FIPI

Federation of Indian Petroleum Industry

POLICY & ECONOMIC REPORT
OIL AND GAS MARKET

FEBRUARY 2022

Table of Contents

Executive Summary

According to World bank estimates, after rebounding to an estimated 5.5% in 2021, global growth is expected to decelerate markedly in 2022 - to 4.1 %, reflecting continued COVID-19 flare-ups, diminished fiscal support and lingering supply bottlenecks.

Various downside risks cloud the outlook, including simultaneous Omicron-driven economic disruptions, further supply bottlenecks, a de-anchoring of inflation expectations, financial stress, climate-related disasters and a weakening of long-term growth drivers. This underscores the importance of strengthening global cooperation to foster rapid and equitable vaccine distribution, calibrate health and economic policies, enhance debt sustainability in the poorest countries and tackle the mounting costs of climate change.

Figure Comparing growth contributions of major economies

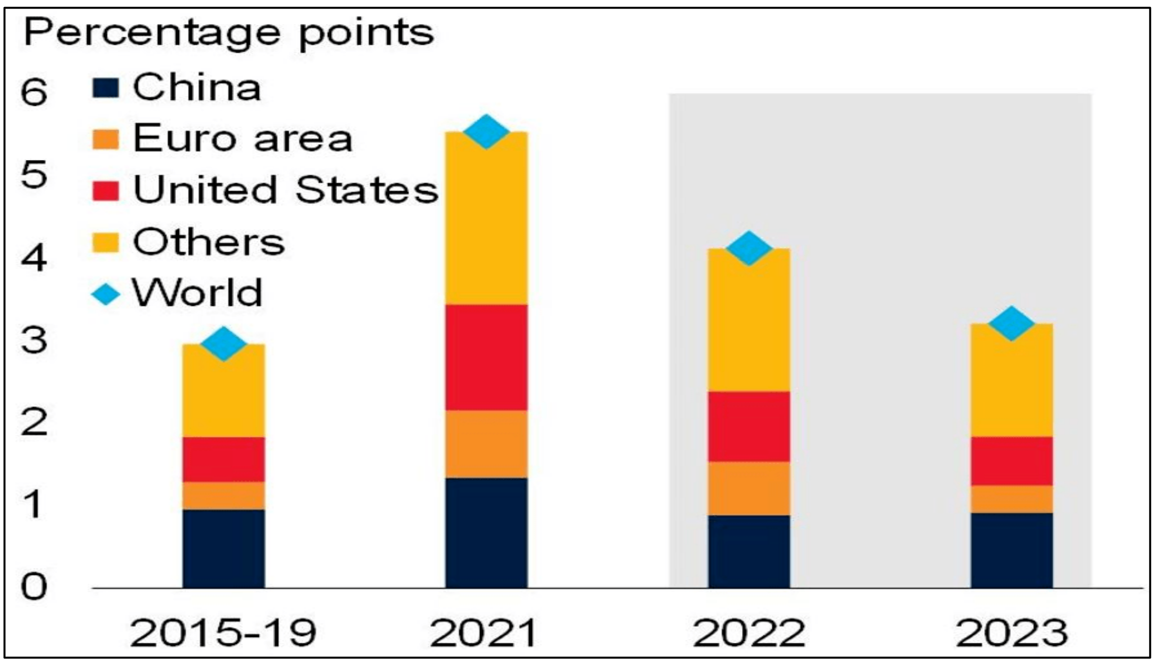
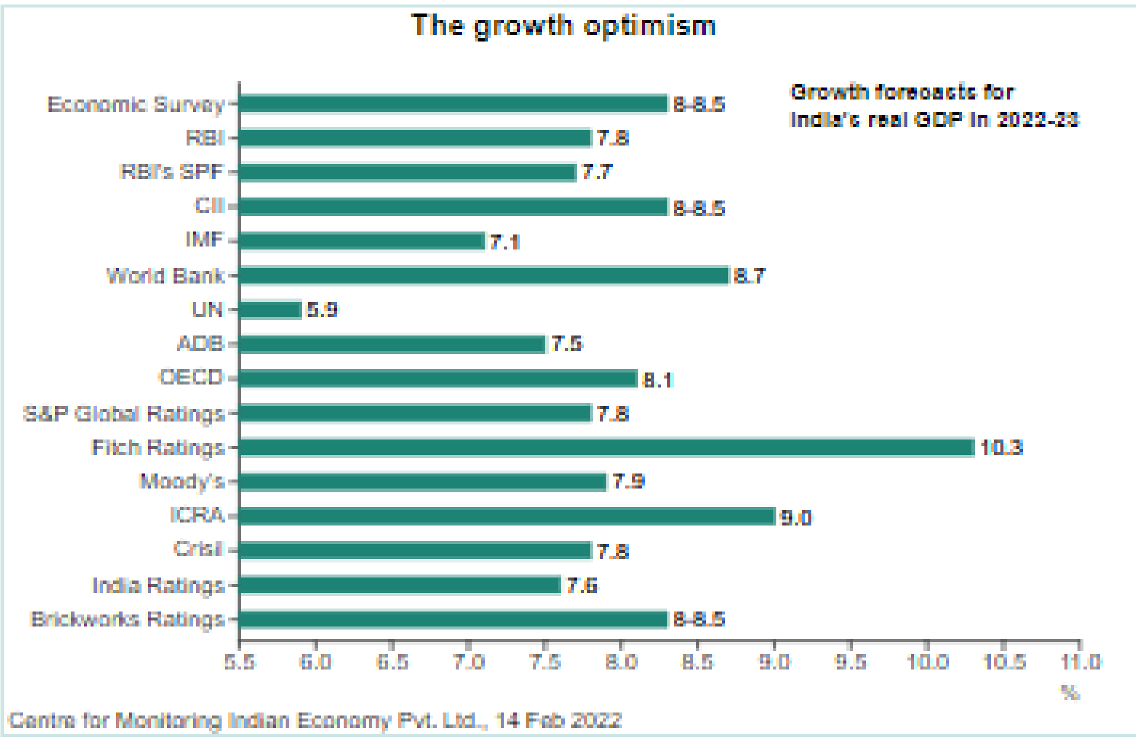


Image: World Bank

The first advance estimates of national income released by the National Statistical Office (NSO) placed India's real gross domestic product (GDP) growth at 9.2 per cent for 2021-22. Private consumption, the mainstay of domestic demand, continues to trail its pre-pandemic level. The persistent increase in international commodity prices, surge in volatility of global financial markets and global supply bottlenecks can exacerbate risks to the outlook.

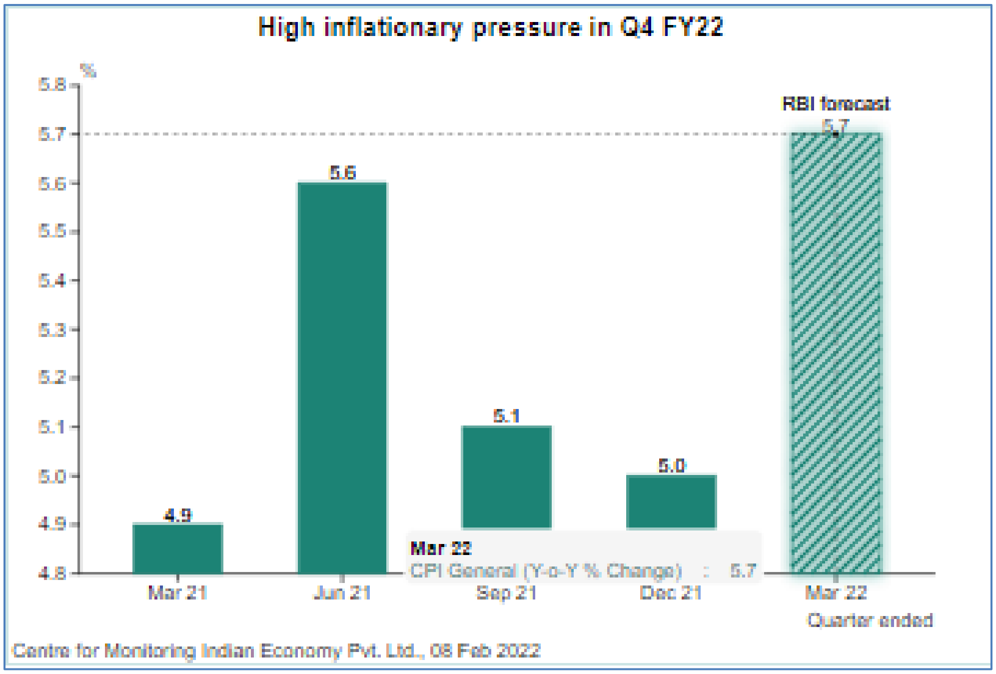
RBI views the positive impulses for quickening the pace of recovery emanate from buoyant Rabi prospects, robust export demand, accommodative monetary and liquidity conditions, improving credit offtake, and the continued push on capital expenditure and infrastructure in the Union Budget 2022-23.

Going forward, government's thrust on capital expenditure and exports are expected to enhance productive capacity and strengthen aggregate demand. This would also crowd in private investment. The conducive financial conditions engendered by the RBI's policy actions will provide impetus to investment activity. Further, the capacity utilization is rising, and the outlook on business and consumer confidence remain in optimistic territory, which should support investment as well as consumption demand. The prospects for agriculture have brightened on good progress of winter crop sowing.



Considering all these factors, RBI has forecasted real GDP growth at 7.8 % for 2022-23 with Q1:2022-23 at 17.2 %; Q2 at 7.0 %; Q3 at 4.3 %; and Q4 at 4.5 %. The RBI's growth projection for next financial year is lower than 8-8.5 per cent projected by the Finance Ministry in the recent Economic Survey which was tabled in Parliament.

India's benchmark inflation rate, measured by the Consumer Price Index (CPI) rose to 6.01 per cent year-on-year in January 2022, data released by the Ministry of Statistics and Programme Implementation. The rise was mainly on account of high food inflation, which jumped to a 14-month high of 5.43 per cent. The uptick in the food basket was due to a sharp rise in prices of oils and fats which climbed 18.70 per cent on year in January. Apart from this, the meat and fish prices saw a rise of 5.47 per cent while that of vegetables gained 5.19 per cent and pulses and products rose 3.02 per cent.



The RBI has projected 5.3 per cent retail inflation for FY22, with Q4 inflation seen at 5.7 per cent. CPI inflation for 2022-23 is projected at 4.5 per cent with Q1:2022-23 at 4.9 per cent; Q2 at 5.0 per cent; Q3 at 4.0 per cent; and Q4 at 4.2 per cent. With the current assessment of the current macroeconomic situation and the outlook, RBI continued with accommodative stance to revive and sustain growth. RBI left the reverse repurchase rate, the policy repo rate and the marginal standing facility rate at 3.35%, 4.00% and 4.25%, respectively.

On the employment front, the CMIE data for first three weeks of February suggest that the quantum of employment continues to remain a challenge, with pressure on the labor market increased as the unemployment rate rose to 7.55% in the month of February 2022 from 6.57% recorded in the last month. The urban unemployment rate is 7.75% in February 2022 and the rural unemployment rate is 7.45% in February 2022.

Oil prices soared past $100 for the first time in more than seven years after Russian Government announced a military operation in Ukraine. Brent surged to $100.04 a barrel after the announcement, as concerns grew about a full-scale conflict in eastern Europe. WTI hit $95.54. One factor that could act as a temporary brake on prices is the Iran nuclear deal with a new agreement expected to be announced in March. The supply side pressure may be eased as Iran could restore about 1 million barrels a day of supply to global markets.

Non-OPEC liquids supply growth is revised down by 0.06 mb/d to around 0.6 mb/d y-o-y, to average 63.6 mb/d. An upward revision, mainly to the US, was offset by downward revisions in the supply forecasts of other countries such as Brazil, China, Canada, Ecuador and the UK due to unexpected lower output in 4Q21. For 2022, non-OPEC supply growth remained unchanged at 3.0 mb/d y-o-y, to average 66.6 mb/d. The main drivers of liquids supply growth are expected to be the US and Russia, followed by Brazil, Canada, Kazakhstan, Norway and Guyana. OPEC NGLs are forecast to grow by 0.1 mb/d both in 2021 and 2022 to average 5.1 mb/d and 5.3 mb/d, respectively.

The Asian gasoline 92 crack spread witnessed rise in consumption levels within the region, particularly in India, and despite prevailing concerns about COVID-19 variants. The start of the Lunar New Year, which is celebrated in some countries of the region, likely provided further support. Moreover, the hefty reduction in Chinese gasoline exports has largely contributed to lower volume availability in the region, which provided support to the Asian gasoline complex. The Singapore gasoline crack spread against Oman in January averaged $12.84/b, up by 36 ¢ m-o-m and up by $8.58 y-o-y.

Natural gas spot price at the U.S. benchmark Henry Hub is averaging at $ 4.38/MMBtu and prices are expected to be volatile amid highly variable winter weather forecast. High demand globally for U.S. exports of liquefied natural gas (LNG) also serves to limit downward pressure on domestic prices.

Economy in Focus

1. A snapshot of the global economy

Global economic growth

According to World bank estimates, global growth is expected to decelerate in 2022 to 4.1 %, after rebounding to an estimated 5.5% in 2021. This deceleration is marked by spread of new COVID-19 variant, diminished fiscal support and disruptions in supply chain levels.

Various uncertainties cloud the outlook, including Omicron-driven economic disruptions, supply side bottlenecks creating inflationary pressures, climate-related disasters and a weakening of long-term growth drivers. This underscores the measures adopted by economies to foster rapid and equitable vaccine distribution, calibrate health and economic policies, ensure debt sustainability in the poorest countries and tackle the mounting costs of climate change.

