

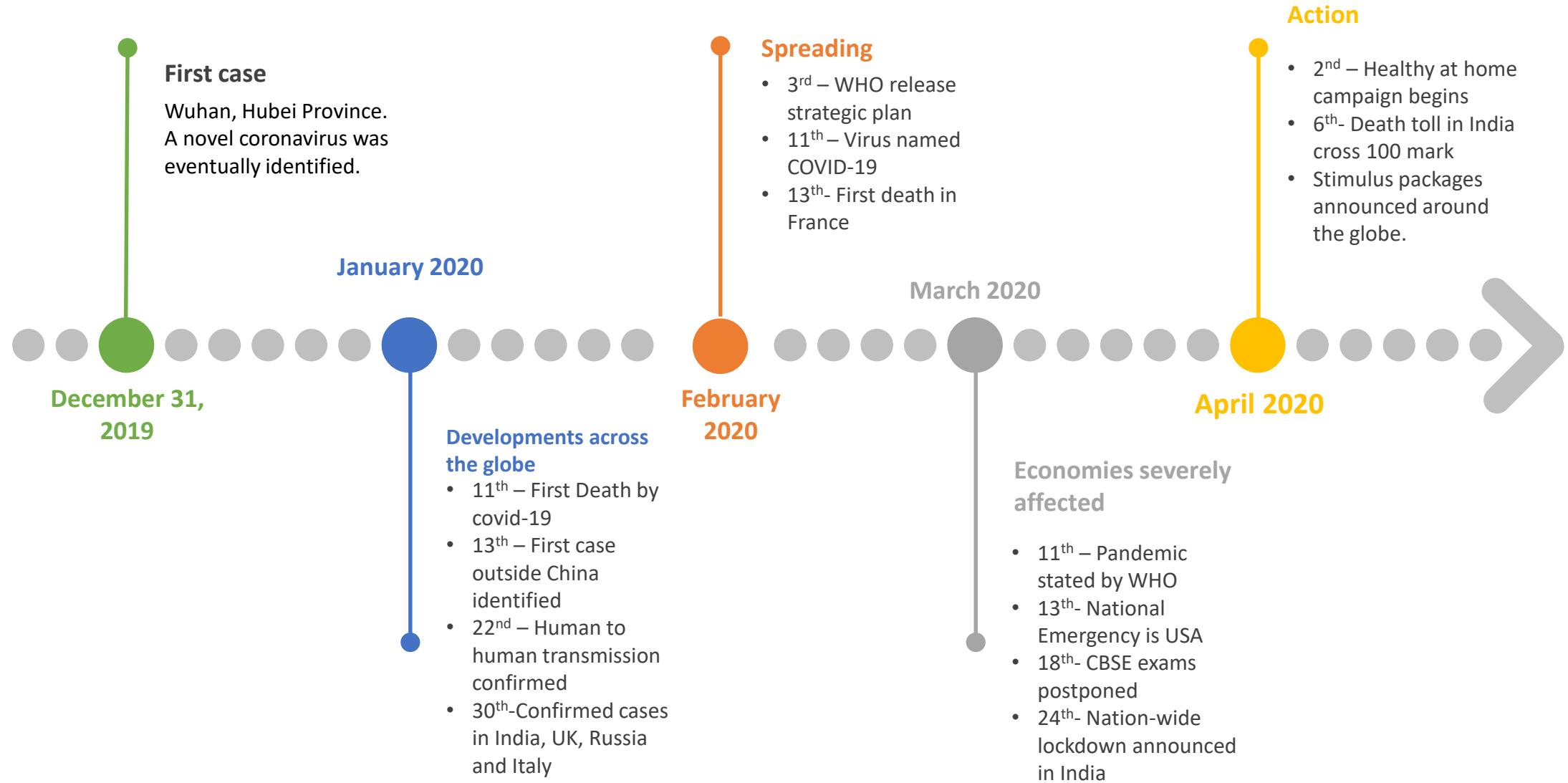
ECONOMIC IMPACT OF COVID-19

By-

*Sigma – The Official Business Club of
NIT Trichy*

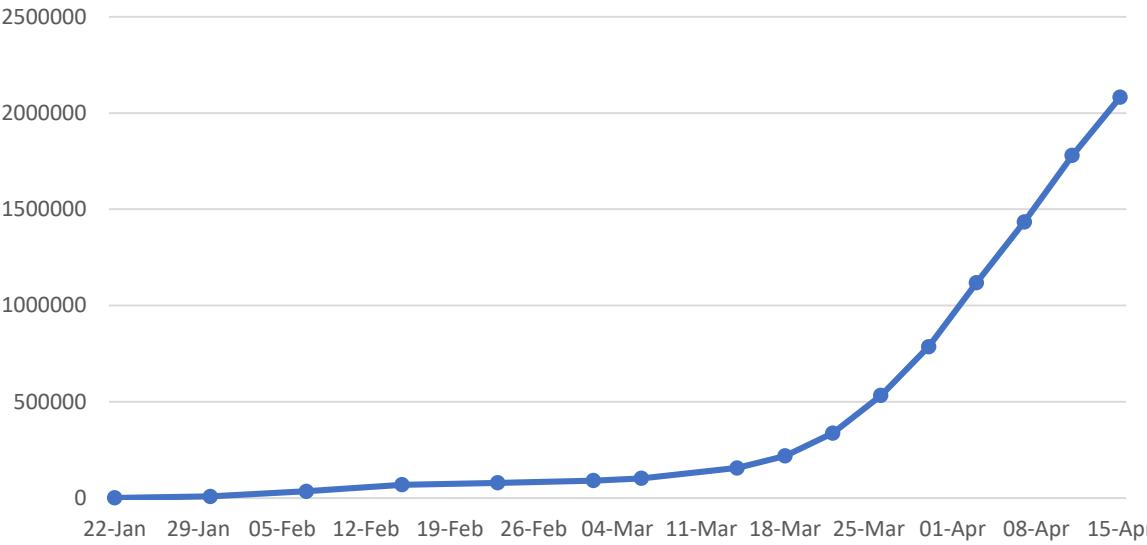
Project Date : ● May 2020

Timeline of the Pandemic

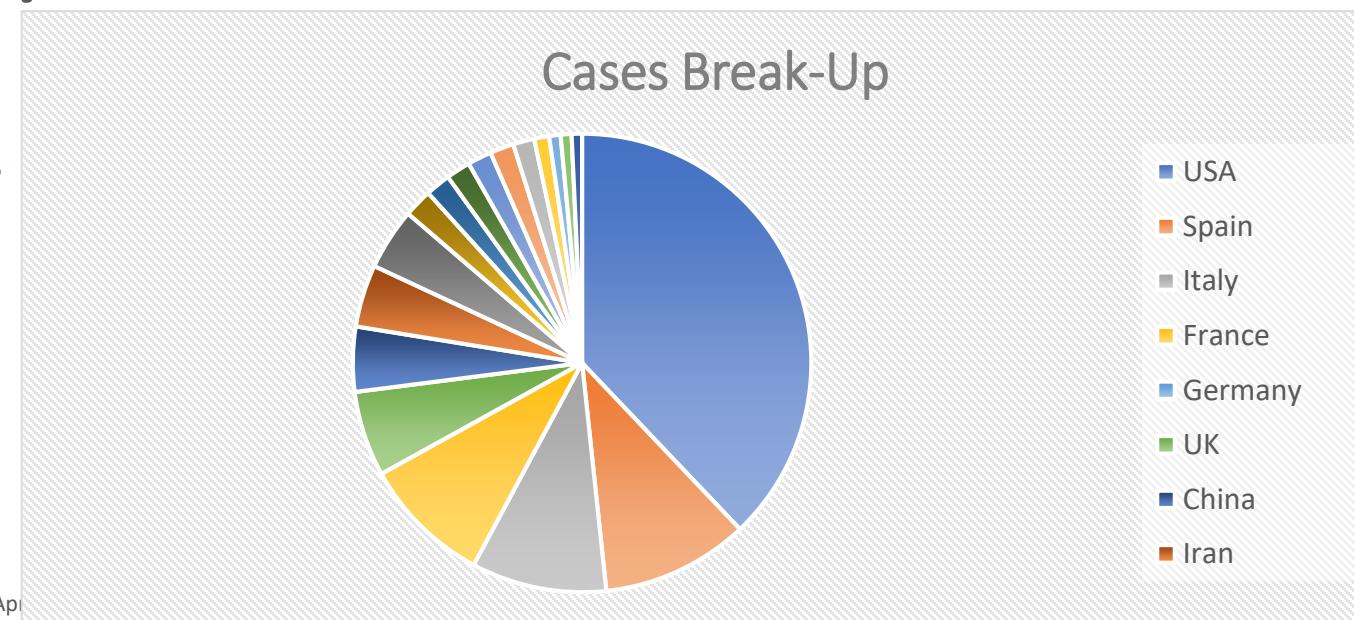


