*The State of the Economy in Questions**

Michael Debabrata Patra

Governor, Professor Ashima Goyal, Dr. O.P Mall, Executive Director, Dr. Ajit Joshi, Principal Adviser, Department of Statistics and Information Management or DSIM, distinguished professional forecasters, colleagues from DSIM and other departments of the RBI,

I am deeply honoured to be invited to interact with our professional forecaster today. We meet after two year and seven months and much has transpired between these two meetings. We have a first in this meeting - Governor, interacting with professional forecasters. Never happened before, and I should know, with my long history in the RBI! It underlines the importance we attach to the inputs given by our panel of professional forecasters to policy-making.

"We live in a world of high uncertainty" is fast becoming the understatement of the year. Everything is up in the air. To give you a flavour of the roller coaster unknowns: as the world's most powerful grouping – the G7 – met in Germany and was reaffirming its "unwavering commit to support the government and people of Ukraine", missiles slammed into Kiev, Ukraine's capital.

The war will go on and so will geopolitical spillovers.

In response to a global inflation crisis, the most synchronised monetary policy tightening the world has seen in decades is underway. Will inflation come down is, however, hugely conditional upon how long the war lasts. More certainty seems to be crystallising around the likelihood of a recession. The BIS warns that it may take more than one recession to conquer the price surge but if it is not vanquished, an inflation psychology will spread and get entrenched.

Can India weather the geopolitical storm, break the back of inflation and achieve escape velocity from this global trap? Is the worst of inflation behind us, or is there more pain ahead? The balance of payments looks sustainable, but will it look as good if crude rules above US$ 120-130 per barrel? Monetary policy has been activated, but is the public's ask too much – inflation should fall to target without hurting growth? The RBI is asked to clearly communicate its future moves in the quest of this impossible dilemma, but is communication as good an instrument on the way up as it is on the way down?

It is said that economists seek to study uncertainty, and statisticians seek to measure it. Accordingly, I thought I would take advantage of this august company, our internal teams included, to delve into some of our recent research and place before you some existential questions about the state of the economy.

II. HARD OR SOFT LANDING?

Will the global economy undergo a hard landing – the BIS terms a hard landing as a recession occurring after the policy rate is raised for at least three successive quarters[1] – or a soft landing? Citigroup's economic surprise index (CESI) compiled by Bloomberg, which measures the degree to which macroeconomic data announcements beat or miss forecasts, has fallen into

* Speech delivered by Michael Debabrata Patra, Deputy Governor, in the Seminar of Policy Issues: Interface with Professional Forecasters on July 2, 2022 at Lonavala. Gratitude and appreciation are owed to Sonna Thangzason, John Joyce, Abhilasha, Indranil Bhattacharya, Atri Mukharjee, Harendra Behera, Rajeev Jain, V Dhanya, Dhirendra Gajbhiye, Kunal Priyadarshi, Asish Thomas George and Sitikantha Pattanaik for their valuable comments and to Vineet Kumar Srivastava and Samir Ranjan Behera for editorial assistance.

[1] BIS Annual Report, 2021/22, https://www.bis.org/about/areport/areport2022.pdf

[2] 'The Global Economy is falling short of expectations', The Economist, June 27, 2022; https://www.economist.com/graphic-detail/2022/06/27/the-global-economy-is-falling-below-expectations

negative territory[2]. Economists surveyed by The Wall Street Journal have dramatically raised the probability of recession in the next 12 months, putting it at 44 per cent in June 2022 – a level usually seen only on the brink of or during actual recessions. It is up from 28 per cent in April 2022 and 18 per cent in January 2022.

Much will depend on the fortunes of the US. There have been ten recessions during the period for which data on the effective Federal Funds rate are available (from Q3 1954)[3]. All of them, including the ones associated with the global financial crisis (GFC) and the COVID-19 pandemic, have been preceded by a period of monetary tightening (Chart 1). Not all episodes of monetary tightening were followed by a recession [such as during Q3:1961 to Q3:1963; Q4:1965 to Q3:1966 (recession did not occur in the next 3 years *i.e*, up to Q3:1969, but the US economy did enter a recession in Q4:1969); Q1:1984 to Q3:1984; and Q1:1993 to Q3:1993]

The global economy is projected to decelerate significantly during 2022 by all multilateral agencies; however, none of them foresee a contraction on an annual basis, including in alternative stress scenarios (Table 1).

Based on a nowcast of global GDP growth that uses data for 35 countries which account for 61 per cent of global GDP, it is observed that the momentum of global GDP growth has lost steam during Q1:2022, entering the contractionary zone sequentially (-1 per cent from 1.4 per cent in the previous quarter) (Chart 2). Even on a year-on-year basis, there is a substantial loss of pace (from 4.7 per cent in Q4:2021 to 2.8 per cent in Q1:2022)[4]. In an autoregressive integrated moving average (ARIMA) framework with exogeneous regressors, global GDP growth is likely to contract in Q2: 2022 by (-) 0.4 per cent sequentially and by (-) 4.1 per cent on a year-on-year basis.

III. IS THE INDIAN ECONOMY WEATHERING GEOPOLITCAL SPILLOVERS?

The June (MPC) meeting was held in the shadow of geopolitical spillovers. The MPC noted that domestic economic activity is gaining traction. Rural consumption should benefit from the likely normal south-west monsoon and the expected improvement in agricultural prospects. A rebound in contact-intensive services is likely to bolster urban consumption, going forward. Investment activity is expected to be supported by improving capacity utilisation, the government's capex push, and strengthening bank credit. Growth of merchandise and services exports is set to sustain the recent buoyancy. On the other hand, spillovers from prolonged geopolitical tensions, elevated commodity prices, continued supply bottlenecks and tightening global financial conditions weigh on the outlook. Taking all these factors into consideration, the real GDP growth projection for 2022-23:Q1 was placed at 16.2 per cent; Q2 at 6.2 per cent.

Table 1: World Bank Global Growth Forecast: Alternate Scenarios

	2021	2022	2023
Baseline	5.7	2.9	3.0
Alternate Scenario I: Baseline + Fed tightening	-	2.6	2.4
Alternate Scenario II: I + Energy price spike	-	2.2	1.6
Alternate Scenario III: II + China COVID-19	-	2.1	1.5

3 FRED Economic Data, St. Louis Fed; https://fred.stlouisfed.org/series/FEDFUNDS

4 These are the results of a recent Bulletin paper titled "Nowcasting Global GDP". **Alternate Scenario I: Baseline (+)** widespread financial stress caused by faster U.S. monetary tightening – Fed policy rates rise to 4 per cent by the first quarter of 2023, rapid tightening of global financial conditions, financial stress across EMDEs and large-scale capital outflows and soaring bond spreads, ultimately forcing authorities to accelerate fiscal consolidation efforts. **Alternate Scenario II: Alternate Scenario I (+)** Russia respond to escalating EU sanctions by announcing immediate ban on all energy exports to EU by Q3:2022, further sanctions targeting shipping companies or third parties purchasing Russian oil. **Alternate Scenario III: Alternate Scenario II (+)** China experience COVID-19 resurgences of steadily decreasing severity through the second half of 2022 and into 2023.