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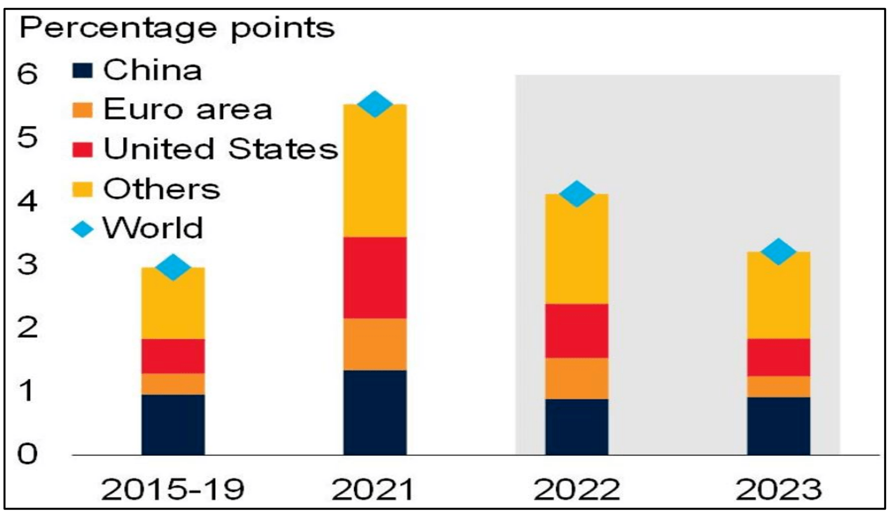


Image: World Bank

Divergence in growth rates

- While the output and investment in advanced economies are projected to return to pre-pandemic trends next year, they will remain below in emerging market and developing economies (EMDEs), owing to lower vaccination rates, and tighter fiscal and monetary policies.
- The levels of output are severely impacted in most of the EDMEs in contrast to advanced economies. These economies are plagued with growth trajectories that are not strong enough to stimulate demand, investment or output to pre-pandemic trends over the forecast horizon of 2022-23.

- Further supply bottlenecks create substantial cost inflationary pressures weighing down the growth further.

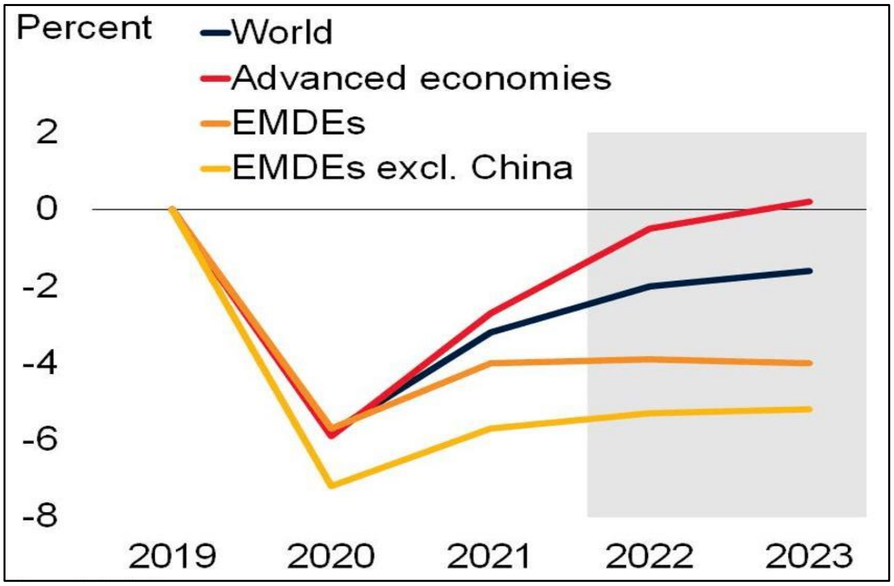
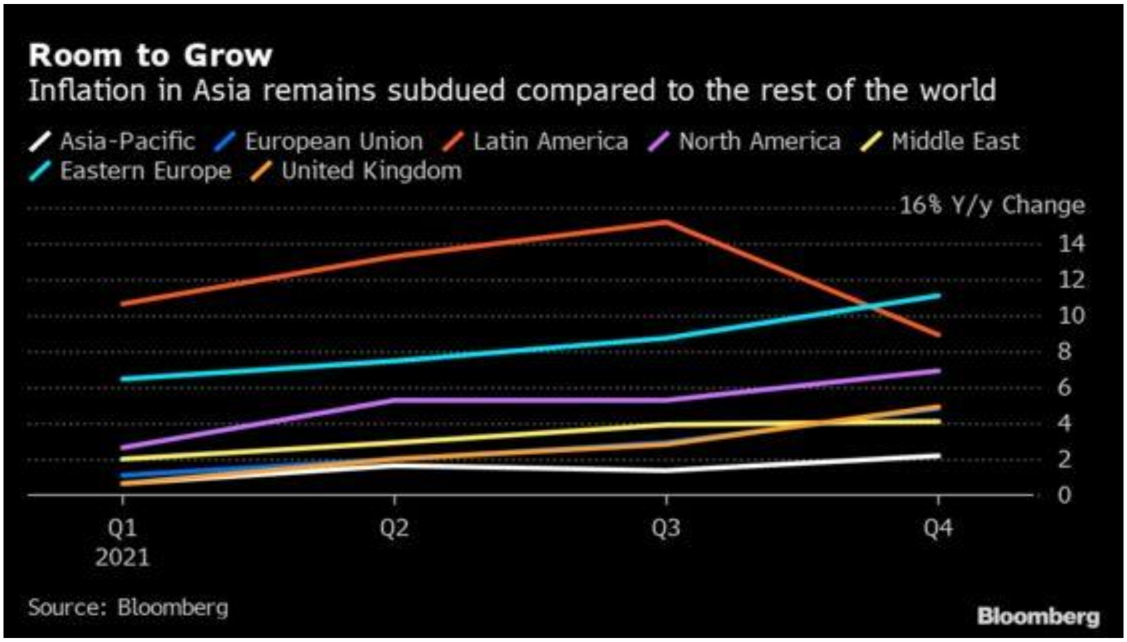


Image: World Bank

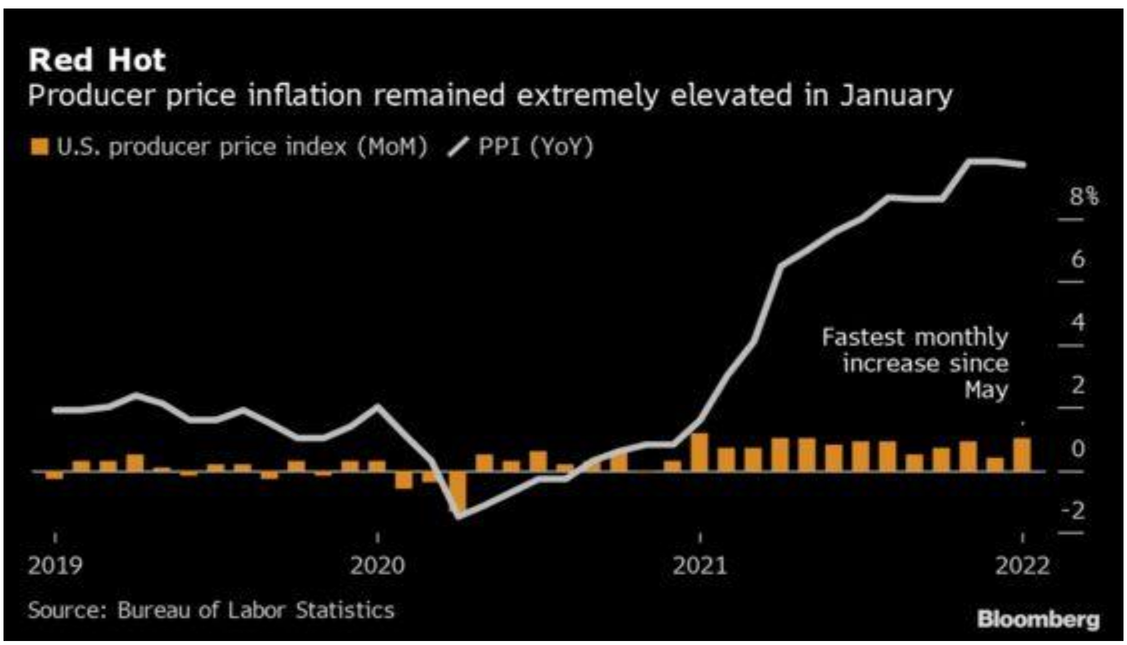
Global Inflation

The rebound in global activity, together with supply disruptions and higher food and energy prices, have pushed up headline inflation across many countries. This has prompted Central banks of many economies to be less accommodative and adopt higher policy rates.

- In U.S. Fed has already signaled a rise in policy rates by end of march 2022 to curb the rising inflation.
- Unlike the US and Europe, moderate inflationary pressures are allowing central banks in many Asian nations to hold the line on interest rates to stimulate demand and thereby economic growth.
- While price pressures are building up in India and Thailand, Asia still enjoys inflation rates that are relatively subdued compared to the rest of the world.
- In Japan price growth is still too weak for the Central bank to consider pulling back its stimulus measures.



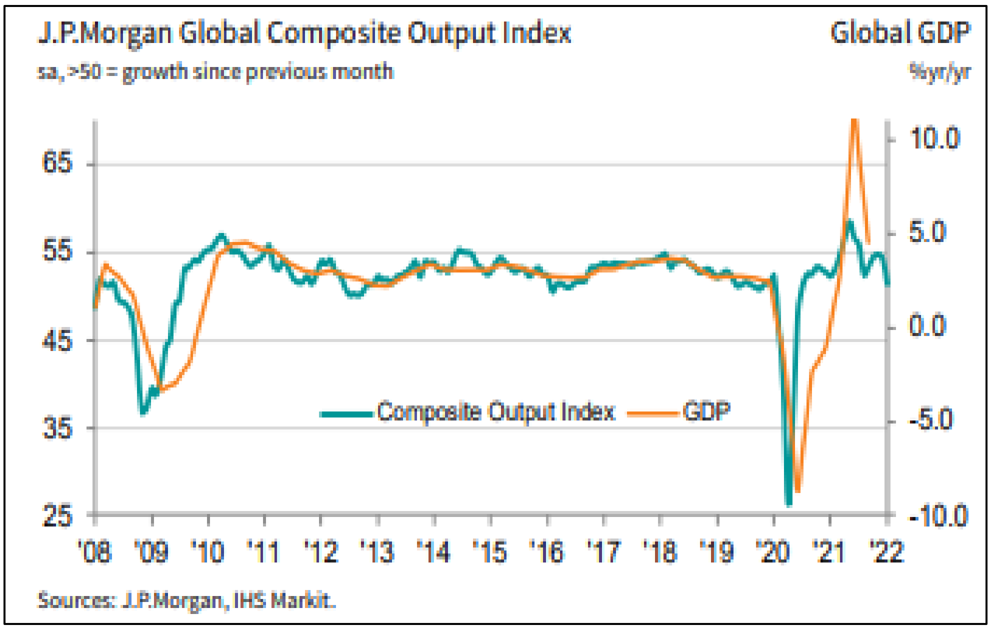
In the U.S. recent figures showed a jump in prices paid to producers, while inflation across Europe is taking a bigger toll on consumers, especially for food and fuel.



Global PMI

At 51.4 in January, the J.P.Morgan Global Composite Output Index remained in growth territory for the nineteenth month in a row. The slowdown impacted both the manufacturing and services sub-sectors. Manufacturing output rose at the weakest pace during its 19-month sequence of expansion. Service sector business activity increased to the lowest extent since July 2020. Of the six narrower sector definitions covered by the survey – consumer, intermediate and investment goods manufacturers and business, consumer and financial service providers – five registered output growth in January.

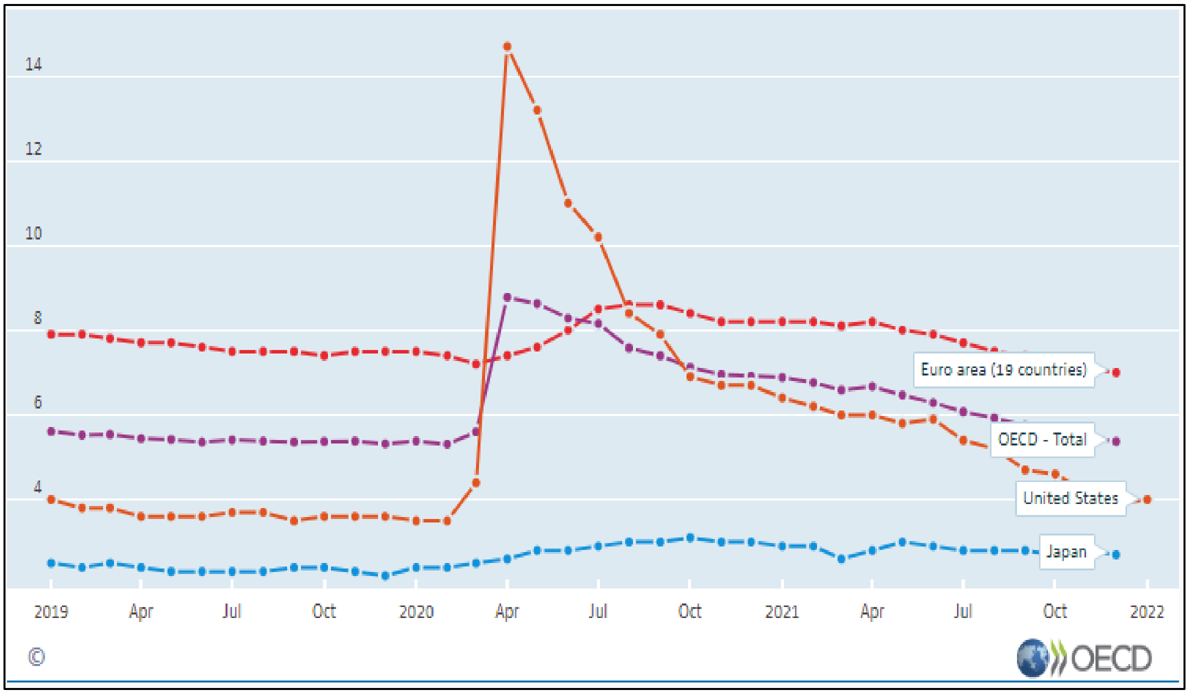
Of the 13 nations for which January Composite PMI data were available, nine saw economic activity expand. The strongest performers were Ireland and the UK. The US registered growth below the global average for the first time in a year and-a-half. Japan, Spain, Australia and Kazakhstan were the nations to see activity fall.



