JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA
PGDM / PGDM (M) / PGDM (SM)
SECOND TRIMESTER (Batch 2023-25)
END TERM EXAMINATION, JANUARY 2024

Course Name	Macroeconomics and Economic Environment of Business (MEEB)	Course Code	20402
Max. Time	2 Hours	Max. Marks	40 MM

INSTRUCTIONS:

a. **Attempt all Questions**
b. **Be Precise in your answer**
c. **All questions carry equal marks**
d. **Only a single-bound notebook or register containing handwritten notes or a single book is allowed in the examination hall. The copy or register must display the student's full name and roll number on the cover for identification and verification during the exam. Loose sheets or papers of any kind are strictly prohibited.**
e. **Exchange of registers or copies in the Exam Hall is strictly prohibited. Violation of this rule may result in disqualification from the exam.**

Read and answer the questions that follow.

Recent Inflation Dynamics in India

(adapted from RBI Bulletin, December 2023)

I. Introduction

As 2023 ended and a new year began, the long-awaited normality still eludes the global economy. The years 2020 to 2023 will perhaps go down in history as the period of 'Great Volatility', comprising a host of black swan events in quick succession. The global economy is showing signs of slowdown, though unevenly across geographies and sectors. The Emerging Market Economies (EMEs) as a group have remained resilient during the current bout of volatility, unlike previous episodes. While headline inflation has receded from the highs of last year, it remains above target in many countries. Core inflation continues to be sticky, impeding the last mile of disinflation. Major central banks have kept rates on hold while refraining from forward guidance in view of the prevailing uncertainties. Financial markets remain volatile in their quest for definitive signals about the future path of interest rates. Let us examine the price level changes over the last 4 years.

The post-pandemic surge in inflation across economies posed a major challenge for monetary policymakers around the world. Amidst repeated waves of COVID-19 infections and associated lockdowns and restrictions, the Russia-Ukraine conflict with the consequent supply disruptions and commodity price boom, and the large-scale fiscal and monetary policy stimuli since the onset of the pandemic, it became challenging for central banks to assess the relative role of demand and supply factors in the evolving inflation dynamics. In the early phase of the pandemic, lockdowns and restrictions across advanced economies (AEs) and emerging market and developing economies (EMDEs) led to a contraction in economic activities. The vaccine rollout and adaptation to the pandemic life opened scope for gradual easing of pandemic time restrictions and shift in demand towards goods away from contact intensive services, creating sectoral supply-demand imbalances and price pressures. Subsequently, the release of pent-up demand supported by fiscal and monetary impetus led to rebound in commodity prices, a stronger than expected economic recovery across regions and marked increase in consumer price inflation in many AEs and EMDEs. In this regard, the IMF noted that, "while monetary policy can generally look through transitory increases in inflation, central banks should be prepared to act quickly if the risks of rising inflation expectations become more material in this uncharted recovery" (IMF, 2021). In the highly uncertain environment, accommodative policies continued in most economies during 2021.

The outbreak of Russia-Ukraine conflict in February 2022, however, led to renewed supply disruptions and global shortages in key food, energy and other commodities, causing a sharp increase in their prices. Consequently, a number of economies experienced a rapid rise in inflation, which in an environment of tighter labour market conditions, especially in AEs, raised the risks of destabilisation of inflation expectations and inflation becoming generalised. As a result, many central banks, both AEs and EMDEs, resorted to aggressive tightening of monetary policy to keep inflation expectations anchored and bring inflation back to the target. EMDEs had to additionally contend with heightened financial market volatility and depreciation pressures on their currencies. The globalisation of inflation, and an assessment that the price pressures are not transitory led to a synchronised monetary policy tightening (RBI, 2023). It has also been argued that central banks erred on the side of interpreting the initial inflation surge as temporary and fell behind the curve in their inflation fight (Walsh, 2022; Kronick and Ambler, 2023) which led inflation to reach multi-decade highs in many AEs.

A pertinent question that arises is what could have helped central banks to react to the inflation surge in a timely manner? Post-pandemic literature emphasised on the role of both adverse supply shocks such as supply bottlenecks and higher energy prices (Budianto et al., 2021) as well as excess demand caused by catch-up effects and large-scale monetary and fiscal stimulus due to the COVID-19 pandemic (Summers, 2021; Furman, 2022). In this context, assessing disaggregated personal consumption expenditure (PCE) inflation by spending category in the US, Shapiro (2022a) provided a novel approach to quantify and track the evolving impact of supply driven versus demand-driven factors on inflation on a monthly basis to guide policy.

