FIPI

FEDERATION OF INDIAN PETROLEUM INDUSTRY

MAY 2021

POLICY & ECONOMIC REPORT OIL & GAS MARKET

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Executive Summary

Over the last week of May, the number of new cases and deaths continued to decrease, with over 4.1 million new cases and 84,000 new deaths reported; a 14% and 2% decrease, respectively, compared to the previous week. The Western Pacific Region reported the largest increase in the number of deaths, while other regions reported decreases or similar numbers to the previous week. Despite a declining global trend over the past four weeks, incidence of COVID-19 cases and deaths remain high, and substantial increases have been observed in many countries throughout the world. The European Region reported the largest decline in new cases and deaths in the past week, followed by the South-East Asia Region

After a 3.5% contraction in 2020-21, global real GDP is projected to surge 5.7% in 2021-22 according to IHS Markit estimates. The growth forecast for May is revised up by 0.2 percentage point in 2022, reflecting stronger performances in North America, Europe, and mainland China but significantly weaker growth in India, where the COVID-19 pandemic is raging. The rebound in the second quarter is mainly driven by rapid growth in consumer spending, residential investment, and business equipment investment supported by rise in COVID-19 vaccinations and decline in new infections.

India reported almost 27 million cases of the coronavirus as of May 30, 2021, with more than two million recoveries and about 300 thousand fatalities. The country reported a continuous decline in daily cases after reporting the highest number of cases (4,14,188) on 7 May 2021. In the past week, as compared to previous week, 26 states/UTs have shown a decrease in cases. Higher increase, among larger states was reported from Tamil Nadu (23%), Andhra Pradesh (9%) and Odisha (7%).

The second wave of Covid-19 infections is clouding Indian economy's prospects of recovery from the worst ever contraction suffered in 2020-21. According to CMIE estimates, the real GDP was expected to grow by 28 per cent in the first quarter of 2021-22 over the 24.4 per cent contraction witnessed in the first quarter of 2020-21. But now GDP growth during the June 2021 quarter will get arrested at 22 per cent as fresh Covid-19 cases have increased three folds in the last 25 days, compelling many state governments to impose fresh curbs on mobility and businesses. The IHS Markit India Manufacturing Purchasing Managers' Index stood at 50.8 in May 2021 compared with 55.5 in April. Both output and new orders grew the least in ten months, while there was a substantial slowdown in the growth of input purchasing.

Crude oil benchmarks fluctuated in the range of USD 60 during the month of May. Strong recovery in China and Japan propelled the demand for crude oil in the first fortnight of May month. There was a minor dip in crude prices as the prospect of Iran's return to market fueled a possibility of increase in crude supply. In the last week of May, withdrawal of crude in US inventory boosted the crude oil benchmarks. US crude oil inventory stood below the average of last five years. For the month, crude benchmarks went down with marginal decline. Average Brent, WTI and Dubai basket crude prices in May went up by 4.86 %, 5.56 % and 7.15 % respectively from their April prices.

Global rig count for the month of April went down by 42. From March's rig count of 1,231 it went down to 1,189. Season change in Canada let the rig counts drop significantly in the month of April. Rig count declined in Latin America, Europe, Asia Pacific, Canada and in the Middle East. Onshore rig went down by 45 and offshore rig count went up by 3. Indian drilling rig count went down by 4 in the month of April to reach 74.

Global oil supply in April 2021 decreased by 0.15 mb/d m-o-m to average 93.06 mb/d and was down by 6.45 mb/d Y-o-Y. In 2021, world oil demand is forecasted to increase by 6.0 mb/d, unchanged from last month's forecast Total demand is foreseen to reach 96.5 mb/d.

Asian product markets margins weakened further with most pressure coming from the barrel's bottom, although crude processing rates in the region remained relatively constrained. Overall refining capacity in the region increased in the month of April, while Covid surge in India led to the reduced refinery intakes. Refinery margins for Oman in Asia lost 30 ȼ on m-o-m to average $1.65 /b in April and was higher by $3.74 on y-o-y basis. Refinery utilization rates in April averaged 89.54 % in selected Asian markets comprising of Japan, China, India and Singapore.

In April 2021, consumption of petroleum products went down by 9.4 % m-o-m and up by 71.3 % on y-o-y. Consumption of refined petroleum products for April 2021 stood at 17,013 MT.

Natural gas prices saw an increase in Henry and Europe hub as the global gas consumption is set to rise by 3.2% in 2021, offsetting the decline in 2020. Natural gas price in the Henry hub increased by 2 % to reach $ 2.61 /MMBtu in the month of April due to continued LNG activities. Natural gas price in the Europe saw a surge by 16.6 % on M-o-M basis due to cold blast across the region in the month of April. European Gas price for the month of April averaged $ 7.15 per MMBtu. Asian spot LNG prices were on rise in April as China, Japan and South Korea replenished the LNG inventories. LNG prices for June delivery stood up around USD 7.3/ MMBtu. Japan LNG benchmark declined by 19.8 % as excess supply and decline in demand rattled the market.

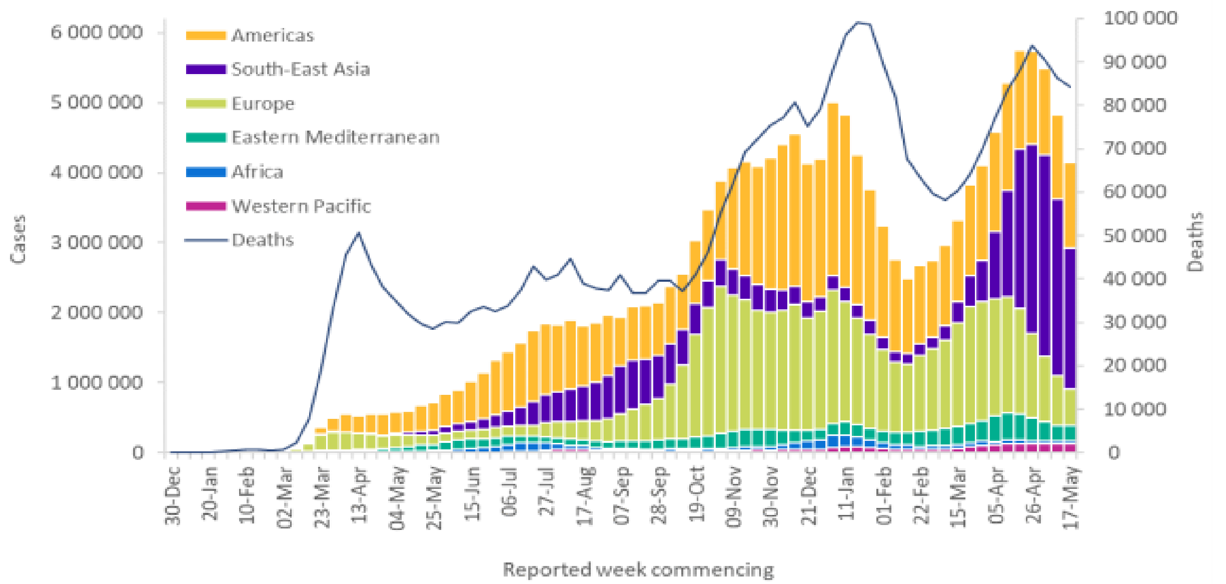
Economy in Focus

1. A snapshot of the global economy: Recovery catches pace despite surge in virus cases

Over the past week, the number of new cases and deaths continued to decrease, with over 4.1 million new cases and 84,000 new deaths reported; a 14% and 2% decrease, respectively, compared to the previous week. The Western Pacific Region reported the largest increase in the number of deaths, while other regions reported decreases or similar numbers to the previous week. Despite a declining global trend over the past four weeks, incidence of COVID-19 cases and deaths remain high, and substantial increases have been observed in many countries throughout the world. The European Region reported the largest decline in new cases and deaths in the past week, followed by the South-East Asia Region

Global COVID-19 cases

Figure 1. COVID-19 cases reported weekly by WHO Region, and global deaths, as of 23 May 2021**



Source: World Health Organization (WHO)

After a 3.5% contraction in 2020-21, global real GDP is projected to surge 5.7% in 2021-22 according to IHS Markit estimates, its strongest advance since 1973. The growth forecast for May is revised up by 0.2 percentage point in 2022, reflecting stronger performances in North America, Europe, and mainland China but significantly weaker growth in India, where the COVID-19 pandemic is raging.

Since early January, the seven-day average of new COVID-19 cases has plunged 88% in the United States and 97% in the United Kingdom. Consumer spending is proving more resilient than expected as economies reopen, travel picks up, and social activities resume. The IHS Markit PMI surveys show service sectors are quickly gaining momentum (while manufacturing performance remains strong) in countries where the pandemic is subsiding.

Performances will vary across regions, with North America and Asia-Pacific leading but Africa and Latin America lagging:-

- After a 3.5% contraction in 2020-21, the US economy will likely to expand 6.7% in 2021-22, led by rapid growth in consumer spending, residential investment, and business equipment investment. The economy will regain its previous peak of employment in mid-2022, and the unemployment rate should fall to 3.5% by mid-2023.
- Following a double-dip recession, the Eurozone outlook is improving. After setbacks in the fourth quarter of 2020-21 and the first quarter of 2021-22, eurozone real GDP is starting to rebound in the second quarter as COVID-19 vaccinations rise, new infections decline, and containment measures ease.
- China's economic expansion is supply-led, but domestic demand will catch up. In the first quarter of 2021, real GDP increased 18.3% from its year-earlier level and 10.3% from its level in the first quarter of 2019. Growth rates of industrial production and services output are outpacing gains in fixed investment and retail sales.
- A tidal wave of COVID-19 virus infections has darkened India's economic outlook. The vaccine shortages have stalled progress on vaccinations and prompted the government to temporarily halt vaccine exports. The May forecast incorporates a national lockdown that will lead to a 10% quarter-on-quarter drop in India's real GDP during the April-June quarter.

The US

The US economy continues to show signs of improvement with speedy vaccination drive conducted by the Government. Private sector firms across the US signalled an unprecedented expansion in business activity in May. Growth was driven by the fastest service sector upturn on record, with the increase in manufacturing output also accelerating amid stronger client demand.

Adjusted for seasonal factors, the IHS Markit Flash U.S. Composite PMI Output Index posted 68.1 in May, up from 63.5 in April. The rate of expansion was unprecedented after surpassing April's previous series record. The rise in new orders quickened for the fifth month running in May, with improvements in demand stemming from greater customer confidence and the further reopening of the economy. At the same time, new export business rose at the fastest pace since the series covering both manufacturing and services began in September 2014.

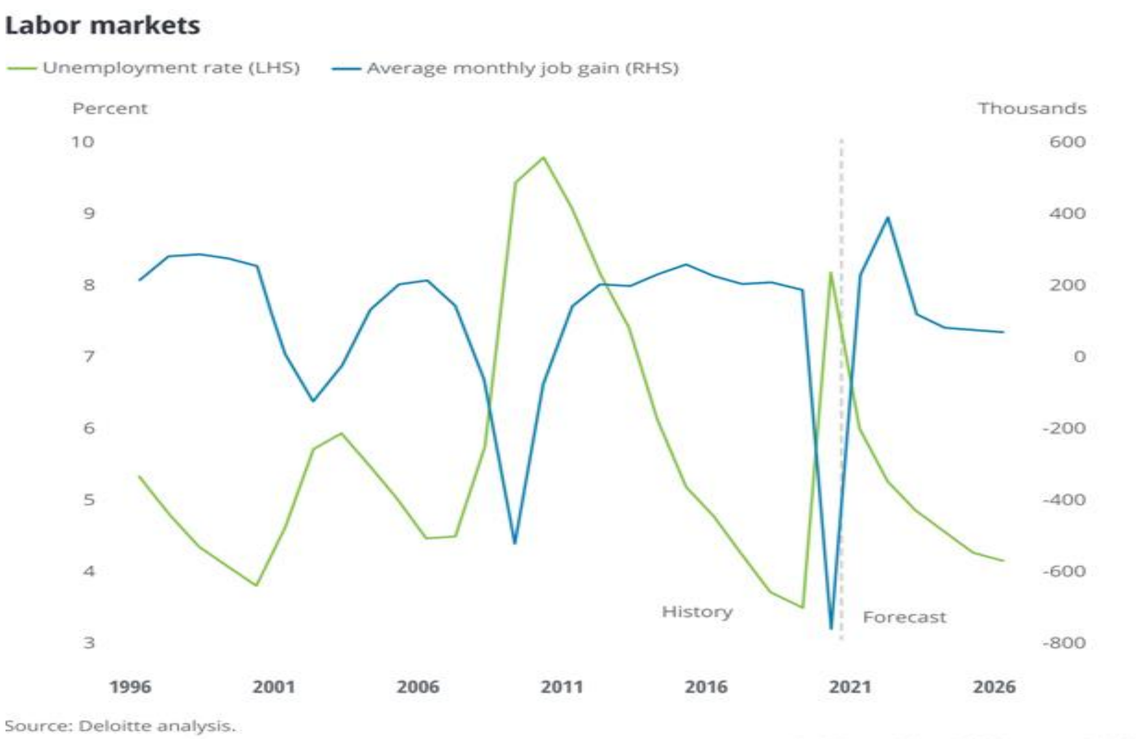
Inflationary pressures continued to mount in May, as rates of increase in input prices and output charges quickened to the steepest on record. Companies commonly noted efforts to pass through soaring costs to clients, with prices of oil, PPE and transportation often cited as fueling the uptick in expenses.

The manufacturers registered the fastest rise in work-in-hand on record amid raw material shortages. While job creation was again seen in the goods-producing sector, the rise was the slowest for five months, linked in part to difficulties filling vacancies.

Business confidence across the private sector improved in May, with the pick-up in sentiment largely stemmed from the service sector. Manufacturers expressed concern regarding raw material shortages, which it is feared could extend through 2021, and unsustainable demand conditions. The seasonally adjusted IHS Markit Flash U.S. Services PMI™ Business Activity Index registered 70.1 in May, up from 64.7 in April. The rate of expansion was the sharpest since data collection for the series began in October 2009. Firms linked the upturn to stronger client demand amid greater customer confidence and the reopening of non-essential businesses.

US Labor markets: - The great layoff of April 2020 saw employment plunge by more than 20 million, with most industries suffering a decline of more than 10%. As long as COVID-19 remains a significant issue, demand in the most affected industries will continue to lag. But as the vaccination program begins to allow resumption of activity, we can expect to see demand for workers spike. Spot labor shortages could well pop up in industries—such as food service and accommodation. Businesses will eventually find those workers, and will reach equilibrium.