Growth of new orders and businesses, alongside continued company confidence, encouraged further job creation during January. Employment rose for the seventeenth successive month, with growth registered in the US, the Euro area, Japan, the UK, Brazil and Australia.

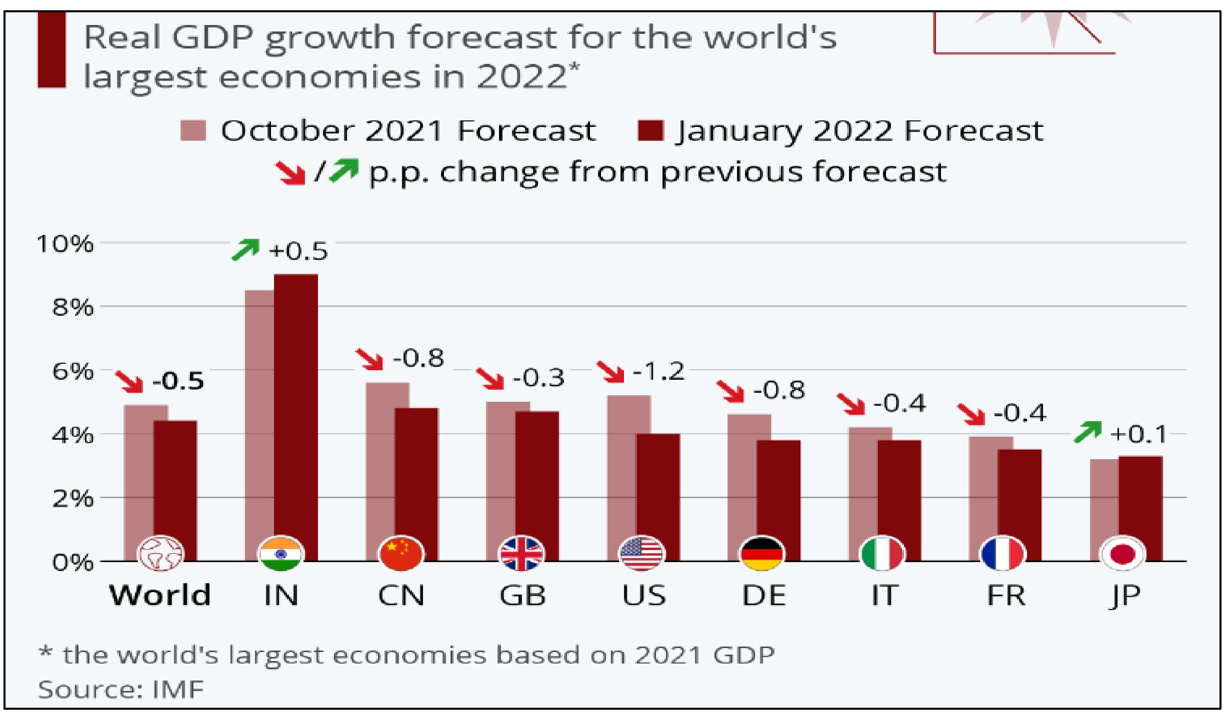
Global Employment

According to International Labor Organization (ILO), the global unemployment level in 2022 is estimated at 207 mn, compared to 186 mn in 2019. The impact has been particularly serious for developing nations that experienced higher levels of inequality, more divergent working conditions and weaker social protection systems. The European and the North American regions are showing the most encouraging signs of recovery, while South-East Asia, Latin America and the Caribbean have the most negative outlook.



2. IMF slashes growth forecast for 2022

According to latest World Economic Outlook report of IMF, the organization expects global gross domestic product to grow 4.4 percent this year, down from its October 2021 forecast of 4.9 percent.



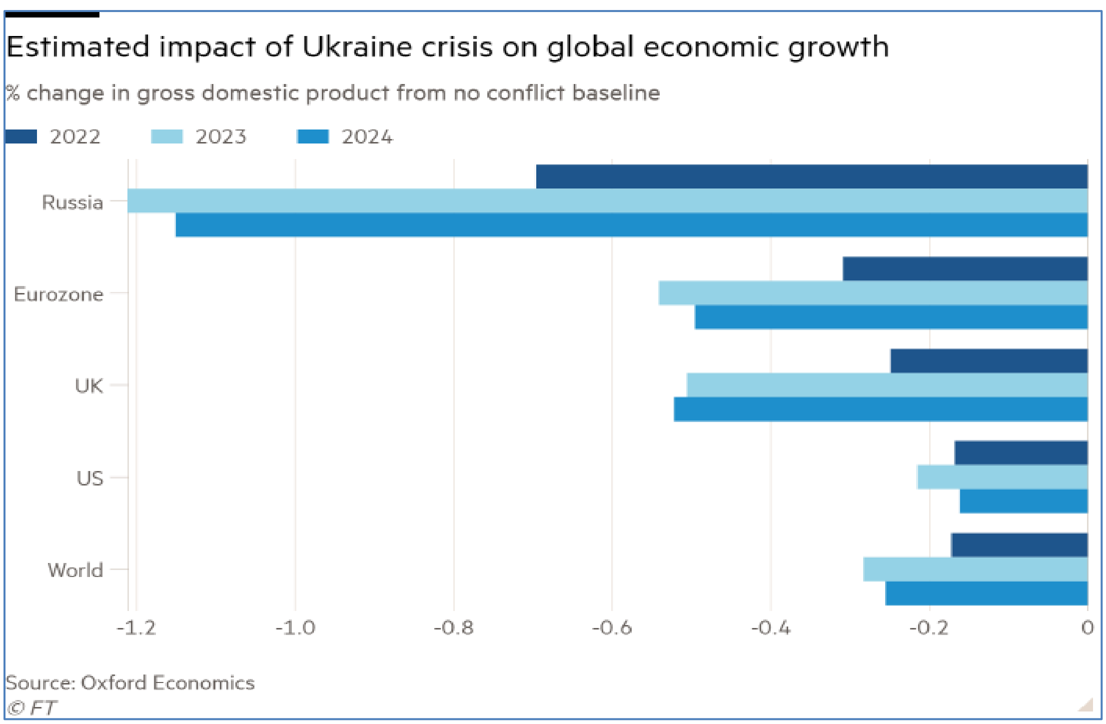
The U.S. and China, play a large role in the global growth markdown, as the IMF lowered its outlook for these countries significantly.

- The withdrawal of Biden's Build Back Better plan as well as the expected tightening of monetary policy contributed to a 1.2 % -point cut of U.S. GDP growth forecast,
- The disruptions caused by China's zero-tolerance Covid policy resulted in a 0.8 %-point downgrade of the growth prospects.
- Elevated inflation along with high energy prices and supply chain disruptions in many countries is acting as deterrent to growth in many economies.

3. Global economic impact of Russian-Ukraine war crisis

Russia's invasion of Ukraine has increased geopolitical tensions culminating into high inflation and supply chain bottlenecks. The direct impact of invasion stands out in form of lower trade with Russia, economic sanctions levied on Moscow by the US and EU, and financial contagion. The indirect consequences include the adverse effect on business and consumer confidence and commodity markets.

The war crisis has led to rapid surge in energy prices with oil climbed past $100 a barrel for the first time since 2014, while European natural gas jumped as much as 62%.



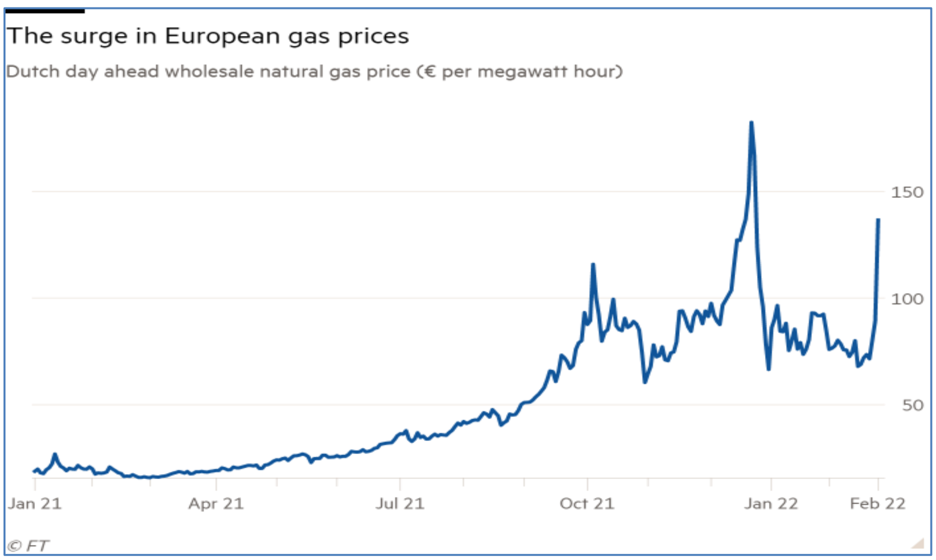
While the impact of pandemic has been worse with risk posed due to higher inflation and volatile financial markets, the invasion could have a worsening effect on both the factors. Bloomberg Economics has captured three scenarios that examine how the war could impact growth, inflation and monetary policy.

Scenarios For Economic Impact of Ukraine Crisis

- An end to war would lead to no disruption in oil and gas supplies thereby ensuring stabilized prices at their current levels. This would keep U.S. and European economic recoveries on track.
- In the second scenario, a prolonged conflict would cause disruptions to Russia's oil and gas exports which may trigger an energy shock. The Central banks are expected to respond by a rate hike this year to reduce consumption growth.
- A worst-case scenario would see a halt in Europe's gas supply, triggering a recession accompanied by surge in energy prices and financial turmoil across global economies.

Energy concerns affect the wider inflation picture

Europe is highly dependent on gas from Russia and cannot quickly find alternative supplies if pipelines are cut. With a prolonged conflict between Russia and Ukraine, the supply of gas could be severely impacted leading to higher energy prices and posing significant inflationary pressures.



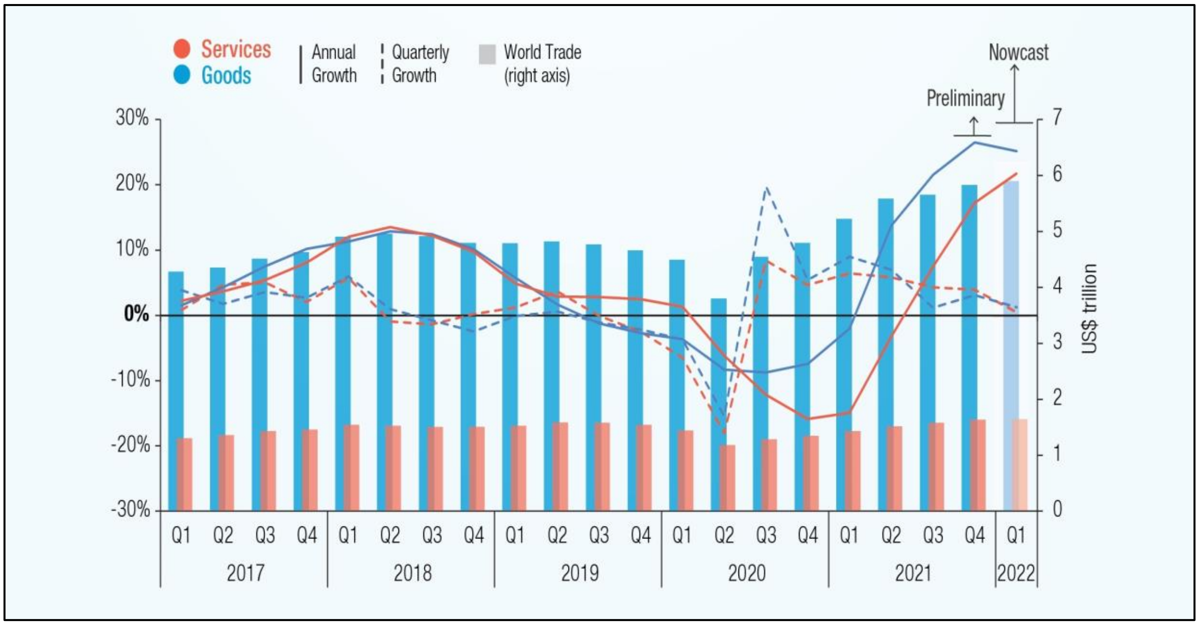
Higher energy costs would translate into more expensive transport, affecting the movement of all kinds of goods. A sharp rise would add to inflation and hit consumers. This may add to pressure on central banks to boost interest rates. Already, the US Federal Reserve last month signaled it would begin raising rates from March to control rampant inflation.