With current mortality Rate = **9.389 %**

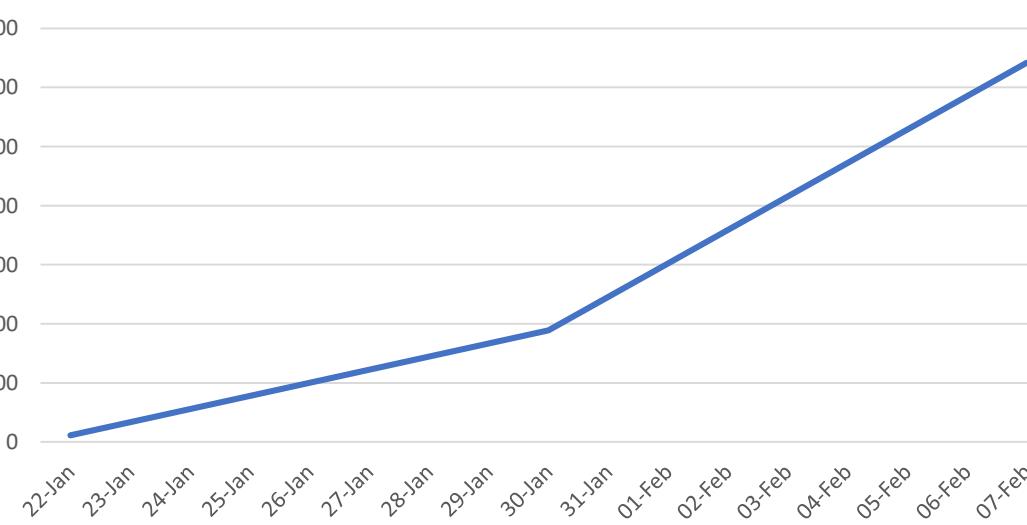
TOTAL NO. OF CASES



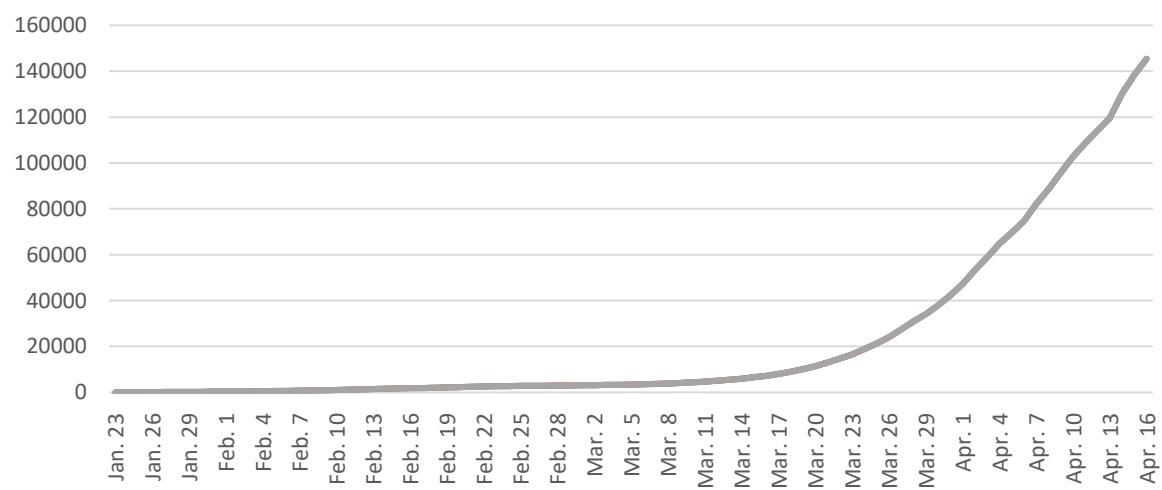
Cases Break-Up



ACTIVE CASES



Total Deaths



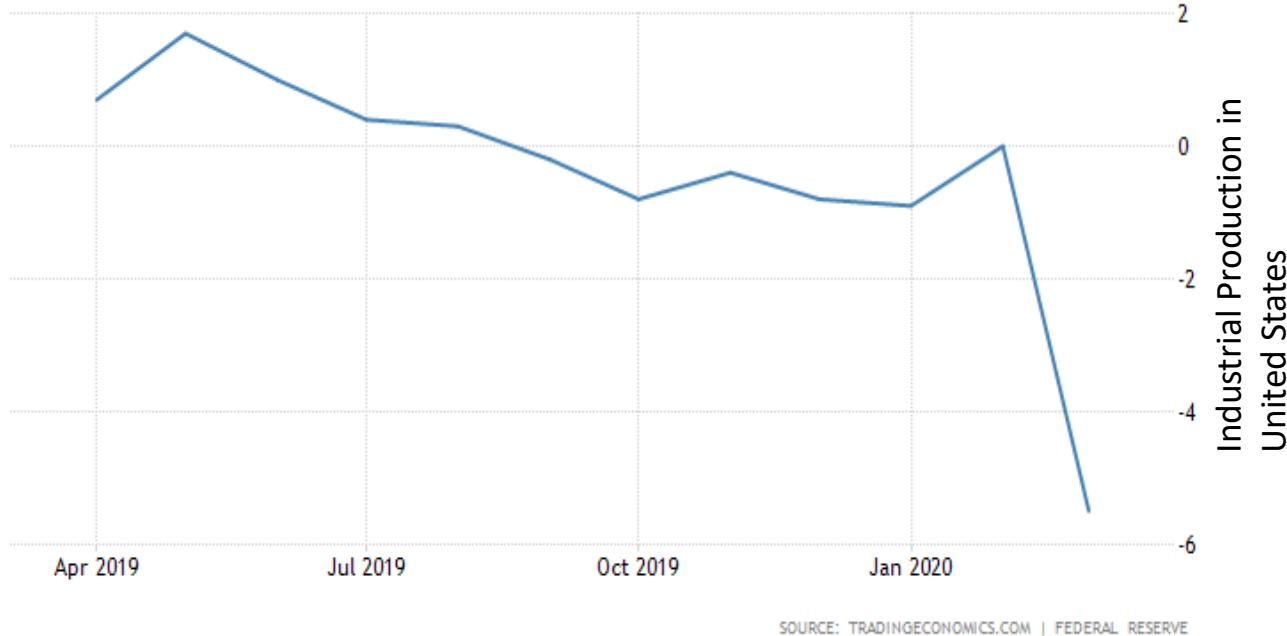
Impact on Suppliers/ Manufacturing units