The high frequency indicators for Q1: 2022-23 are mixed; however, amidst a sea of red and yellow, greens are making their appearance, mainly reflecting the revival of contact-intensive sectors. (Chart 3). On the basis of these indicators, our nowcasts for Q1:2022-23 range between 15.5-16.7 per cent while the Survey of Professional Forecasters' (SPF) median forecast is 14 per cent[5]. Our nowcasts find a marginal improvement in momentum, with the 15.5 per cent nowcast having no momentum. Is it the case that professional forecasters see negative momentum in Q1: 2022-23 (Chart 4)? In Q2, we see an improvement in momentum (5.4 per cent) but weighed down by base effects.

IV. WHAT IS THE YIELD CURVE TELLING US ABOUT THE ECONOMY?

In the recent period, frequent inversions of the US yield curve have been cited as pointing to the probability of a recession. In India, the yield curve, which was relatively flat prior to the pandemic in Q2 of 2019, steepened in Q2:2020 after the announcement of the RBI's pandemic related measures, which included a 115 basis points decline in the policy rate. The introduction of G-SAP in April 2021 further lowered the belly (mid-segment) of the curve by Q2: 2021. With policy tightening commencing from since April 2022, there has been an almost parallel shift of the yield curve by Q2:2022, indicating hardening of yields across the term structure.

Information from the yield curve is encapsulated in its latent factors – the yield or level; its first derivative (or dy/dx) is the slope and its second derivative or d^2y/dx^2 is its curvature. These factors help to extract information from the entire yield curve: dimensionality reduction without losing information. In India, the pandemic-induced policy accommodation led to a decline in the level but an increase in both slope and curvature (the hump shape of the curve), which basically indicates dissimilar adjustments of yields across mid-segment maturities because of market segmentation. The recent monetary policy normalisation measures have resulted in an upward shift of the level while the curvature and slope have declined on account of higher increase in short-term rates *vis-à-vis* medium and long term rates (Chart 5).

A comparison of the recent sharp increase in level and curvature relative to the pre-pandemic period reaffirms expectations of economic recovery and hardening of *ex ante* inflation expectations by market participants. In sum, the yield curve is indicating an improvement in long-term growth prospects, an upshift in *ex ante* inflation expectations and tighter monetary policy in the period ahead.

V. ARE PEAKING SUPPLY CHAIN PRESSURES INDICATING EASING OF INFLATION?

The global inflation crisis has its roots in supply chain pressures and elevated commodity prices. As it gains generalisation and persistence, the monetary policy response shapes up to align demand with existing levels of supply. An index of supply chain pressures for India (ISPI), developed by extracting common factors latent in 19 domestic and global variables for the period March 2005 through May 2022, is found to track supply pressures on the Indian economy efficiently (Chart 6). While it contemporaneously correlates with input prices, it displays lead indicator properties in respect of goods price inflation. A moderation in the index would indicate an easing of inflation pressure in coming months and *vice versa.*

There is some evidence now that supply chain pressures are peaking globally and in India, so that a major source of upward inflation pressures may be ebbing. Will this reinforce the conduct of monetary policy so that less aggressive actions will suffice?

[5] Survey of Professional Forecasters on Macroeconomic Indicators – Results of the 76th Round, June 8, 2022; https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=21065

VI. HOW INTENSE IS IMPORTED INFLATION?

The transmission of exchange rate changes to domestic inflation is an important parameter for the setting of monetary policy. This is unobservable and has to be estimated for each country: the change in inflation due to a unit change in the exchange rate is known as exchange rate pass-through (ERPT). Updated estimates of time-varying ERPT suggest an increase in pass-through of exchange rate changes to domestic inflation in India in the recent period (0.11 in the pre-pandemic period to 0.18) (Chart 7). Rising levels and volatility of inflation, exchange rate volatility and higher crude oil prices have led to higher ERPT.

This focuses attention on increased monetary policy vigilance on the growing role of imported inflation, especially if external shocks become stronger. On the other hand, this strengthens the exchange rate channel of monetary policy transmission, implying that lower orders of rate hikes can bring down inflation faster, conditional upon the higher ERPT.

VII. ARE HOUSEHOLDS RESPONDING TO SUPPLY SIDE MEASURES?

The May 2022 round of the Inflation Expectation Survey of Households (IESH) of the RBI was conducted during May 2 to 11, 2022 in 19 major cities on 6,062 urban households. The survey showed that households' median inflation perceptions increased from 9.7 per cent in March 2022 to 10.1 per cent in the current round. Median inflation expectations for three months ahead rose by 10 bps to 10.8 per cent, while for one year ahead, they rose by 30 bps to 11.1 per cent (Chart 8).

In view of the reduction in the prices of petrol and diesel following the cut in central excise duties on May 21, 2022 a limited follow-up survey (or an 'extension survey') was conducted during May 24-28, 2022, which covered 3,036 households across 19 centres. In the extension survey, the three months ahead and one year ahead expectations eased by 190 bps and 90 bps, respectively, when compared with the regular round – a significant drop from the March 2022 IESH survey readings. Further reduction of State VATs on petrol and diesel across the country can certainly contribute to softening of inflationary pressures as well as expectations.

VIII. WHAT IS THE COST OF FIGHTING INFLATION?

Monetary policy has been activated with the belief that there is an inverse correlation between unemployment and wage growth – the essence of the Philip Curve (PC). Output can be increased only at the cost of higher inflation or conversely, inflation can be lowered only at the cost of lower output. From the late 1990s up to the pandemic, global economic activity expanded continuously without any parallel acceleration in inflation – the Great Moderation. This led many to believe that the PC has flattened, that it has either disappeared or is hibernating, implying that monetary policy may not work or may be too costly. A consensus exists, though, that the answer is empirical and country-specific.

Hence, we estimated a time-varying Phillips curve for India, incorporating the pandemic experience. The first challenge was to estimate the output gap. In view of the pandemic and its toll, output was posited as comprising potential output (unobservable), the output gap and a disturbance in the form of the Oxford stringency index[6]. Since we had two unobservables – potential output and the output gap – we require two measurement equations – the Phillips curve or the aggregate supply curve and the Taylor rule or the monetary policy reaction function – two observables *i.e.*, inflation and the interest rate, and a connecting equation – the IS or aggregate demand curve. From

[6] The Oxford Stringency Index track and compare government responses to the coronavirus outbreak over time. The stringency index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest). The Oxford Stringency Index is a measure of the strictness of government COVID-19 response policies and is not an indicator of its effectiveness.

this set-up, we filter out the unobservables. This is the standard Kalman filter. The innovation is the introduction of the stringency index (Chart 9).

Our estimates show that the output gap, which was -1 per cent of potential output in 2019, widened to – 5.4 per cent in 2020 Q2 but is likely to have narrowed to -3.5 per cent in Q1: 2022-23. Thus, the output gap in India is closing gradually. With this valuable input, we estimated a time-varying non-linear Phillips curve for India. Our results show that the inflation process in India has become increasingly sensitive to forward-looking expectations (Chart 10). The slope of the Phillips curve has been declining with the anchoring of inflation expectations since the institution of inflation targeting and even before, *i.e.*, since the establishment of its pre-conditions from 2015. This has also led to an increase in the sacrifice ratio, implying that for every unit of disinflation, more and more output would be lost. From 2020, however, the Phillips curve has been steepening with the narrowing of the output gap and rising inflation. Alongside, there is a decline in the sacrifice ratio, suggesting that this is the best time to put anti-inflationary monetary policy to work while minimising output losses.