4. Global trade hits record high of $28.5 trillion in 2021- UNCTAD

UNCTAD's Global Trade Update shows that in 2021, world trade in goods remained strong and trade in services finally returned to its pre-COVID-19 levels.

According to the report, the value of global trade reached a record level of $28.5 trillion in 2021 which is an increase of 25% on 2020 and 13% higher compared to 2019, before the COVID-19 pandemic struck.

After a relatively slow third quarter, trade growth picked up again in the fourth quarter, when trade in goods increased by almost $200 billion, achieving a new record of $5.8 trillion. Trade in services rose by $50 billion to reach $1.6 trillion, just above pre-pandemic levels.



Source**: UNCTAD**

Greater trade growth in developing countries

The report shows that in the fourth quarter 2021, all major trading economies saw imports and exports rise well above pre-pandemic levels in 2019. But trade in goods increased more strongly in the developing world than in developed countries. Exports of developing countries were 30% higher than during the same period in 2020, compared with 15% for wealthier nations. The growth was higher in commodity-exporting regions, as commodity prices increased.

Substantial trade growth in most sectors

Except transport equipment, all economic sectors saw a substantial year-over-year increase in the value of their trade during the final quarter of 2021. According to the report, high fuel prices were the reason behind the increase in the value of trade of the energy sector. At the same time the report highlighted that trade growth in communication equipment, road vehicles and precision instruments were subdued, mainly due to global shortage of semiconductors,

Forecasts for 2022

The UNCTAD report indicates that trade growth will slow during the first quarter of 2022. Positive growth rates are however expected for both trade in goods and services, due to subsiding pandemic restrictions and a strong recovery in demand in many economies.

Factors set to shape 2022 world trade

The International Monetary Fund has revised its world economic growth forecast downwards by 0.5 points, considering persistent inflation in the United States and concerns related to China's real estate sector. It also points to ongoing logistic disruptions and rising energy prices, posing downward risks to global economic growth.

On trade flows, the report projects the trend of regionalization to increase because of various trade agreements and regional initiatives, as well as increasing reliance of geographically closer suppliers.

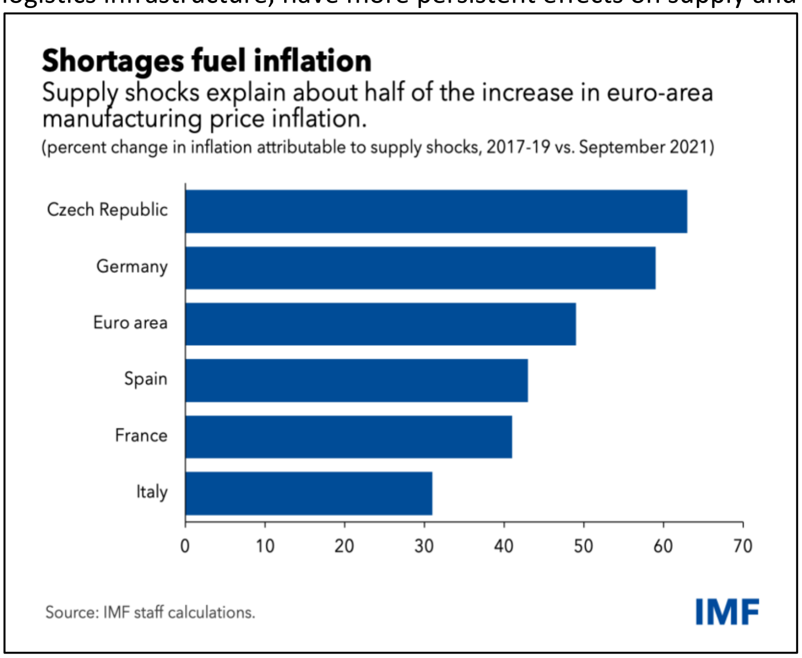
5. Supply Disruptions Add to Inflation, Undermine Recovery in Europe: IMF

The reopening of economies boosted manufacturing output, but renewed lockdowns and shortages of intermediate inputs from chemicals to microchips caused the factory recovery to stall. Prices of core consumer goods rose rapidly as delivery times reached record highs sparking a higher inflation.

Supply constraints also played a significant part in fueling producer price inflation in the euro area. The manufacturing component of producer price inflation was 10 % points higher relative to pre-pandemic times in the first three quarters of 2021.

At the same time, supply disruptions were of less significant on core consumer prices as this measure of inflation was only 0.5 % points higher over the same period. The prices of services, were also less sensitive than those of goods to manufacturing supply shocks.

Globally, 40 percent of the supply constraints in manufacturing were result of shutdowns. Further, the severe weather and industrial accidents hindered microchip and auto output in 2021, resulting in shutdowns and spiraling inflation. Other drivers of supply constraints, such as labor shortages and aging logistics infrastructure, have more persistent effects on supply and inflation than shutdowns.



Policy priorities

- Implementation of regulatory measures would reduce the pressures on supply bottlenecks. This would include fast-tracking licensing of transport and logistics workers, temporarily easing restrictions on port operating hours, streamlining customs inspections, easing immigration rules to alleviate labor shortages, and mandating practices that limit the spread of the virus and protect the health of workers.
- Fiscal measures should also be deployed efficiently to ease the bottlenecks and avoid permanent damage to potential output. Broad-based aggregate demand support at this time could raise inflation with limited impact on output and employment.
- The huge supply chain bottleneck can cause higher inflation by allowing wages and prices to spiral upwards. Therefore, the Central bank needs to manage this trade off by ensuring stable inflation expectation without affecting the supply position.

In general, to anchor inflation expectations at target rates, it is critical that central bankers continue to communicate how they will react to inflation and signal readiness to respond rapidly to any significant change in the medium-term inflation outlook.

6. Global LNG trade growth expected to slow to 4% in 2022: IEA

Global LNG trade growth is expected to slow to 4% in 2022, following year-on-year growth of 6% last year on the back of strong economic recovery in Asia, according to International Energy Agency.

In its latest quarterly gas market report, the IEA said the LNG demand expansion in Asia during 2021 is expected to moderate this year and the drought-driven rise in South American imports is set to reverse.

Global LNG trade in 2020 was estimated at around 356 million mt by industry group, International Group of Liquefied Natural Gas Importers (GIIGNL). A 6% increase last year as estimated by the IEA suggests total trade in 2021 of 377 million mt and forecast growth to around 392 million mt this year.

- In its report, the IEA said Asia would account for all the net growth in LNG imports in 2022. China remains the single largest country contributor to import growth, but its growth rate drops to 9% in 2022 due to the ramp-up of pipeline flows from Russia and the overall slowdown in gas demand growth.
- India's LNG imports are projected to return to their 2020 levels and register a 12% increase in 2022, the agency said. It added that LNG inflows to emerging Asia are set to expand by 27% this year, driven by the region's post-pandemic demand recovery, domestic production declines and planned import capacity additions.
- European LNG imports are also expected to remain elevated in 2022 to meet the region's high restocking needs.

- The IEA said import growth in the Middle East during 2022 is expected at 11%, enabled in part by Kuwait's new Al-Zour terminal, while in Africa imports are set to be fueled by the emergence of new importing countries -- Ghana, South Africa and Senegal.
- LNG export growth in 2022 remains dominated by North America, which accounts for more than 75% of the net increase in global LNG supply, the agency said.

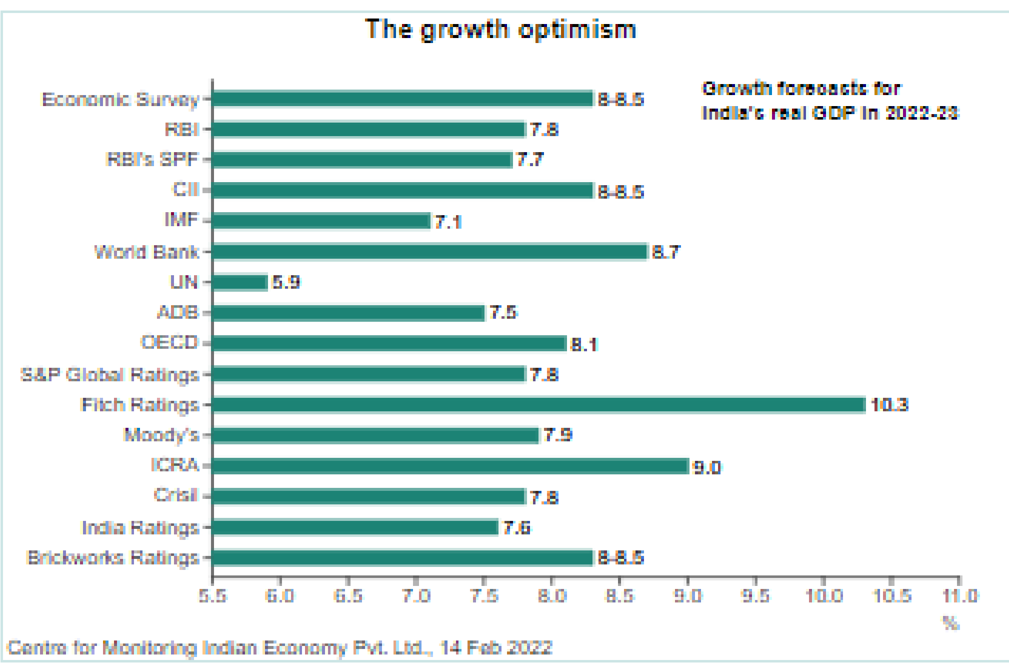
7. India Economy

India's economic growth

The first advance estimates of national income released by the National Statistical Office (NSO) placed India's real gross domestic product (GDP) growth at 9.2 % for 2021-22. Private consumption continues to trail its pre-pandemic level. The persistent increase in international commodity prices, surge in volatility of global financial markets and global supply bottlenecks pose risks to the outlook.

RBI views the drivers that can accelerate the pace of recovery are buoyant Rabi prospects, robust export demand, accommodative monetary and liquidity conditions, improving credit offtake, and the push on capital expenditure and infrastructure in the Union Budget 2022-23.

Going forward, government's thrust on capital expenditure and exports are expected to enhance productive capacity and strengthen aggregate demand. The conducive financial conditions as laid down by the RBI's policy actions will provide impetus to investment activity. Further, the outlook on business and consumer confidence remains in optimistic territory, which should support investment as well as consumption demand. The prospects for agriculture have brightened on good progress of winter crop sowing.



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Inflation in India

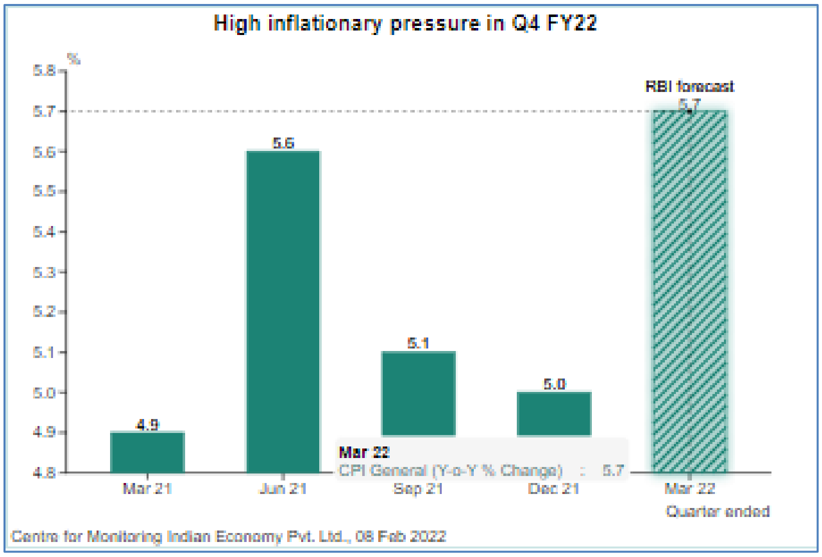
- India's benchmark inflation rate, measured by the Consumer Price Index (CPI) rose to 6.01 % year-on-year in January 2022, data released by the Ministry of Statistics and Programme Implementation.
- The level breached the upper tolerance level of the medium-term inflation target of 4+/-2 per cent set by the Reserve Bank of India (RBI).
- The rise was mainly on account of high food inflation, which jumped to a 14-month high of 5.43 per cent. The uptick in the food basket was due to a sharp rise in prices of oils and fats which climbed 18.70 % on year in January. Apart from this, the meat and fish prices saw a rise of 5.47 % while that of vegetables gained 5.19 % and pulses and products rose 3.02 %.

INFLATION RATES AT WHOLESALE, RETAIL LEVEL

Month	WPI	CPI
June	12.1%	6.26%
July	11.6%	5.59%
Aug	11.64%	5.3%
Sept	11.8%	4.35%
Oct	13.83%	4.48%
Nov	14.87%	4.91%
Dec	13.56%	5.66%
Jan	12.96%	6.01%

Source: MoSPI, Ministry of Commerce & Industry

- Apart from food and beverages, the fuel and light segment rose 9.32 per cent, clothing and footwear gained 8.84 per cent and the housing segment inched up 3.52 per cent.
- Inflation at the wholesale level in January softened to 12.96 per cent from 13.56 per cent a month ago according to data released by the Ministry of Commerce and Industry.
- In its recently concluded monetary policy meet, Reserve Bank of India said inflation based on consumer price index (CPI) is expected to come well below its upper tolerance level, at 4.5 per cent, in the next fiscal year beginning April 2022.