BEFORE LOCKDOWN

- Disrupted global supply chain
- Companies dependent on supply from affected areas forced to shutdown
- Stockpiling, led to empty shelves, and higher vulnerability for smaller businesses

AFTER LOCKDOWN

- Loss of jobs due to halt in activities resulting in worsening financial situation of daily wage workers
- Unused inventory deteriorated
- Changed purchasing patterns
- Operations of NBFCs, and SMEs affected due to Cash crunch

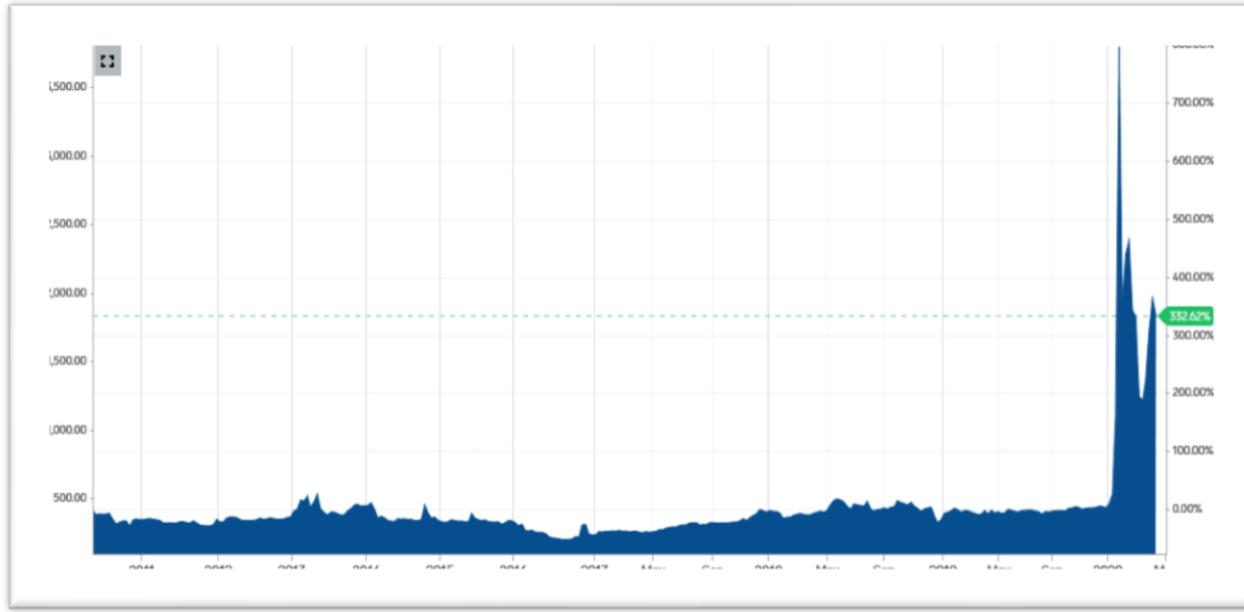


SOURCE: TRADINGECONOMICS.COM | FEDERAL RESERVE

Industrial Production in the United States decreased 5.50 percent year-on-year in March of 2020, the biggest decline since November of 2009

Most affected Industries

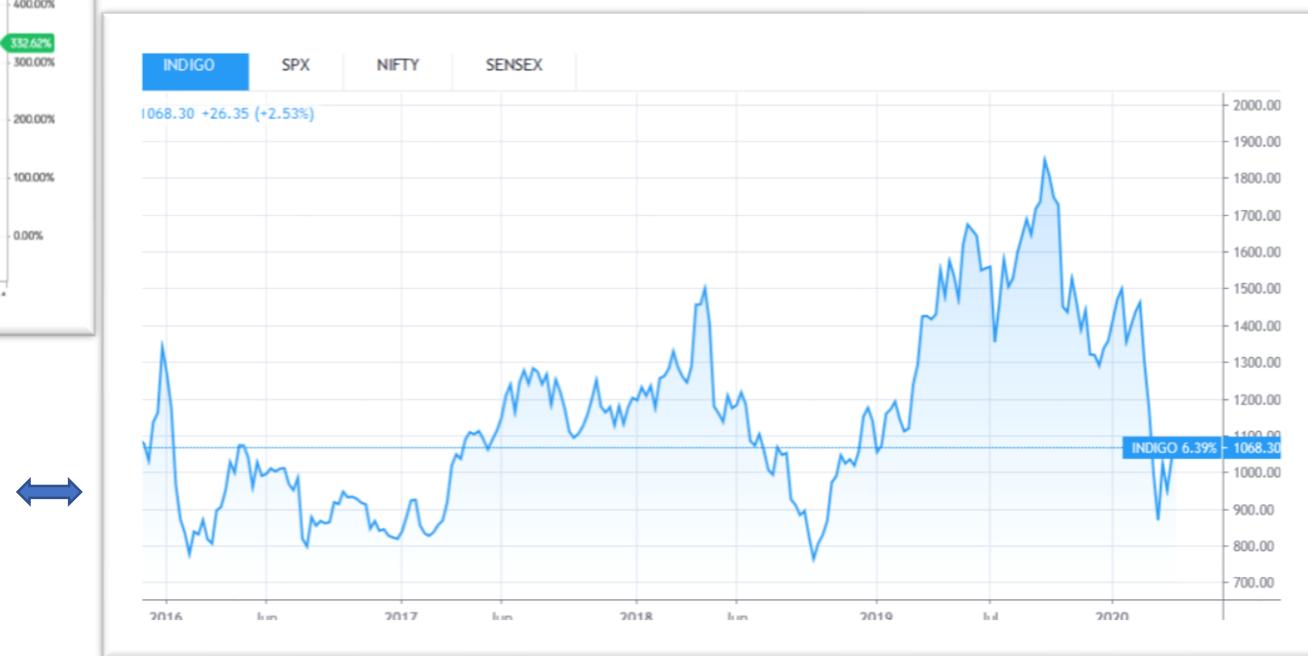
- Essential commodities and medical products saw rise in demand
- Non-Essential commodities faced major losses



Shares of Kawamoto Corporation- which produces medical products- went skyrocketing amid the outbreak

IndiGo, India's largest airline, registered a dip of around 50% in March as compared to its all-time high of Rs. 1898/ share.

Similar is the situation with Luxury, and the Automobile sector



Brand Perception

Consumer sentiment on brand communications during the COVID-19 pandemic

I am pleased to hear about brands taking actions like making donations of goods and services.

56%

I want to hear what brands are doing in response to the pandemic.

40%

It is reassuring to hear from the brands I know and trust.

43%

I do not want to hear from brands at this time.