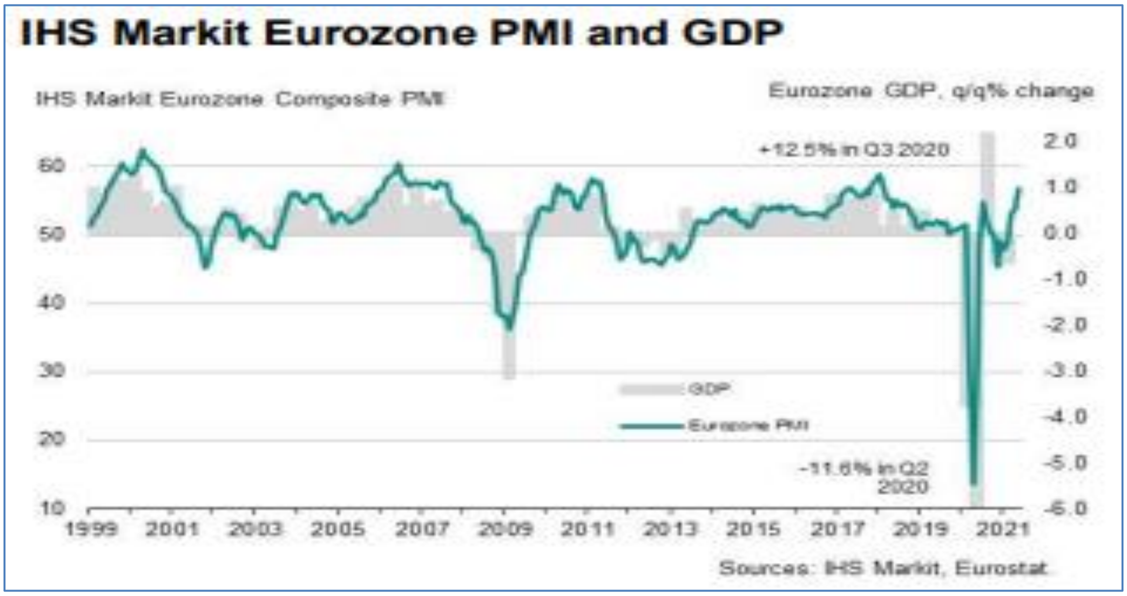
US Labor markets



Euro Zone

Eurozone business activity grew at a faster rate in May as economies continued to open up from virus restrictions. The rate of expansion hit the highest for over three years as new order inflows surged to an extent not seen for almost 15 years. Business optimism about the year ahead continued to break new highs, but price gauges rose further hitting all-time highs in manufacturing as demand continued to outstrip supply for many goods and services.

The headline IHS Markit Eurozone Composite PMI rose from 53.8 in April to 56.9 in May. The latest reading was the highest since February 2018 and indicated a third successive month of output growth. The strengthening of demand and brighter outlook prompted firms to again take on extra staff, with employment rising for a fourth successive month in May. However, although the rate of job creation remained the second-highest in just under two years, it waned slightly due to instances of difficulties in filling job vacancies.



However, while manufacturing reported the strongest growth rate, it was the service sector that drove the overall improvement in performance. Having eked out a marginal increase in April for the first time in eight months, business activity across the region's service sector expanded in May at a rate not seen since June 2018 as the easing of COVID-19 related restrictions facilitated a revival in demand. New orders for services rose for the first time since last July, growing at the fastest pace since January 2018.

With demand continuing to run ahead of supply for many goods and services, inflationary pressures increased again in May. Average input prices rose at the sharpest rate since March 2011, led by the largest rise in factory input costs.

China

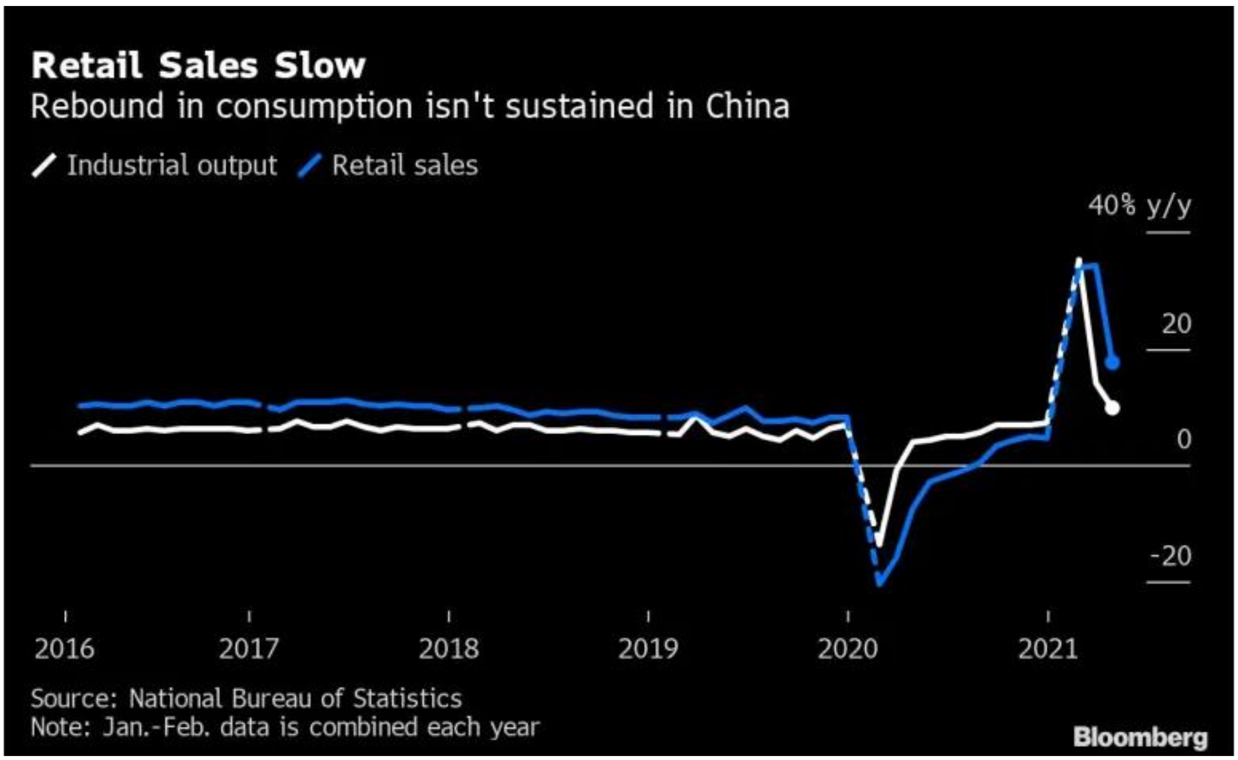
China's economy has slackened in April from the jump seen in the previous month as factory output slowed and retail sales missed analyst expectations, indicating more pressure on the recovery in consumption.

Industrial production grew 9.8 percent in April from a year ago, slower than the 14.1 percent surge in March, according to National Bureau of Statistics (NBS) data. Retail sales rose 17.7 percent year-on-year in April, much weaker than a 24.9 percent uptick expected by analysts and down from the jump of 34.2 percent seen in March. The PMI for China (51.9) was relatively modest.

The explanations for the deceleration in spending are the partial withdrawal of government stimulus, the tightening of credit market conditions (which is affecting the housing market), supply chain disruptions, such as shortages of key inputs (which led to a surge in producer prices in April) and limited transport capacity. The latter is hurting the ability to serve strong export demand.

There also has been surge in inflation in China as producer prices have accelerated sharply. The People's Bank of China (PBOC) believes that this is due to a rapid increase in global demand, combined with supply chain disruption and shortages of key inputs. Further, the PBOC said that this surge will likely be temporary and that, as a result, consumer price inflation is likely to remain modest.

China Retail Sales

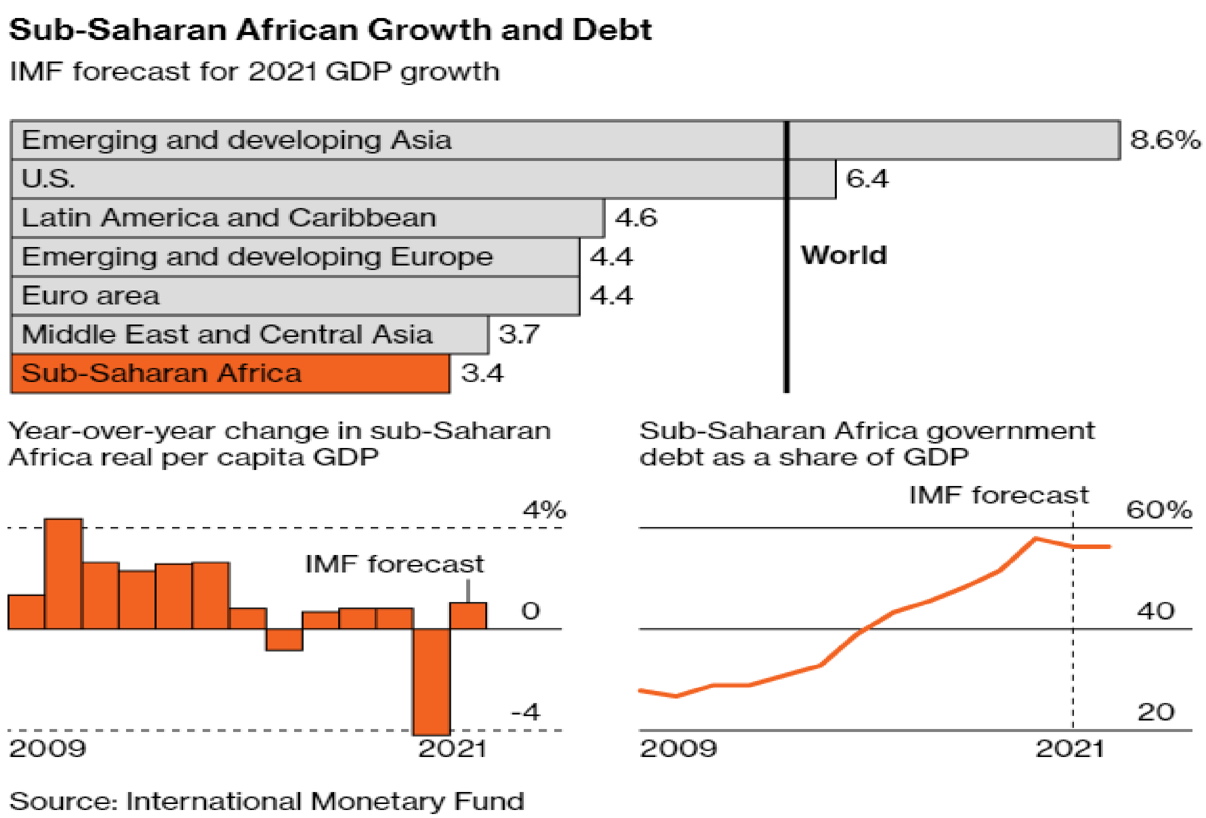


2. Vaccines Shortage crushes Africa's hopes for an economic revival

Covid-19 has plunged 30 million Africans into extreme poverty last year meaning they live on less than \$1.90 a day. As many as 39 million more could follow in 2021, according to the African Development Bank. In the sub-Saharan region, per capita income in absolute terms fell to levels last seen almost a decade ago. The rate of inoculations in African countries has fallen behind other parts of the world. As of May 12, only 22.4 million shots have been administered on a continent with 1.3 billion people, according to the African Centers for Disease Control and Prevention.

Most of the continent is depending on Covax, a global initiative created to provide equitable access to vaccines. But African countries won't receive the bulk of those orders until the second half of the year, and those will cover only a fifth of their populations. Efforts to mass-produce shots on the continent have been delayed by countries, including the U.S., Canada, and the U.K.. South Africa, one of the few nations able to buy its own vaccines, expects to receive almost 4.5 million doses by the end of June—for a population of about 60 million. Poorer countries such as Zimbabwe are relying on donations from China, Russia, and even India—where a devastating disease outbreak and temporary ban on exports have already curbed shipments to Africa.

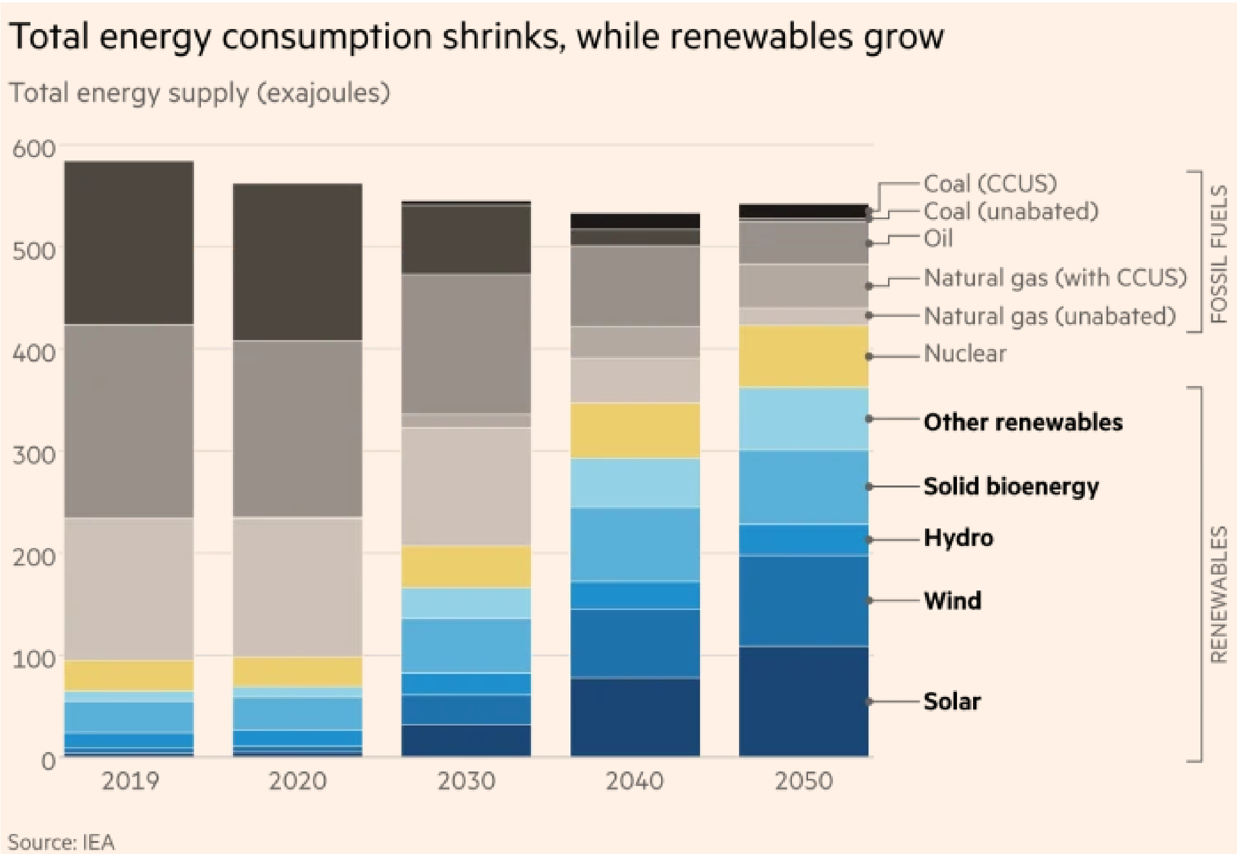
World output is expected to expand at the fastest pace in at least four decades as rich countries with vaccinated populations return to normal, according to IMF estimates. Africa's slow vaccine rollout and lack of funding could set it back 2-5 years, according to Vera Songwe, the executive secretary of the UN Economic Commission for Africa. Globally, poorer countries need to deploy $450 billion to rebuild their economies over the next five years and accelerate their income convergence with advanced economies, according to the IMF. Some African governments may gain access to funds through $650 billion in special drawing rights that the Washington-based IMF plans to provide to emerging and low-income nations.