RBI stance on inflation

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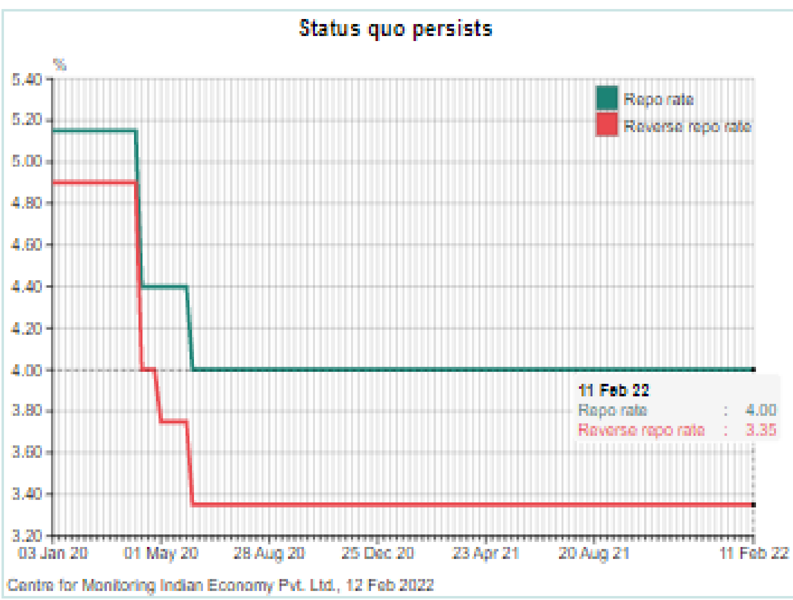

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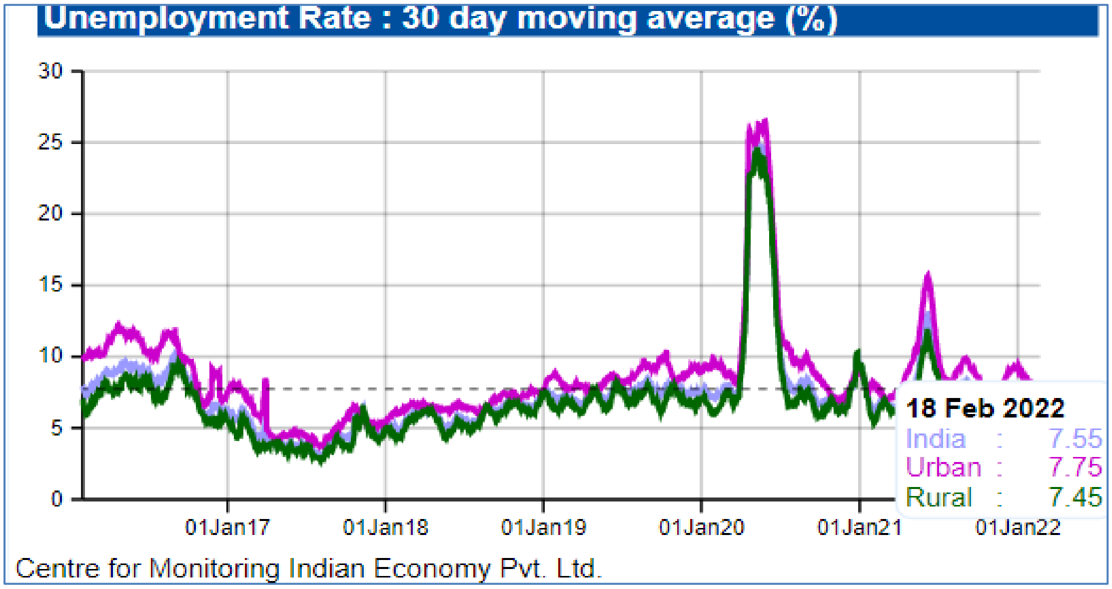


Oil price hike amid Russian-Ukraine war crisis to endanger macro-economic price stability

The rise in crude prices poses inflationary, fiscal and external sector risks for India. For every 10 % increase in crude oil prices, the wholesale price index in India increases by 0.9 % - 1 % and the consumer price index by 0.4 % - 0.6 %.

A 10 % rise in oil prices leads to an increase of nearly $15 billion in India's current account deficit, or 0.4 % of its GDP, leading to a depreciation in the rupee, S&P Global Platts Analytics said in a report.

With Brent crude surged at $100/b in Asian trade as Russian Government announced military operations in Ukraine, forces governments to alter fiscal policies to cushion the blow from massive foreign exchange outflows. "High oil prices will dampen demand and will undermine the fragile economic recovery if they continue to rise," said Lim Jit Yang, advisor for oil markets at S&P Global Platts Analytics.

Supply disruptions of oil are less of an issue over Ukraine, but the cost of petroleum products is likely to surge. This will have a major impact on India’s cost of inflation as India depends on imports to meet 85 per cent of its crude needs, 60 per cent of LPG use and nearly half of its LNG consumption.

- India paid $101 billion for 227 million tonnes of crude oil in fiscal year 2019-20, and has already paid $94.3 billion for 10 months of supplies.

- LNG shipments at $9.9 billion in April-January rose 60 per cent on the year despite volumes shrinking by 3.2 per cent.
- LPG imports for the ten-month period cost $10 billion.
- India may spend $140-$145 billion this fiscal for petroleum imports, equivalent to around 5 per cent of GDP.

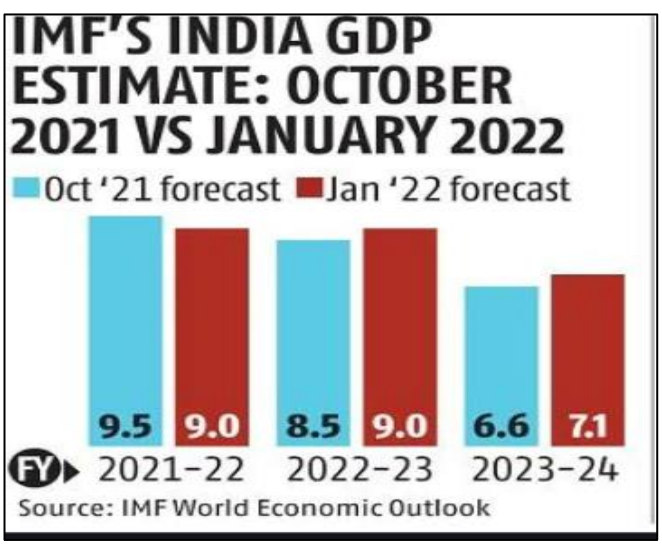
According to Platts Analytics, among Asia's big four oil consuming countries, China is well-positioned as it has substantial domestic production, coupled with relatively high SPR levels. China's relatively low inflation rate means that it has leeway to boost economic growth if needed, which it expects to be 4.9 per cent for 2022, with oil demand growing at 560,000 b/d.

India, on the other hand, is more vulnerable as it depends heavily on crude imports, and it has relatively low SPR compared to other major Asian consuming countries. Further, India's soaring consumer price index continues to be a cause of concern for the economy.

As economies struggle, the rise of crude oil toward $100/b is prompting Asian importers to rethink their fiscal prudence. Japan has decided to provide subsidies to refiners and oil product importers in the current quarter with the aim of curbing the price rise. South Korea has lowered taxes on auto fuels by up to 20 per cent for six months from November. But as geopolitical concerns rise because of the mounting tensions between Russia and Ukraine, leading oil importers are hoping for a favorable US-Iran nuclear agreement, which would open up flows from the OPEC producer, ease the tight supply situation and cool global oil prices.

IMF cuts India's GDP forecast for FY22 to 9% from 9.5%

The International Monetary Fund on Tuesday cut its FY22 gross domestic growth product (GDP) forecast for India to 9 per cent from 9.5 per cent predicted in October, citing disruptions due to the Omicron wave of the Covid-19 pandemic.



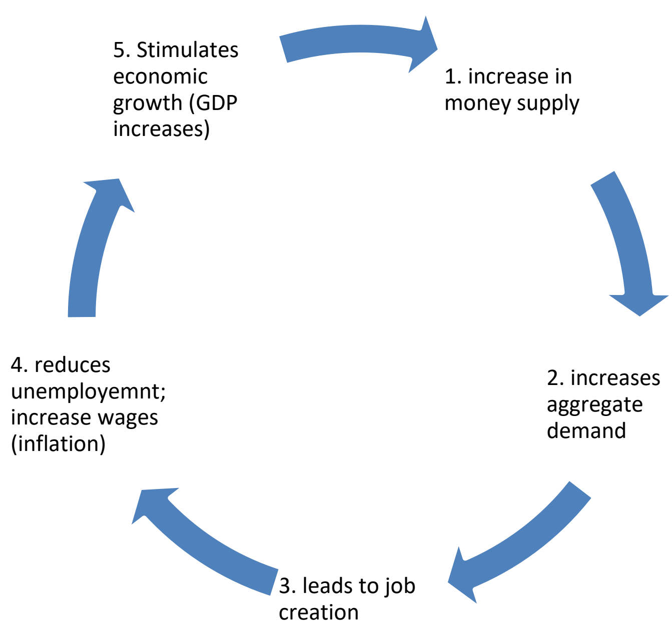
IMF raised the country's GDP projection for FY23 to 9 per cent from 8.5 per cent earlier and to 7.1 per cent from 6.6 per cent for FY24. In its latest World Economic Outlook report, the IMF also cut its global growth forecast for calendar year 2022 to 4.4 per cent from 4.9 per cent projected in the last WEO report in October. India's prospects for 2023 are marked up on expected improvements to credit growth, investment and consumption.

Lessons from Economics

MONETARISM

Monetarism, maintains that the total amount of money in an economy is the chief determinant of current GDP in the short run and the price level over longer periods. Monetary policy, one of the tools governments have to affect the overall performance of the economy, uses instruments such as interest rates to adjust the amount of money in the economy. Monetarists believe that the objective of monetary policy is targeting the growth rate of the money supply. Monetarism gained prominence in the 1970s—bringing down inflation peaking at 20% in the United States and United Kingdom and influenced the U.S. central bank's decision to stimulate the economy during the global recession of 2007–09.

The concept of Monetarism is mainly associated with Nobel Prize–winning economist Milton Friedman. He said that the supply of money in an economy is the primary driver of economic growth. Friedman argued that poor monetary policy by the Federal Reserve, was the primary cause of the Great Depression in the United States in the 1930s.



As the availability of money in the system increases, aggregate demand for goods and services goes up. An increase in aggregate demand encourages job creation, which reduces the rate of unemployment and stimulates economic growth.

Basic Model of Monetarism

The quantity theory of money can be summarized in the equation of exchange, formulated by John Stuart Mill, which states that the money supply, multiplied by the rate at which money is spent (i.e., velocity) per year, equals the nominal expenditures in the economy.

$$\boxed{MV=PQ}$$

where:

M=money supply
V=velocity (rate at which money changes hands)
P=average price of a good or service
Q=quantity of goods and services sold

Monetarist theory views velocity as generally stable, which implies that economic growth is a function of economic activity (Q) and inflation (P). If V is constant, then an increase (or decrease) in M will lead to an increase (or decrease) in either P or Q.

Variations in nominal income reflect: -

- changes in real economic activity (the number of goods and services sold) and
- inflation (the average price paid for them)

The quantity theory is the basis for several key tenets and prescriptions of monetarism:

• **Long-run monetary neutrality:** An increase in the money stock would be followed by an increase in the general price level in the long run, with no effects on factors such as consumption /output.

• **Short-run monetary no neutrality:** An increase in the stock of money has temporary effects on real output (GDP) and employment in the short run because wages and prices take time to adjust.

• **Constant money growth rule:** Friedman proposed a fixed monetary rule, which states that the Fed should be required to target the growth rate of money to equal the growth rate of real GDP, leaving the price level unchanged. If the economy is expected to grow at 2 % in a given year, the Fed should allow the money supply to increase by 2 %.

• **Interest rate flexibility:** The money growth rule was intended to allow interest rates, which affect the cost of credit, to be flexible to enable borrowers and lenders to take account of expected inflation as well as the variations in real interest rates.

Mechanism of Monetary Policy adopted by RBI

- When the money supply expands, RBI lowers interest rates. This is due to banks having more to lend, so they are willing to charge lower rates. That means consumers borrow more to buy items like houses, automobiles, and furniture. Decreasing the money supply raises interest rates, making loans more expensive—this slows economic growth.
- In India, RBI implements the monetary policy's Quantitative and Qualitative instruments to achieve economic goals. The main instruments of these policies are CRR, SLR, Bank Rate, Repo Rate, Reverse Repo Rate, Open Market Operations (buying and selling government securities to reach the target funds rate).
- The RBI reduces inflation by raising the interest rate or decreasing the money supply lent to businesses and consumers, thus reducing spending and economic growth. This is known as contractionary monetary policy.
- Conversely, to avoid recession, and the resultant unemployment, the RBI must lower the interest rate which increases borrowing by consumers and businesses, thus boosting spending and stimulating economic growth. This is known as expansionary monetary policy.

Monetarism vs. Keynesian Economics

- Friedman argued that the errant monetary policy of the Federal Reserve was a primary cause of the Great Depression. Keynes believed that the fiscal policy of the government i.e. increasing government spending is the key factor in stimulating an economy that is in a recession.