15%

Brand perception:

What customers believe a product or service represents, not what the company owning the brand says it does.

Comes from:

Customer Experience; Reputation and Word of mouth recommendation.

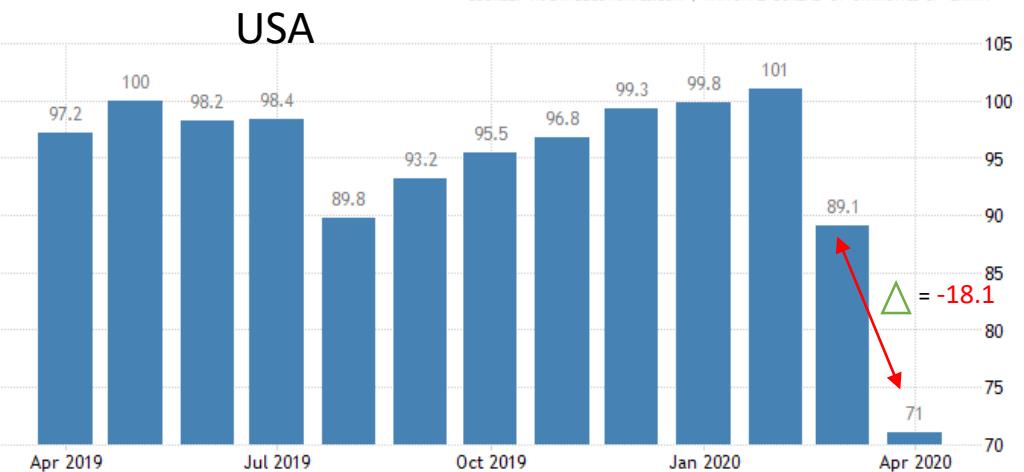
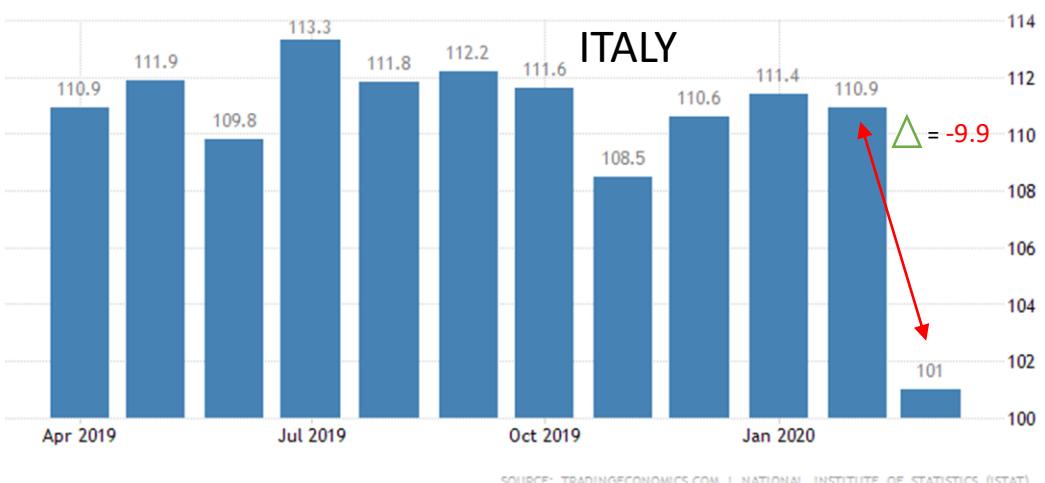
For example: A company which didn't lay off its employees or has contributed to the community in any manner, will definitely be the primary choice of the future job seekers and consumers would morally prefer its product over others.

Impact on Consumer Confidence

Consumer Confidence is an economic indicator that measures the degree of optimism that consumers feel about overall state of the economy and their personal financial situation.

Inferences

- Dip in consumer confidence across the globe irrespective of the spread of virus in the region.
- Halted trades and business activities along with uncertainty about future promotes negative mindset, decreasing consumer confidence.



Consumer Behaviour Thresholds

#1 PROACTIVE HEALTH-MINDED BUYING	#2 REACTIVE HEALTH MANAGEMENT	#3 PANTRY PREPARATION	#4 QUARANTINED LIVING PREPARATION	#5 RESTRICTED LIVING	#6 LIVING A NEW NORMAL
Interest rises in products that support overall maintenance of health and wellness.	Prioritize products essential to virus containment, health and public safety. E.g. face masks	Pantry stockpiling of shelf-stable foods and a broader assortment of health-safety products; spike in store visits; growing basket sizes.	Increased online shopping, a decline in store visits, rising out-of-stocks, strains on the supply chain.	Severely restricted shopping trips, online fulfillment is limited, price concerns rise as limited stock availability impacts pricing in some cases.	People return to daily routines (work, school, etc.) but operate with a renewed cautiousness about health. Permanent shifts in supply chain, the use of e-commerce and hygiene practices.

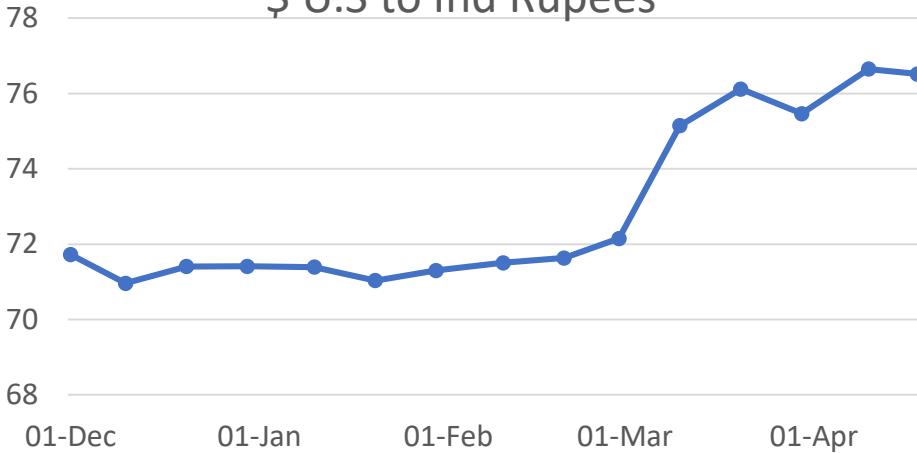
If this consumer behaviour is sustained, it would result in significant changes in shopping patterns, and cautiousness towards health and hygiene.

People are starting to consider online shopping as a safer option to buy groceries and daily items.

Increasing awareness towards hygiene and consequently higher sales of personal hygiene products.