3. IEA report carves out the roadmap for net zero emissions by 2050

The International Energy Agency has mapped out a pathway that it says is "narrow but still achievable" if the world is to cut carbon dioxide emissions to nearly zero and limit global warming to 1.5C. Meeting this goal, which has been adopted by major economies such as the EU, US and UK, would require a total transformation of the global economy over the next three decades. Under the IEA's scenario, this would include ending the sale of conventional petrol cars by 2035, reaching 100 per cent clean energy by 2040 and using heat pumps to meet at least half of all heating needs by 2045.

Total energy consumption in 2050 would be less than it is today because of improvements in efficiency, even though the global economy will be 40 per cent larger than it is now.



Most of the energy would come from renewable sources, with the IEA forecasting that solar power will increase 20 times and wind power 11 times by 2050. Electricity use would also grow. Today, about 20 per cent of total energy consumption is electric. By 2050, this would rise to 50 per cent in this scenario.

A corresponding spending boost in electricity infrastructure would be required. Total capital investment in the energy sector would need to rise to $5tn a year, of which investment in transmission and distribution grids would rise to $820bn annually in 2030 from $260bn today. Fossil fuels such as coal, oil and gas would have a very limited role by 2050 in this scenario. Coal would decline to just 4 per cent of the global energy supply, mostly from power plants that are equipped to capture carbon dioxide before it is released.

Oil and gas would play a slightly larger role in 2050, but not by much, according to the IEA. Oil demand would fall by 75 per cent, reaching 24m barrels per day and gas demand would decline by 55 per cent under the agency's scenario. The IEA report says no new exploration for oil, gas or coal supplies would be necessary, as producers would be focusing only on their existing assets. Notably, this means that the Middle East would produce a growing share of the world's oil supplies over time. As a result, OPEC's control of the oil market would grow to about 52 per cent, its highest level ever.

Policymakers will also have to use every tool at their disposal, including placing a price on carbon dioxide emissions. As the price of oil declines in the net zero scenario, the price of carbon dioxide will rise, the IEA forecasts, particularly in developed countries. Governments will also need to accelerate their plans to cut emissions. Existing government climate plans, which were also examined by the IEA in this report, will only cut emissions by 35 per cent by 2050.

4. Pandemic has presented UK with 'once-in-a-generation opportunity' to course correct it's economy: CBI

The Confederation of British Industry (CBI), Britain's leading Business association, has highlighted in a recent report that the UK economy has a 'once-in-a-generation opportunity' to transform and achieve its goal of reaching net-zero emissions. The report further says that the year 2021 must represent a 'turning point' in economic policy and the country must avoid the mistakes made after the global melt down of 2008. The report goes on to claim that if necessary measures are taken on a timely basis, the country could add over EUR 700 Billion and some 2,40,000 new jobs to the economy. This will also boost the exports from small and medium sized industries by EUR 20 Billion.

The measures suggested by CBI includes developing local economic clusters to make the economy more regionally balanced, replacing the Apprenticeships Levy with a 'Learning for Life' skills levy, and increasing research and development spending.

The report warns that both the social and the economic impacts of the pandemic on the groups hardest hit is likely to leave generational scars. The report points out that to course correct the situation, this year may be crucial Future generations will judge us on the road we choose next. The economic history of nations shows that the decisions we take, the plans we develop and the actions we set in motion in the coming weeks and months will cast a long shadow.

The report insisted that achieving net zero emissions was especially important to protect the environment, boost jobs and exports for companies, and help Britain become a world leader in industries like wind power and carbon capture. The CBI suggested an extra £8billion in exports could come from hydrogen electrolyser production, EUR 3billion could derive from offshore wind, while electric vehicles and battery technology could provide an EUR 18billion boost.

It also declared there was far greater potential for SMEs to sell goods and services overseas and for more businesses to become 'superstar' exporters - companies which sell a minimum of ten products to at least ten markets.

CBI Director-General Tony Danker highlighted 'This country will never have a greater opportunity to transform our economy and society. This is the moment where we have a genuine chance to make big bets on how the UK economy will grow and compete’. The CBI also asserted that a long-term plan was needed for taxation that would allow Britain to fix the damage to its public finances wrought by the biggest ever budget deficit in peacetime without hurting business investment.

5. Accelerated investments in digital transformation and sustainability to generate 5.7 million jobs in Europe by 2030: Report

A recent report ‘Europe’s new dawn - Reinventing industry for future competitiveness’ published by Accenture and BusinessEurope claims that accelerated investments in digital and sustainability could add up to 5.7 million new jobs across Europe by 2030.

The report shows that although Europe was keeping pace with other regions from a growth and market share standpoint pre-pandemic, the trajectory has since diverged. European businesses now expect their recovery from the pandemic to take at least six months longer than companies in Asia-Pacific and North America expect their own recoveries to take. However, the report notes that Europe is well positioned to leverage future growth opportunities due to its strength in key industries. This strength, coupled with investment in digitalization and sustainability, could boost employment and create millions of jobs in the region by 2030.

The accelerated investment in both digitalization and sustainability — which the report refers to as the “Twin Transformation” — could boost net job creation by up to 5.7 million by 2030 across the region compared to the number that would be created if digital and sustainability investments were not accelerated. Top industries for net job creation include industrial equipment, high tech, software, utilities, automotive, life sciences, and communications/media.

The report further includes a survey conducted with 700 C-level executives across Europe, technology investment should be focused on artificial intelligence, mentioned by 66% of the respondents, 5G and 6G (58%), cloud (52%) and next generation-batteries (34%).

Rising investment in technology, sustainability and their workforces

Nine out of 10 European companies (88%) plan to increase their investments in digital transformation and sustainability practices this year, whereas only 58% increased their investments in those areas in 2020. European businesses are also placing a heavy emphasis on reskilling their workforces. More than three-quarters (86%) of European companies plan to upskill/reskill up to 25% of their workers in the next three years to keep pace with their company's need. Overall, approximately seven million workers in the region could benefit from upskilling/reskilling initiatives.

Role of European Governments and the EU Institutions to emerge as global leaders

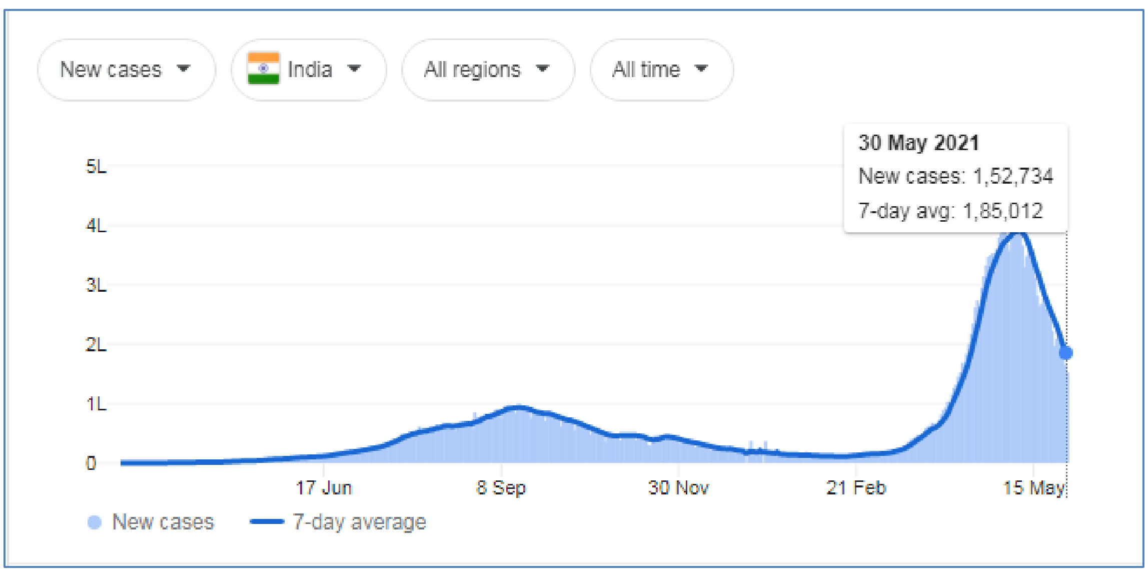
The report has identified five areas for actions that European businesses expect governments and EU institutions to undertake. These include:

- Upgrading education and training systems by promoting key incubators of talent and ensuring alignment with most needed skills while facilitating digital literacy, life-long learning and vocational education.
- An enabling digital transformation that includes planning and rolling out a common technology infrastructure (5G, Cloud, IoT, AI) and supporting de-carbonization efforts. Also, the creation of an investment and innovation-friendly regulatory framework is expected, for instance by reducing legal fragmentation and red tape
- Incentivize high potential industries through investment in disruptive and breakthrough research and innovation, adoption of policies to support the development of innovative industrial ecosystems, and the creation of public-private partnerships

1. Snapshot of Indian Economy: surge in COVID cases increase downside risk for the fast-recovering economy

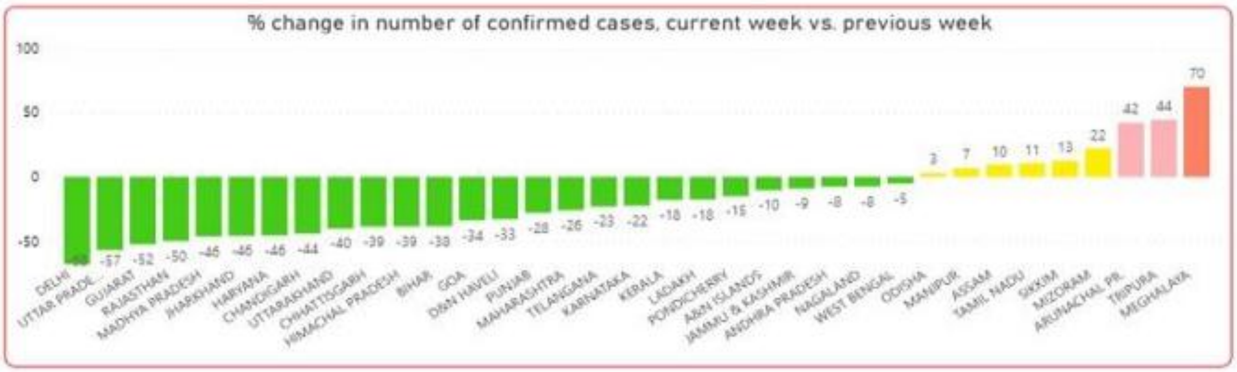
India reported almost 27 million cases of the coronavirus as of May 30, 2021, with more than two million recoveries and about 300 thousand fatalities. The country reported a continuous decline in daily cases after reporting the highest number of cases (4,14,188) on 7 May 2021.

India COVID-19 cases



Source: World Health Organization (WHO)

In the past week, as compared to previous week, 26 states/UTs have shown a decrease in cases. Higher increase, among larger states was reported from Tamil Nadu (23%), Andhra Pradesh (9%) and Odisha (7%).

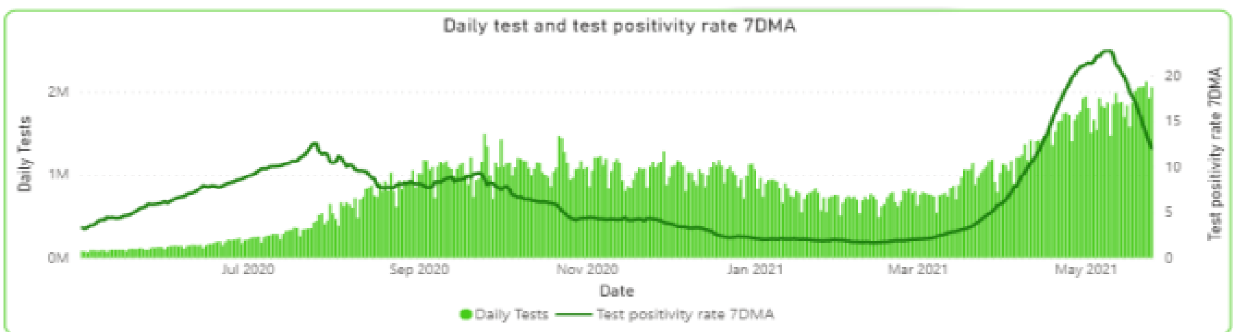


Source: - WHO

Vaccinations in India

As of 25th May 2021, India has tested more than 332 M samples. Tests include both, RTPCR and Rapid Antigen. India's current test positivity rate (7DMA) is 12%.

Testing- National level



Source: - WHO

India continued to drive Covid-19 vaccinations among various age group with preconditions and the details are as under:-

Cumulative Coverage Report of Covid-19 vaccination (as on 25 May 2021)

Beneficiaries vaccinated		
1st dose	2nd dose	Total
15,52,35,374	4,33,03,625	19,85,38,999

Source: WHO

GDP Growth

In the recent announcement by Central Government on May 31st 2021, India FY 2021 GDP contracts 7.3% against a 4% expansion in the preceding FY 2020. In contrast GDP in March quarter of 2020-21, grew by 1.6%. The Q4 growth was better than the 0.5% expansion in the previous quarter Oct-Dec quarter 2020-21. The Private Final Consumption expenditure fell by a significant 9.1 % in FY21 as compared to a 5.5 % rise in FY20. However, public expenditure by the government rose 2.91 % in FY21, much slower than the 7.88 % rise seen in FY20. The agriculture growth for FY 21 has been estimated at 3.6%. Mining and manufacturing has contracted by 8.5% and 7.2% respectively; while electricity growth came in at 1.9%. The growth in construction contracted by 8.6%; trade and hotels grew at a negative rate of 18.2% and the financial and real estate sector growth too was negative at 4.6%. India's fiscal deficit came in at 9.3% of GDP in 2020-21, down from the budgeted revised estimate of 9.5%.