India has experienced episodes of short inflation spikes even before the pandemic (for example, December 2019-February 2020) due to weather-induced food price shocks, but its frequency has increased since the pandemic with overlapping global shocks – Russia-Ukraine conflict and synchronised monetary policy tightening - disrupting supply, pushing up commodity prices and inducing financial market volatility. Notably, food and fuel occupy more than 50 per cent of India's CPI basket suggesting that the role of supply side shocks in driving inflation may be higher compared to AEs. Despite India being a food surplus country, recent experiences show that supply issues from not only weather disturbances but also trade channel could be significant in influencing domestic food inflation dynamics, while volatility in international crude oil prices could impinge on inflation both directly and indirectly in view of large import dependence. Moreover, CPI food basket contains protein rich items which could exhibit demand driven price pressures associated with increase in income levels (Gokarn, 2011). Thus, while certain supply shocks in food items such as vegetables could be temporary, some others related to global supply concerns and consumption shifts induced by rising incomes could be persistent. On the other hand, most of the items in core (i.e., excluding food and fuel) could be largely driven by demand, but could also reflect the pass-through of sustained input costs pressures. Thus, with both demand and supply factors affecting prices of different CPI items/subgroups to varying degrees during different episodes, it may be pertinent not only to analyse the drivers of inflation but also quantify the impact of demandand supply-factors driven inflation regularly to guide policy making.

Furthermore, a 9-month rolling window analysis on the contributions of demand and supply to inflation shows that demand drivers of inflation not only increased but also remained consistently elevated post-April 2022 in contrast with the first wave of COVID-19 when it gradually tapered off. On the other hand, supply driven inflation which rose sharply after the first wave of COVID-19, tapered off significantly thereafter, until the Russia-Ukraine conflict again pushed up its contribution to some extent. In view of these inflation dynamics and drivers, the commencement of monetary tightening in AprilMay 2022 in India was timely. The policy repo rate was increased by 250 basis points (bps) during May 2022-February 2023 to keep inflation expectations anchored and to ensure that inflation progressively aligns to the target.

II. Stylised Facts

The halt in production and slump in demand due to lockdowns at the onset of COVID-19 pandemic led to a sharp fall in economic growth across countries. Due to the consequent weakness in overall demand conditions, commodity prices fell initially. Gradually, with the opening of the economy on vaccine rollout and release of pent-up demand, overall demand recovered faster than supply, thereby putting pressures on commodity prices. Prices rose across all major categories, i.e., food, fuel and metals reflecting supply constraints amid demand recovery. COVID-related restrictions also heightened supply chain disruptions during 2021 and led to increases in freight costs, labour shortages and delays in delivery. The Russia-Ukraine conflict in early 2022 further amplified supply chain disruptions and commodity price pressures.

In the early phase of the pandemic, AEs experienced a sharp fall in inflation in 2020 alongside contraction in economic activities due to the lockdowns and restrictions. In the EMDEs, however, inflation did not fall uniformly in 2020 even as economic activities contracted. Post the Ukraine conflict, inflation rose to multi-year highs across AEs and EMDEs in 2022 amid rising food and energy prices, renewed supply disruptions, stimulus-led faster economic recovery, tighter labour market conditions in AEs, and currency depreciation in EMDEs. Compared to what was anticipated initially, inflation turned out to be more stubborn and persistent. This, in turn, prompted synchronised aggressive tightening of monetary policy across economies in 2022.

India also witnessed contraction in economic activity in 2020-21 due to the pandemic. However, in contrast with the experience of AEs, inflation rose in India reflecting the impact of weather induced food price shock and lockdown related supply disruptions and remained generally elevated during the various COVID-19 waves. Amid pandemic uncertainties, the outbreak of Russia-Ukraine conflict further pushed up global commodity prices and aggravated supply disruptions leading to sharp increase in input cost pressures. This was gradually passed-on to output prices in line with economic recovery, which resulted in elevated core (i.e., CPI excluding food and fuel) inflation. Consequently, headline inflation peaked at 7.8 per cent in April 2022.

It is difficult to gauge whether the inflation surges are temporary or persistent on a real time basis. These challenges are accentuated during periods of heightened macroeconomic uncertainty, and aggregative measures such as output gap and labour market conditions often fail to provide a clear signal about the entire economy due to shock induced distortions as well as lags in data availability. In this environment, an ongoing assessment of relative importance of demand and supply in driving inflation could be a useful guide for policy making. A decomposition of drivers of CPI inflation covering all the sub-groups can provide information on relative contributions to inflation. Such an exercise cannot, however, identify the inherent demand-supply mismatches in each category. This is notwithstanding the fact that inflation in food and fuel groups is generally assumed to be supply driven, while core inflation components are largely demand driven.

