI inflation fell to 4.3% in April 2021 from 5.5% in March 2021 (Chart 2) led by lower food inflation and partly due to base effect.

- ▶ Consumer food inflation fell to 2.0% in April 2021 from 4.9% in March 2021 guided by a higher pace of contraction in vegetable prices to (-)14.2% from (-)5.0% over the same period.
- ▶ Contraction in prices of cereals and products increased to (-)3.0% in April 2021 from (-)0.7% in March 2021. Prices of milk and products contracted for the first time in 88 months at (-)0.1% in April 2021.
- ▶ Inflation in fuel and light increased to a 30-month high of 7.9% in April 2021.
- ▶ Core CPI inflation¹ moderated to a seven-month low of 5.5% in April 2021.
- ▶ Inflation in transportation and communication services eased marginally to 11.0% in April 2021 from an all-time high of 12.5% in March 2021 partly due to base effect.

Chart 2: inflation (y-o-y, in %)



CPI inflation eased to 4.3% in April 2021. WPI inflation accelerated to an all-time high of 10.5% in April 2021 primarily due to elevated global crude and commodity prices partially reflecting a low base effect.

Source: MoSPI, Office of the Economic Adviser, Government of India (GoI)

Note: Headline CPI inflation and inflation in certain groups for the month of April 2020 and May 2020 have been imputed by the MoSPI²; Core CPI inflation has been estimated for April 2020 and May 2020 using this imputed data

WPI inflation increased to an all-time high of 10.5% in April 2021 from 7.4% in March 2021 due elevated global crude and commodity prices partially reflecting a low base effect.

- ▶ Inflation in crude petroleum increased to an unprecedented level of 160.2% in April 2021 due to higher global crude price and a low base effect.
- ▶ Fuel and power inflation increased to a 49-month high of 20.9% in April 2021 from 10.3% in March 2021, reflecting higher prices of mineral oils including petrol, diesel and furnace oil.
- ▶ Core WPI inflation increased to a historic high of 8.3% in April 2021 from 7.0% in March 2021 primarily due to higher inflation in manufactured basic metals and chemicals and chemical products which increased to 19.3% and 10.2% respectively in April 2021 as compared to 16.6% and 8.2% respectively in March 2021 reflecting sustained cost push pressures.
- ▶ WPI food index-based inflation was at a 15-month high of 7.6% in April 2021 as compared to 5.3% in March 2021. Inflation in eggs, meat and fish increased to 10.9% in April 2021, its highest level since January 2014. Inflation in fruits accelerated to a historic high of 27.4% in April 2021 from 16.3% in March 2021.

¹ Core CPI inflation is measured in different ways by different organizations/agencies. Here, it has been calculated by excluding food, and fuel and light from the overall index.

² http://www.mospi.gov.in/sites/default/files/press_release/CPI%20Technical%20Note%20on%20Imputation.pdf

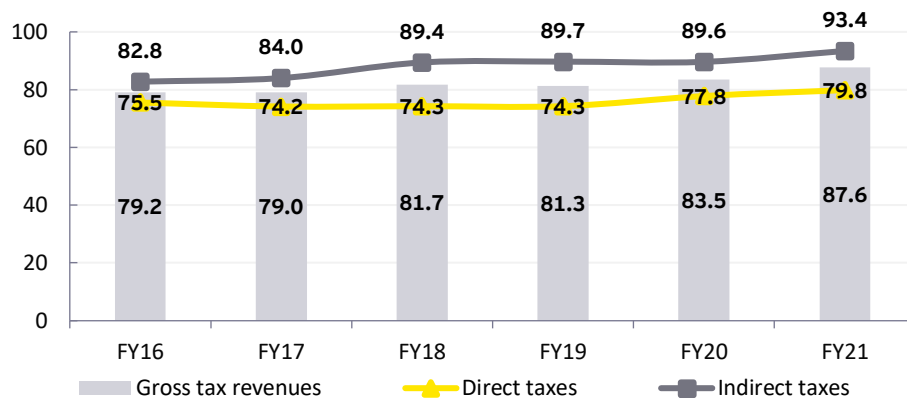


3. Fiscal performance: Center's gross tax revenues during Apr-Feb stood at 87.6% of FY21 RE

A. Tax and non-tax revenues

- ▶ As per the Comptroller General of Accounts (CGA)³, Center's gross tax revenues (GTR) during the April-February FY21 period as a proportion of annual revised estimate (RE) stood at 87.6% (**Chart 3**). In comparison, central gross tax revenues during April-February as a proportion of annual actuals averaged 81.3% during the three-year period FY18 to FY20.
- ▶ The Union Budget for FY22 projected a contraction of (-)5.5% in center's gross tax revenues for FY21. However, with revenues showing a contraction of (-)0.7% up to February 2021, a better than estimated performance is likely.
- ▶ Direct tax revenues during April-February FY21 relative to RE stood at 79.8% as compared to the three-year corresponding average of 75.5% relative to actuals.
- ▶ While corporate income tax (CIT) revenues as a percentage of annual RE stood at 78.6% during April-February FY21, the corresponding ratio for personal income tax (PIT) stood at 81.1%.
- ▶ Indirect taxes (comprising CGST, UTGST, IGST⁴ and GST compensation cess, union excise duties, arrears of service tax and customs duty) during April-February FY21 as a proportion of RE stood at 93.4% as compared to a three-year corresponding average of 89.6% relative to actuals.
- ▶ Center's GST revenues during April-February FY21 as a proportion of RE stood at 96.3% and the corresponding ratio for union excise duties was at 87.0%.
- ▶ Center's customs duty revenues during April-February FY21 relative to RE at 100.7% indicates that the FY21 RE has already been achieved.

Chart 3: central gross tax revenues during April-February as percentage of actuals (RE for FY21)



As per the CGA, Center's gross taxes during April-February FY21 stood at 87.6% of the annual RE as compared to the corresponding average of 81.3% relative to actuals during FY18 to FY20.

Source: Monthly Accounts, Controller General of Accounts (CGA), Government of India

Notes: (a) Direct taxes include personal income tax and corporation tax, and indirect taxes include union excise duties, arrears of service tax, customs duty, CGST, UTGST, IGST and GST compensation cess; (b) Other taxes (securities transaction tax, wealth tax, fringe benefit tax, banking cash transaction tax, etc.) are included in the center's gross tax revenues along with direct and indirect taxes.

- ▶ Center's non-tax revenues during April-February FY21 stood at 73.2% of the annual RE as compared to the three-year corresponding average of 76.4% relative to actuals. This ratio was much higher at 80.7% during April-February FY20.
- ▶ Non-debt capital receipts (comprising disinvestment receipts and recovery of loans and advances) during April-February FY21 stood at 92.1% of the annual RE as compared to the corresponding three-year average of 75.3% relative to actuals during FY18 to FY20.
- ▶ As per information sourced from the Department of Investment and Public Asset Management⁵, the FY21 revised target for disinvestment at INR32,000 crores has been achieved.

³ Monthly accounts for February 2021 released on 31 March 2021

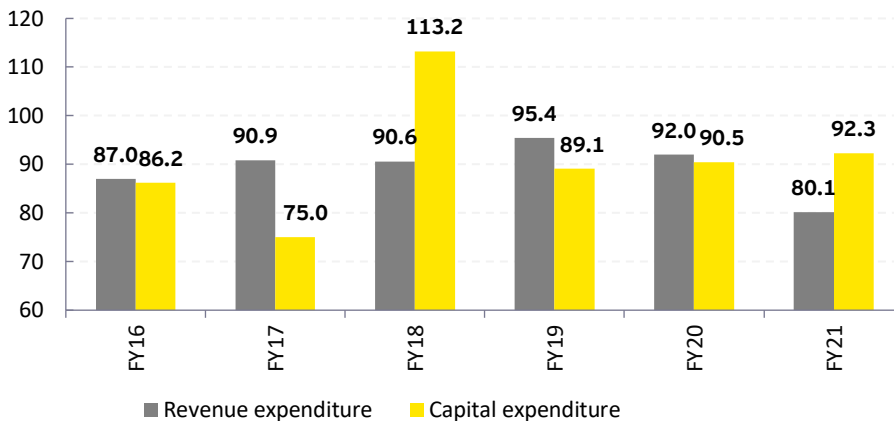
⁴ IGST revenues are subject to final settlement

⁵ <https://www.dipam.gov.in/dipam/home>

B. Expenditures: revenue and capital

- ▶ Center’s total expenditure during April-February FY21 as a proportion of the annual RE stood at 81.7% as compared to the corresponding average of 93.2% relative to actuals during FY18 to FY20.
- ▶ Revenue expenditure during April-February FY21 as a percentage of annual RE stood at 80.1% as compared to an average of 92.6% relative to actuals during FY18 to FY20 (Chart 4).
- ▶ Center’s capital expenditure during April-February FY21 stood at 92.3% of the annual RE as compared to the corresponding three-year average of 97.6% relative to actuals.