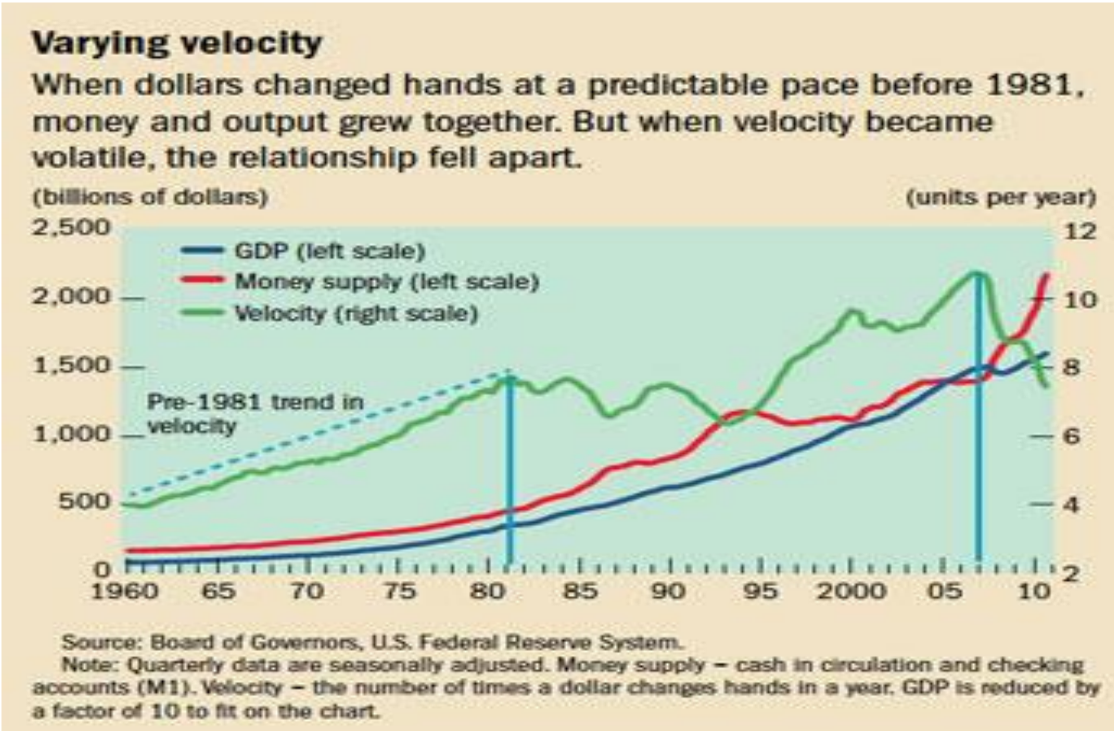
- Overall, Keynesian economists believe in active central bank and government intervention in the economy, while monetarists such as Friedman believe that free markets self-adjust in terms of prices and employment to provide the maximum benefit to the economy.

Real examples of Monetarism theory in practice

In 1979, Paul A. Volcker became chairman of the U.S. Fed and made fighting inflation its primary objective. The Fed restricted the money supply (in accordance with the Friedman rule) to tame inflation and succeeded. He raised the federal funds rate to 20% in 1980. Inflation subsided dramatically, although it resulted in a big recession (the 1980-82 recession).

During the same time period, Britain was also struggling with severe inflation. When Margaret Thatcher was elected prime minister in 1979, she also implemented a set of monetarist policies to combat the rising prices in the country. By 1983, inflation in Britain had been halved, from 10% to 5%.

However, the popularity of monetarism was relatively brief. In the 1980s and 1990s, the link between the money supply and nominal GDP broke down; the quantity theory of money the backbone of monetarism was called into question as velocity of money had become unpredictable.



- From the above figure, in the 1970s velocity increased at a fairly constant rate and it appeared that the quantity theory of money was a good one. The rate of growth of money, adjusted for a predictable level of velocity, determined nominal GDP.

- But in the 1980s and 1990s velocity became highly unstable with unpredictable periods of increases and declines. The link between the money supply and nominal GDP broke down, and the usefulness of the quantity theory of money came into question.

- The change in velocity's predictability was the result of changes in banking rules and financial innovations. In the 1980s banks were allowed to offer interest-earning checking accounts, and many better alternatives like mutual funds, and other assets were available in lieu of traditional bank deposits. As a result, the relationship between money and economic performance changed.

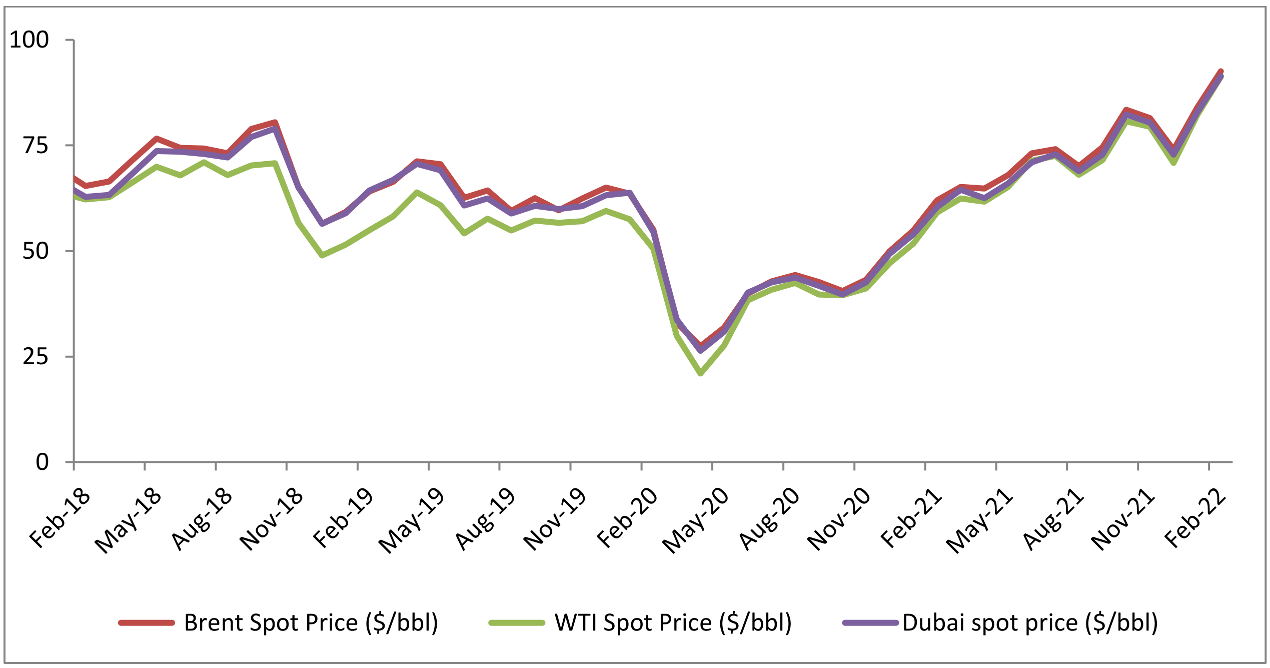
Oil Market

Crude oil price – Monthly Review

Oil prices soared past $100 for the first time in more than seven years after Russian Government announced a military operation in Ukraine. Brent crude jumped 7.3 percent to $103.9 a barrel, the highest level since July 2014 and WTI hit $95.54. High energy prices can cause fears of major disruption to the global energy supply. Russia is the world's third-biggest oil producer and second-biggest producer of natural gas, ranking among the top energy suppliers to the US and China, the world's top two economies.

The world now sees the Iran nuclear deal with a new agreement expected to be announced in March as a temporary brake in record prices. The supply side pressure may be eased as Iran could restore about 1 million barrels a day of supply to global markets.

Figure 1: Benchmark price of Brent, WTI and Dubai crude



Source: WORLD BANK

- Brent crude price averaged $ 93.07 per bbl in February 2022, up by 10.8 % on a month on month (MoM) and 50.1 % on year on year (YoY) basis, respectively.
- WTI crude price averaged $ 91.26 per bbl in February 2022, up by 11.0 % on a month on month (MoM) and 54.4 % on year on year (YoY) basis, respectively.
- Dubai crude price averaged $ 91.39 per bbl in February 2022, up by 10.4 % on a month on month (MoM) and 51.3 % on year on year (YoY) basis, respectively.

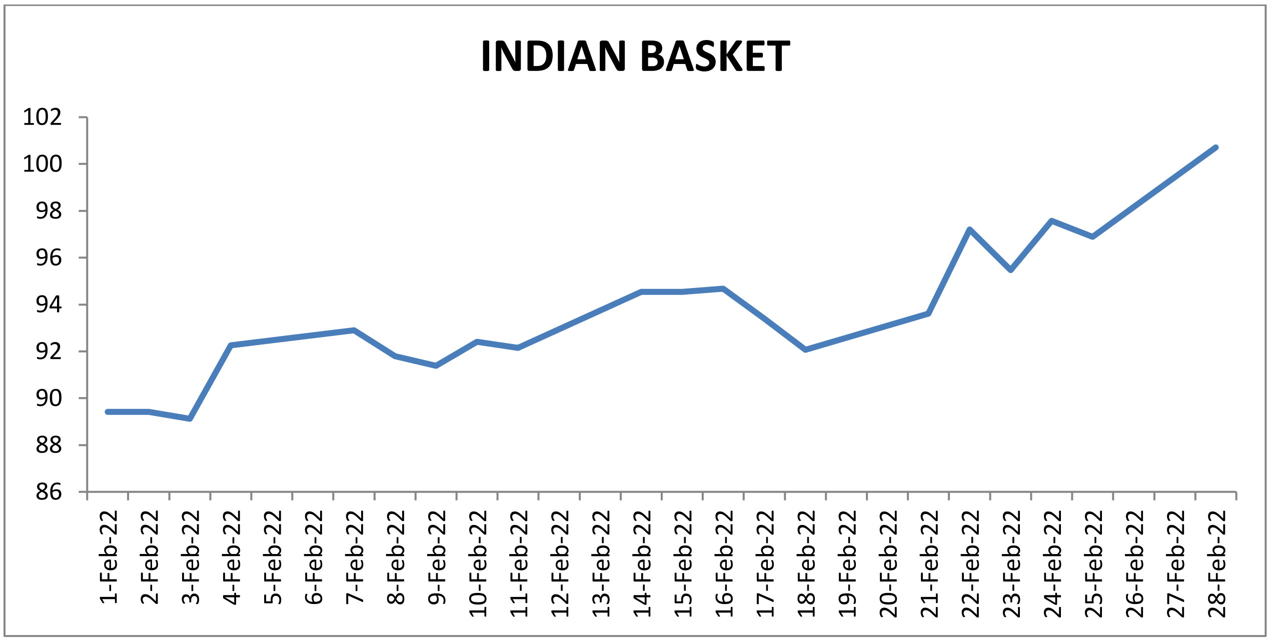
Table 1: Crude oil price in February, 2022

Crude oil	Price ($/bbl) in February 2022	MoM (%) change	YoY (%) change
Brent	93.07	10.8%	50.1%
WTI	91.26	11.0%	54.4%
Dubai	91.39	10.4%	51.3%

Source: WORLD BANK

Indian Basket Crude oil price

Figure 2: Indian crude oil basket price in $ per bbl



Source: Petroleum Planning & Analysis Cell

- Indian crude basket price averaged $ 92.44 per barrel in February 2022, up by 10.3 % on Month on Month (M-o-M) and 51.7 % on a year on year (Y-o-Y) basis, respectively.

Oil production expected to outpace demand

Non-OPEC liquids supply growth is revised down by 0.06 mb/d to around 0.6 mb/d y-o-y, to average 63.6 mb/d. An upward revision, mainly to the US, was offset by downward revisions in the supply forecasts of other countries such as Brazil, China, Canada, Ecuador and the UK due to unexpected lower output in 4Q21. For 2022, non-OPEC supply growth remained unchanged at 3.0 mb/d y-o-y, to average 66.6 mb/d. The main drivers of liquids supply growth are expected to be the US and Russia, followed by Brazil, Canada, Kazakhstan, Norway and Guyana. OPEC NGLs are forecast to grow by 0.1 mb/d both in 2021 and 2022 to average 5.1 mb/d and 5.3 mb/d, respectively.

The crude oil production based on the January 2022 OPEC+ meeting, is expected to rise, as participants have reaffirmed their decision to continue to increase output by 0.4 million b/d each month until all of the production cuts are reversed.

As for Iran, which is in talks to revive the Joint Comprehensive Plan of Action (JCPOA) nuclear deal, crude production could rise towards a sustainable capacity of 3.8 million bpd, up roughly 1.3 million bpd from current levels by the end of this year, according to the IEA. Iran also has about 80 million barrels of crude oil and condensate stored on tankers, the Agency said.

Oil demand & supply

- World oil demand growth is revised up slightly by 17 tb/d, reflecting the latest data trends across the regions, to stand at 5.7 mb/d. Overall, non-OECD growth in 2021 increased by 3.1 mb/d while the OECD recorded growth of 2.6 mb/d. In the OECD, the US continued to be the major driver of oil demand, recording growth of 1.6 mb/d.

- According to Organization of the Petroleum Exporting Countries (OPEC), world oil demand growth forecast unchanged at 4.15 million barrels per day (bpd) for FY 2022 with OECD and non-OECD projected to grow by 1.8 mb/d and 2.3 mb/d, respectively. Industrial activities are anticipated to accelerate, boosting diesel demand. Meanwhile, mobility has recovered substantially with domestic, regional and international flights already showings signs of recovery.

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- For 2022, non-OPEC supply growth remained unchanged at 3.0 mb/d y-o-y, to average 66.6 mb/d. The main drivers of liquids supply growth are expected to be the US and Russia, followed by Brazil, Canada, Kazakhstan, Norway and Guyana. OPEC NGLs are forecast to grow by 0.1 mb/d both in 2021 and 2022 to average 5.1 mb/d and 5.3 mb/d, respectively.