The Phillips curve is alive and well in India, but it is recovering from a period of flattening lasting more than six years, *i.e.*, from 2014.

IX. WHAT IS THE STANCE OF MONETARY POLICY?

The natural rate of interest is that rate at which monetary policy is neither expansionary nor contractionary and consistent with the economy being in a state of equilibrium or steady state – when inflation is at target and output is close to or at its potential level. As it is unobserved in real life, the natural or neutral rate of interest has to be empirically estimated. Caution is necessary as these estimates are time varying and highly sensitive to the choice of data, sample period, variables and methodology, with large confidence bands.

After the pandemic, several determinants of the natural rate have exhibited distinct shifts, with persisting uncertainty about whether and over what time frame they may normalise. Employing a Kalman filter with Bayesian methods, the natural rate for India is estimated to lie in the range of 0.8 per cent to 1.0 per cent for Q3 of 2021-22, which is lower by about 80 basis points than the earlier comparable estimate of 1.6 -1.8 per cent for Q4:2014-15 (Chart 10).

The main factor that can be attributed to the decline in the natural rate is the deceleration in the growth of potential output. The confidence band around the estimates has widened, reflecting heightened uncertainty about the evolution of key determinants of the natural rate during the post-pandemic period. The current estimate of the natural rate, read in conjunction of the inflation remaining above target and the output gap negative but closing, suggest that monetary policy is still accommodative.

X. WILL INDIA'S EXTERNAL SECTOR WITHSTAND GEOPOLITICAL HEADWINDS?

The elevation in international commodity prices delivered a strong terms of trade shock to India's balance of payments. In association with portfolio outflows in the wake of the war in Ukraine, financing pressures are building up, although they are modest at this time. More recently, commodity prices appear to be peaking, impacted by loss of demand as a global risk aversion has set in with fears of imminent recession.

With crude prices at $105 per barrel as assumed by the MPC, the net terms of trade index will worsen from 100.6 in 2021-22 to 98.5 in 2022-23. This will cause the CAD to widen from 1.2 per cent of GDP in 2021-22 to 2.3 in 2022-23, *ceteris paribus*. With crude at US $ 120, the terms of trade index falls further to 97.4 and the CAD expands to 2.8 per cent of GDP but it remains within the sustainable limit of 3 per cent. External debt remains modest as a proportion to GDP and has actually declined between March 2021 and March 2022 (Chart 11).

XI. ARE FISCAL RISKS MOVING SUB-NATIONAL?

Before the pandemic, the combined gross fiscal deficit (GFC) of the state governments remained modest at 2.5 per cent of GDP (during 2011-12 to 2019-20), lower than the Fiscal Responsibility Legislation (FRL) ceiling of 3 per cent. With the onset of the pandemic, States' fiscal position deteriorated in 2020-21. With a decline in revenue and increase in spending, the fiscal deficit widened to 3.5 per cent of GDP in the revised estimates for 2021-22. States' outstanding debt at end-March 2022 stands at 31.2 per cent of GDP, which is the highest in the past 15 years. The most indebted states are expected to remain stressed, with their debt-GSDP ratios likely to exceed 35 per cent by 2026-27 (Chart 12).

Risks to state government finances arise from macroeconomic uncertainty; declining own tax revenue; relaunch of the old pension scheme by some states; rising expenditure on non-merit freebies; expanding contingent liabilities; and the ballooning overdue of DISCOMs - warranting strategic corrective measures. Financial restructuring or bailout of ailing DISCOMs will have the most severe impact on debt-GSDP ratios.

XI. WILL THE OUTPUT LOST TO COVID 19 BE RECOVERED?

The pre-COVID trend growth rate works out to 6.6 per cent (CAGR for 2012-13 to 2019-20). The Report on Currency and Finance, 2021-22 took the actual growth rate of (-) 6.6 per cent for 2020-21, 8.7 per cent for 2021-22, the projection of 7.2 per cent for 2022-23, and 7.5 per cent beyond that. It found that India is expected to catch up with pre-pandemic trend growth only by 2034-35 (Chart 13). The output losses for individual years have been worked out to 19.1 lakh crore, 17.1 lakh crore and 16.4 lakh crore for 2020-21, 2021-22 and 2022-23, respectively. The key question is: Will these output losses ever be reclaimed?

XII. CONCLUSION

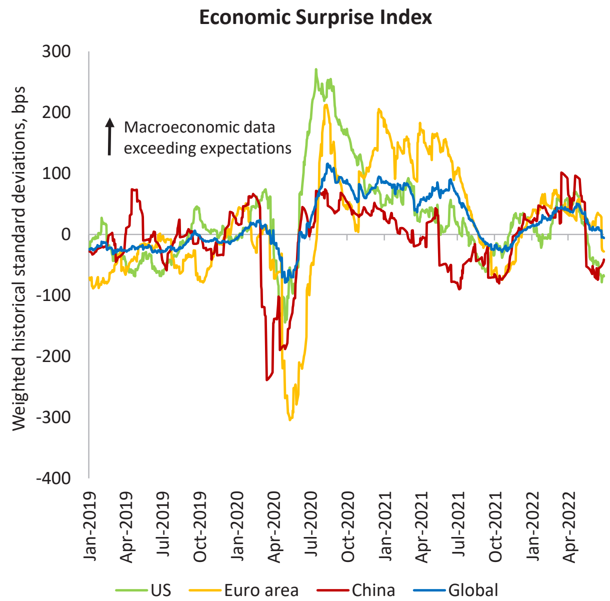
We live in an age of anxiety, when the present seems unstable and the future uncertain. Apprehensions of recession grow, consumer confidence wanes, businesses become risk averse and markets are overshooting. Geopolitical spillovers refuse to abate. Reshoring of supply chains has begun. There is a strengthening of centrifugal forces and a weakening of the centripetal in the world around us. What is looking like fragmentation may actually be changes in the fundamental shape of globalisation. Or the end of it. We do not know enough. It is possible to envisage a soft landing – the war ceases; supply bottlenecks ease; inflation falls away; and further monetary policy tightening is put on hold. On the other hand, the worse-case scenario can also play out – inflation gets entrenched, prompting a stronger tightening, and causing a stagflationary hard landing. If this dilemma is global, India cannot be immune. There are some aspects of the situation we face today that are unique but there are also others which we have seen before. History does not repeat itself, but it often rhymes[7]. We have to navigate these stormy seas. And we have to do it our way. I leave you with these pensive thoughts.