Chart 4: central expenditures during April-February as percentage of actuals (RE for FY21)



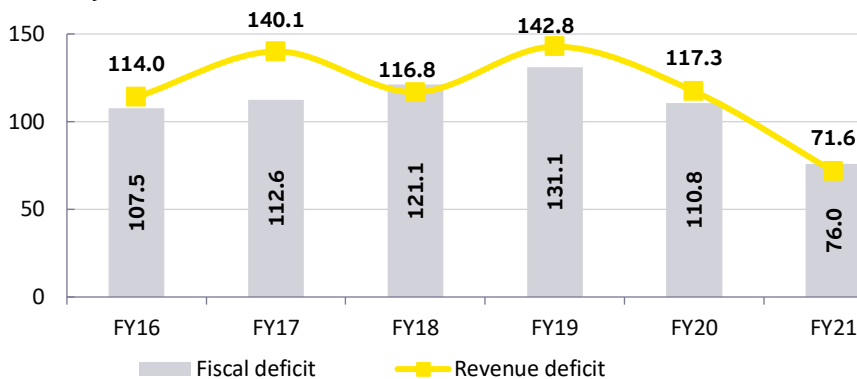
During April-February FY21, while Center’s capital expenditure stood at 92.3% of the annual RE, the corresponding ratio for revenue expenditure was lower at 80.1%.

Source (basic data): Monthly Accounts, Controller General of Accounts (CGA), Government of India

C. Fiscal imbalance

- ▶ Center’s fiscal deficit during April-February FY21 stood at 76.0% of the annual RE as compared to the three-year average of 121.0% relative to actuals during FY18 to FY20 (Chart 5). As per the Union Budget for FY22, the Center’s fiscal deficit has been estimated at 9.5% of GDP for FY21 (RE).
- ▶ Center’s revenue deficit during April-February FY21 stood at 71.6% of the annual RE as compared to the three-year average of 125.6% relative to actuals during FY18 to FY20. Center’s revenue deficit has been estimated at 5.9% of GDP for FY21 (RE).

Chart 5: fiscal and revenue deficit during April-February as percentage of actuals (RE for FY21)



During April-February FY21, Center’s fiscal deficit stood at 76.0% of the annual RE while the corresponding ratio for revenue deficit was at 71.6%.

Source: Monthly Accounts, Controller General of Accounts (CGA), Government of India.



4. Comparative global perspective: India's combined fiscal deficit estimated at 12.3% of GDP in FY21

General government fiscal deficit to GDP ratio

Table 1: general government net lending/borrowing (% to GDP)

Country	2020	2021	2022	2023	2024	2025	2026
AEs	-11.7	-10.4	-4.6	-3.2	-3.0	-3.0	-2.8
USA	-15.8	-15.0	-6.1	-4.6	-4.7	-5.0	-4.7
UK	-13.4	-11.8	-6.2	-4.0	-3.4	-3.3	-3.3
Euro area	-7.6	-6.7	-3.3	-2.3	-1.8	-1.6	-1.6
Japan	-12.6	-9.4	-3.8	-2.5	-2.3	-2.3	-2.4
EMDEs	-9.5	-7.5	-6.5	-6.0	-5.5	-5.1	-4.8
Brazil	-13.4	-8.3	-7.2	-7.3	-7.0	-6.6	-6.5
Russia	-4.1	-0.8	-0.3	-0.5	-0.5	-0.04	0.01
India*	-12.3	-10.0	-9.1	-8.4	-8.0	-7.7	-7.4
China	-11.4	-9.6	-8.7	-7.9	-7.2	-6.5	-6.0
S. Africa	-12.2	-10.6	-8.3	-7.1	-6.7	-6.7	-6.8

Source: IMF World Economic Outlook (April 2021)

*fiscal year basis; Note: (1) forecasts from 2021 onwards, (2) -ve indicates deficit and +ve indicates surplus

was the highest at 13.4% in 2020 for Brazil which expanded the social safety net and provided a job retention program among other measures.

- ▶ India's fiscal deficit was also high at 12.3% of GDP in 2020 although direct fiscal support in terms of additional spending and foregone revenue stood only at 3.3% of GDP.
- ▶ Fiscal deficit to GDP ratios are expected to fall gradually after 2021 in EMDEs with the group average reaching 4.8% by 2026. Russia is expected to return to a fiscal surplus and fiscal deficit is expected to range between 6%-6.8% in 2026 for Brazil, China and South Africa. India's fiscal deficit at 7.4% of GDP in 2026 is expected to remain above the Fiscal Responsibility and Budget Management (FRBM) norm of 6%.

▶ With the onset of the pandemic in 2020, most advanced economies (AEs) have undertaken sizable fiscal support measures to counter the health crisis and its economic fallout.

Consequently, fiscal deficit in AEs was at 11.7% of GDP in 2020. For EMDEs, fiscal deficit to GDP ratio was relatively lower at 9.5% in 2020.

▶ Fiscal deficit to GDP ratio was the highest at 15.8% in 2020 for the US, followed by the UK at 13.4% and Japan at 12.6%. With fiscal measures extending to 2021 in these countries, fiscal deficits are projected to remain high in 2021.

▶ After 2021, fiscal deficit to GDP ratios in AEs is expected to narrow with the group average falling to 2.8% by 2026.

▶ Among emerging market and developing economies (EMDEs), fiscal deficit to GDP ratio

General government gross debt to GDP ratio

- ▶ The general government debt to GDP ratio for AEs as a group increased by 16.3% points from 103.8% in end-2019 to 120.1% in 2020. The average debt during the forecast period from 2021 to 2026 is projected at 121.6% of GDP.
- ▶ Among AEs, the highest increase in general government debt to GDP ratio in 2020 occurred for Japan at 21.4% points, followed by 18.9% points for the US and 18.4% points for the UK. For these three economies, debt to GDP ratios are expected to stabilize at these high levels in the medium term.
- ▶ For EMDEs, general government debt to GDP ratio increased from 54.1% in 2019 to 63.4% in 2020, a relatively milder increase of 9.3% points. Average debt to GDP ratio is expected to stabilize around 68% during the forecast period.

Table 2: general government gross debt (% to GDP)

Country	2019	2020	2021	2022	2023	2024	2025	2026
AEs	103.8	120.1	122.5	121.7	121.8	121.5	121.4	121.1
USA	108.2	127.1	132.8	132.1	132.4	133.0	133.9	134.5
UK	85.2	103.7	107.1	109.1	110.7	111.4	112.2	113.0
Euro area	84.0	96.9	98.2	96.5	95.6	94.4	93.1	91.9
Japan	234.9	256.2	256.5	253.6	252.9	253.4	254.0	254.7
EMDEs	54.1	63.4	64.0	66.0	67.7	69.2	70.3	71.2
Brazil	87.7	98.9	98.4	98.8	100.1	101.0	101.4	101.7
Russia	13.8	19.3	18.1	17.7	17.6	17.7	17.3	17.4
India*	73.9	89.6	86.6	86.3	85.7	84.8	83.8	82.6
China	57.1	66.8	69.6	73.7	77.3	80.4	83.3	86.0
S. Africa	62.2	77.1	80.8	84.4	87.2	89.9	92.5	94.9

Source: IMF World Economic Outlook (April 2021)

*fiscal year basis; Note: forecasts from 2021 onwards

- ▶ Among EMDEs, the highest increase in government debt to GDP ratio in 2020 occurred for India at 15.7% points, followed by South Africa at 14.9% points and Brazil at 11.3% points. India's government debt-GDP ratio projected at 82.6% in 2026 would breach the target of 60% by more than 20% points.



5. In focus: India's experience with COVID – people's and economy's health

1. 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 2021⁶ peaking at 0.4 million cases per day on 30 April 2021. This is the highest per-day COVID incidence across all COVID waves across all economies. These are dubious distinctions. When we chose the lockdown route, the economy suffered excessively and when we chose to remain open, people's health suffered excessively. 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.

2. State wise key demographic features

In this section, we consider the state wise key demographic features of India's population. In **Table 3**, 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 above⁷. 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 3: state wise key demographic features in 2021

States ⁸	% 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%
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*)

⁶ Ministry of Health and Family Welfare and COVID-19, Gol and PRS India (<https://prsindia.org/covid-19/cases>)

⁷ 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 would be marginal in terms of shares.