Table 2: World Oil demand in mbpd	2021	1Q2022	2Q2022	3Q2022	4Q2022	2022	Growth	%
Total OECD	**44.59**	**44.58**	**45.86**	**47.50**	**47.69**	**46.43**	**1.84**	**4.12**
~ of which US	*19.96*	*19.69*	*21.07*	*21.36*	*21.28*	*20.86*	*0.90*	*4.50*
Total Non-OECD	**52.06**	**54.55**	**53.90**	**53.82**	**55.23**	**54.37**	**2.32**	**4.45**
~ of which India	*4.79*	*5.48*	*4.82 #*	*4.97#*	*5.44*	*5.18*	*0.39*	*8.16*
~ of which China	14.52	14.64	15.44	15.00	15.65	15.18	0.66	4.57
Total world	**96.65**	**99.13**	**99.75**	**101.32**	**102.92**	**100.80**	**4.15**	**4.30**

Source: OPEC monthly report, February 2022

 # During 2022 rising oil demand will be supported by increasing requirements in all main petroleum product categories, however, some downside risks pertain relating to rising COVID-19 cases, new variants and their associated containment measures, as well as fuel substitution.

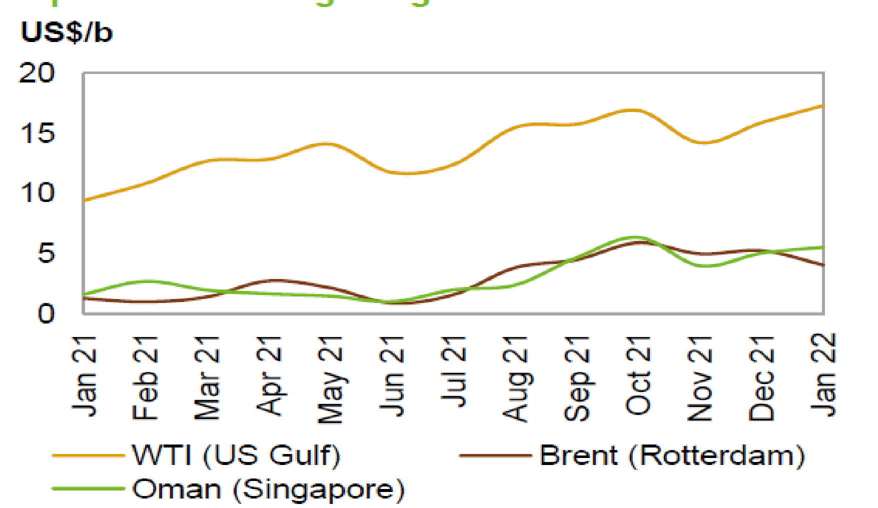
*Note: *2021-22 = Forecast. Totals may not add up due to independent rounding*

Global petroleum product prices

US Gulf Coast (USGC) refining margins against WTI continued to trend upwards for the second consecutive month to fully recover all losses registered last November, and reached the highest level recorded since October 2019. Due to a winter storm in mid-January, the region witnessed product output restrictions, that further, worsened the already tight product balance. US refinery intakes declined by around 370 tb/d in January. US refinery intake is expected to decline further in the coming months on forecasts of another winter storm amid the onset on peak spring turnaround season.

Refinery margins in Northwest Europe against Brent were pressured by higher feedstock prices and power costs as natural gas prices remained high. Nearly 80% of all European refineries depend on natural gas to power their plants, with refineries located in the big oil refining hubs such as Northwest Europe's Amsterdam-Rotterdam-Antwerp essentially relying on natural gas for all its power needs. Refinery margins against Brent in Europe averaged $4.04/b in January, down by $1.20 compared with a month earlier but up by $2.78 y-o-y.

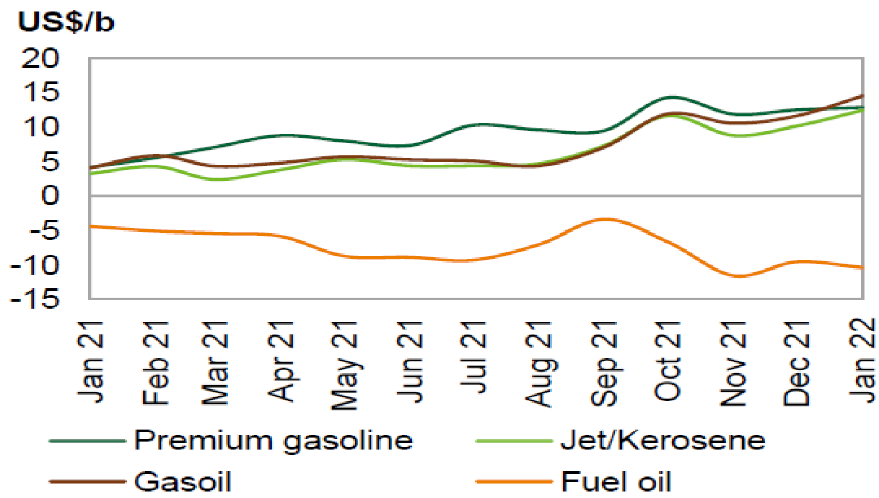
Graph 6 - 1: Refining margins



Sources: Argus and OPEC.

The Asian gasoline 92 crack spread witnessed rise in consumption levels within the region, particularly in India, and despite prevailing concerns about COVID-19 variants. The start of the Lunar New Year, which is celebrated in some countries of the region, likely provided further support. Moreover, the hefty reduction in Chinese gasoline exports has largely contributed to lower volume availability in the region, which provided support to the Asian gasoline complex. The Singapore gasoline crack spread against Oman in January averaged $12.84/b, up by 36 ¢ m-o-m and up by $8.58 y-o-y.

Graph 6 - 5: Singapore crack spreads vs. Dubai



Sources: Argus and OPEC.

The Singapore gasoil crack spread trended upwards, a reflection of strong regional demand, firm industrial and manufacturing activity as well as a contraction in gasoil availability in the region. The Singapore gasoil crack spread against Oman averaged $14.50/b, up by $2.87 m-o-m and up by $10.39 y-o-y.

Table 3: Singapore FOB, refined product prices ($/bbl)

Singapore product prices	Price ($/b) in February 2022	MoM (%) change	YoY (%) change
Naptha	84.56	8.7%	51.5%
Premium gasoline (unleaded 95)	98.04	11.5%	63.3%
Regular gasoline (unleaded 92)	96.18	12.1%	63.2%
Jet/Kerosene	95.78	14.7%	65.1%
Gasoil/Diesel (50 ppm)	98.99	15.6%	65.5%
Fuel oil (180 cst 2.0% S)	97.43	15.3%	65.8%
Fuel oil (380 cst 3.5% S)	72.97	14.5%	44.9%

Source: OPEC

Petroleum products consumption in India

Monthly Review:

- The consumption of petroleum products during April 2021 - January 2022 with a volume of 168.28 MMT reported a growth of 6.07% compared to the volume of 158.65 MMT during the same period of the previous year.
- MS (Petrol) consumption during the month of January 2022 with a volume of 2.47 MMT recorded de-growth of 5.3 % over the volume of 2.61 MMT in January 2021.
- HSD (Diesel) consumption during the month of January 2022 with a volume of 6.37 MMT recorded de-growth of 6.5 % of the volume of 6.81 MMT in the month of January 2021.
- LPG consumption during the month of January 2022 with a volume of 2.57 MMT recorded growth of 3.1 % against a volume of 2.49 MMT in the month of January 2021.

- ATF consumption during January 2022 with a volume of 0.45 MMT registered a growth of 3 % over a volume of 0.44 MMT during the month of January 2021.
- Bitumen consumption during January 2022 with a volume of 0.81 MMT recorded growth of 18.7 % on YOY change.
- Kerosene (SKO) consumption registered de-growth of 13.5 % in January 2022 as compared to January 2021.

Table 4: Petroleum products consumption in India, January 2022

CONSUMPTION OF PETROLEUM PRODUCTS (P)	Consumption in '000 MT	MoM (%) change	YoY (%) change
LPG	2,569	3.8%	3.1%
Naphtha	1,285	8.3%	1.1%
MS	2,473	-12.2%	-5.3%
ATF	455	-17.6%	3.0%
SKO	126	5.6%	-13.5%
HSD	6,369	-12.8%	-6.5%
LDO	92	-0.6%	6.9%
Lubricants & Greases	396	-0.1%	26.7%
FO & LSHS	544	0.3%	0.9%
Bitumen	806	15.9%	18.7%
Petroleum coke	1,415	33.5%	-12.2%
Others	1,085	-9.0%	4.0%
TOTAL	17,614	-4.4%	-2.4%

Source: PPAC

Natural Gas Market

Natural Gas Price – Monthly Review

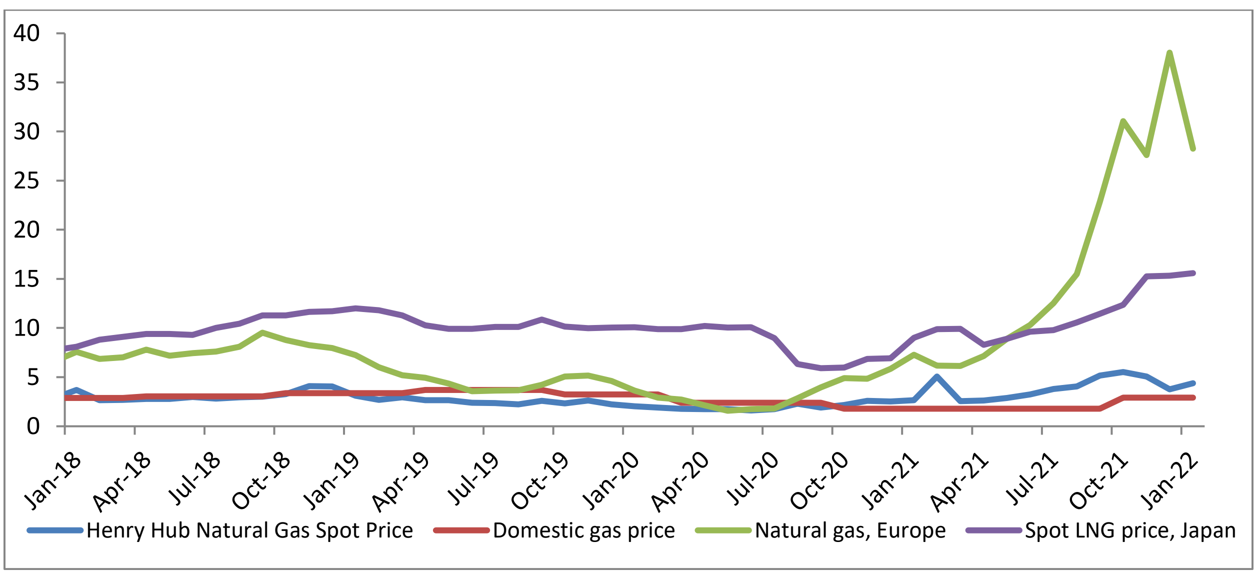
- Natural gas spot price at the U.S. benchmark Henry Hub is averaging at $ 4.38/MMBtu and prices are expected to be volatile amid highly variable winter weather forecast.

- The natural gas spot price at the Title Transfer Facility (TTF) in the Netherlands in Europe has been trading at all-time high levels. The TTF price averaged $28.26 per MMBtu. Gas prices are also being driven by fewer LNG tanker deliveries to Europe as a result of increased demand from Asia. Further, gas prices are expected to remain high driven by greater demand from the post-pandemic recovery, low storage capacity, and tensions in Ukraine.

- Japan Liquefied Natural Gas Import Price is averaging at $ 15.57 per mmBtu for January 2022, up from 15.32 last month which is a change of 1.64% from last month. The rise in prices is a result of persistent cold weather conditions in Japan that results in increase in natural gas heating expenditures during winter.

- The price of domestically produced natural gas is $2.90 per million British thermal unit (mmBtu) from October 1, 2021, to March 31, 2022. The price of domestic gas price has been hiked by 62 percent from the previous revision which was $1.79 per mmBtu for April 2021 to September 2021. Further, the maximum sale price allowed to natural gas production from deep-water, ultra-deep-water, high pressure and high-temperature discoveries was increased from $3.62 per mmBtu to $6.13 per mmBtu.