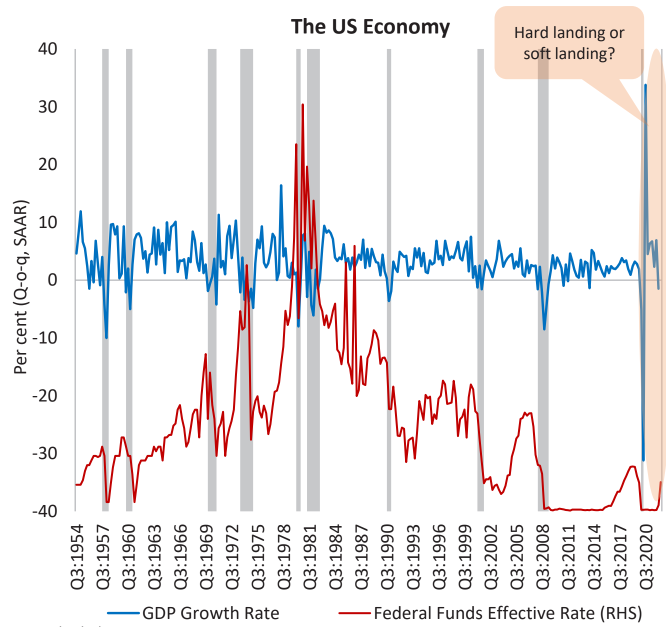
Thank you.

7 Attributed to Mark Twain.

Annex

Chart 1: Global Economy – Hard or Soft Landing

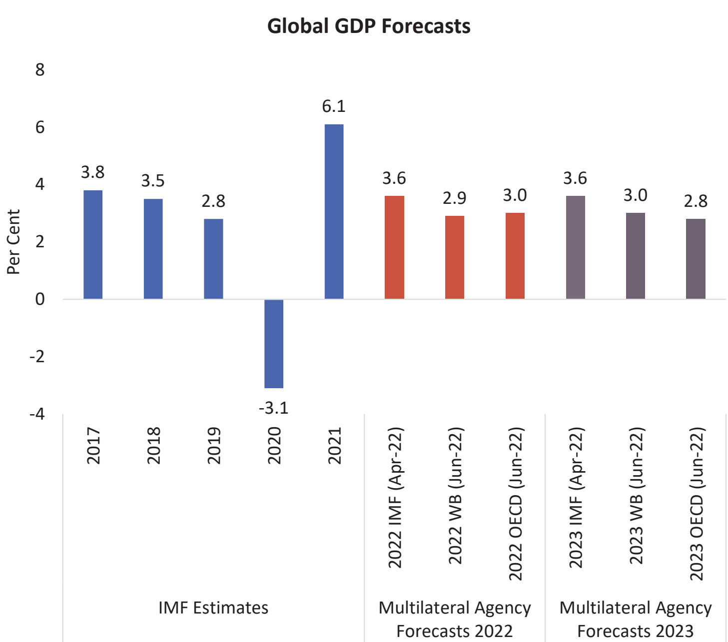




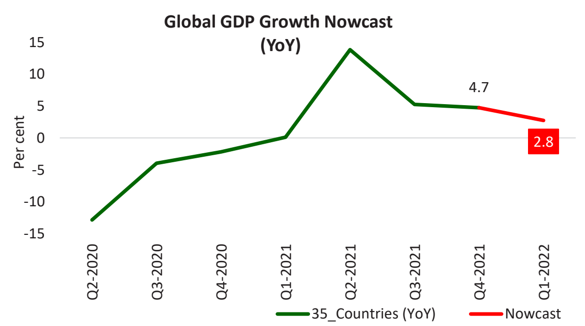
Grey shaded areas represent recessions

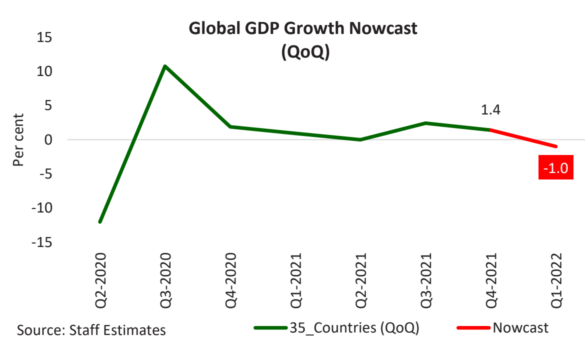
Sources: Bureau of Economic Analysis; St. Louis Fed database; https://www.nber.org/research/business-cycle-dating; Refinitiv Datastream.

Chart 2: What do nowcasts say?



Source: IMF, WB, OECD





Source: Staff Estimates

Chart 3: High Frequency Indicators – Greener or Redder?

		High Frequency Indicators - Growth (y-o-y per cent)							Growth over pre pandemic		
Sectors	Indicators	Q1:2021-22	Q2:2021-22	Q3:21	Q4:21	Mar-22	Apr-22	May-22	Mar 22/Mar 19	Apr 22/Apr 19	May 22/May 19
Urban Demand	Passenger Vehicles Sales	317.7	3.7	-20.1	-6.1	-3.9	-3.8	185.1	-4.2	1.6	10.6
Rural Demand	Two Wheelers Sales	85.9	-12.3	-24.8	-23.0	-20.9	15.4	253.2	-17.8	-29.9	-27.4
	Three Wheelers Sales	91.0	53.1	14.5	-2.8	-0.7	51.1	2161.6	-51.6	-54.7	-44.7
	Tractor Sales	38.9	-9.5	-13.5	-25.7	-14.3	40.6	47.4	17.0	55.5	41.1
Trade, hotels, transport, communication	Commercial Vehicles Sales	234.4	24.5	0.9	18.8	18.8			-12.1		
	Railway Freight Traffic	40.5	13.0	7.2	7.0	6.7	9.4	14.6	16.3	20.9	25.5
	Port Cargo Traffic	27.2	6.2	1.6	-0.7	0.6	5.5	10.2	7.7	8.1	11.4
	Domestic Air Cargo Traffic	201.9	27.2	2.5	-4.3	-1.0	7.9	54.7	-4.4	2.7	1.9
	International Air Cargo Traffic	118.6	24.8	15.4	1.9	1.1	-0.9	-4.6	-10.7	-5.2	-13.6
	Domestic Air Passenger Traffic	366.8	116.6	61.6	6.9	37.7	87.9	474.7	-5.3	-1.5	-2
	International Air Passenger Traffic	328.0	110.4	138.5	80.8	105.7	155.6	722.8	-43.8	-36.6	-28
	GST E-way Bills (Total)	97.9	27.5	10.8	9.2	9.7	28.0	84.1	42.4	43.3	35.6
	Tourist Arrivals	639.1	322.9	263.1	155.9	177.9	399.2		-65.0	-49.3	
Construction	Steel Consumption	100.9	-0.5	-6.0	-1.7	0.7	1.8	19.0	2.7	18.6	5.6
	Cement Production	54.5	22.9	8.6	9.3	8.8	8.0		8.1	8.9	
PMI Index	Manufacturing	51.5	53.8	56.3	54.3	54.0	54.7	54.6			
	Services	47.2	52.4	57.3	52.3	53.6	57.9	58.9			
Scheduled Commercial Banks- Aggregates	Deposits	10.1	9.5	10.3	8.6	8.9	10.0	8.6	30.9	34.4	31.4
	Credit Outstanding	6.0	6.5	7.8	7.9	8.6	9.6	11.2	21.7	24.8	24.3
Electricity Generation	Conventional	18.8	7.6	2.4	2.2	4.3	10.1	20.4	15.6	16.4	6.8
	Renewable	12.9	28.6	6.0	19.2	22.5	29.7		58.8	52.9	

Chart 4: Is India Weathering the Geopolitical Storm?