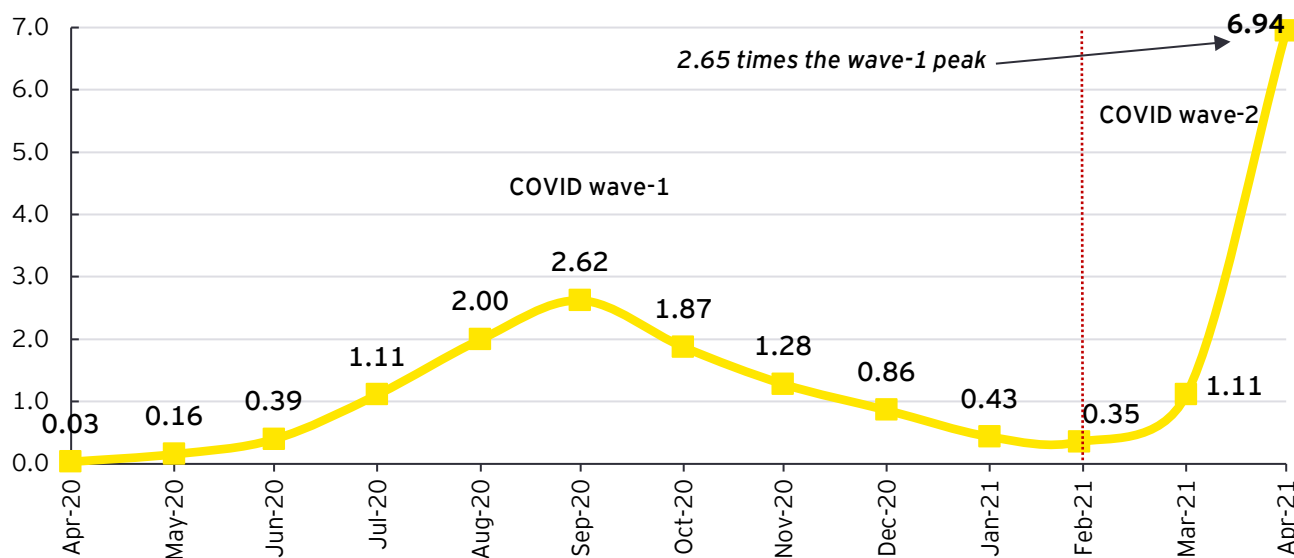
⁸ AP-Andhra Pradesh, AS-Assam, BH-Bihar, CH-Chhattisgarh, GJ-Gujarat, HR-Haryana, JH-Jharkhand, KA-Karnataka, KL-Kerala, MH-Maharashtra, MP-Madhya Pradesh, OR-Odisha, PB-Punjab, RJ-Rajasthan, TN-Tamil Nadu, TS-Telangana, UP-Uttar Pradesh, WB-West Bengal, S&H-Small and Hilly States (Arunachal Pradesh, Himachal Pradesh, Goa, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Uttarakhand), DL-Delhi, UTs-Union Territories (with and without legislatures)



3. 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 2020⁹ 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 6).

Chart 6: 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 Virus¹⁰. 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 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.

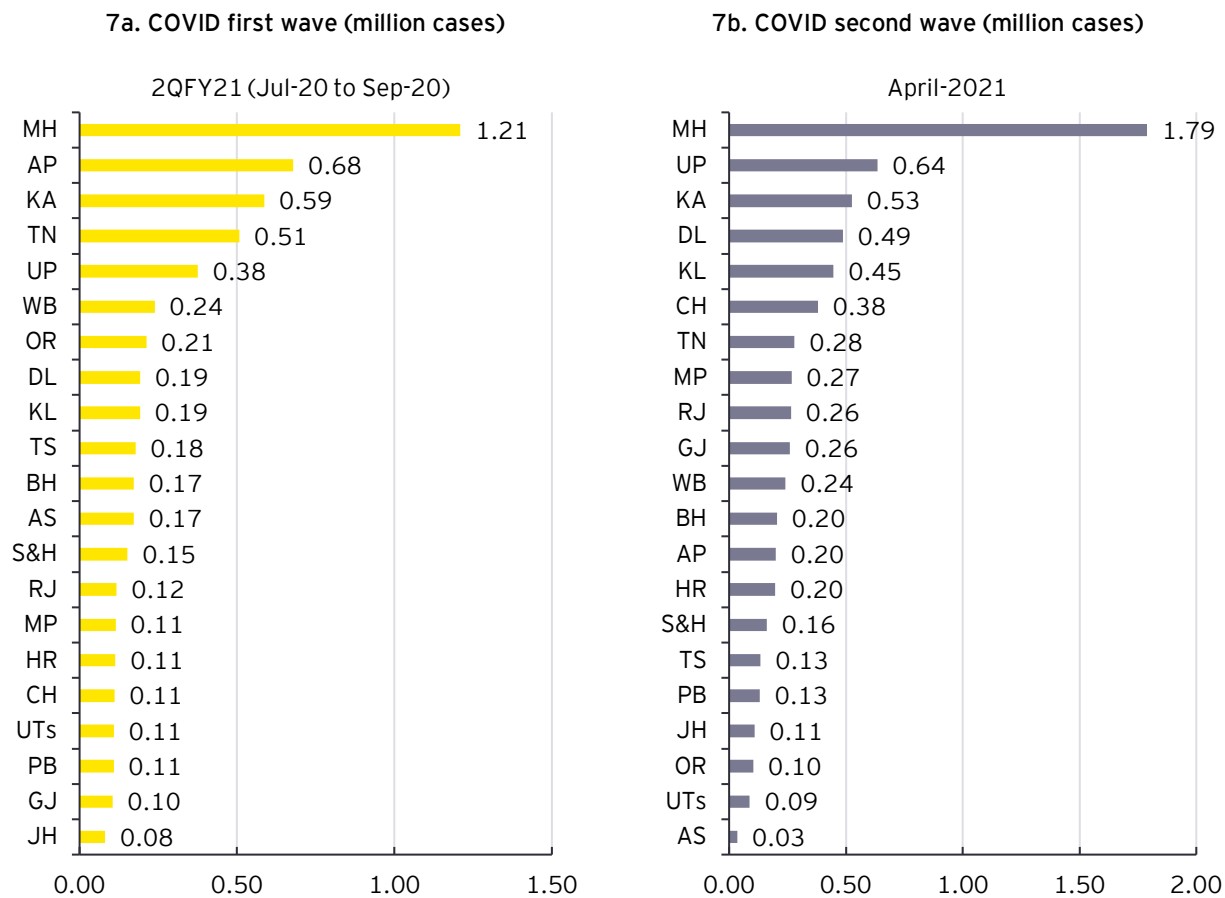
The inter-state profile of COVID's first and second phases are also of considerable interest. In **Chart 7a**, the interstate profile of the incidence of COVID is depicted for 2QFY21 reflecting the period in which COVID accelerated and reached a peak. The incidence is highest for Maharashtra exceeding 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 7b**). 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.

⁹ 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.>)

¹⁰ <https://www.thehindu.com/news/national/covid-19-after-three-mutant-variants-govt-issues-fresh-set-of-travel-guidelines/article33867701.ece>

Chart 7: COVID interstate profile: wave-1 and wave-2

Source (basic data): MoHFW, Government of India

4. International passengers: spatial concentration

Table 4 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 would 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 4: State/UT wise number of international passenger arrivals⁵

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%
MN	-	-	9	10	19	0.00%
MP	302	610	1	-	913	0.01%
OR	1,465	4,780	30	-	6,275	0.07%

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
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.

5. 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 5: 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	
<i>R-squared</i>	0.907		<i>Mean dependent var</i>	0.017	
<i>Adjusted R-squared</i>	0.867		<i>S.D. dependent var</i>	0.014	
<i>S.E. of regression</i>	0.005		<i>Akaike info criterion</i>	-7.501	
<i>Sum squared residual</i>	0.000		<i>Schwarz criterion</i>	-7.153	
<i>Log likelihood</i>	85.762		<i>Hannan-Quinn criterion</i>	-7.426	
<i>F-statistic</i>	22.722		<i>Durbin-Watson stat</i>	2.049	
<i>Prob(F-statistic)</i>	0.000				

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

As shown in **Table 5**, 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 passengers¹¹ (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

¹¹ 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.

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.

6. 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 6 we have provided average per-day vaccination rate so as to prepare a profile of the inter-state variation in the vaccination rate.

Table 6: vaccination doses: daily average

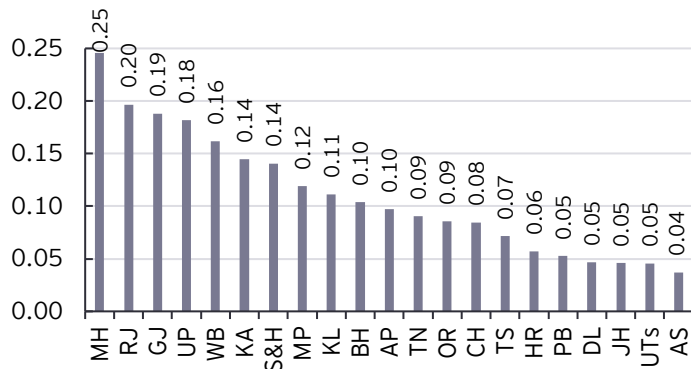
States	Avg. March 2021 (per-day)	Avg. April 2021 (per-day)	Average per day vacc. administered (1-Mar-21 to 30-Apr-21)	Index of per-day rate of vacc. relative to the highest	Share in total vacc. doses administered for population aged 45+	Cumulated vaccination doses administered (till 30-Apr-21) as % of 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 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%.