Further, according to FICCI, the overall business index has plunged to 51.5 in May 2021 signalling a sharp deterioration in the optimism level of corporate India. Weak consumer demand, non-availability of raw materials, manpower shortages and logistical delays are the top most concerns.

India's Core sector output grew 56% in April, against the index of eight core sector industries that had declined 37.9% in April 2020. The higher growth rate in April 2021 is largely due to low index base in April 2020 consequent to the low industrial production across all sectors caused by nationwide lockdown imposed to contain spread of Covid 19 last year. The core sector output has been lower by 15% in April 21 over the March 21 level with broad based contraction across all segments.

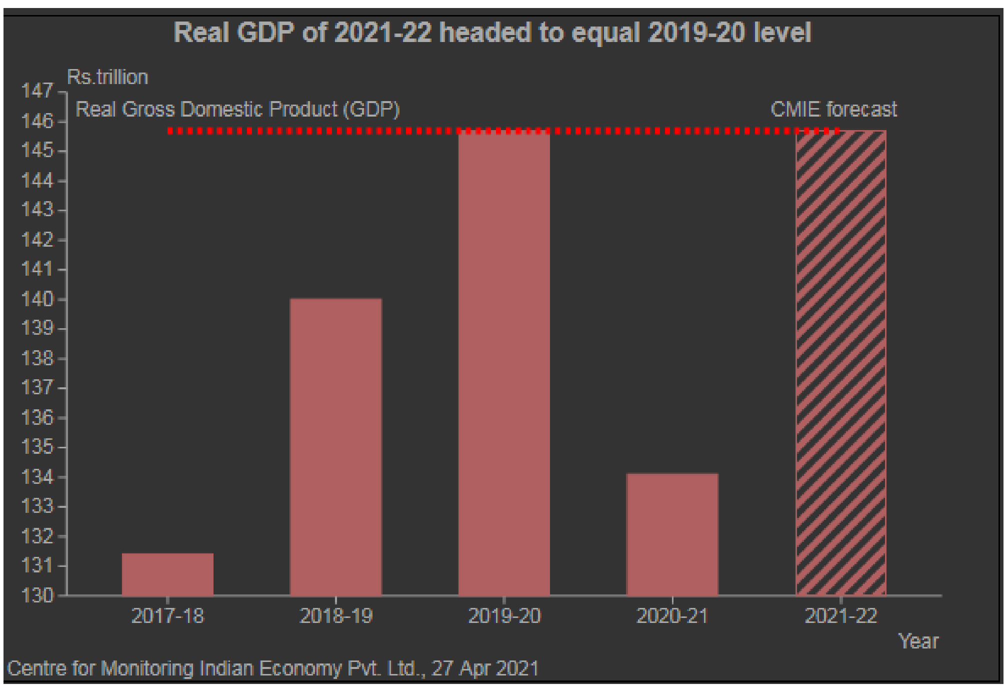
The 8 core industries included in the core index-coal, crude, natural gas, refinery products, fertilizers, steel, Cement and electricity

Sector	**April growth (%)**
Coal	9.5
Crude Oil	-2.1
Natural Gas	25
Refinery goods	30.9
Fertilizers	1.7
Steel	400
Cement	548.8
Electricity	38.7
Total	56.1

India: Current GDP Situation

The second wave of Covid-19 infections is clouding Indian economy's prospects of recovery from the worst ever contraction suffered in 2020-21. According to CMIE estimates, on April 1, 2021, the economy would grow by 9.2 per cent in 2021-22. The real GDP was expected to grow by 28 per cent in the first quarter of 2021-22 over the 24.4 per cent contraction witnessed in the first quarter of 2020-21. But now GDP growth during the June 2021 quarter will get arrested at 22 per cent as fresh Covid-19 cases have increased three folds in the last 25 days, compelling many state governments to impose fresh curbs on mobility and businesses. Fewer restrictions imposed this time ensure that India's GDP in the June 2021 quarter does not drop as low as it did in the June 2020 quarter. However, it will still be 9 per cent lower than its pre-Covid level in real terms at Rs.32.9 trillion.

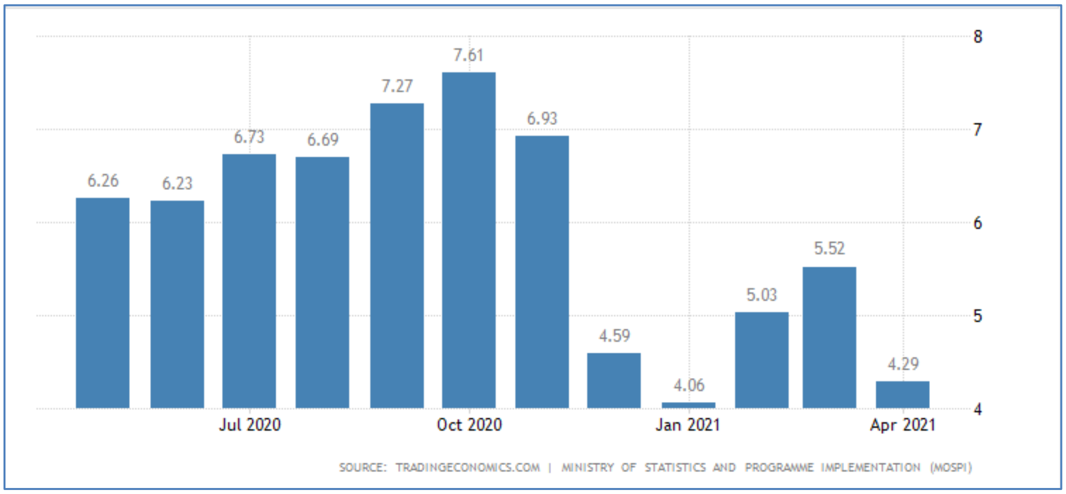
Employment and household incomes have still not fully recovered from the shock of 2020 lockdown. Latest household income estimates available from CMIE's pan-India Consumer Pyramids Household Survey (CPHS) suggest that average household income, despite recovering from the April 2020 slump, remained 9.7 per cent below its year-ago level in November 2020 in nominal terms. The decline in real terms would be higher.



Inflation in India

Annual inflation rate in India eased to 4.29 percent in April of 2021, the lowest reading in three months from 5.52 percent in March. Point-to-point rate of inflation based on the CPI-AL (Consumer Price Index for Agricultural Labourers) and CPI-RL (Consumer Price Index for Rural Labourers) decreased to 2.66 per cent and 2.94 per cent in April 2021, from 2.78 percent and 2.96 per cent, respectively, in March, 2021. This is mainly due to lower prices of certain food items. Food inflation based on CPI-AL and CPI-RL stood at 1.24 per cent and 1.54 per cent in April 2021. This is mainly due to pulses (7.51 percent vs 13.25 percent) and a bigger fall in cost of vegetables (-14.18 percent vs -4.83 percent). Cost also eased for clothing and footwear, pan, tobacco and intoxicants but accelerated for fuel and light (7.91 percent vs 4.5 percent) and housing (3.73 percent vs 3.5 percent).

India's future inflation trajectory will be shaped by the course of the Covid-19 pandemic, but global commodity price-driven pressures remain a concern, RBI Governor Shaktikanta Das said last week. Inflation Rate in India is expected to be 5.00 percent by the end of this quarter, according to Trading Economics global macro models and analysts' expectations.



Purchasing Manager's Index (PMI)

A gauge of activity across India's manufacturing sector fell to the lowest in 10 months amid a resurgence of Covid-19 cases. The IHS Markit India Manufacturing Purchasing Managers' Index stood at 50.8 in May 2021 compared with 55.5 in April. Both output and new orders grew the least in ten months, while there was a substantial slowdown in the growth of input purchasing.

Many companies refrained from lifting input buying due to fewer output needs and ongoing crisis. Supplier delivery times continued to lengthen for the third straight month. The deterioration was linked to global shortages of raw materials and the pandemic. In turn, raw material scarcity exerted further upward pressure on input costs. Prices data showed input cost inflation easing to a four-month low but remaining sharp and above its long-run average.

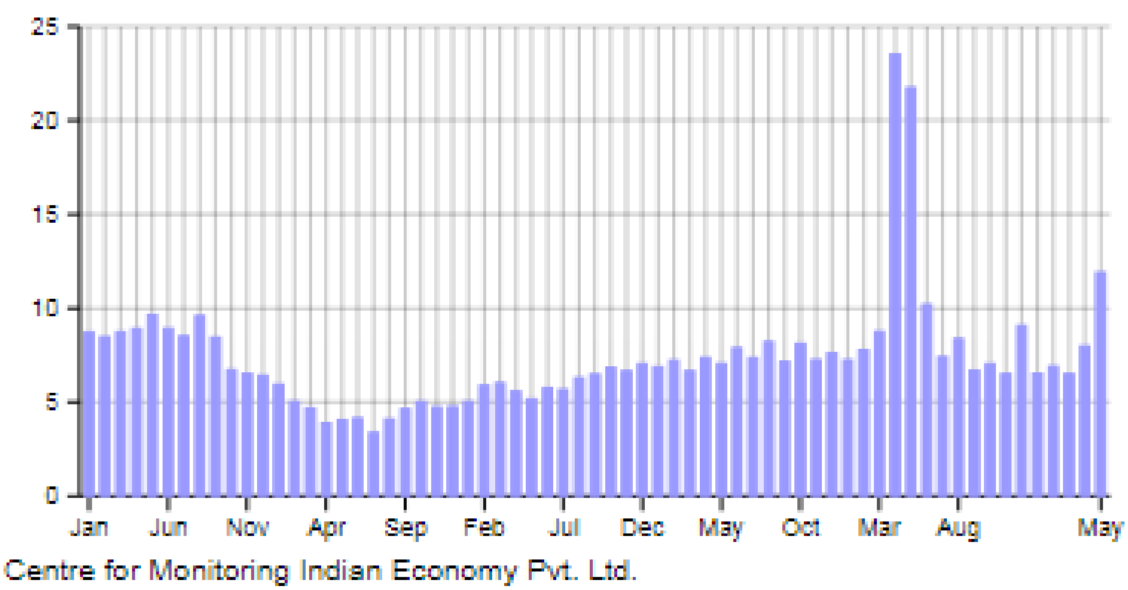
Covid-19 restrictions and a lack of new work led companies to reduce their payroll numbers further. The decline in employment was slight, but accelerated from April.

PMI Index

Unemployment in India

Weekly unemployment rate has seen a sudden rise to 14.7 per cent in the week ending May 23, according to CMIE estimates. This is almost double of 8.67 per cent unemployment rate on May 9. As per the CMIE, the lockdowns could have denied people from seeking employment and caused a fall in labour participation. It said the economy was not in a position to provide jobs to a large number of people. Urban employment rose to 17.4% during the same period while rural unemployment moved to 13.5%. Most of the job losses are from the agricultural sector, which is not impacted by the lockdowns. Of the 7.35 million people who lost employment in April, 6 million losses were from the agricultural sector. April is a lean month for employment on the farms.

Unemployment Rate in India



2. Various agencies peg India’s real GDP growth rate in the range of 9- 9.9% in 2021-22

Various research agencies have revised their estimates for India’s real GDP growth rate and pegged it in the range of 9 – 9.9% for 2021-22. Moody's has revised its forecast for India's economic growth in the current financial year downwards to 9.3 per cent from an earlier projection of 13.7 per cent.

The Organization for Economic Co-operation and Development (OECD) cut its growth projection for India for FY22 to 9.9 per cent from 12.6 per cent estimated in March. OECD said while India is projected to be the fastest-growing G20 economy in 2021, it will also be the one which is the furthest away from its pre-crisis GDP trend. Prospects for the world economy have brightened but the recovery is likely to remain uneven and, crucially, dependent on the effectiveness of public health measures and policy support, according to the OECD's latest Economic Outlook.

Lesson from Economics

Breaking out of the Malthusian trap:-

The theory based on the facts presented by Thomas Robert Malthus in year 1798 stating that the geometric progression of population growth would outstrip the arithmetic progression of food production. Malthus was of the view that natural catastrophes and human disasters could correct the imbalance between food supply and population growth.

Malthus believed that there will be nature's mechanism to keep the balance between food supply and population growth, which he named as "checks" – Preventive check and Positive Check. Positive Checks are termed as "Malthusian catastrophe" which includes premature deaths like disease, hunger, war, epidemics, famines and other natural calamities. Such positive checks will reinstate the balance between population and food supply. The preventive checks include abstinence and delay in marriage adopted by man to control the population and in turn the positive checks.