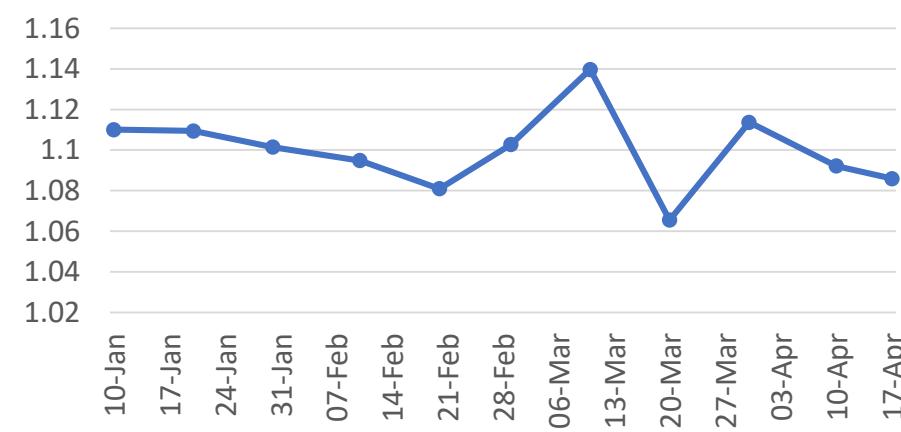
Exchange Of Currencies In Market

\$ U.S to Ind Rupees



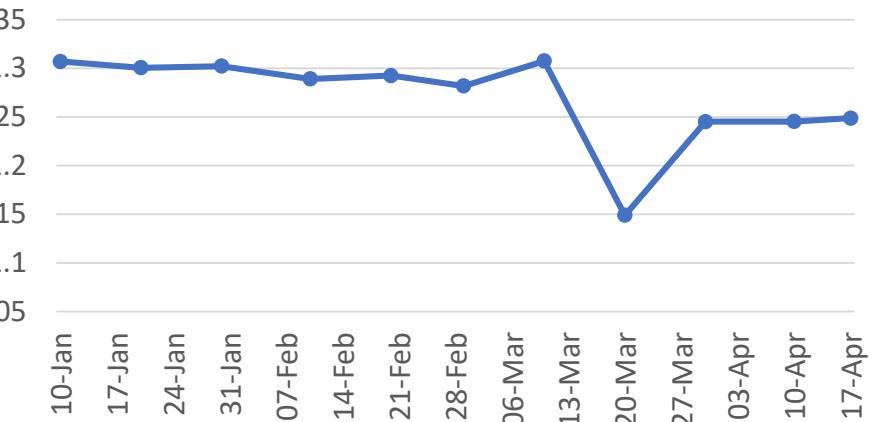
The graph follows the trends up to beginning of March. Then, suddenly, the India Rupees loses a bit value; from 72.15 to 75.145 in 10 days.

Euro to \$ U.S



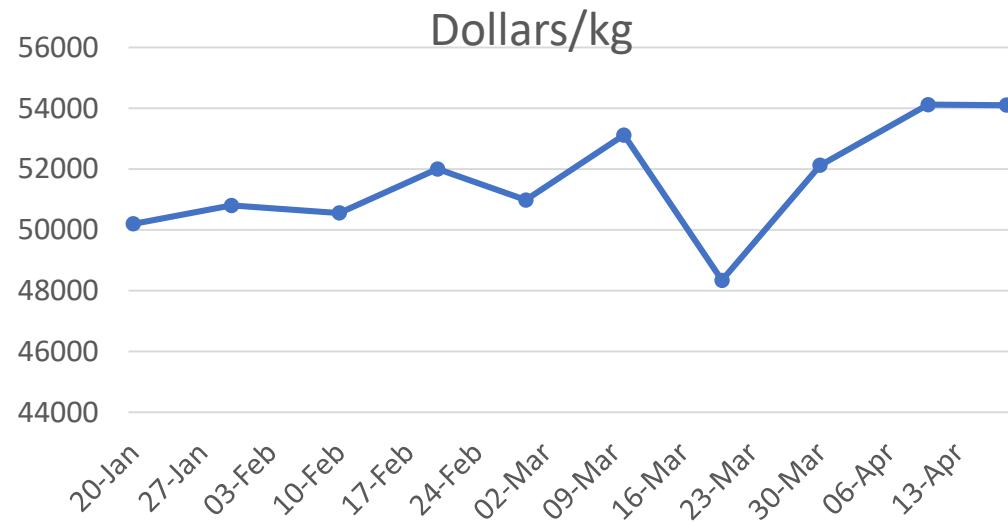
Although, euro is losing it's value in slight manner over last 2 years, but in span of a month it spiked 2 times downwards in the graph on close-to 20-Mar & 4-Apr.

Pound Sterling to \$ U.S



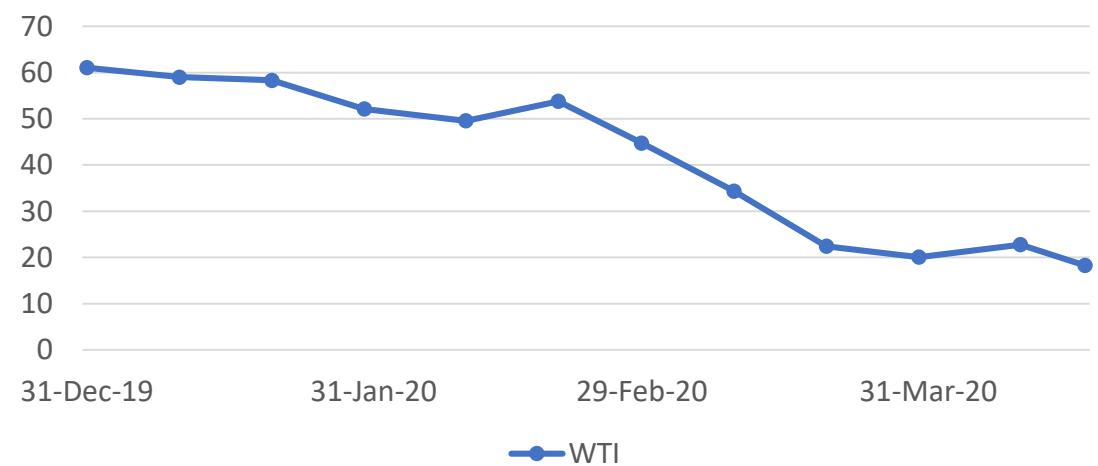
The British Pound is coming down for many years. This time, it had a downfall from 9-Mar to 19-Mar (\$1.3074 - \$1.1489). Later on, rose to \$1.2487 on 17-Apr.

Gold 24K (kg) price in U.S Dollars (20-Jan – 17-Apr)



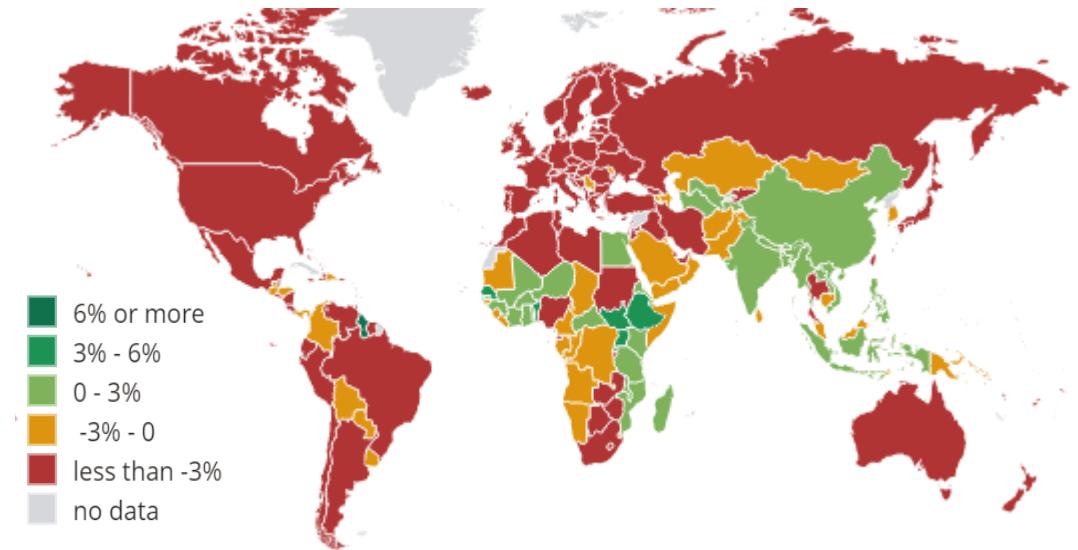
The price of gold had a downfall in the middle of March from \$53,123 to \$48,342. later on, it recovered.