7. Perspectives on period required to attain full vaccine coverage of eligible population

Chart 8 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 8: state wise average per-day vaccination rate (million doses) during March and April 2021

Source (basic data): MoHFW, Government of India

Table 7 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 would be unacceptably challenging. At an all-India level, it would require 748 days to achieve full coverage of the population of 18 years and above (eligible population). But, in terms of coverage of individual states, some states would 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 7: 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
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

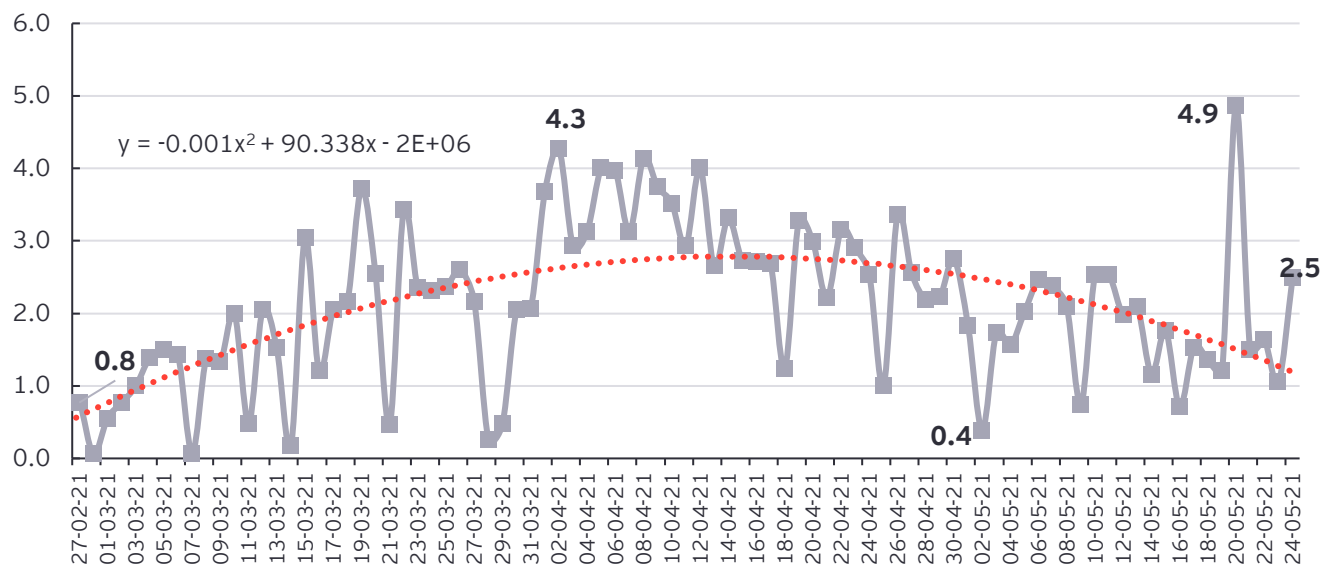
Two additional considerations need to be brought in. First, the improvement in the availability of vaccines as the supply situation improves. Second, apart from age cut offs, we need to add a spatial dimension to allocation of vaccines. In other words, some states need to be subjected to "saturation vaccination" before we focus on all India coverage. This aspect is discussed subsequently.

Chart 9 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 2021¹² since the current production capacity of Serum Institute India (SII) and Bharath Biotech together is approximately 75 million units per month¹³, that is 2.5 million doses per day if we do not export any units for some time.

Chart 9: 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 2021¹⁴.

In a report (no. 342¹⁵) 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 month¹⁶. On 16 April 2021¹⁷, 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 that there would be a 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 2021¹⁸. Further, on 20 April 2021, Bharat Biotech announced the scaling up of its manufacturing capacity to produce approximately 700 million doses of COVAXIN annually¹⁹, that is, 58.33 million doses per month. It is not indicated as to when this capacity would become effective. As per recent media reports²⁰, 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.

¹² Average daily rate of vaccination during 1 May 2021 to 24 May 2021 was 1.8 million

¹³ <https://www.bbc.com/news/world-asia-india-55571793>

¹⁴ Cumulated coverage report of COVID-19 vaccination released on 21 May 2021 by MoHFW.

¹⁵ https://rajyasabha.nic.in/rsnew/Committee_site/Committee_File/ReportFile/19/147/342_2021_3_10.pdf

¹⁶ 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_announcement.php)

¹⁷ <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1712271>

¹⁸ <https://www.businesstoday.in/current/economy-politics/received-order-for-26-crore-covid-19-vaccine-doses-from-centre-serums-adar-poonawalla/story/438152.html>

¹⁹ <https://www.bharatbiotech.com/images/press/bharat-biotech-covaxin-capacity-expansion-to-worldwide.pdf>

²⁰ <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 2021²¹, which is nearly 43% of total domestic vaccination doses administered till 30 April 2021.

Table 8 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 8: 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 vaccines²² 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 would take 11 months to vaccinate the entire eligible population considered here. It is clear that throughout this period, demand will exceed supply and an appropriate interstate allocation policy may be needed not only to avoid confusion but also to avoid complaints from states.

The Center in its FY22 budget had allocated INR35,000 crore for vaccination. This amount is meant to be transferred to the states²³. Given that vaccination is associated with strong positive externalities, Center has a primary role in ensuring country-wide coverage. If Center becomes the only governmental agency to procure vaccines, the average price per vaccine would 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

²¹ <https://www.mea.gov.in/vaccine-supply.htm>

²² 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.

²³ As per the Demand for Grants No.40, Department of Finance, FY22 Union Budget



would be 2,170 million considering two doses per person. At an average price of INR300 per dose, the total vaccination cost would be INR65,108 crore. If states' involvement pushes up the average price to say INR500 per dose, total vaccination bill to the country would unnecessarily 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 all the confusion ensuing from states' involvement in vaccine procurement and implementation.

The next issue, after center takes up the entire vaccine procurement responsibility, pertains to its inter-state allocation. The appropriate objective of vaccination should 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 all 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 should 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.

8. 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 would 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:

- 1) Procurement of vaccines should be fully centralized. This will keep total procurement costs to a minimum since a single agency for purchase would be able to reap economies of scale and will have much better bargaining power in the domestic and international markets.
- 2) 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.
- 3) There should be only two channels of distribution of vaccines namely, government and private. There should be no distinction between the central and state governments. These should 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 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 should be continued until the supply shortage situation in regard to the vaccines continues. This strategy will minimize the need for extended lockdowns in progressively larger areas thereby minimizing economic losses.



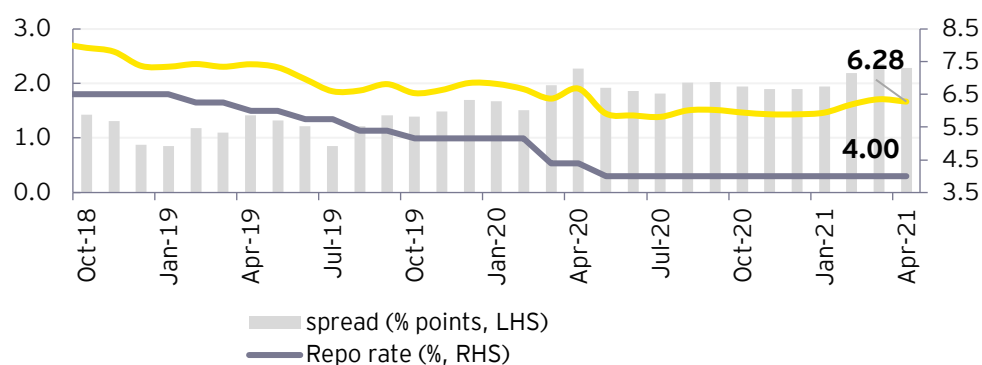
6. Money and finance: growth in bank credit fell to 5.6% in March 2021

A. Monetary sector

Monetary policy

- ▶ Persistent inflationary pressures in the economy, as indicated by higher CPI and core-CPI inflation until February 2021 had led the RBI to retain the repo rate at 4.0% in its monetary policy review held on 7 April 2021 (Chart 10) while maintaining an accommodative stance. In addition, the RBI announced a host of liquidity augmenting measures to support domestic economic recovery.
- ▶ Supplementing these measures, on 7 May 2021²⁴, the RBI announced additional liquidity enhancing measures to ease constraints faced by different stakeholders engaged particularly in providing critical health related goods and services. These measures include (a) term liquidity facility of INR50,000 crore and (b) Special Long-Term Repo Operations (SLTRO) for Small Finance Banks amounting to INR10,000 crore.

Chart 10: movements in the repo rate and 10-year government bond yield



Reflective of weakness in demand conditions, growth in bank credit averaged 6.0% in FY21, lower than 9.4% in FY20.