Figure 3: Global natural gas price trends



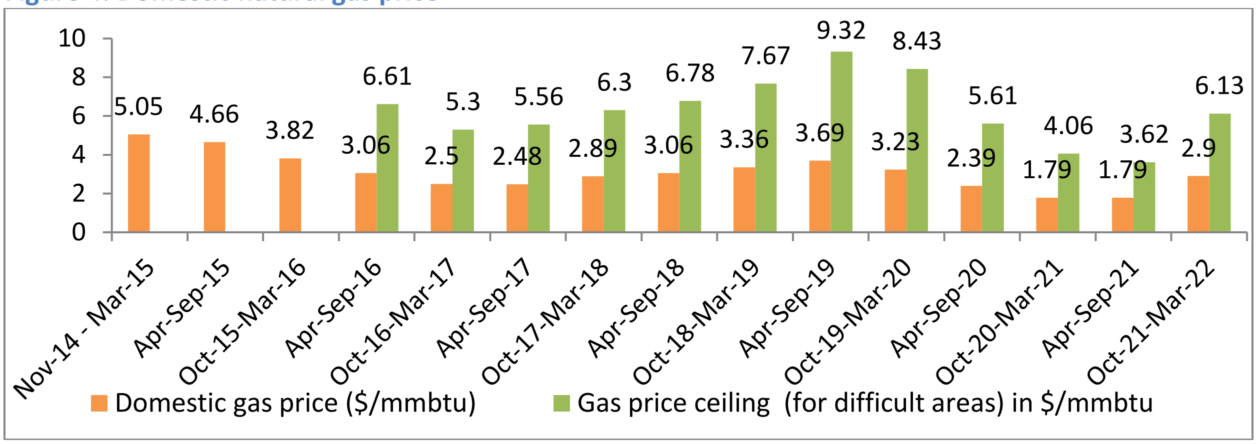
Source: EIA, WORLD BANK

Table 5: Gas price

Natural Gas	Price ($/MMBTU) in January 2022	MoM (%) change	YoY (%) change
India, Domestic gas price (Dec 21)	2.90	0.00%	62.0%
India, Gas price ceiling – difficult areas (Nov 21)	6.13	0.00%	51.0%
Henry Hub	4.38	16.5%	64.0%
Natural Gas, Europe	28.26	-25.7%	288.7%
Liquefied Natural Gas, Japan	15.57	1.6%	73.0%

Source: EIA, PPAC, World Bank

Figure 4: Domestic natural gas price



Source: PPAC

Indian Gas Market

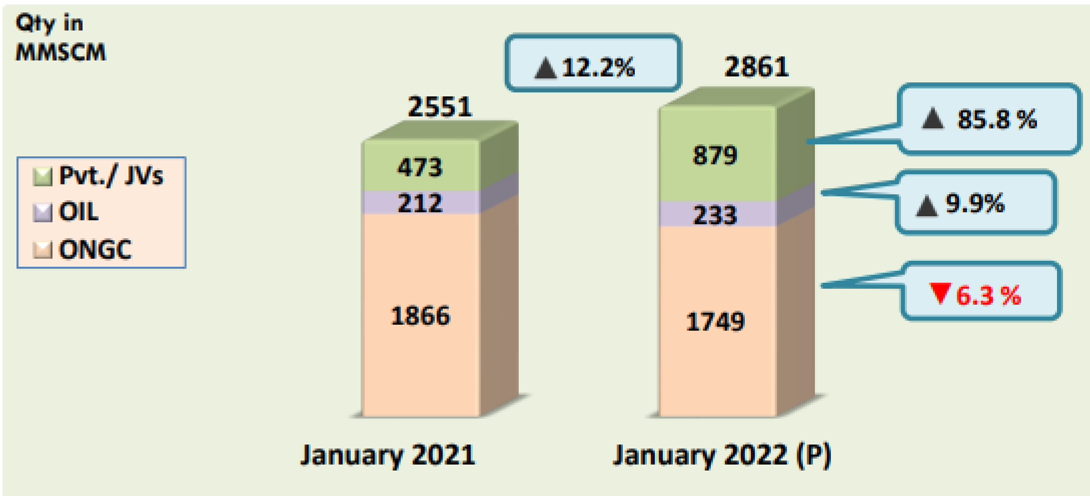
- Gross production of natural gas for the month of January, 2022 was 2861 MMSCM (increase of 12.2 % over the corresponding month of the previous year).
- Total imports of LNG (provisional) during the month of January 2022 were 2408 MMSCM (decrease of 10.6% over the corresponding month of the previous year).
- Natural gas available for sale during January 2022 was 4692 MMSCM increase of 0.5 % over the corresponding month of the previous year).
- Total consumption during January 2022 was 4794 MMSCM (provisional). Major consumers were fertilizer (31%), City Gas Distribution (CGD) (23%), power (12%), refinery (7%) and petrochemicals (5%).
- Domestic natural gas price which takes into account international benchmarks including Henry Hub, Alberta hub, Russia and UK National Balancing Point. With global gas price increase, India's latest gas price revision saw significant increase, thus capturing the international gas price trends. Domestic gas price for Oct 2021 to March 2022 is $2.9 per MMBTU. A notification was issued by MoP&NG on 21st March 2016, for marketing including pricing freedom for gas to be produced from discoveries in deep water, ultra-deep water, and high-pressure high temperature areas. For the Oct 2021 to March 2022 period, the price of gas from such areas has been notified at $6.13 per MMBTU, 69.34 % up from last revision.

Monthly Report on Natural gas production, imports and consumption – January 2022

1. Domestic Natural Gas Gross Production:

- Domestic natural gas gross production for the month of January, 2022 was 2861 MMSCM (increase of 12.2 % over the corresponding month of the previous year).

Figure 10: Domestic natural gas Gross production (Qty in MMSCM)

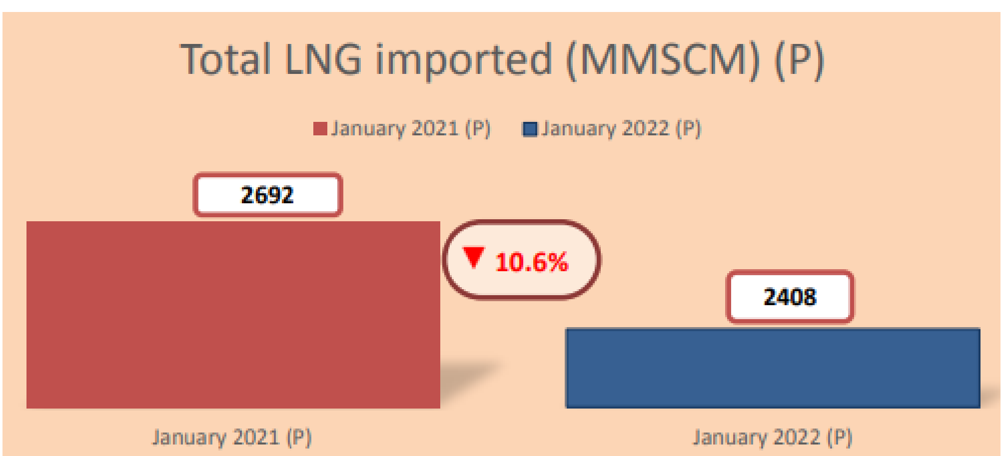


Source: PPAC

2. LNG imports:

Total imports of LNG (provisional) during the month of January 2022 were 2408 MMSCM (decrease of 10.6 % over the corresponding month of the previous year 2692 (MMSCM).

Figure 11: LNG imports (Qty in MMSCM)

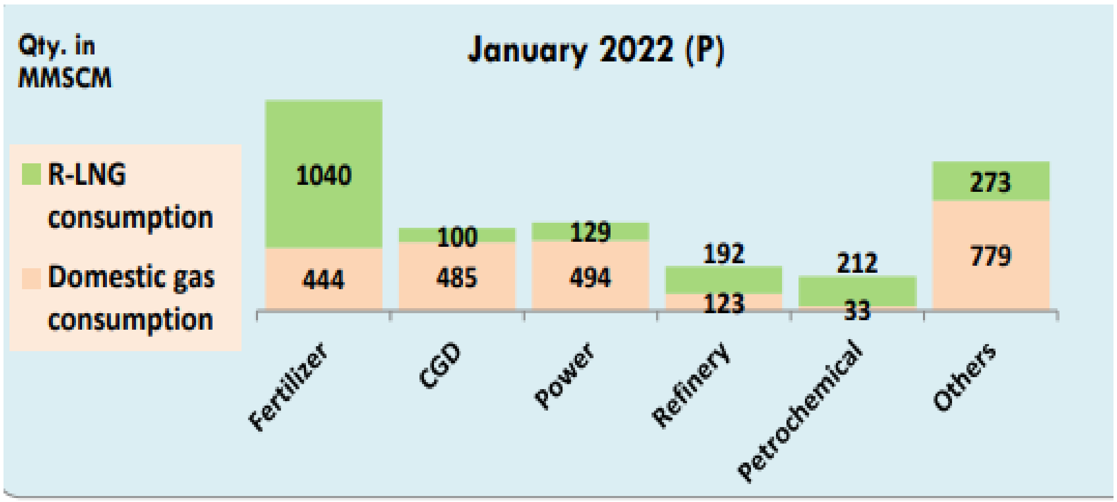


Source: PPAC

3. Sectoral Consumption of Natural Gas:

Total consumption of natural gas during January 2022 was 4794 MMSCM. Major consumers were fertilizer, CGD, power, refinery, others and petrochemicals.

Figure 12: Sectoral Consumption of Natural Gas (Qty in MMSCM) in January 2022



Source: PPAC

Key developments in Oil & Gas sector during January 2022

- **Monthly Production Report for January, 2022**

1. Production of Crude Oil

Indigenous crude oil and condensate production during January 2022 was lower by 2.4 % than that of January 2021 as compared to a de-growth of 1.8 % during December 2021. OIL registered a growth of 5.3 % and ONGC registered a degrowth of 3.1 % during January 2022 as compared to January 2021. PSC registered de-growth of 3.5 % during January 2022 as compared to January 2021. De-growth of 2.6 % was registered in the total crude oil and condensate production during April - January 2022 over the corresponding period of the previous year.

2. Production of Natural Gas

Gross production of natural gas for the month of January 2022 was 2861 MMSCM which was higher by 12.2% compared to the corresponding month of the previous year. The cumulative gross production of natural gas of 28535 MMSCM for the current financial year till January 2022 was higher by 20.5% compared with the corresponding period of the previous year.

3. Crude Oil Processed (Crude Throughput)

Crude oil processed during January 2022 was 21.7 MMT, which was 0.5 % lower than January 2021 as compared to a growth of 2.2 % during December 2021. Growth of 9.2 % was registered in the total crude oil processing during April- January 2022 over the corresponding period of the previous year

4. Production of Petroleum Products

Production of petroleum products saw a growth of 3.7 % during January 2022 over January 2021 as compared to a growth of 5.9 % during December 2021. Growth of 8.9 % was registered in the total POL production during April- January 2022 over the corresponding period of the previous year.

- **National Hydrogen Policy**

In February 2022, the Ministry of Power unveiled India's first green hydrogen policy. The guidelines laid down by the Government are a step in the right direction to ensure that Green Hydrogen (GH) is used to decarbonize and reduce emissions in the hard-to-abate sectors like fertilizer manufacturing, oil refining and others. This will also enable the government to meet its other objectives of energy security, energy self-reliance, reducing imports of expensive fossil fuels and thereby the import bill. The salient features of the policy are as follows: -

- The policy gives liberty to purchase or set up renewable capacity for GH anywhere by manufacturers themselves or with a developer.
- The allotment of land is allowed in renewable energy parks for the manufacture of Green Hydrogen/ammonia.
- The renewable energy used for green hydrogen production will get open access without central surcharge and zero inter-state transmission charges for 25 years for projects commissioned before June 30, 2025.
- The GH manufacturer can 'bank' any surplus power with the utility for 30 days, i.e., put the power into the utility's grid and take it back within 30 days.
- If a distribution licensee or a power supplier needs to buy renewable energy to supply to GH manufacturers, the utility will sell the RE power at concessional rates.
- Manufacturers of Green hydrogen shall be allowed to set up bunkers near ports for storage and easy export of green ammonia.
- Renewable energy consumed for production of Green Hydrogen shall count towards Renewable Purchase Obligations (RPO) compliance for the consuming entity.
- Ministry of New and Renewable Energy (MNRE) will establish a single portal for all statutory clearances and permissions required for manufacture, transportation, storage and distribution of green hydrogen/ammonia.

The notification makes green power availability cheaper and easier to GH manufacturers. Through these measures, the government is promoting the transmission of renewable energy and the setting up of green hydrogen production near to where it will be consumed.

- **Government of India sets policy for Electric Vehicle charging stations**

Ministry of Power issued the revised consolidated Guidelines & Standards for charging infrastructure on 14th January, 2022. The guidelines describe the roles and responsibilities of various stakeholders at the Central and State level for expeditious deployment of public EV charging infrastructure across the country. The salient features as stipulated in the guidelines and standards are as under:

- Tariff for supply of electricity for Public Charging Station (PCS) shall be a single part tariff and shall not exceed "Average Cost of Supply" till 31st March, 2025.

- DISCOMs may leverage on funding from the Revamped Distribution Sector Scheme (RDSS) under 'Part A – Distribution Infrastructure' for the general upstream network augmentation necessitated due to the upcoming charging infrastructure in various areas. The cost of such works carried out by the DISCOMs with the financial assistance from Government of India under Revamped Scheme shall not be charged from the consumers for Public Charging Stations for EVs.

- Housing Societies, Malls, Office Complexes, Restaurants, Hotels, etc. are allowed to install PCS for charging of vehicles including charging of visitor's vehicles permitted to come in its premises.

- Charging stations meant for 100% in-house/captive utilization are free to choose charging specifications as per requirement.

- DISCOMs have been directed to provide electricity connection to PCS in accordance with the timelines specified in the "Electricity (Rights of Consumers) Rules 2020".

- The connection for a PCS shall be provided within 7 days in metro cities, 15 days in other municipal areas and 30 days in rural areas. Appropriate Commission may specify a lesser time limit than the aforementioned limit.

- Any PCS/chain of charging station may also obtain electricity from any generation company through open access. Open access shall be provided within 15 days for this purpose. Only cross subsidy charges (not more than 20% as per Tariff Policy Guidelines), transmission charges and wheeling charges shall be applicable.

- The details of requirements of Public Charging Infrastructure (PCI), PCI for long range EVs and/or heavy duty EVs, Location of PCS, Database of Public EV charging stations, Tariff for supply of electricity to EV PCS and service charge at PCS are also included.

- Due to high cost of rent for land and charges provision of land at promotional rates for PCS have been provided in the Guidelines. Land available with Government/Public entities shall be provided to Government/Public entity on a revenue sharing basis at a fixed rate of Re.1/kWh (used for charging) to be paid to the land-owning agency, initially for a period of 10 years.

The number of charging stations for EVs in 9 mega cities of India increased by 2.5 times in the last 4 months due to multiple initiatives taken by the Govt. the 9 mega cities that are in focus of development of EVs infrastructure are: Surat, Pune, Ahmedabad, Bengaluru, Hyderabad, Delhi, Kolkata, Mumbai and Chennai. The aggressive efforts undertaken by the government through various implementing agencies have resulted in rapid growth in deployment of public EV charging infrastructure.

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