III. Stagflation risk in India

Post COVID-19 pandemic, the global economic landscape faced challenges that led to an increased risk of stagflation, portmanteau of economic stagnation alongside high inflation. Various factors, such as the COVID-19 pandemic, geopolitical tensions, lockdowns in China, and supply chain disruptions, have contributed to this situation (World Bank, 2022). However, compared to stagflationary period of the 1970s, currently the risk of stagflation is lower attributable to favourable macroeconomic conditions. Unlike the severe commodity price shocks experienced in the 1970s, during which crude oil almost increased four-fold, the increase in energy prices during 2022 was lesser. Additionally, central banks worldwide are now more focused on maintaining price stability and, financial institutions have healthier financial positions.

Historically, various events during the last two decades including global financial crises, the taper tantrum, and the COVID-19 pandemic have increased risks of stagflation. Recent evidence from 22 economies that rely heavily on non-commodity exports highlights two significant factors that could elevate the risk of stagflation in emerging markets - higher commodity prices and the appreciation of the US dollar (Hofmann et al., 2023). These factors can lead to weak economic growth and high inflation exacerbating the stagflationary risk in these economies.

While stagflation is usually a result of supply shocks such as a sudden spike in commodity prices, the risks could also propagate through knock-on effects through their impact on other macroeconomic variables such as a sudden depreciation of the exchange rate or a tightening of financial conditions. Growth and inflation, in such a scenario, could be impacted through multiple channels such as increased borrowing constraints for firms or large exchange rate pass-through effects on domestic prices. When firms face higher borrowing constraints, they may respond by raising their prices (Banerjee et al., 2020). This, in turn, poses an additional risk of higher inflation as well as lower economic growth. In essence, the ripple effects of market volatility and tightened financial conditions can have significant implications for both inflation and overall economic growth i.e., higher inflation and lower growth, over and above the direct impact of the supply shock. The tight financial conditions prevailing in the economy during 2019-20 were a source of concern for growth

The sharp pick-up in domestic energy prices since May 2020 posed risks to both inflation and growth outlook as it adds to the cost of production. Besides fuel and light group in CPI, transport subgroup containing petrol, diesel and fares are also impacted by the movement in petroleum products. India being the 3rd largest consumer of crude oil and depending on imports to the tune of around 80 per cent makes the role of supply management very critical for country's energy security. Prices of petroleum products are mostly administered in the sense OMCs (Oil Marketing Companies) usually announce the prices of LPG, kerosene, petrol and diesel by taking into account base price, dealer's margin and different duties set by the government. This highlights the fact that different factors can have different impacts on the growth and inflation trajectory depending on the underlying dynamics of pass-through

IV. Conclusion

An evaluation of the relative importance of supply and demand factors driving inflation on a real time basis is a useful guide for the conduct of forward-looking monetary policy. However, it has become challenging in the presence of overlapping shocks since the pandemic and the pandemic-time fiscal and monetary policy stimulus. Nonetheless, a real time assessment of the relative importance of demand and supply is needed for timely policy actions to manage policy trade-offs between growth and inflation. Also, stagflation has the potential to destabilise the entire macroeconomic framework of an economy by creating an environment of uncertainty. It is a major concern for the RBI as it is entrusted with the primary objective of maintaining price stability while keeping in mind the objective of growth requiring constant monitoring of any arising stagflation risk.

Q.1. Amidst both demand- and supply-side factors at play, critically evaluate the demand and supply drivers of inflation under the following situations:

a. COVID-19 pandemic
b. Russia-Ukraine conflict (8 Marks)

Q.2. In what ways can deviations between real GDP and potential GDP (output gap) influence inflationary or deflationary pressures? Interpret the effect of sustained trade-off between inflation and GDP growth on economic policies. (8 Marks)

Q.3. Elevated risks of stagflation were experienced during specific episodes like the Asian Crisis, the Global Financial Crisis, the taper tantrum, and the COVID-19 pandemic. Identify and analyze the major determinants of stagflation risk in India. (8 Marks)

Q.4. Discuss the trade-off between high inflation and high unemployment. How might policymakers address such a scenario? (8 Marks)

Q.5. Explore the relationship between inflation-targeting frameworks and central bank policy responses. To what extent do central banks in India and other countries rely on inflation targeting, and how does this influence their policy rate decisions? (8 Marks)