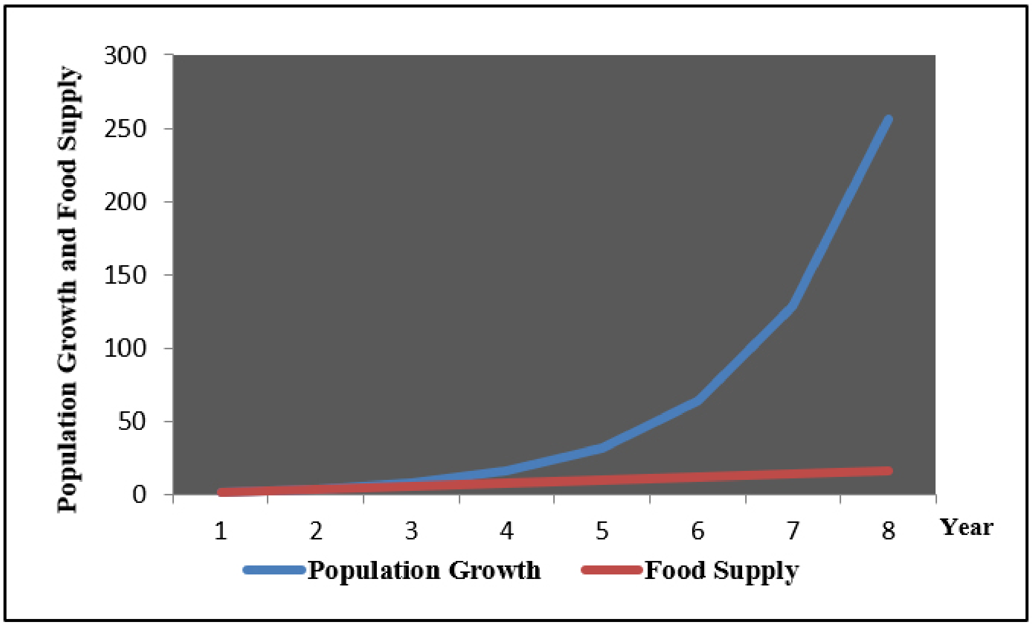


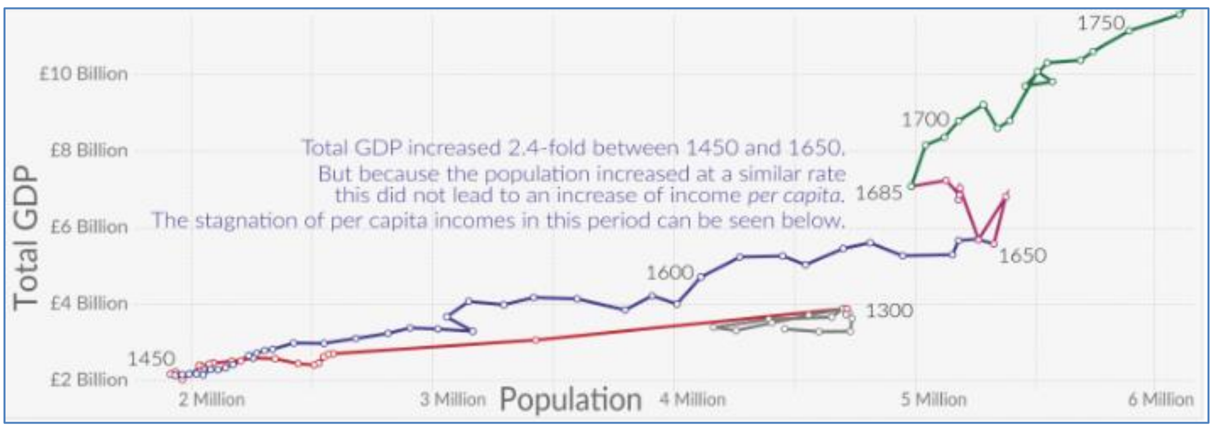
FIGURE 1: MALTHUSIAN IDEA OF POPULATION GROWTH AND FOOD SUPPLY

It is believed that the earth was calling for adaptation and mitigating strategies for its recovery since long. There had been excessive pressures on the infrastructure like the sewage system, bus, train, medical facilities in developing countries which reminded many of the Malthusian fear. Due to an increase in economic prosperity, countries have been facing many other issues such as balanced regional development, controlling rural to urban migration, expanding cities at the cost of greenery and developing smart cities etc. There have been many devastating pandemics and catastrophes in the past like Plague, small-pox, flu or European wars, famines etc. that strike a chord of Malthusian warning. Malthus was of the view that with such Protective checks, there will be more number of deaths leading to lower standard of living and higher poverty. As a result he recommended Malthusian Theory of Population by ensuring Preventive checks must remain a background to such planning and recommended policies.

<u>The Malthusian Trap: the zero-sum economy:-</u>

The Malthusian theory was at work when England had Black Death (bubonic plague pandemic) which led to an increase of living standards for the survivors of the pandemic. The Black Death killed almost half of the English population in the mid-14th century. Their per capita incomes increased by almost 50% as the decline of total agricultural output was much smaller than the decline of the population. The red line in the graph shows a rapid increase of per capita incomes. Since the economy was agricultural, the plague's economic benefits were a richer supply of food. Higher productivity also made it possible that working hours in the UK had decreased and wages increased. With higher incomes, the population demanded more political power, and eventually revolted against oppression. The fight against high taxes and serfdom culminated in the Great Rising of 1381.

The Black Death thus resulted in an increase in material living standards for the survivors, but mainly because of one-off reduction in the population. This mechanism where the size of the population determines people's living standards is termed as "Malthusian Trap'.



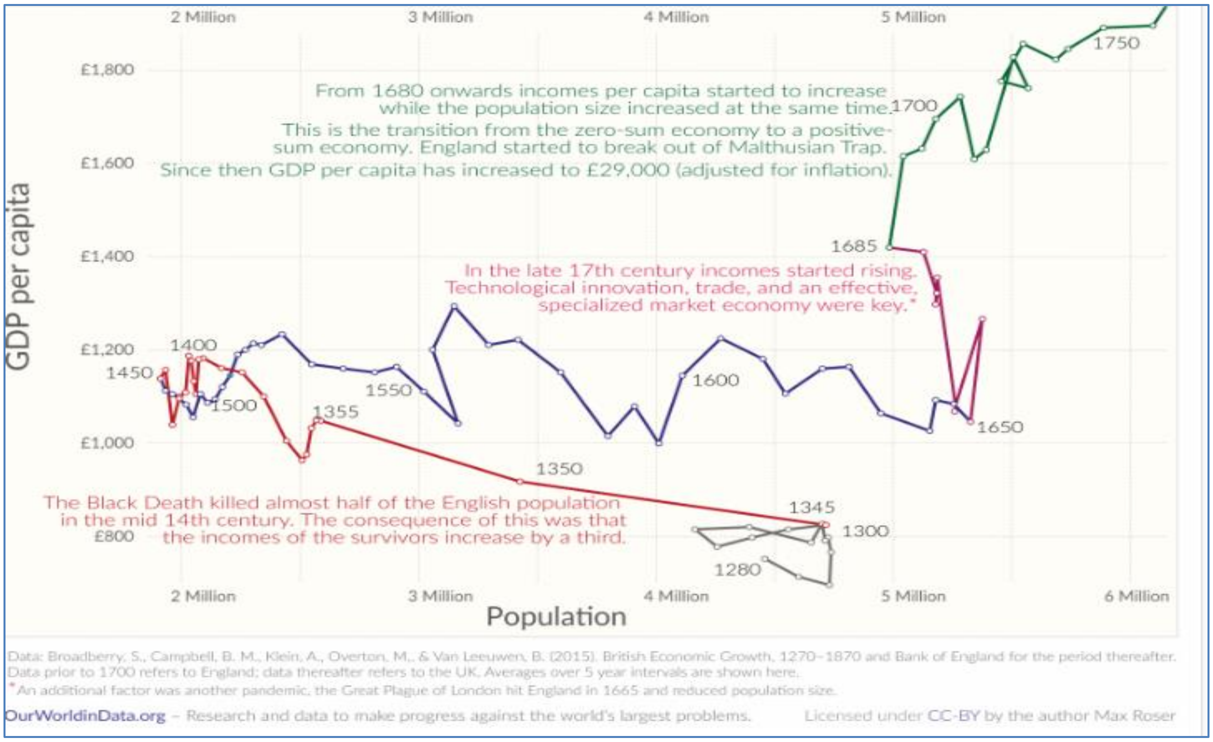
Between 1450-1650, the total GDP increased 2.4-fold but the population also increased at the same rate. The stagnation in per capita income can be seen in the graph above. This is the other side of the Malthusian Trap: a growing size of the economy did not lead to higher living standards, but to more people. As a consequence living standards did not increase.

Thus, from above we notice that Malthus had this realization that any increase in productivity would not increase living standards but only the size of the population which is inherent as the "inevitable laws of our nature" and as such ensured that poverty would always remain the condition of the masses.

<u>Breaking out of the trap:-</u>

From around 1685 onwards we see what Malthus thought was impossible as the speed of innovation fueling productivity growth became so fast that both the size of the population and income per person started growing at the same time.

The economy changed from a zero-sum game to a positive-sum game in which the living standards of people increased over time



Malthus' insight was that in the pre-growth economy improvements in living standards were only possible when large fractions of the populations died. Any productivity gains on the other hand only led to a growing population. Malthus failed to understand the vast resources of the Earth and foresee the technology to utilize those resources.

COVID-19 shows us that in today's economies the logic of Malthus no longer applies: the people in countries that suffered the highest death tolls can obviously not expect to see any economic benefits from the death of their compatriots. To the contrary, the data so far shows that the countries that did worst in protecting the lives of their population also suffered the highest economic losses. We do not live in a zero-sum economy anymore.

In a positive-sum economy your living standards are determined by the productivity of the economy that you are part of mainly the goods and services produced in the economy.

The episode of the Black Death showed us that in a zero-sum economy it is in people's economic self-interest that others are worse off; more deaths means higher living standards for the survivors.

The COVID pandemic in 2020 shows us how it defeated the concept of Malthusian theory and tells us that in today's positive-sum economy your own economic well-being depends on the well-being of others and it is in your own self-interest that others are healthy and well.

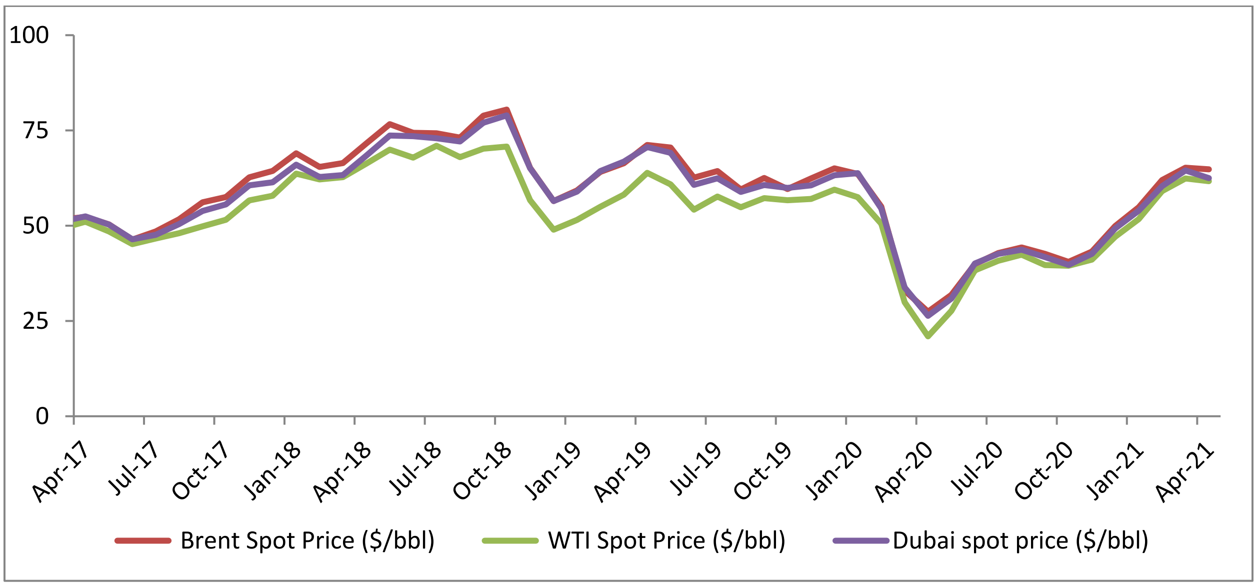
Oil Market

Crude oil price – Monthly Review

Crude oil benchmarks declined in the first fortnight of April but stood above USD 60 mark as it recovered in the second half of the month. Decline in demand for crude in the US and build in U.S crude inventories led to the decline in WTI benchmark. Surging Covid-19 cases in India, third largest crude consumer dented the recovering demand leading to price fall. With partial lockdown & curfew across several parts of India, the demand is likely to take a hit.

For the month, crude benchmarks went down with marginal decline. Average Brent, WTI and Dubai basket crude prices in April went down by 0.60 %, 1.1 % and 3.1 % respectively from their March prices.

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



Source: WORLD BANK

- Brent crude price averaged $ 64.80 per bbl in April 2021, down by 0.6 % on a month on month (MoM) but up by 136.2 % on year on year (YoY) basis, respectively.
- WTI crude price averaged $ 61.70 per bbl in April 2021, down by 1.1 % on a month on month (MoM) but up by 194.2 % on year on year (YoY) basis, respectively.
- Dubai crude price averaged $ 62.50 per bbl in April 2021, down by 3.1 % on a month on month (MoM) but up by 137.2 % on year on year (YoY) basis, respectively.

Table 1: Crude oil price in April, 2021

Crude oil	Price ($/bbl) in April 2021	MoM (%) change	YoY (%) change
Brent	64.80	-0.6%	136.2%
WTI	61.70	-1.1%	194.2%
Dubai	62.50	-3.1%	137.2%

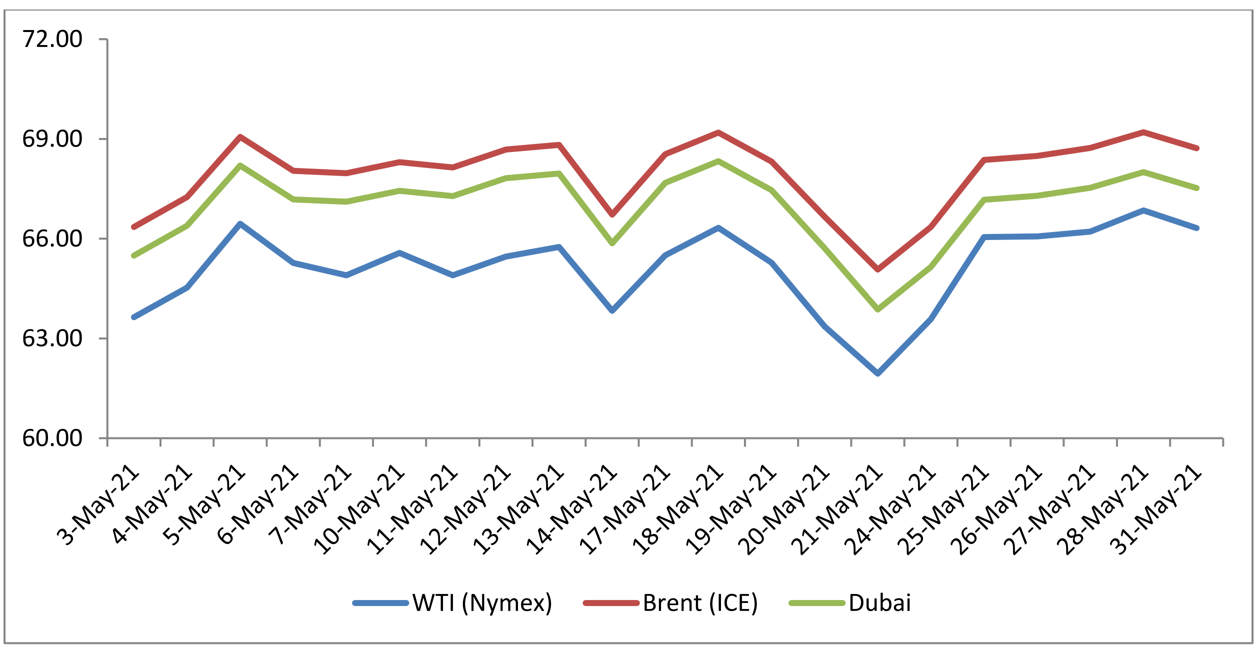
Source: WORLD BANK

Demand rebound in East and US inventory strengthens crude in May

Crude oil benchmarks fluctuated in the range of USD 60 during the month of May. Strong recovery in China and Japan propelled the demand for crude oil in the first fortnight of May month. There was a minor dip in crude prices as the prospect of Iran's return to market fueled a possibility of increase in crude supply. However, it vanished after US denied resumption of talks with Iran on lifting sanctions on Iran. In the last week of May, withdrawal of crude in US inventory boosted the crude oil benchmarks. US crude oil inventory stood below the average of last five years.