Crude Oil (WTI) barrel price in U.S Dollars WTI barrel in \$



The price of crude oil has come down drastically, not only WTI but all involved in the business. From \$53.78 on 20-Feb to \$18.27 on 17-Apr.

GDP & Stocks



The impact of coronavirus on stock markets since the start of the outbreak



Source: Bloomberg, 01 April 2020, 09:00 GMT

BBC

The International Monetary Fund recently announced the "Great Lockdown" recession will drag global GDP lower by 3% in 2020.

The coronavirus pandemic is set to leave 170 countries with lower GDP per capita by the end of the year.

For the first time in 60 years, Asia as a region will not register any economic growth this year because of the coronavirus pandemic, according to forecasts by the International Monetary Fund.

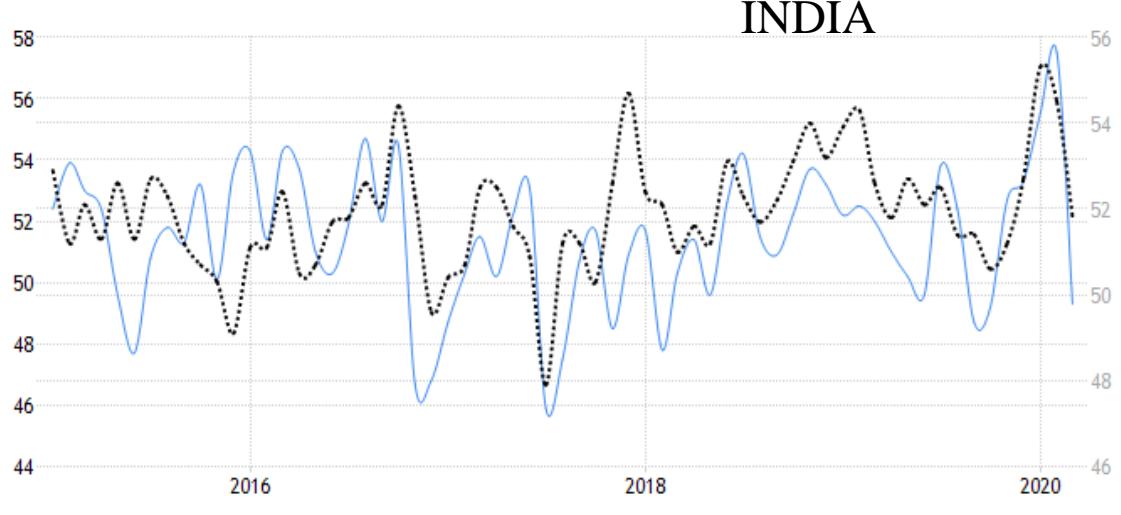
Investors fear the spread of the coronavirus will destroy economic growth and that government action may not be enough to stop the decline. In response, central banks in many countries, including the United Kingdom, have slashed interest rates.

That should, in theory, make borrowing cheaper and encourage spending to boost the economy.

Source: IMF

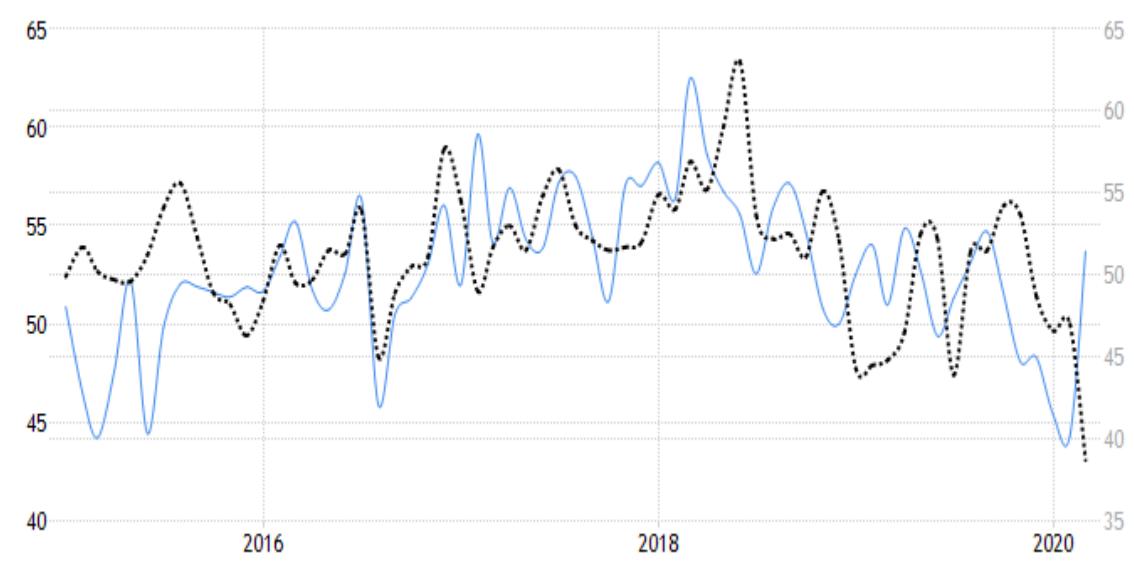
PMIs around the Globe

— INDIA SERVICES PMI INDIA MANUFACTURING PMI



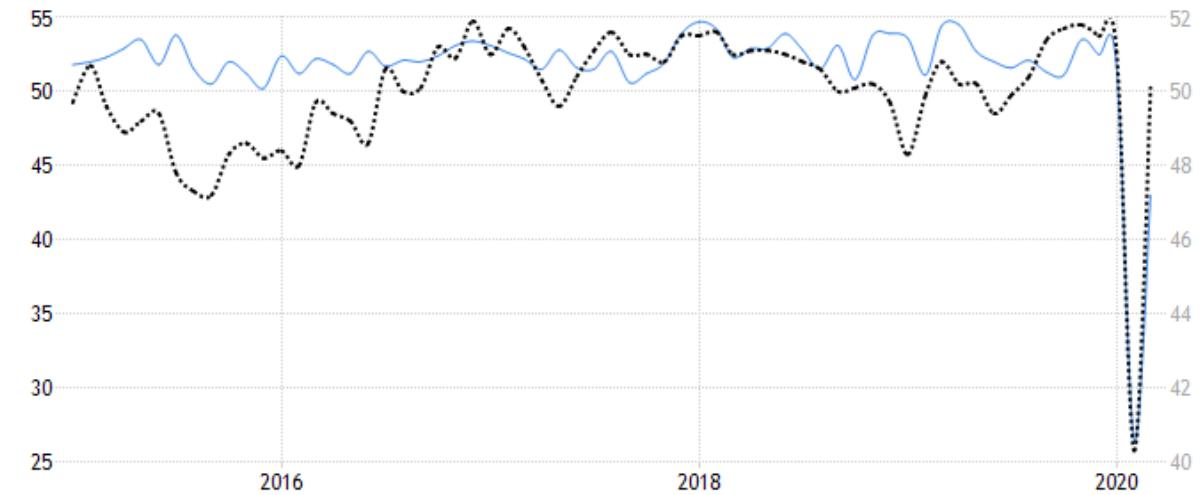
— AUSTRALIA MANUFACTURING PMI AUSTRALIA PERFORMANCE SERVICE...