Source: Database on Indian Economy, RBI

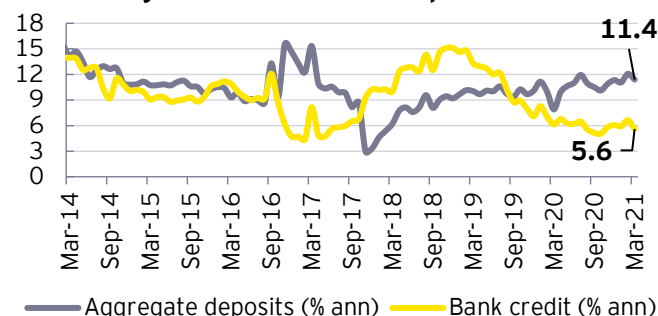
Money stock

- ▶ Growth in broad money stock (M3) fell for the second consecutive month to 10.6% in April 2021 from 11.7% in March 2021. This was due to a slower growth in time deposits while narrow money (M1) grew marginally during the month. Growth in time deposits fell to 8.9% in April 2021, its lowest since March 2020.
- ▶ M1 marginally grew to 16.2% in April 2021 from 16.1% in March 2021 led by higher growth in demand deposits, although there was a fall in the growth of currency in circulation. Demand deposits grew by 17.0% in April 2021 from 14.2% in March 2021. However, currency in circulation fell to 15.5% in April 2021 from 16.8% in March 2021.

Aggregate credit and deposits

- ▶ Growth in bank credit moderated to 5.6% in March 2021 from 6.6% in February 2021 due to a sharp fall in the growth of credit to services (Chart 11). Growth in bank credit averaged 6.0% in FY21, falling from 9.4% in FY20.
- ▶ Growth in non-food credit slowed to 4.9% in March 2021 from 6.5% in February 2021 led by a sharp fall in the growth of credit to services.
- ▶ Sectoral deployment of bank credit²⁵ indicates that the outstanding credit to industry grew marginally by 0.4% in March 2021, its first positive growth since October 2020. Within the industrial sector, credit to infrastructure grew by 3.6% in March 2021 as compared to a contraction of (-)1.5% in February 2021. Credit to iron and steel sector contracted sharply by (-)11.3% in March 2021, its worst performance since

Chart 11: growth in credit and deposits



Source: Database on Indian Economy, RBI

²⁴ https://rbi.org.in/Scripts/BS_SpeechesView.aspx?ld=1108

²⁵ As per RBI, data on sectoral deployment of bank credit collected from select 33 scheduled commercial banks accounts for about 90% of the total non-food credit deployed by all scheduled commercial banks



February 2020. Credit to cement sector also contracted by (-)11.1% in March 2021 as compared to a growth of 1.8% in February 2021. In FY21, growth in credit to industries averaged at 0.2% as compared to 3.6% in FY20.

- ▶ Growth in credit to services sector fell to a historic low of 1.4% in March 2021 from 9.3% in February 2021. On average, growth in credit to services was lower at 8.9% in FY21 as compared to 10.1% in FY20. Growth in credit to agricultural sector was at 12.3% in March 2021, increasing from 10.2% in February 2021. Credit to agriculture grew on average by 7.0% in FY21, marginally higher than 6.7% in FY20.
- ▶ Growth in personal loans increased to 10.2% in March 2021 from 9.6% in February 2021.
- ▶ Growth in aggregate bank deposits fell to 11.4% in March 2021 from 12.1% in February 2021 led by a fall in the growth of both demand and time deposits.

B. Financial sector

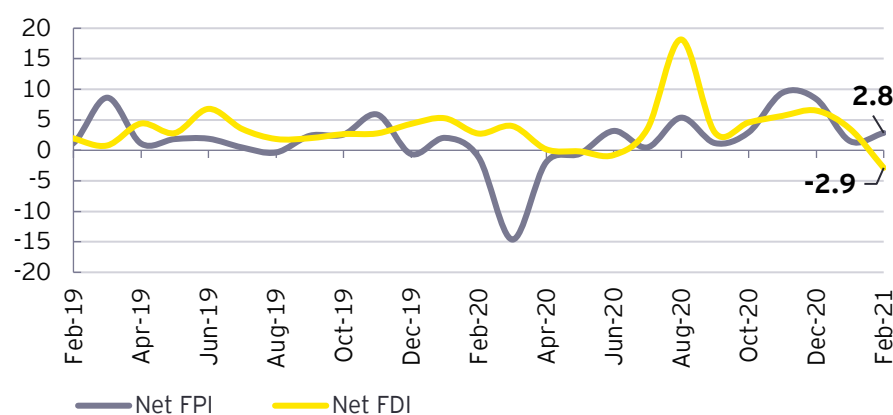
Interest rates

- ▶ As per the data released by the RBI on 7 May 2021, the average interest rate on term deposits with a maturity of more than one year was retained for the sixth successive month at 5.20% in April 2021, with the actual rate ranging from 4.90% to 5.50%.
- ▶ Similarly, the average MCLR was also unchanged for the fourth consecutive month at 6.80% in April 2021, ranging between 6.55% and 7.05%.
- ▶ The average yield on 10-year government bond fell marginally by 7 bps to 6.28% in April 2021 from 6.35% in March 2021 (**Chart 10**). RBI's liquidity augmenting measures may have influenced the benchmark bond yields in April 2021.
- ▶ WALR on fresh rupee loans by SCBs fell marginally to 8.03% in March 2021 from 8.19% in February 2021. In FY21, WALR on fresh rupee loans was lower at 8.32% on average as compared to 9.50% in FY20.

FDI and FPI

- ▶ As per the provisional data released by the RBI on 26 April 2021, overall foreign investment (FI)²⁶ outflows amounted to US\$(-)0.04 billion in February 2021 as compared to inflows of US\$5.0 billion in January 2021 due to high net FDI outflows.

Chart 12: net FDI and FPI inflows (US\$ billion)



Net FDIs registered an outflow of US\$(-)2.9 billion in February 2021, its worst performance since April 2011.

Source: Database on Indian Economy, RBI

- ▶ Gross FDI inflow of US\$4.3 billion was more than offset by US\$(-)5.4 billion repatriation/disinvestment in February 2021 implying a US\$(-)1.1 billion FDIs into India. This combined with a US\$(-)1.8 billion FDI investment by India in February 2021 led to net FDI outflows amounting to US\$(-)2.9 billion.
- ▶ Net foreign portfolio investment (FPI) inflows increased to US\$2.8 billion in February 2021 from US\$1.5 billion in January 2021.

²⁶ Foreign Investment (FI) = net FDI plus net FPI



7. Trade and CAB: merchandise trade deficit widened to US\$15.1 billion in April 2021

A. CAB: current account posted a deficit of (-)0.2% of GDP in 3QFY21

Current account recorded a deficit for the first time in four quarters at (-)0.2% of GDP in 3QFY21 as compared to a surplus of 2.4% in 2QFY21 (**Chart 13, Table 11**). Net merchandise trade deficit was at (-)4.7% of GDP in 3QFY21, as compared to (-)2.3% in 2QFY21. Merchandise exports relative to GDP dipped to 10.4% in 3QFY21 from 11.9% in 2QFY21. Merchandise imports relative to GDP were at 15.1% in 3QFY21 as compared to 14.2% in 2QFY21. Net invisible receipts fell to 4.4% of GDP in 3QFY21 from 4.7% of GDP in 2QFY21 reflecting the moderation in net transfers to 2.6% of GDP.

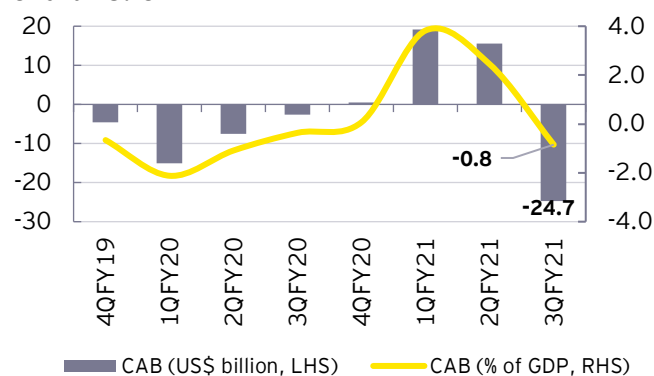
Table 9: components of CAB in US\$ billion

Fiscal year	CAB as % of nominal GDP	CAB	Goods account net	Invisibles* net
FY17	-0.7	-15.3	-112.4	97.1
FY18	-1.8	-48.7	-160.0	111.3
FY19	-2.1	-57.3	-180.3	123.0
FY20	-0.8	-24.7	-157.5	132.8
4QFY20	0.1	0.6	-35.0	35.6
1QFY21	3.7	19.0	-10.8	29.8
2QFY21	2.4	15.1	-14.8	29.9
3QFY21	-0.2	-1.7	-34.5	32.8

Source: Database on Indian Economy, RBI

Note: (-) deficit; (+) surplus; *invisibles include services, current transfers and income components

Chart 13: CAB



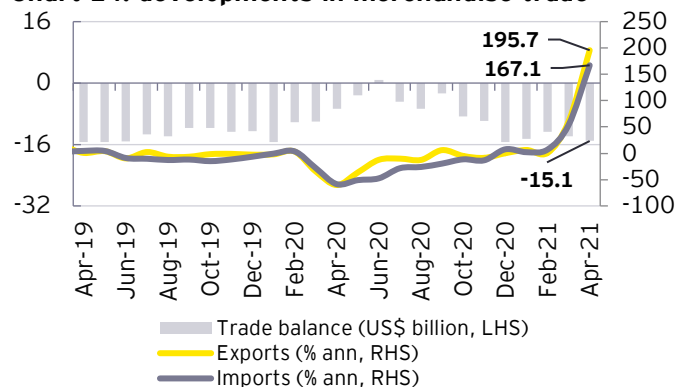
Source: Database on Indian Economy, RBI

B. Merchandise trade and exchange rate

Merchandise trade deficit widened to US\$15.1 billion in April 2021 from US\$13.9 billion in March 2021.