For the month, crude benchmarks went down with marginal decline. Average Brent, WTI and Dubai basket crude prices in May went up by 4.86 %, 5.56 % and 7.15 % respectively from their April prices.

Figure 2: Crude oil price in May 2021

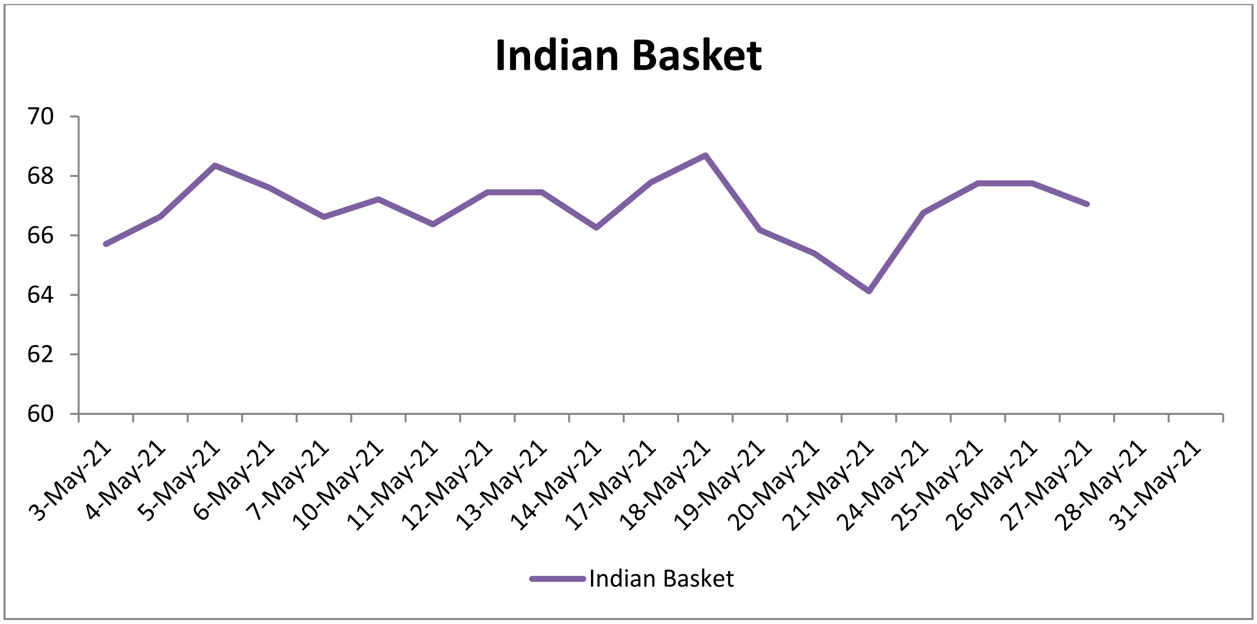


Source: EIA, Oilprice.com, PPAC

Indian Basket Crude oil price

- The Indian basket of Crude Oil represents a derived basket comprising of Sour grade (Oman & Dubai average) and sweet grade (Brent Dated) of Crude oil processed in Indian refineries in the ratio of 74.77:25.23 during 2017-18.

Figure 3: Indian crude oil basket price in $ per bbl



Source: Petroleum Planning & Analysis Cell

- Indian crude oil benchmark prices saw a zig-zag pattern in the month of May corresponding to the fluctuations in the global crude benchmarks.

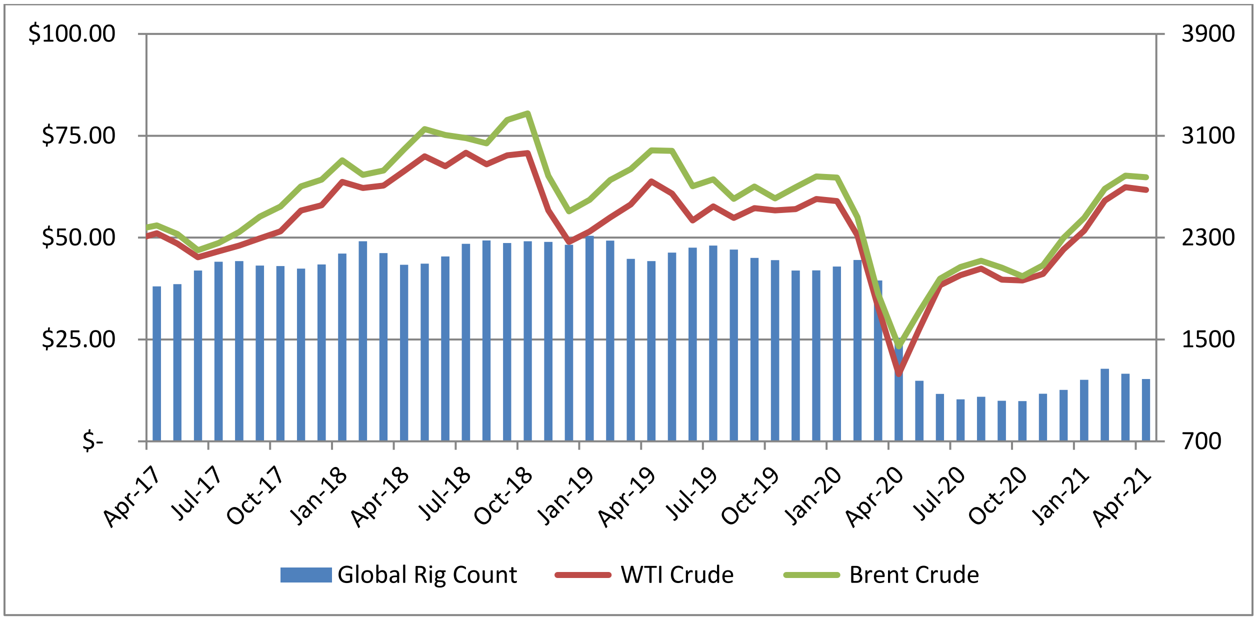
- Indian crude basket price averaged $ 66.90 per barrel in May 2021, up by 6.29 % on Month on Month (M-o-M) and by 131.57 % on a year on year (Y-o-Y) basis, respectively.

Upstream activity & Rig count

Global rig count

Rig count represents the total number of active drilling rigs in the world. Demand for drilling rig is highly dependent on crude oil price. When the oil price increases, demand for exploration activity increases, resulting in the increase in rig count. A lower oil price could trim the exploration budget of the oil companies, thereby reducing the demand for drilling rig.

Figure 4 Global Rig Count vs. Crude Prices



Source: Baker Hughes

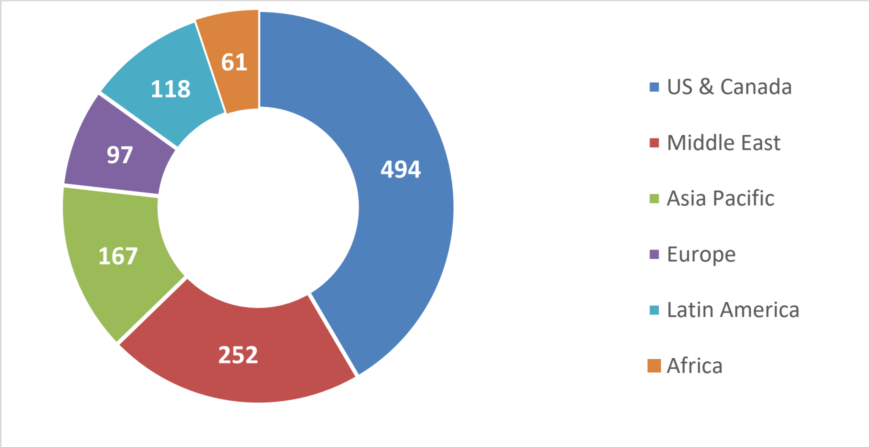
Global rig count for the month of April went down by 42. From March's rig count of 1,231 it went down to 1,189. Season change in Canada let the rig counts drop significantly in the month of April. Rig count declined in Latin America, Europe, Asia Pacific, Canada and in the Middle East. Rig count went up by 2 in Africa. US rig count was up by 28 from 408 to reach 436, while rig count in Canada went down by 50 from 108 to reach 58. Onshore rig went down by 45 and offshore rigs went up by 3.

Table 2 : Global Drilling Rig Count

Rig Type	Count in April 2021	MoM (%) change	YoY (%) change
Land	1,010	-4.27 %	-20.28 %
Offshore	179	1.70 %	-27.53 %
Total	1,189	-3.41 %	-21.47 %

Source: Baker Hughes

Figure 5 Geography-wise Rig count - April 2021



Source: Baker Hughes

Indian Drilling Rig Count

Indian drilling rig count went down by 4 in the month of April to reach 74. Indian rig count decreased by 17.78 % on Y-O-Y basis. 63 were onshore rigs and the rest 11 were offshore rigs.

Figure 6 Indian Rig Count vs. Indian Basket Crude Price

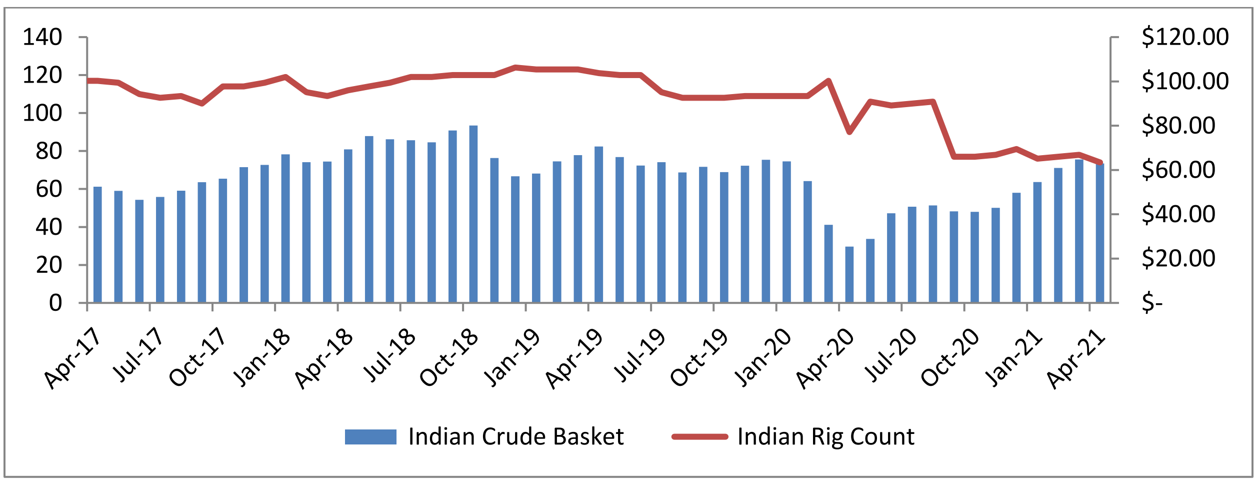


Table 3 : Indian Rig Count

Rig Type	Count in April 2021	MoM (%) change	YoY (%) change
Land	63	1.61 %	21.15 %
Offshore	11	-31.25 %	-71.05 %
Total	74	-5.13 %	-17.78 %

Source: Baker Hughes

Oil demand & supply

Preliminary data indicates that global oil supply in April 2021 decreased by 0.15 mb/d m-o-m to average 93.06 mb/d and was down by 6.45 mb/d Y-o-Y. Non-OPEC supply (including OPEC NGLs) decreased in April by 0.18 mb/d m-o-m to average 67.97 mb/d in April 2021. On Y-o-Y basis, it was lower by 1.16 mb/d. The preliminary decrease in production mainly came from the Canada and Norway by around 0.5 mb/d due to planned maintenance activity. In April 2021, share of OPEC crude oil in total global production went up by 0.1% to 27.0 %. Estimates are based on preliminary data from direct communication for non-OPEC supply, OPEC NGLs and non-conventional oil, while estimates for OPEC crude production are based on secondary sources.

In 2021, world oil demand is forecasted to increase by 6.0 mb/d, unchanged from last month's forecast Total demand is foreseen to reach 96.5 mb/d.

Slower-than-anticipate demand in OECD Americas during the first quarter of 2021 and resurgence in Covid-19 cases in India and Brazil has weakened the demand for crude oil leading to downward revision. For the other side of the year in second half of 2021, positive weekly transportation fuels data from the US and accelerated vaccination program in several regions has given an optimism.

Assumed return to normality and improved mobility will also positively influence regions such as Middle East and other Asia in 2H21. In OECD region, oil demand is forecasted to show a 2.77 mb/d y-o-y increase as oil demand gains traction especially in the OECD America. However, oil demand is not expected to recover fully from the 2020 decline. Oil demand in the OECD region is estimated to reach 44.78 mb/d, an increase by 2.69 mb/d.

In the non-OECD region, oil demand is estimated to rise by 3.3 mb/d as compared to 2020. Demand growth is anticipated to be driven by China, followed by India and other Asian countries. A healthy rebound in economic activities is anticipated to stimulate the industrial fuel demand. Demand for petrochemical feedstock is also projected to support the demand rebound. Oil demand in the non-OECD region is estimated to reach 51.69 mb/d, an increase by 3.27 mb/d.

Table 4: World Oil demand in mbpd	2020	1Q2021	2Q2021	3Q2021	4Q2021	2021	Growth	%
Total OECD	**42.09**	**43.19**	**44.34**	**4545**	**46.04**	**44.78**	**2.69**	**6.38**
~ of which US	**18.44**	**19.18**	**19.86**	**20.24**	**20.45**	**19.94**	**1.50**	**8.12**
Total Non-OECD	**48.42**	**50.10**	**50.45**	**52.45**	**53.70**	**51.69**	**3.27**	**6.75**
~ of which India	*4.40*	*4.94*	*4.29*	*4.68*	*5.61*	*4.88*	*0.49*	*11.10*
~ of which China	13.19	12.95	14.27	14.93	15.05	14.30	1.11	8.43
Total world	**90.51**	**93.29**	**94.79**	**97.90**	**99.74**	**96.46**	**5.95**	**6.58**

Source: OPEC monthly report, May 2021

*Note: *2020 = Estimate and 2021 Forecast*

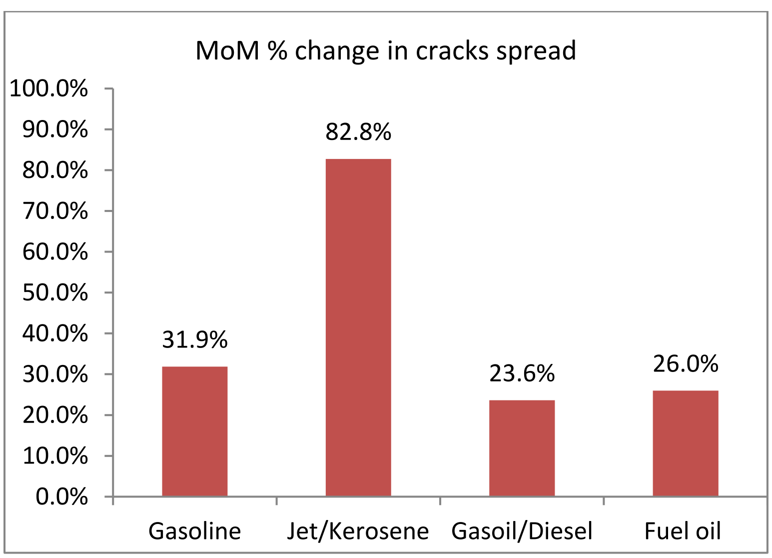
Global petroleum product prices

Asian product markets margins weakened further with most pressure coming from the barrel's bottom, although crude processing rates in the region remained relatively constrained. Overall refining capacity in the region increased in the month of April, while Covid surge in India led to the reduced refinery intakes. Refinery margins for Oman in Asia lost 30 ¢ on m-o-m to average $1.65 /b in April and was higher by $3.74 on y-o-y basis. Refinery utilization rates in April averaged 89.54 % in selected Asian markets comprising of Japan, China, India and Singapore.