AUSTRALIA



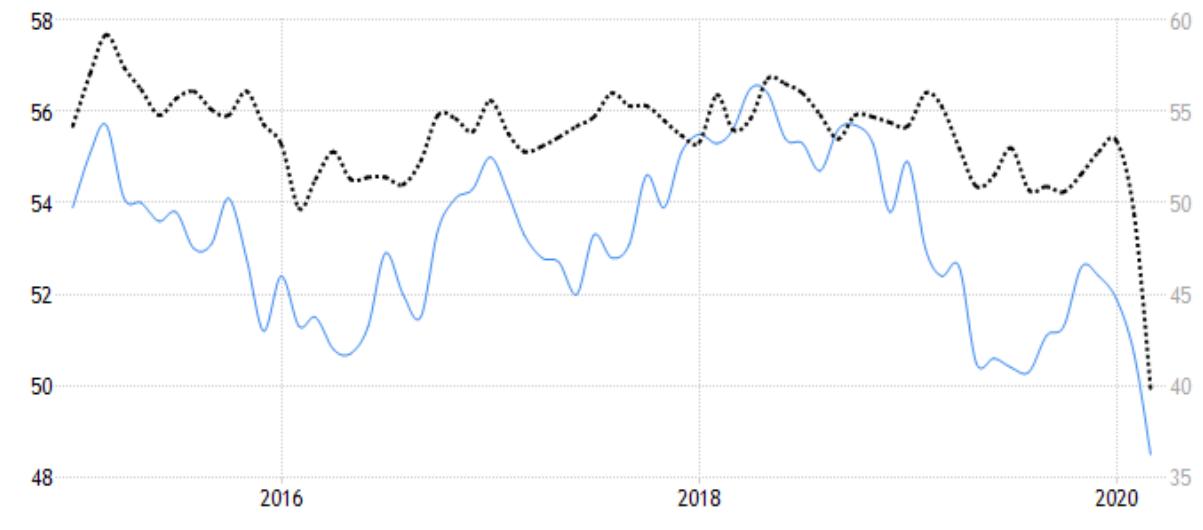
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CHINA

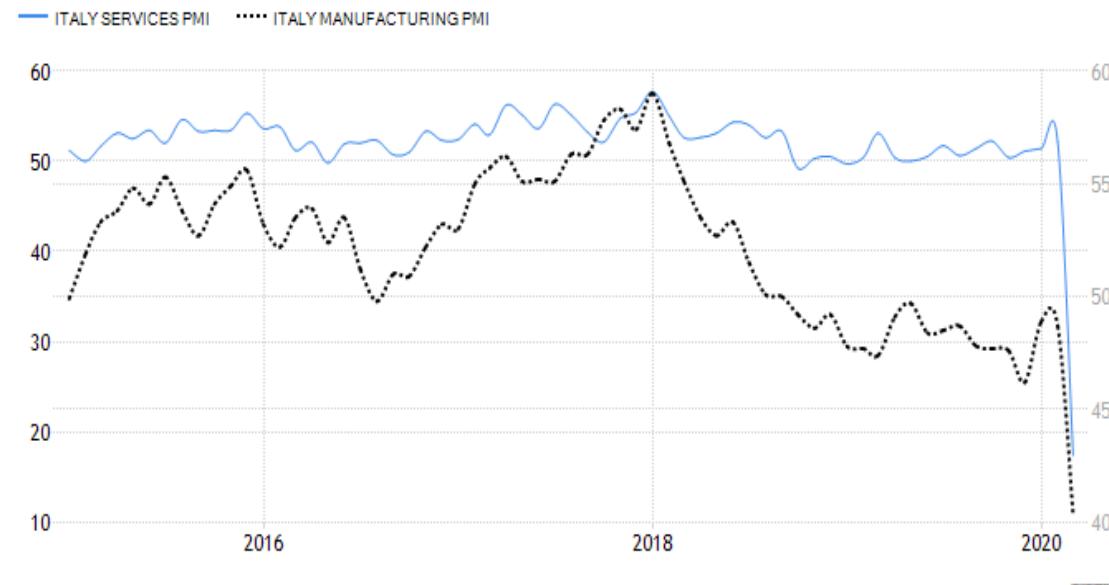


— US MANUFACTURING PMI US SERVICES PMI

US



PMIs around the Globe

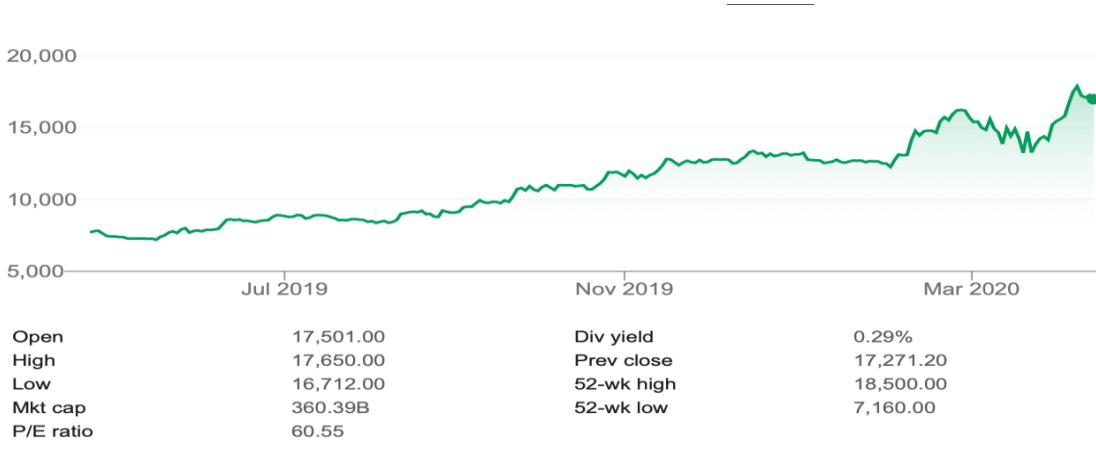


- The IHS Markit Italy Services PMI slumped to **17.4** in March of 2020 from 52.1 in February and much worse than market expectations of 22. The reading pointed to a record contraction in the services sector due to emergency measures and shutdowns designed to restrict the COVID-19 outbreak.
- Tourism represents almost **13% of GDP** and is one of the sectors which contribute most to the economy of the country. This sector has been hit hard by this crisis.