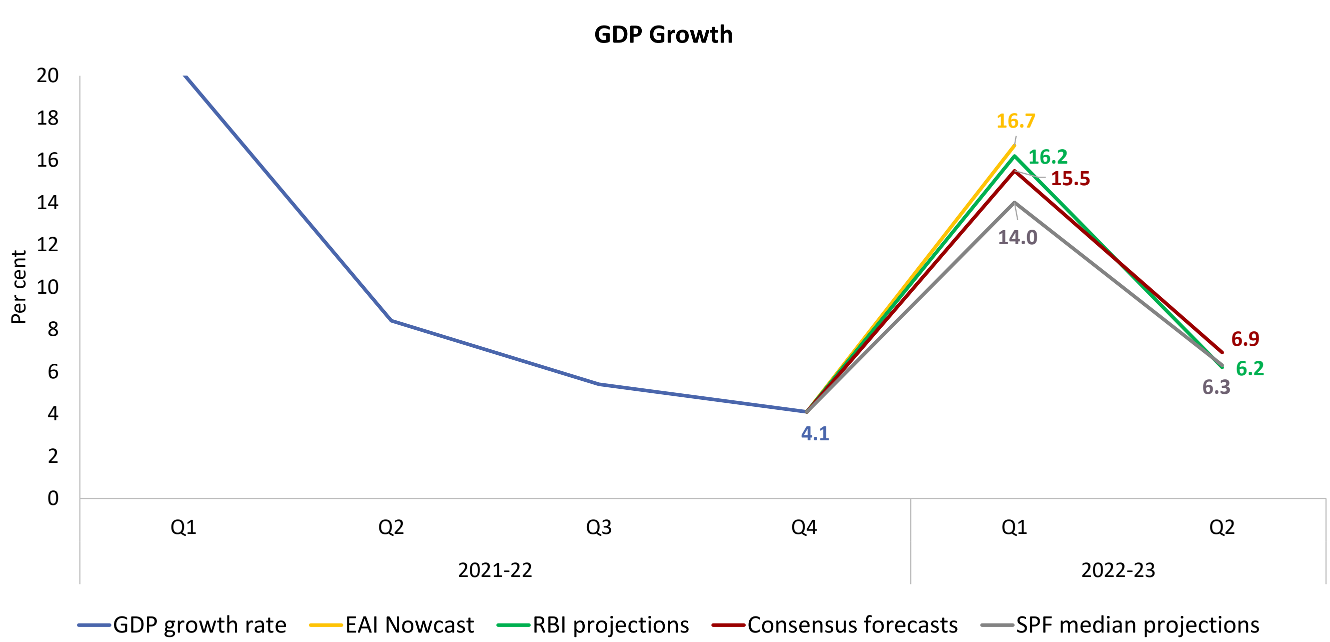


Chart 5: What is the Yield Curve Telling us About the Economy?

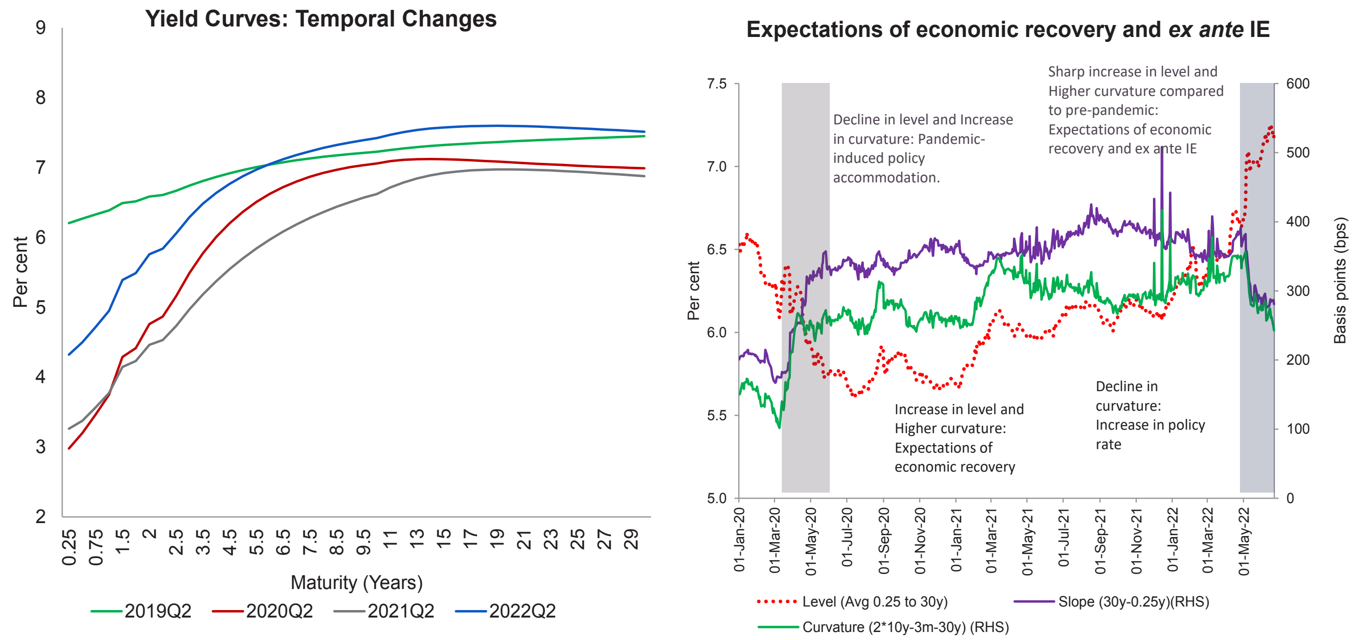


Chart 6: Will Peaking Supply Chain Pressures Reinforce Monetary Policy?