Asian gasoline 92 cracks spread jumped extending their upward trend for the fifth continuous month boosted by robust gasoline exports to other regions. Increase in maintenance activity in Asia lead to gasoline output cuts within the region and Covid surge in India impacted the gasoline demand due to implementation of lockdown. Singapore Gasoline cracks averaged $8.77/b against Oman in April, up by $1.37 m-o-m but down by $2.84 y-o-y.

Jet/kerosene cracks spread in Asia reversed trends and moved upwards due to stronger regional requirements for domestic air travel. With majority of international air travel remaining suspended, the jet fuel supplies are limited in the region as refineries have kept a cap on production due to weakening margins. End of winter season in North East Asia led to decline in demand for Kerosene. The Singapore jet/kerosene crack spread against Oman averaged minus $ 0.52/b, down by $ 1.06 m-o-m and by $2.95 y-o-y.

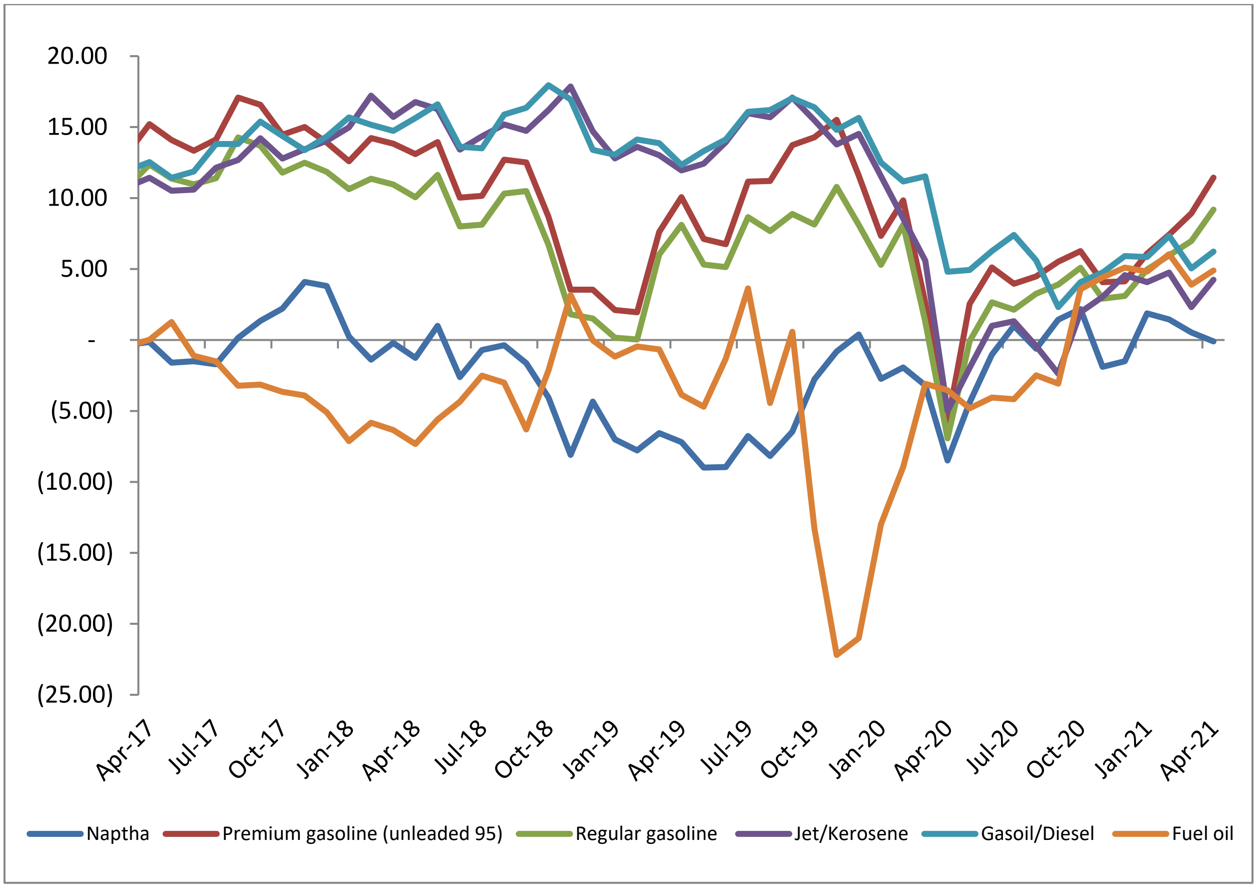
The Singapore gasoil crack spreads weakened, supported by limited regional supplies and healthy domestic absorption levels backed by strong economic and industrial activities in the region. Singapore gasoil crack spread against Oman averaged $ 4.81/b, up by $0.46 /b m-o-m and but down by $2.71 y-o-y.



Source: OPEC Monthly Report

The Singapore fuel oil crack spread continued to trend downwards, leading into negative territory to reach the lowest level seen since June 2020. The poor performance was attributed to stronger availability and moderate regional demand. Singapore fuel oil cracks against Oman averaged minus $ 5.84 /b, down by 41 ¢ m-o-m, and by $ 6.74 y-o-y.

Figure 7: Product crack spreads vs. Dubai crude



Source: OPEC, FIPI

Table 5: Singapore FOB, refined product prices ($/bbl)

Products	Price ($/b) in April 2021	MoM (%) change	YoY (%) change
Naphtha	62.4	-4.0%	249.4%
Premium gasoline (unleaded 95)	73.94	0.7%	260.9%
Regular gasoline (unleaded 92)	71.69	0.3%	269.2%
Jet/Kerosene	66.74	-0.1%	212.6%
Gasoil/Diesel (50 ppm)	68.73	-1.2%	120.6%
Fuel oil (180 cst 2.0% S)	67.4	-1.4%	195.5%
Fuel oil (380 cst 3.5% S)	57.08	-3.2%	156.8%

Source: OPEC

Petroleum products consumption in India

Monthly Review:

- In April 2021, consumption of petroleum products went down by 9.4 % m-o-m and up by 71.3 % on y-o-y. Consumption of refined petroleum products for April 2021 stood at 17,013 MT.
- Petrol consumption was down 13.0 % on monthly basis as larger number of vehicles were off the road due to lockdown implemented across all the states. On year-o-year basis, Petrol consumption was up by 145.1 %.
- Diesel consumption was down by 7.5 %. Baring the essential goods movement, all other commercial vehicles like taxi, buses remained off the roads as lockdown restricted the movement.
- ATF consumption saw a decline in consumption by 13.9 % in the month of April due to reduction in travel as second wave swept through the country. With decline in passenger count, airlines were forced to cancel large number of flights. ATF consumption on Y-o-Y basis was up by 624.6 %.
- LPG consumption was down by 6.5 % on M-o-M and by 0.9 % on Y-o-Y. LPG consumption stood around 2,114 MT in April 2021.
- With restriction of construction activities as a part of lockdown guidelines, road projects remained subdue in the month of April. Bitumen consumption was down by 27.2 % on M-o-M basis.

Table 6: Petroleum products consumption in India, April 2021

Petroleum products	Consumption in '000 MT April 2021	MoM (%) change	YoY (%) change
LPG	2,114	-6.5%	-0.9%
Naphtha	1,272	-6.5%	48.0%
MS	2,384	-13.0%	145.1%
ATF	409	-13.9%	624.6%
HSD	6,679	-7.5%	105.5%
LDO	92	-18.1%	233.5%
Lubricants & Greases	258	-28.8%	21.8%
FO & LSHS	543	2.6%	82.4%
Bitumen	658	-27.2%	236.3%
Petroleum coke	1,624	-0.1%	43.1%
Others	876	-14.9%	32.2%
TOTAL	17,013	-9.4%	71.3%

Source: PPAC

Natural Gas Market

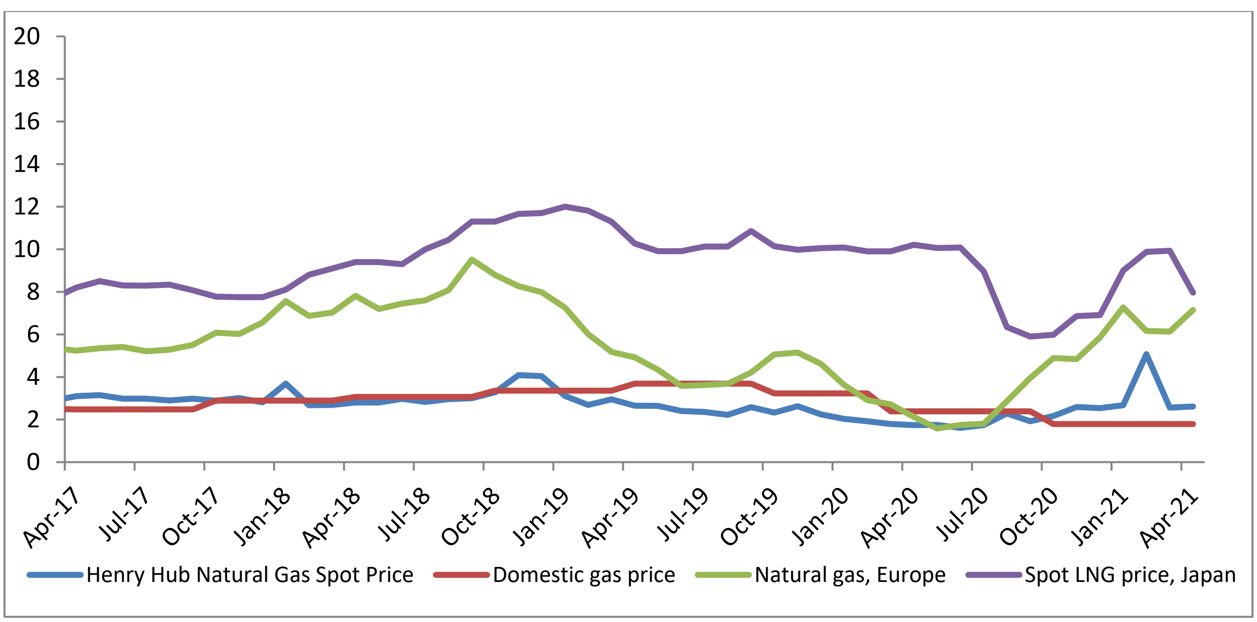
Natural Gas Price – Monthly Review

Natural gas prices saw an increase in Henry and Europe hub as the global gas consumption is set to rise by 3.2% in 2021, offsetting the decline in 2020. Natural gas price in the Henry hub increased by 2 % to reach $ 2.61 /MMBtu in the month of April due to continued LNG activities. With LNG exports expected to continue and slight corresponding increase in natural gas production is forecasted to rise the gas price in Henry hub up to $ 3.11 / MMBtu.

Cold blast in parts of Europe in April led to significant fall in gas inventory levels across the Europe. The gas storage level is on lower side as the region is entering the summer. Natural gas price in the Europe saw a surge by 16.6 % on M-o-M basis and 237.3 % on Y-o-Y basis. Gas price for the month of April averaged $ 7.15. Increase in consumption of natural gas in several parts of Europe for commercial activities led to the increase in gas price.

Asian spot LNG prices were on rise in April as China replenished the LNG inventories. Japan and South Korea also followed the similar trend to stock up LNG for next winter. Supply disruptions witnesses in previous month made the countries to stock up for winter. LNG prices for June delivery stood up around USD 7.3/ MMBtu. Japan LNG benchmark declined by 19.8 % as excess supply and decline in demand rattled the market.

Figure 8: Global natural gas price trends



Source: EIA, WORLD BANK

Table 7: Gas price

Natural Gas	Price ($/MMBTU) in April 2021	MoM (%) change	YoY (%) change
India, Domestic gas price (March 21)	1.79	-0.00%	-25.1%
India, Gas price ceiling – difficult areas (Mar 21)	3.62	-10.83%	-35.47%
Henry Hub	2.61	2.0%	50.0%
Natural Gas, Europe	7.15	16.6%	237.3%
Liquefied Natural Gas, Japan	7.96	-19.8%	-22.0%

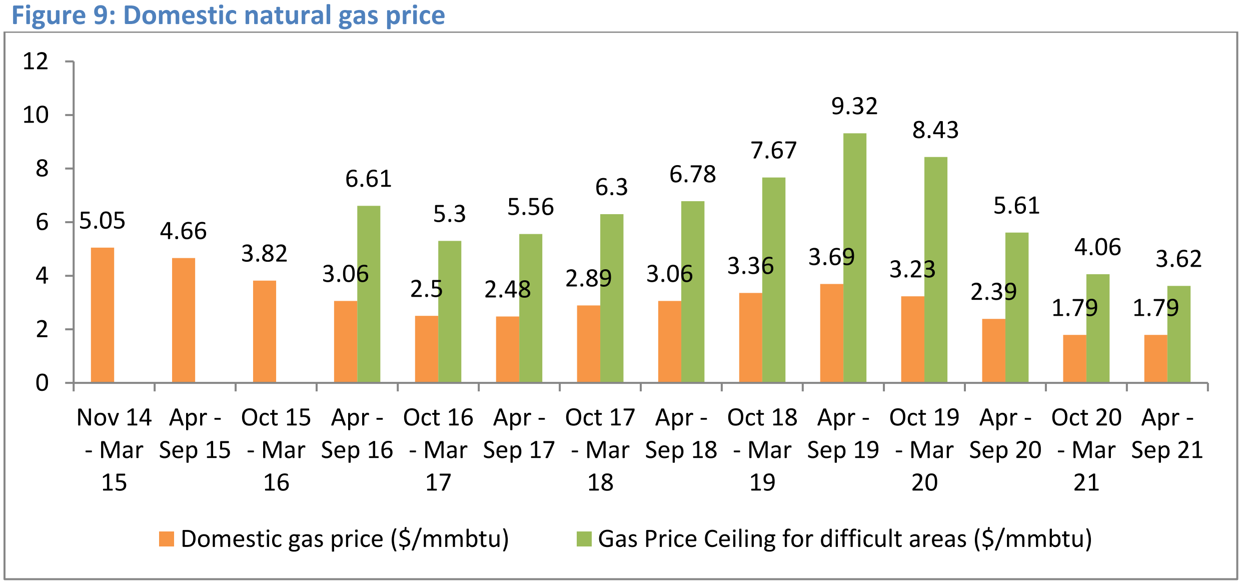
Source: EIA, PPAC, World Bank

Indian Gas Market

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 declining, India's latest gas price revision saw significant decline, thus capturing the international gas price trends. Domestic gas price for April 2021 to September 2021 is $1.79 per MMBTU. It remained unchanged but was down by 44.58 % on Y-o-Y basis.