- ▶ Merchandise exports and imports growth (on y-o-y basis) increased to unprecedented levels of 195.7% and 167.1% respectively in April 2021 due largely to favorable base effects (**Chart 14**). On a m-o-m basis, both exports and imports contracted by (-)11.1% and (-)5.5% respectively in April 2021 as compared to a growth of 23.3% and 19.3% respectively in March 2021.
- ▶ On a y-o-y basis, exports growth of gems and jewelry, engineering goods and petroleum products were at historic highs of 9271.2%, 238.3% and 191.5% respectively in April 2021. However, on a m-o-m basis, exports of engineering goods and gems and jewelry contracted by (-)14.5% and (-)6.5% respectively as compared to a strong growth in March 2021 while exports growth of petroleum products at 6.2% was lower than that in March 2021.
- ▶ Similarly, growth in gold, machinery and electronic goods imports were at unprecedented levels (on a y-o-y basis) in April 2021 due largely to favorable base effect. On a m-o-m basis, however, imports of these three items showed a double-digit contraction of (-)26.5%, (-)13.0% and (-)13.7% respectively in April 2021 as compared to strong growths in March 2021.
- ▶ Although the y-o-y growth in exports and imports excluding oil, gold and jewelry were at historic highs of 160.2% and 109.9% respectively in April 2021, their m-o-m comparison showed a contraction of (-)13.9% and (-)3.5% respectively in April 2021 as compared to a growth of 21.8% and 13.5% respectively in March 2021.
- ▶ The rupee depreciated to INR74.5 per US\$ (average) in April 2021 from INR72.8 per US\$ in March 2021 due weakened growth expectations, higher expected liquidity and lower net FPI inflows.

Chart 14: developments in merchandise trade



Source: Ministry of Commerce and Industry, GoI

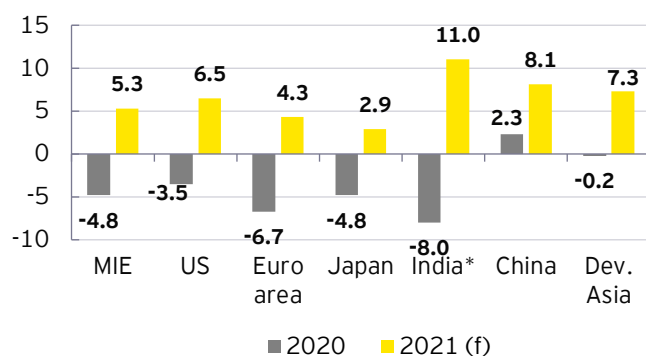
8. Global growth: developing Asia projected to grow by 7.3% in calendar year 2021

A. Growth outlook

- ▶ The ADB (Asian Development Outlook, April 2021) estimated a contraction of (-)0.2% in developing Asia in 2020 with South Asia posting the largest contraction on the back of a (-)8.0% decline in India's GDP (**Chart 15**).
- ▶ Economic growth in 2021 for developing Asia is projected to recover to 7.3% assuming that renewed COVID outbreaks are brought under control with vaccine rollouts thereby consolidating growth momentum.
- ▶ Within the region, China showed a positive growth of 2.3% in 2020 helped by its early containment efforts. Growth is projected to improve to 8.1% in 2021 due to an expected surge in private consumption and exports.
- ▶ In India, GDP is projected to move from a contraction of (-)8.0% in 2020 to a strong growth of 11.0% in 2021. While a stimulus-fueled surge in the US, India's largest export market, is expected to support revival in India, a severe second COVID wave poses a downside risk to recovery.
- ▶ Major industrial economies (MIE) as a group are projected to emerge from a contraction of (-)4.8% in 2020 to a growth of 5.3% in 2021 primarily led by the US.
- ▶ The US is forecasted to recover to a growth of 6.5% in 2021 after facing a contraction of (-)3.5% in 2020 helped by the US\$1.9 trillion fiscal stimulus package enacted in March 2021. This would have positive impact on the recovery of global demand.
- ▶ With widespread vaccination expected to be achieved in most advanced economies in the second half of 2021, growth in Euro area and Japan are expected to recover to 4.3% and 2.9% respectively in 2021.

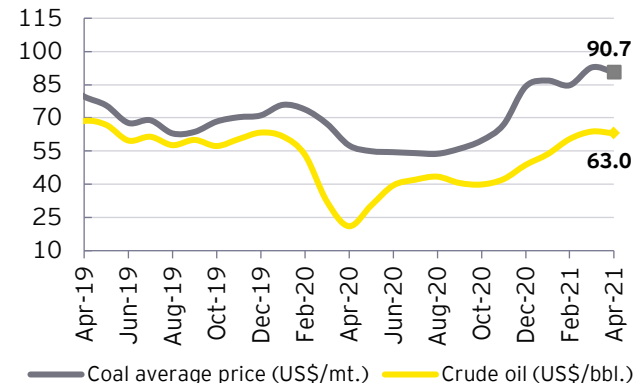
The ADB projected a growth of 7.3% in developing Asia in calendar year 2021 following a contraction of (-)0.2% in 2020.

Chart 15: growth projections (%)



Source: Asian Development Outlook 2021 (April 2021)
(f): forecasted; *data for India pertains to fiscal year; MIE: Major industrial economies

Chart 16: global crude and coal prices



Source (basic data): World Bank, Pink Sheet, May 2021

B. Global energy prices: World Bank projected average global crude price at US\$56.0/bbl. in 2021

- ▶ Average global crude price²⁷ fell to US\$63.0/bbl. in April 2021 from a 22-month high of US\$63.8/bbl. in March 2021 primarily driven by the adverse impact of renewed COVID outbreaks on oil demand (**Chart 16**). Further, OPEC+ agreed to increase oil production during May to July 2021, with Saudi Arabia also gradually unwinding its additional voluntary cut of 1mb/d. The World Bank has projected average global crude price at US\$56.0/bbl. in 2021 and US\$60.0/bbl. in 2022.
- ▶ Average global coal price²⁸ fell to US\$90.7/mt. in April 2021 from a 26-month high of US\$92.8/mt. in March 2021. The World Bank has forecasted Australian coal price to increase to US\$77.6/mt. in 2021, up from US\$61.4/mt. in 2020 as major importers switch to Australian coal instead of Indonesian and South African.

²⁷ Simple average of three spot prices, namely, Dated Brent, West Texas Intermediate and Dubai Fateh

²⁸ Simple average of Australian and South African coal prices

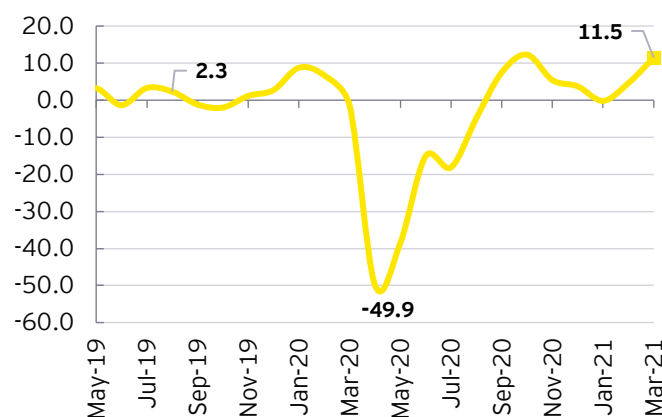


9. Index of Aggregate Demand (IAD): grew by 11.5% in March 2021

Led by a favorable base effect, growth in IAD accelerated to 11.5% in March 2021

- ▶ EY developed an IAD to reflect the monthly combined demand conditions in the agriculture, manufacturing and services sectors. It considers the movements in PMI for manufacturing and services, both measured in non-seasonally adjusted terms, tracing the demand conditions in these sectors. Demand conditions in the agricultural sector have been captured by movements in monthly agricultural credit off-take.
- ▶ IAD grew by 11.5% in March 2021 from 4.6% in February 2021 largely due to favorable base effect (Chart 17).
- ▶ During March 2021, demand conditions in manufacturing and services sectors moderated while those in agriculture improved during the month.