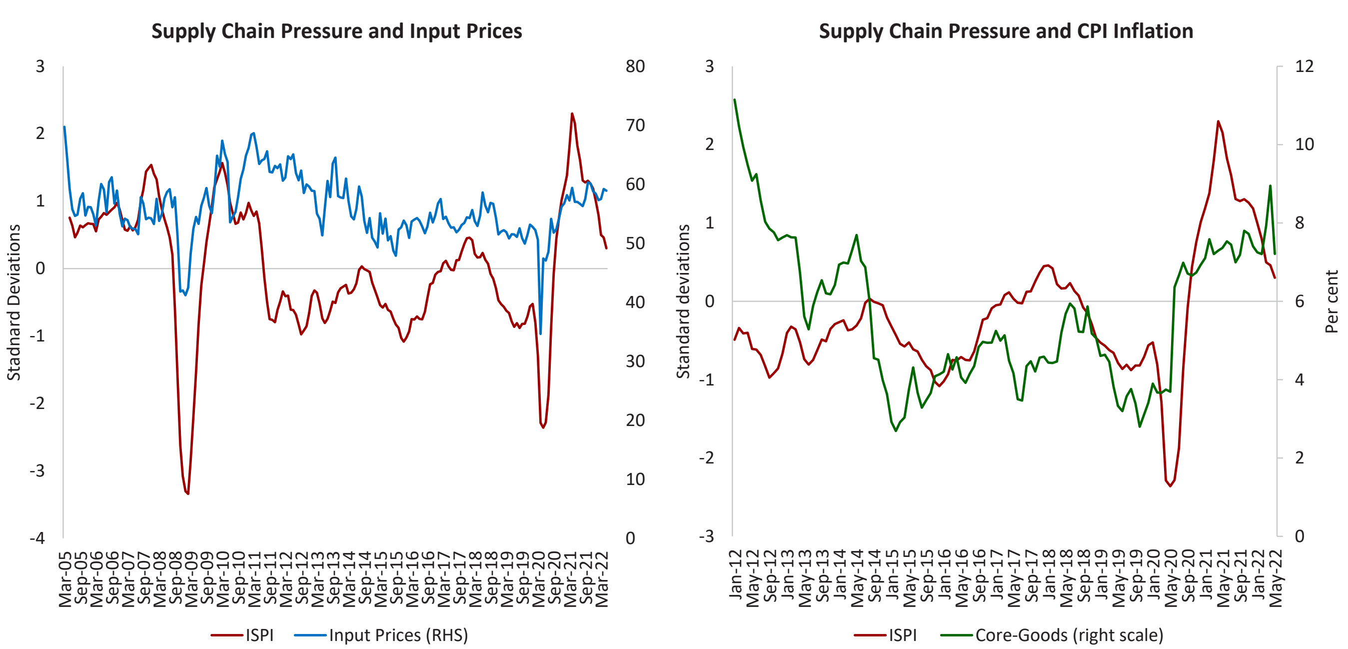


Chart 7: What is ERPT telling us?

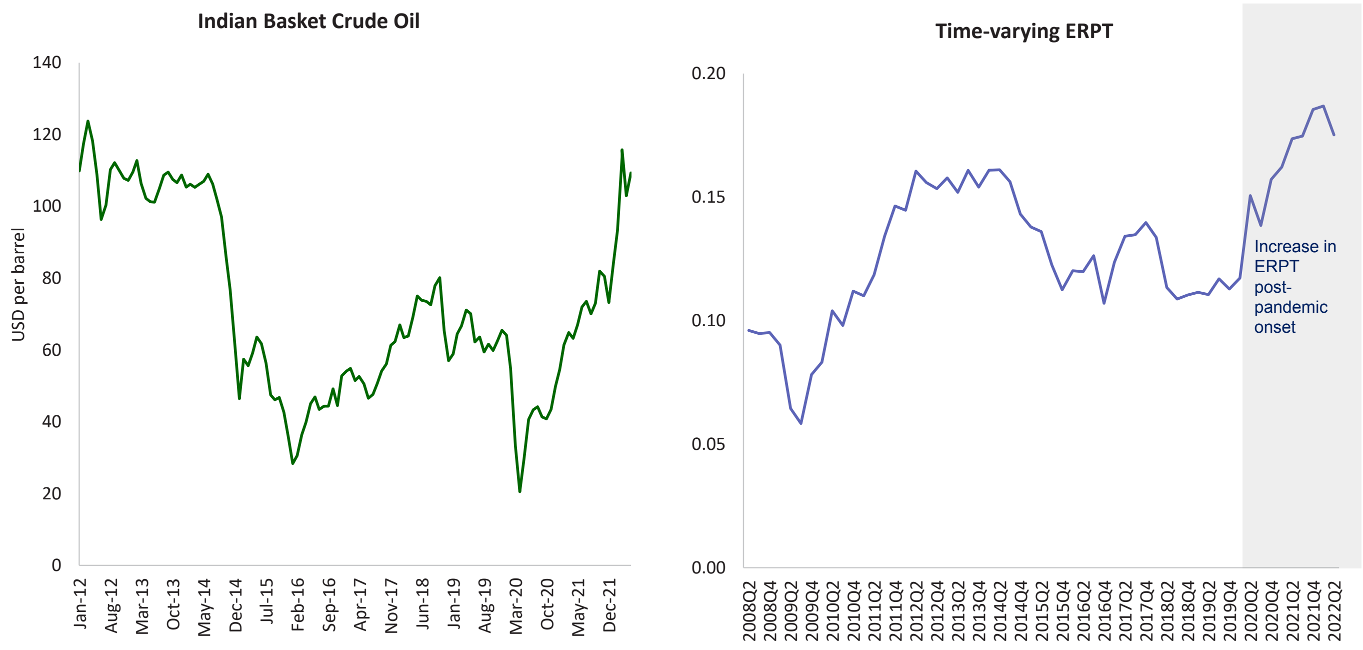


Chart 8: Can Supply-side Measures Anchor Inflation Expectations?

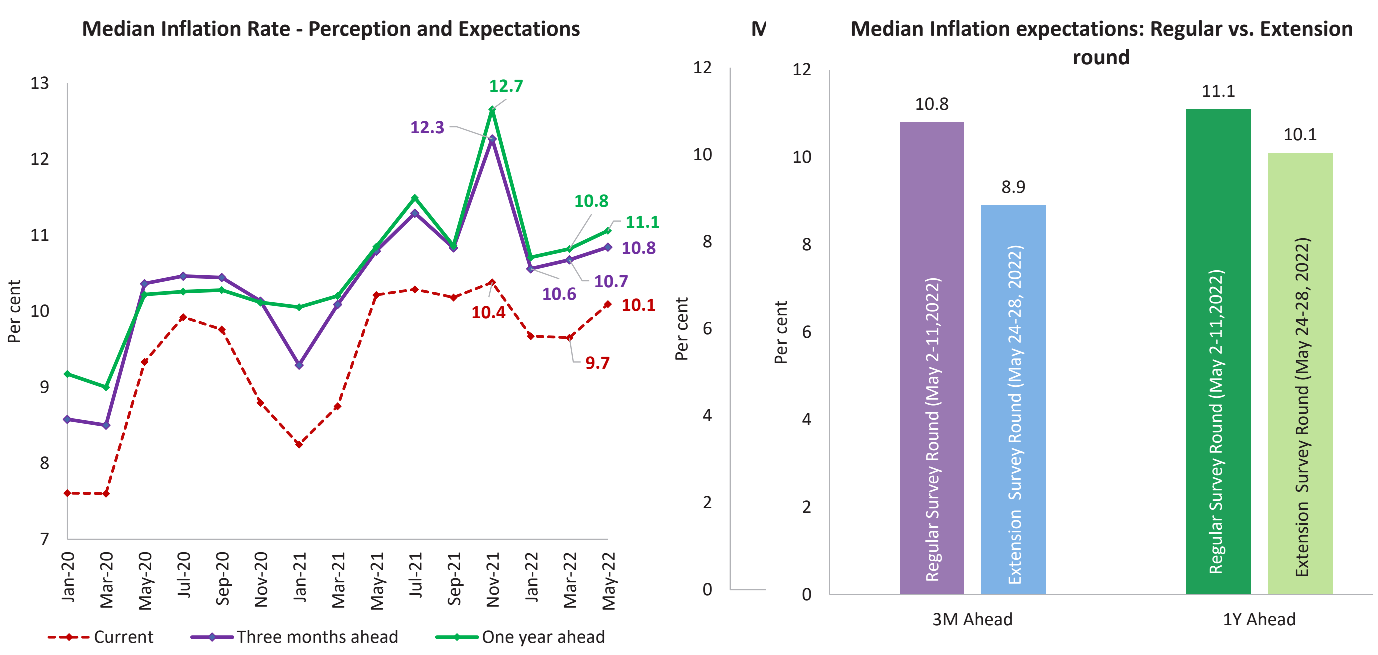
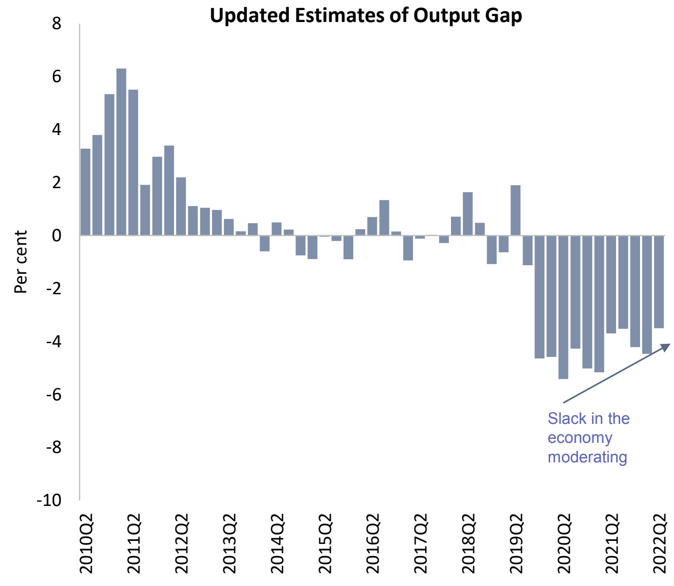