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 April 2021 to September 2021 period, the price of gas from such areas has been notified at $3.62 per MMBTU, 10.8 % down from last revision and 35.4% down from last year.

Figure 9: Domestic natural gas price



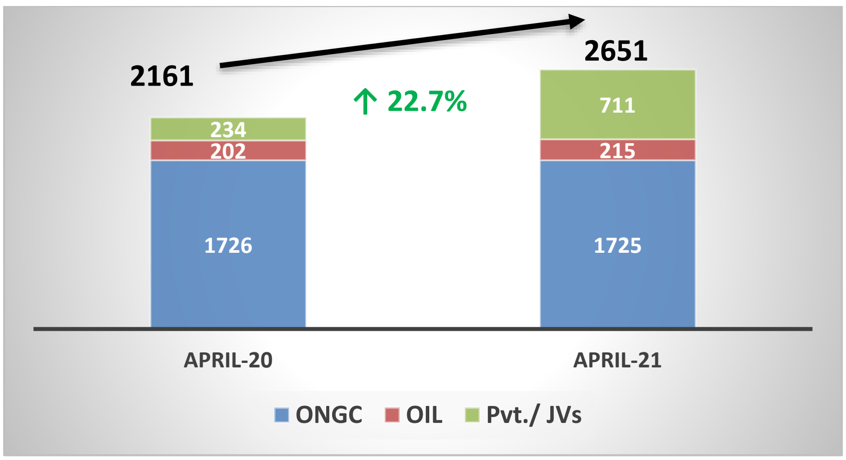
Source: PPAC

Monthly Report on Natural gas production, imports and consumption – April 2021

1. Domestic Natural Gas Gross Production:

Domestic natural gas gross production for the month of April 2021 was 2651 MMSCM (increase of 22.7 % over the corresponding month of the previous year 2,161 MMSCM)

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

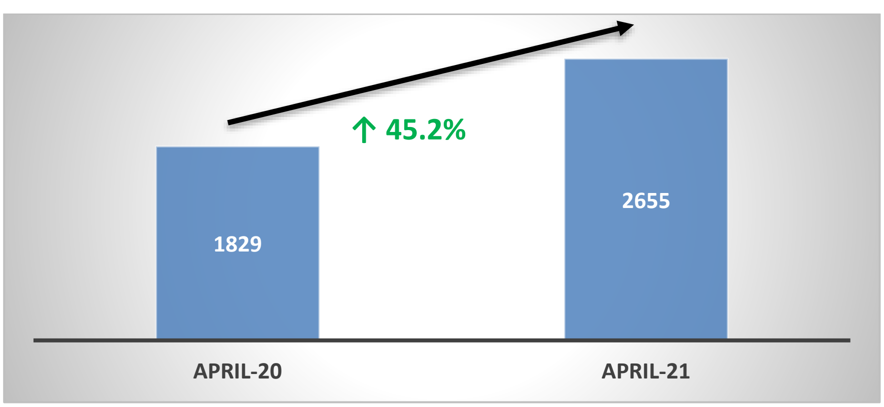


Source: PPAC

2. LNG imports:

Total imports of LNG (provisional) during the month of April 2021 were 2655 MMSCM (increase of 45.2% over the corresponding month of the previous year 1829 MMSCM).

Figure 11: LNG imports (Qty in MMSCM)

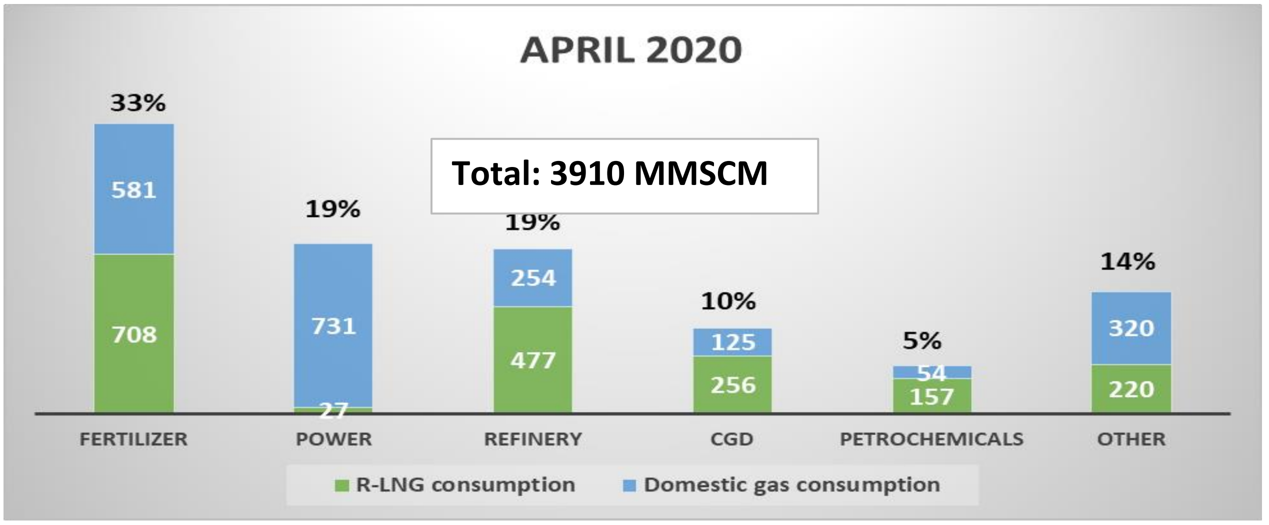


Source: PPAC

3. Sectoral Consumption of Natural Gas:

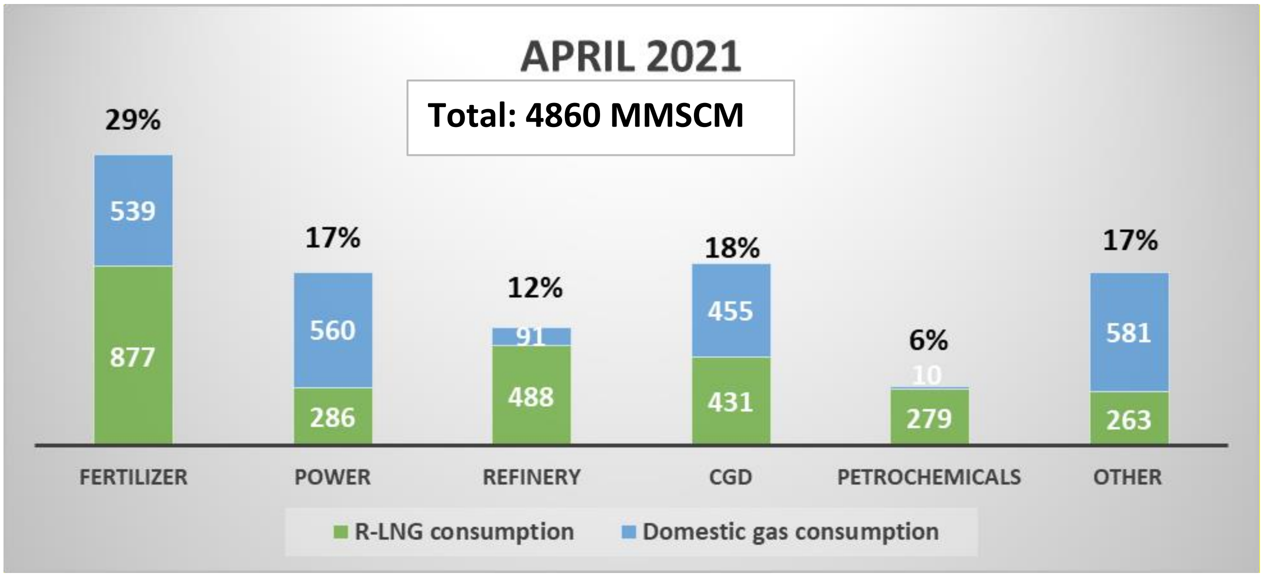
Total consumption of natural gas during April 2021 was 4860 MMSCM (increase of 19.5% over the corresponding month of the previous year 3910 MMSCM). Major consumers were fertilizer (29%), power (17%), refinery (12%), City Gas Distribution (CGD) (18%) and petrochemicals (6%).

Figure 12: Sectoral Consumption of Natural Gas (Qty in MMSCM) in April 2020



Source: PPAC

Figure 13: Sectoral Consumption of Natural Gas (Qty in MMSCM) in April 2021



Source: PPAC

Key developments in Oil & Gas sector during May 2021

- **Monthly Production Report for April, 2021**

  Crude oil production during April, 2021 was 2493.26 TMT which is 1.16% higher than target but 2.07% lower than the production during April, 2020.

  Natural gas production during April,2021 was 2651.49MMSCM which is 22.68% higher than the production during April, 2020 but lower by 1.02% than the monthly target.

  Crude Oil Processed during April, 2021 was 19884.70 TMT which is 1.82% higher than the target for the month and 34.86% higher vis-à-vis April, 2020.Capacity utilization during the April, 2021 was 96.82%

  Production of Petroleum Products during April, 2021 was 20891.57 TMT which is 1.04% higher than the target for the month and 30.90% higher than the production during April, 2020.

- **Oil and Gas Public Sector Companies setting up 100 PSA Medical Oxygen Generation Plants in Hospitals**

  Oil and Gas Public Sector Companies, under the administrative control of the Ministry of Petroleum and Natural Gas, Government of India are working earnestly to meet the Nation's Liquid Medical Oxygen requirements, in this hour of need. Under the guidance of the Minister of Petroleum and Natural Gas Shri Dharmendra Pradhan, they are setting up about 100 Pressure Swing Adsorption (PSA) Medical Oxygen Generation Plants in public health facilities across the country. The hospitals in Uttar Pradesh, Bihar, Karnataka, Goa, Kerala, Maharashtra, Gujarat, Rajasthan, Odisha, Madhya Pradesh and Delhi will be covered under the initiative. The entire expenditure for these plants will be borne by the companies from their CSR fund.

  These PSA plants will come in varying capacities to generate oxygen, catering to hospitals with 200 to 500 beds. They employ technology provided by DRDO and CSIR, absorbing nitrogen from ambient air to concentrate oxygen. The oxygen thus generated will be supplied straight to patients admitted in the hospital. Orders have been placed with the Indian vendors for these plants, and these will start becoming operational from this month itself, and by July, all such plants will come up.

- **Petroleum Minister flagged off 1st supply of Used Cooking Oil-based Biodiesel from Indian Oil's Tikrikalan Terminal**

  On 4th May, Minister of Petroleum & Natural Gas and Steel, Shri Dharmendra Pradhan remotely flagged off the first supply of UCO (Used Cooking Oil) based Biodiesel blended Diesel under the EOI Scheme from Indian Oil's Tikrikalan Terminal, Delhi. Secretary, Ministry of Petroleum & Natural Gas Shri Tarun Kapoor and Chairman, Indian Oil Shri S M Vaidya were also present on the occasion.

  To create an eco-system for collection and conversion of UCO into Biodiesel and developing entrepreneurship opportunities, Minister of Petroleum and Natural Gas & Steel, along with Minister of Health & Family Welfare, Science & Technology and Earth Sciences, had initiated Expressions of Interest for "Procurement of Bio-diesel produced from Used Cooking Oil" on the occasion of World

Biofuel Day on 10th August 2019. Such “Expressions of Interest” are being periodically released by Oil Marketing Companies (OMCs). In the first phase, 11 EoIs were floated between 10.08.2019 to 09.11.2020 for 200 locations. Publication of EoIs has been extended for one more year up to 31.12.2021, for 300 locations across the country.

Under this initiative, OMCs offer periodically incremental price guarantees for five years and extend off-take guarantees for ten years to prospective entrepreneurs. So far, Indian Oil has also issued 23 LOIs for Biodiesel plants with a total capacity of 22.95 Cr Litres (557.57 TPD). Under this initiative, Indian Oil has received 51KL of UCO-Biodiesel at its Tikrikalan terminal in Delhi as of 31.3.2021.

Speaking on the occasion, Shri Dharmendra Pradhan complimented the Oil industry on the stellar role played by them in keeping the fuel lines running despite the stiff challenges of the pandemic. He also lauded the OMCs for going beyond the usual business imperatives by extending support for medical oxygen supply to the nation in this crisis. Mr Pradhan also appreciated Indian Oil’s leadership role in smoothening the Liquid oxygen logistics in the country through various initiatives.

- **Oil and Gas PSUs helped in providing transportation solutions for Liquid Oxygen**

  Oil and Gas PSUs under the Ministry of Petroleum and Natural Gas, Government of India, acting as responsible corporate citizens, are extending their helping hand to support the nation in its efforts to combat the second wave of the COVID 19 pandemic. In this regard, they are specifically working to find transportation solutions for Liquid Oxygen.

  Presently, there are 12 tankers and 20 ISO Containers with the capacity of 650 MT. The figure is going to improve substantively, with the numbers likely to go up to 26 tankers and 117 ISO containers by the end of this month, with the capacity of 2314 MT.95 ISO Containers are being purchased, with a capacity of 1940 Metric Tonne. Orders have already been placed for 30 ISO Containers, with the capacity of 650 MT while negotiations are underway for the remaining containers.

  Orders have been placed for ten thousand cylinders of 40/ 50 litre capacity and 300 cylinders of larger capacity (150 of 500 litre and 150 of 450 litre). Dispatch of these cylinders is likely to begin soon.

  These companies are also importing Liquid Oxygen. 900 MT of Liquid Oxygen is being imported on Gratis basis from Bahrain, UAE, Saudi Arabia, Kuwait and Thailand. A part of the consignment has already been received while a portion of it will be received shortly. In addition, 12840 MT of Liquid Oxygen is being imported on commercial basis, taking total number of imports to 13740 MT.

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