Chart 17: growth in IAD (y-o-y)



Source (Basic data): IHS Markit PMI, RBI and EY estimates

Table 10: IAD

Month	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
IAD	106.2	118.5	133.4	141.7	136.8	136.3	137.8	144.3	140.7
Growth (% y-o-y)	-18.2	-4.9	7.5	12.3	5.4	3.7	-0.2	4.6	11.5
Growth in agr. credit	5.4	4.9	5.9	7.4	8.5	9.4	9.9	10.2	12.3
Mfg. PMI**	-4.9	2.1	8.0	9.4	6.5	6.9	7.8	8.0	5.5
Ser. PMI**	-17.7	-9.7	0.5	7.2	3.6	2.2	2.3	8.6	5.6

**Values here indicate deviation from the benchmark value of 50. A positive value indicates expansion in demand while a negative value implies contraction in demand; PMI for Mfg. and Serv. are non-seasonally adjusted.

Source (basic data): IHS Markit PMI, RBI and EY estimates



11. Capturing macro-fiscal trends: data appendix

Table A1: Industrial growth indicators (annual, quarterly and monthly growth rates, y-o-y)

Fiscal year/ quarter/ month	IIP	Mining	Manufacturing	Electricity	Core IIP	Fiscal year/ quarter/ month	PMI mfg.	PMI ser.
	% change y-o-y							
FY18	4.4	2.3	4.7	5.3	4.3	FY18	51.5	50.0
FY19	3.8	2.8	3.8	5.2	4.4	FY19	52.8	52.2
FY20	-0.8	1.6	-1.4	0.9	0.4	FY20	52.3	51.9
FY21	-8.6	-7.8	-9.8	-0.5	-7.0	FY21	50.2	41.7
1QFY21	-35.6	-22.3	-40.3	-15.8	-23.8	1QFY21	35.1	17.2
2QFY21	-5.7	-7.0	-6.3	0.1	-4.8	2QFY21	51.6	41.9
3QFY21	1.7	-3.2	1.8	6.7	-0.4	3QFY21	57.2	53.4
4QFY21	5.2	-0.1	5.8	9.2	1.3	4QFY21	56.9	54.2
Dec-20	2.2	-3.0	2.7	5.1	0.4	Jan-21	57.7	52.8
Jan-21	-0.9	-2.5	-1.3	5.5	0.9	Feb-21	57.5	55.3
Feb-21	-3.4	-4.4	-3.7	0.1	-3.8	Mar-21	55.4	54.6
Mar-21	22.4	6.1	25.8	22.5	6.8	Apr-21	55.5	54.0

Source: MoSPI, Office of the Economic Adviser, Ministry of Commerce and Industry and IHS Markit Economics

Table A2: Inflation indicators (annual, quarterly and monthly growth rates, y-o-y)

Fiscal year/ quarter/ month	CPI	Food Price Index	Fuel and light	Core CPI	WPI	Food Price Index	Mfg. products	Fuel and power	Core WPI
	% change y-o-y				% change y-o-y				
FY18	3.6	1.8	6.2	4.6	2.9	1.9	2.7	8.2	3.0
FY19	3.4	0.1	5.7	5.5	4.3	0.6	3.7	11.5	4.2
FY20	4.8	6.7	1.3	3.8	1.7	6.9	0.3	-1.8	-0.4
FY21	6.2	7.7	2.7	5.5	1.3	3.9	2.7	-8.0	2.2
1QFY21	6.6	9.9	1.7	4.9	-2.3	3.4	0.0	-17.4	-1.0
2QFY21	6.9	9.7	2.9	5.4	0.5	5.5	1.3	-9.2	0.5
3QFY21	6.4	7.9	2.2	5.7	1.9	4.0	3.3	-8.1	3.0
4QFY21	4.9	3.5	3.9	5.9	4.9	2.8	6.3	2.7	6.2
Jan-21	4.1	2.0	3.9	5.7	2.5	-0.3	5.5	-3.8	5.6
Feb-21	5.0	3.9	3.5	6.1	4.8	3.6	6.1	2.0	5.9
Mar-21	5.5	4.9	4.4	6.1	7.4	5.3	7.3	10.3	7.0
Apr-21	4.3	2.0	7.9	5.5	10.5	7.6	9.0	20.9	8.3

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

* The CPI for April and May 2020 has been imputed

Table A3: Fiscal indicators (annual growth rates, cumulated monthly growth rates, y-o-y)

Fiscal year/month	Gross tax revenue	Corporate tax	Income tax	Direct taxes*	Indirect taxes**	Fiscal deficit % of GDP	Revenue deficit % of GDP
FY 18 (CGA)	11.8	17.8	19.9	18.6	6.0	3.5	2.6
FY 19 (CGA)	8.4	16.2	13.1	14.9	2.9	3.4	2.4
FY20 (CGA)	-3.4	-16.1	4.0	-7.8	1.7	4.6	3.3
FY21 over FY20 (RE over budget actuals)	-5.5	-19.9	-6.8	-13.8	3.6	9.5	7.5
FY 22 (BE over FY 21 RE)	16.7	22.6	22.2	22.4	11.4	6.8	5.1
Cumulated growth (% , y-o-y)						% of budgeted target	
Jul-20	-29.5	-39.2	-29.1	-33.2	-27.5	103.1	117.4
Aug-20	-23.7	-41.8	-28.9	-34.1	-16.5	109.3	121.9
Sep-20	-21.6	-39.7	-21.8	-31.4	-12.0	114.8	125.2
Oct-20	-16.8	-36.7	-16.9	-27.3	-7.0	119.7	126.8
Nov-20	-12.6	-35.7	-12.3	-24.4	-2.4	135.1	139.9
Dec-20	-3.2	-15.4	-6.2	-11.2	4.2	62.7#	60.6#
Jan-21	-1.0	-14.9	-5.5	-10.5	7.5	66.8#	62.7#
Feb-21	-0.7	-16.2	-4.2	-10.4	7.8	76.0#	71.6#

Source: Monthly Accounts, Controller General of Accounts, Government of India, Union Budget documents

* Includes corporation tax and income tax

** Includes customs duty, excise duty, service tax, CGST, UTGST, IGST and GST compensation cess.

#: as % of revised targets for FY21, fiscal and revenue deficits until November 2020 are as % of FY21 budget targets.

Fiscal year/month	CGST	UTGST	IGST	GST compensation cess	Total GST (Center)
INR crore					
FY 2021 (RE)	4,31,000	-	-	84,100	5,15,100
FY 2022 (BE)	5,30,000	-	-	1,00,000	6,30,000
Monthly tax collection (INR crore)					
Jul-20	37,902	224	-6,026	6,816	38,916
Aug-20	32,359	191	5,198	6,856	44,604
Sep-20	37,171	243	-290	6,810	43,934
Oct-20	42,901	136	192	7,840	51,069
Nov-20	39,803	132	7,612	8,029	55,576
Dec-20	43,040	144	12,408	8,248	63,840
Jan-21	44,666	324	6,769	8,332	60,091
Feb-21	66,641	410	-37,308	9,349	39,092

Source: Monthly Accounts, Controller General of Accounts, Government of India, Union Budget documents

Note: IGST revenues are subject to final settlement.

Table A4: Monetary and financial indicators (annual, quarterly and monthly growth rates, y-o-y)

Fiscal year/ month	Repo rate (end of period)	Fiscal year/ quarter/ month	Bank credit	Agg. deposits	Net FDI	Net FPI	Fiscal year/ quarter/ month	M1	M3	10-year govt. bond yield	FX reserves
	%		% change y-o-y		US\$ billion			% change y-o-y		%	US\$ billion
May-20	4.00	FY18	7.5	7.5	30.3	22.1	FY18	21.8	9.2	7.05	424.4
Jun-20	4.00	FY19	13.7	8.9	30.7	-0.6	FY19	13.6	10.5	7.68	411.9
Jul-20	4.00	FY20	9.4	9.9	43.0	1.4	FY20	11.2	8.9	6.80	475.6
Aug-20	4.00	FY21	6.0	11.0	41.1	32.8	FY21	16.1	11.7	6.04	579.3
Sep-20	4.00	1QFY21	6.4	10.5	-0.8	0.6	1QFY21	17.7	12.3	6.15	506.8
Oct-20	4.00	2QFY21	5.7	11.1	24.6	7.0	2QFY21	18.6	12.2	5.95	542.0
Nov-20	4.00	3QFY21	5.6	10.8	16.7	20.8	3QFY21	19.6	12.4	5.91	580.8
Dec-20	4.00	4QFY21	6.0	11.5	--	--	4QFY21	16.1	11.7	6.16	579.3
Jan-21	4.00	Dec-20	6.0	11.3	6.5	8.4	Jan-21	19.9	12.1	5.94	590.2
Feb-21	4.00	Jan-21	5.9	11.1	3.5	1.5	Feb-21	19.0	12.8	6.20	584.6
Mar-21	4.00	Feb-21	6.6	12.1	-2.9	2.8	Mar-21	16.1	11.7	6.35	579.3
Apr-21	4.00	Mar-21	5.6	11.4	--	--	Apr-21	16.2	10.6	6.28	588.0