Chart 9: Is the Phillips Curve in India dead, Inert and Stirring Life or Alive and Well?



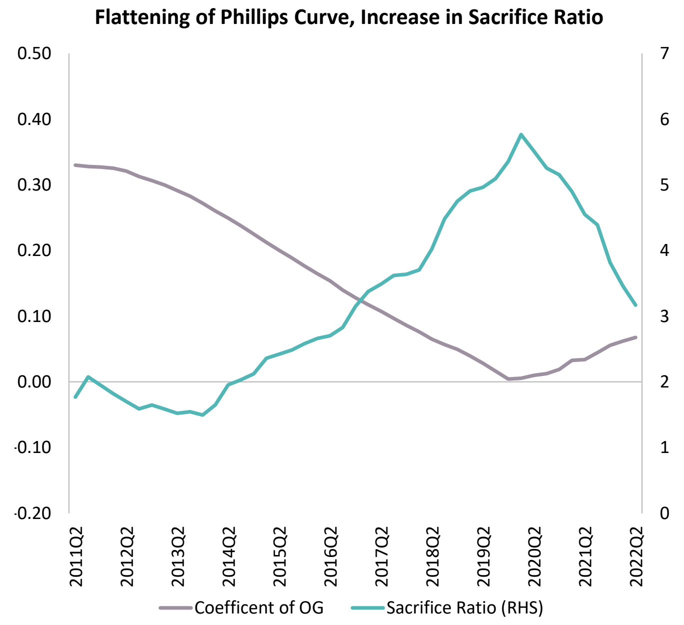
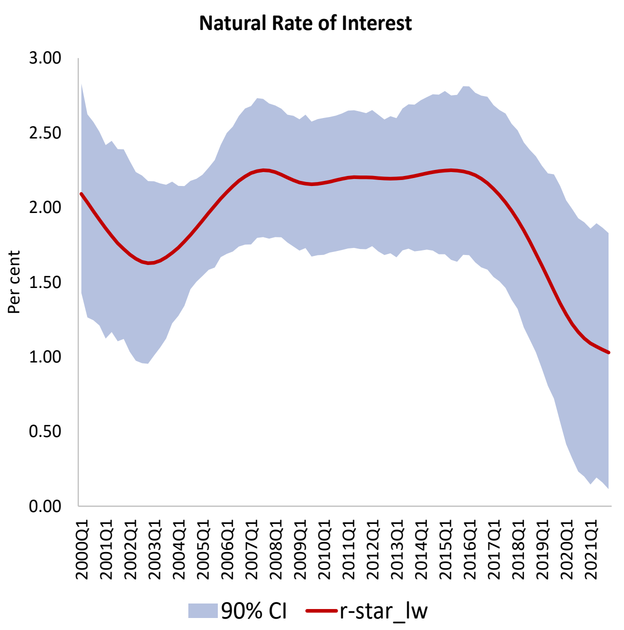


Chart 10: Natural Rate of Interest – What are New Estimates Telling Us?



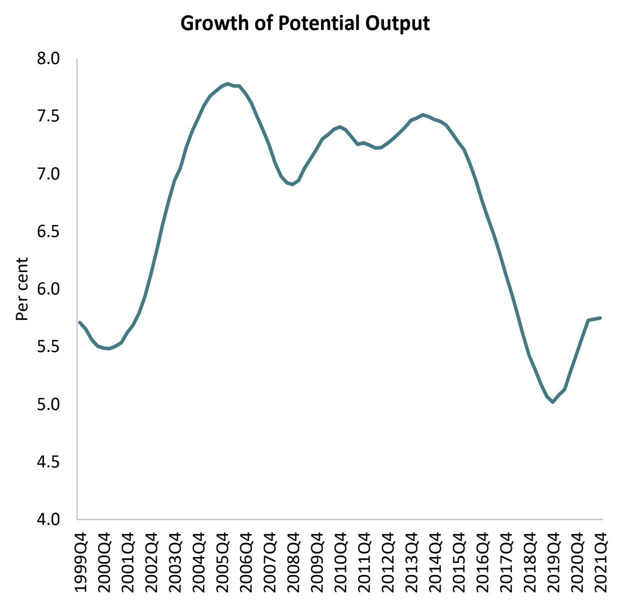


Chart 11: BoP Sustainability: Threshold Effects?

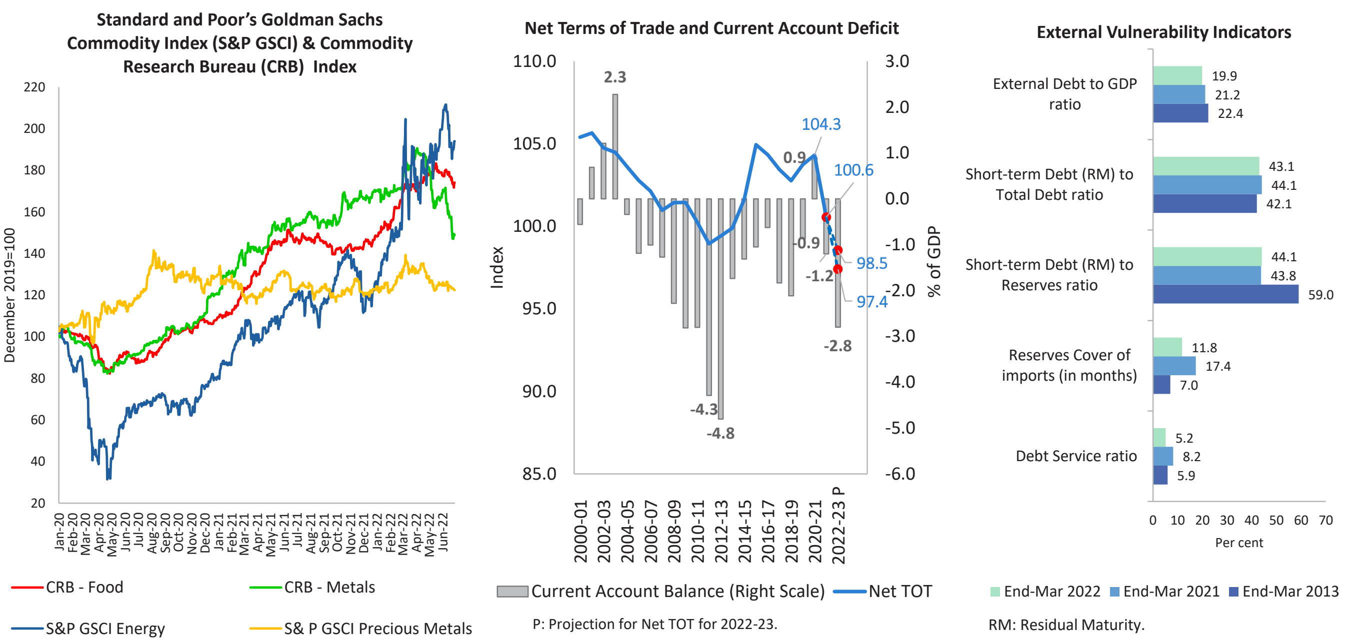


Chart 12: Fiscal Risks: Moving Sub-national?

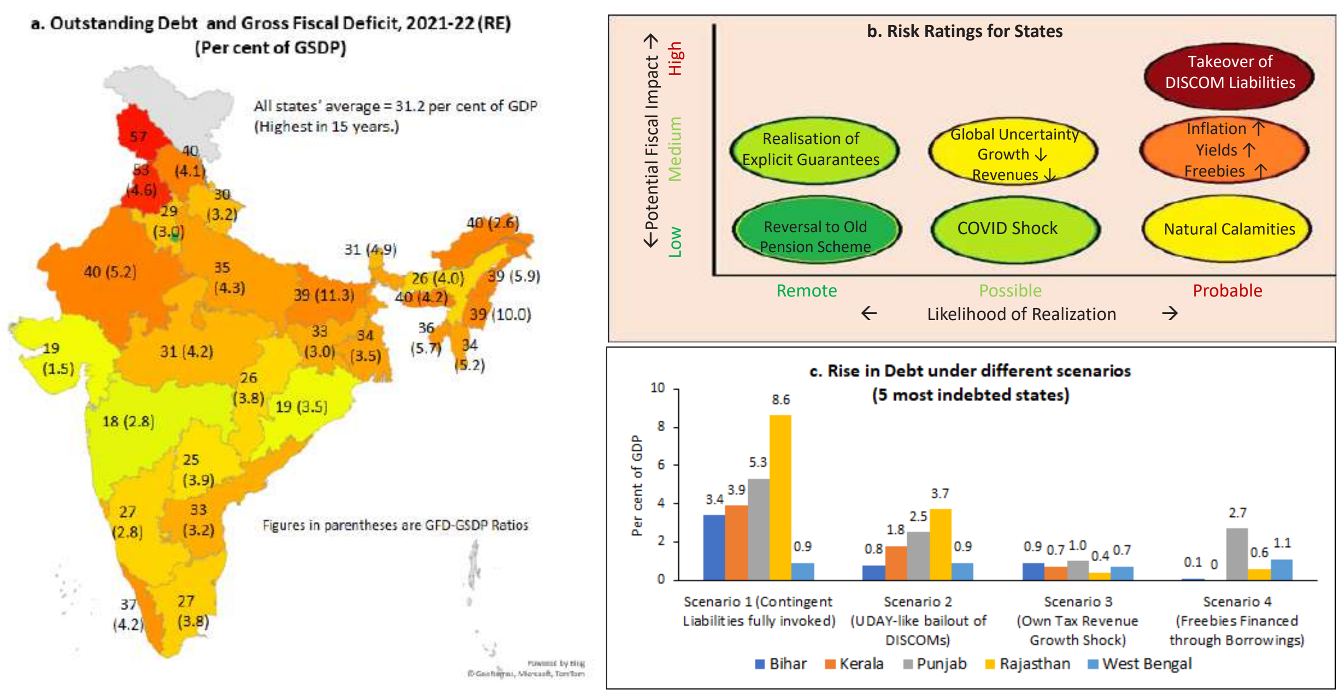
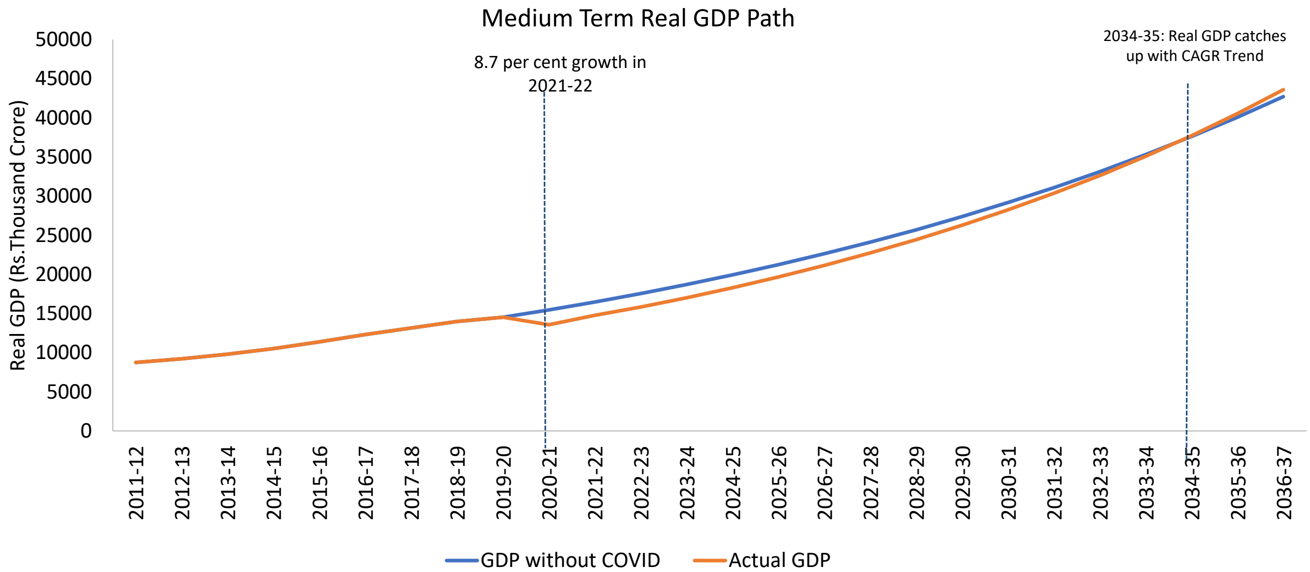


Chart 13: Recovering Output Loss to the Pandemic



India needs to redesign development strategies to recover lost output