Source: Database on Indian Economy - RBI

Table A5: External trade and global growth

External trade indicators (annual, quarterly and monthly growth rates)							Global growth (annual)			
Fiscal year/ quarter/ month	Exports	Imports	Trade balance	Ex. rate (avg.)	Crude prices (avg.)	Coal prices (avg.)	Calendar year	World GDP	Adv. econ.	Emer. econ.
	% change y-o-y		US\$ billion	INR/US\$	US\$/bbl.	US\$/mt		% change y-o-y		
FY18	10.6	20.9	-159.0	64.5	55.7	90.8	2011	4.3	1.8	6.4
FY19	8.6	10.6	-182.3	69.9	67.3	100.4	2012	3.5	1.2	5.4
FY20	-5.1	-8.2	-157.4	70.9	58.5	70.4	2013	3.5	1.4	5.1
FY21	-7.3	-17.4	-98.6	74.2	43.8	67.2	2014	3.5	2.1	4.7
1QFY21	-36.7	-52.4	-9.1	75.9	30.3	55.7	2015	3.4	2.4	4.3
2QFY21	-5.6	-24.8	-14.3	74.4	42.0	54.6	2016	3.3	1.8	4.5
3QFY21	-4.5	-5.6	-34.0	73.8	43.6	70.2	2017	3.8	2.5	4.8
4QFY21	19.6	18.4	-41.1	72.9	59.3	88.1	2018	3.5	2.2	4.5
Jan-21	6.2	2.0	-14.5	73.1	53.6	86.8	2019	2.8	1.6	3.6
Feb-21	0.7	7.0	-12.6	72.8	60.5	84.8	2020	-3.3	-4.7	-2.2
Mar-21	60.3	53.7	-13.9	72.8	63.8	92.8	2021*	6.0	5.1	6.7
Apr-21	195.7	167.1	-15.1	74.5	63.0	90.7	2022*	4.4	3.6	5.0

Source: Database on Indian Economy - RBI, Pink Sheet - World Bank and IMF World Economic Outlook April 2021.

* Indicates projections.


Table A6: Macroeconomic aggregates (annual and quarterly real growth rates, % change y-o-y)

Fiscal year/quarter	Output: Major sectors									IPD inflation
	GVA	Agr.	Ming.	Mfg.	Elec.	Cons.	Trans.	Fin.	Publ.	GVA
FY18 (3rd RE)	6.2	6.6	-5.6	7.5	10.6	5.2	10.3	1.8	8.3	4.5
FY19 (2nd RE)	5.9	2.6	0.3	5.3	8.0	6.3	7.1	7.2	7.4	4.5
FY20 (1st RE) [§]	4.1	4.3	-2.5	-2.4	2.1	1.0	6.4	7.3	8.3	3.3
FY21(AE) [#]	-6.5	3.0	-9.2	-8.4	1.8	-10.3	-18.0	-1.4	-4.1	3.0
3QFY19	5.3	2.6	-7.3	5.6	8.7	7.0	9.7	4.5	4.7	4.5
4QFY19	4.7	0.2	-10.5	2.5	4.6	6.9	8.9	6.6	6.9	4.2
1QFY20	5.0	3.3	-1.3	0.6	6.9	3.7	6.2	8.8	5.6	4.6
2QFY20	4.6	3.5	-5.2	-3.0	1.7	1.0	6.8	8.9	8.8	2.0
3QFY20	3.4	3.4	-3.6	-2.9	-3.1	-1.3	7.0	5.5	8.9	3.4
4QFY20	3.7	6.8	-0.9	-4.2	2.6	0.7	5.7	4.9	9.6	3.2
1QFY21	-22.4	3.3	-18.0	-35.9	-9.9	-49.4	-47.6	-5.4	-9.7	2.9
2QFY21	-7.3	3.0	-7.6	-1.5	2.3	-7.2	-15.3	-9.5	-9.3	2.4
3QFY21	1.0	3.9	-5.9	1.6	7.3	6.2	-7.7	6.6	-1.5	3.3

Source: National Accounts Statistics, MoSPI

[§] Growth numbers for FY20 are based on the first revised estimates (RE) of NAS released by the MoSPI on 29 January 2021 over the second RE of NAS for FY19, #FY21 growth numbers are based on second advance estimates released by MoSPI on 26 February 2021 over the second revised estimates for FY20 released on 26 February 2021.

Fiscal year/quarter	Expenditure components						IPD inflation
	GDP	PFCE	GFCE	GFCF	EX	IM	GDP
FY18 (3rd RE)	6.8	6.2	11.9	7.8	4.6	17.4	4.0
FY19 (2nd RE)	6.5	7.6	6.3	9.9	12.3	8.6	3.7
FY20 (1st RE) [§]	4.0	5.5	7.9	5.4	-3.3	-0.8	3.6
FY21(AE) [#]	-8.0	-9.0	2.9	-12.4	-8.1	-17.6	4.6
3QFY19	5.4	6.8	3.2	12.1	15.7	12.0	6.8
4QFY19	6.6	5.9	8.2	5.0	11.7	0.6	-1.9
1QFY20	5.4	7.6	1.8	13.3	3.0	9.4	4.0
2QFY20	4.6	6.5	9.6	3.9	-1.3	-1.7	1.6
3QFY20	3.3	6.4	8.9	2.4	-5.4	-7.5	3.1
4QFY20	3.0	2.0	12.1	2.5	-8.8	-2.7	5.6
1QFY21	-24.4	-26.3	12.8	-46.4	-22.0	-41.1	2.9
2QFY21	-7.3	-11.3	-24.0	-6.8	-2.1	-18.2	3.4
3QFY21	0.4	-2.4	-1.1	2.6	-4.6	-4.6	4.8

Source: National Accounts Statistics, MoSPI

[§] Growth numbers for FY20 are based on the first revised estimates (RE) of NAS released by the MoSPI on 29 January 2021 over the second RE of NAS for FY19, #FY21 growth numbers are based on second advance estimates released by MoSPI on 26 February 2021 over the second revised estimates for FY20 released on 26 February 2021.



List of abbreviations

Sr. no.	Abbreviations	Description
1	AD	aggregate demand
2	AEs	advanced economies
3	Agr.	agriculture, forestry 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	CSO	Central Statistical Organization
18	Disc.	discrepancies
19	ECBs	external commercial borrowings
20	EIA	US Energy Information Administration
21	Elec.	electricity, gas, water supply and other utility services
22	EMDEs	Emerging Market and Developing Economies
23	EXP	exports
24	FAE	first advanced estimates
25	FC	Finance Commission
26	FII	foreign investment inflows
27	Fin.	financial, real estate and professional services
28	FPI	foreign portfolio investment
29	FRBMA	Fiscal Responsibility and Budget Management Act
30	FY	fiscal year (April–March)
31	GDP	Gross Domestic Product
32	GFCE	government final consumption expenditure
33	GFCF	gross fixed capital formation
34	Gol	Government of India
35	G-secs	government securities



Sr. no.	Abbreviations	Description
36	GST	Goods and Services Tax
37	GVA	gross value added
38	IAD	Index of Aggregate Demand
39	IBE	interim budget estimates
40	ICRIER	Indian Council for Research on International Economic Relations
41	IEA	International Energy Agency
42	IGST	Integrated Goods and Services Tax
43	IIP	Index of Industrial Production
44	IMF	International Monetary Fund
45	IMI	Index of Macro Imbalance
46	IMP	imports
47	INR	Indian Rupee
48	IPD	implicit price deflator
49	J&K	Jammu and Kashmir
50	MCLR	marginal cost of funds-based lending rate
51	Ming.	mining and quarrying
52	Mfg.	manufacturing
53	m-o-m	month-on-month
54	Mt	metric ton
55	MoSPI	Ministry of Statistics and Programme Implementation
56	MPC	Monetary Policy Committee
57	NEXP	net exports (exports minus imports of goods and services)
58	NPA	non-performing assets
59	NCLT	National Company Law Tribunal
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	PSBR	public sector borrowing requirement
67	RE	revised estimates
68	PSU/PSE	public sector undertaking/public sector enterprises
69	RBI	Reserve Bank of India
70	SLR	Statutory Liquidity Ratio
71	Trans.	trade, hotels, transport, communication and services related to broadcasting
72	US\$	US Dollar
73	UTGST	Union Territory Goods and Services Tax
74	WALR	weighted average lending rate
75	WPI	Wholesale Price Index
76	y-o-y	year-on-year
77	1HFY20	first half of fiscal year 2019-20, i.e., April 2019-September 2019