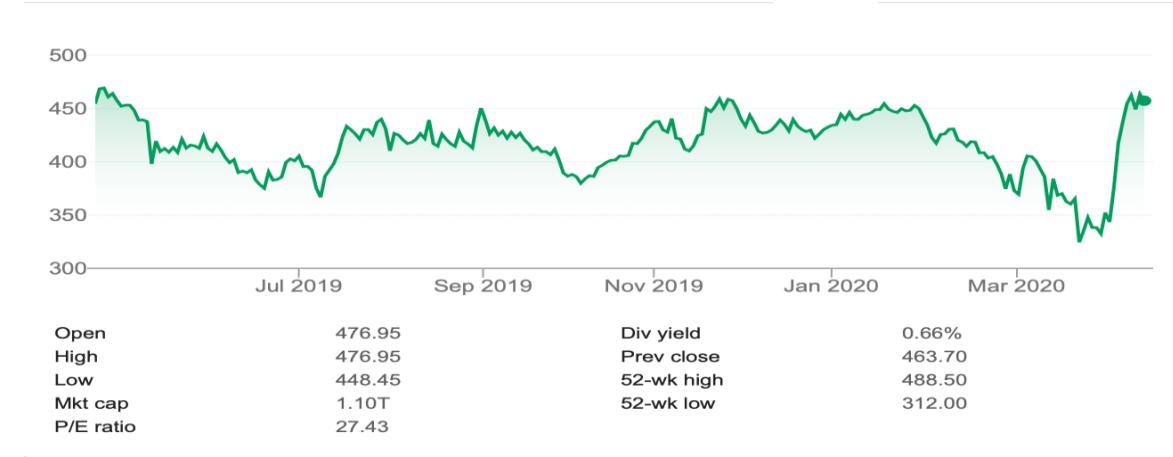
Stock Price Snippets

Pharmaceutical

Abbott India Ltd.

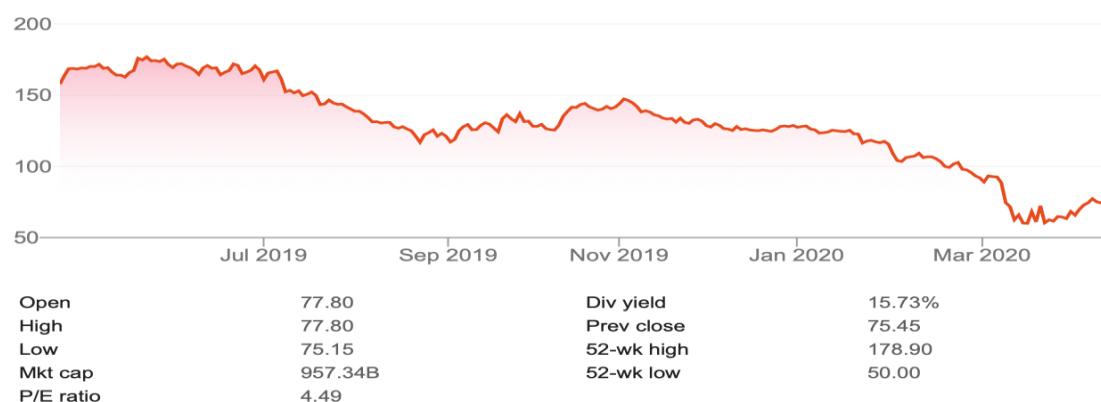


Sun Pharmaceuticals Ltd.



Oil and Gas

Oil and Natural Corporation Ltd.



Reliance Industries Ltd.

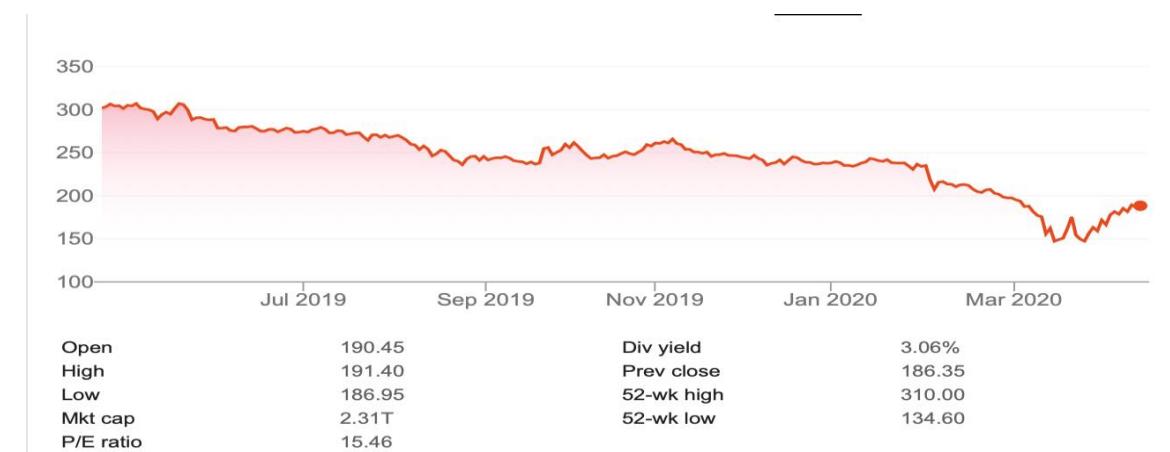


Consumer

Britannia Industries Ltd.



ITC Ltd.

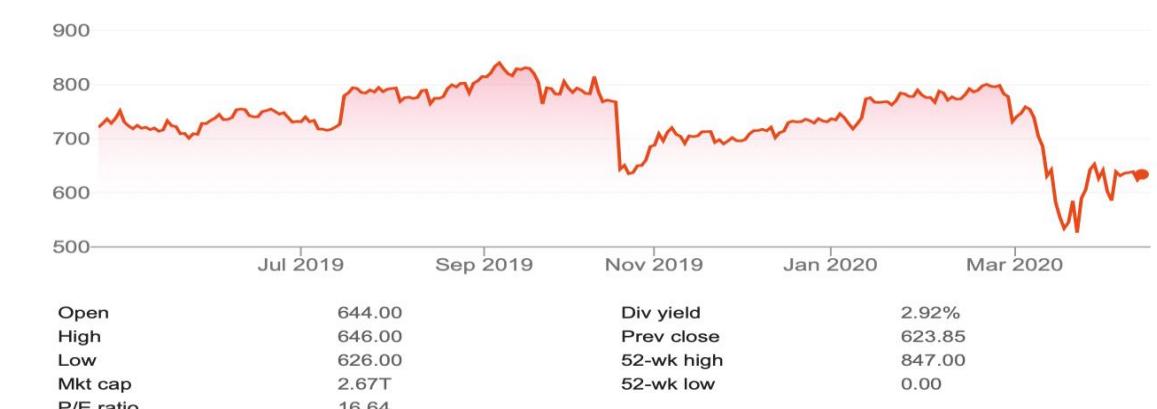


Technology

HCL Technologies Ltd.



Infosys Ltd.



Volatility Index

- Developed by the Chicago Board Options Exchange(CBOE)
- This is a type of a market index which represents the expected change in the market value in any time period.
- In other words it shows the deviation in the stock price over a period of time, i.e, the standard deviation.

$$\sigma^2 = \frac{2}{T} \sum_i \frac{\Delta K_i}{K_i^2} e^{RT} Q(K_i) - \frac{1}{T} \left[\frac{F}{K_0} - 1 \right]^2 \quad (1)$$

Where

$$\sigma \quad VIX / 100 \Rightarrow VIX = \sigma \times 100$$

T Time to expiration

F Forward index level derived from index option prices

K_0 First strike below the forward index level, F

K_i Strike price of i^{th} out-of-the-money option; a call if $K_i > K_0$ and a put if $K_i < K_0$; both put and call if $K_i = K_0$.

ΔK_i Interval between strike prices – half the difference between the strike on either side of K_i :

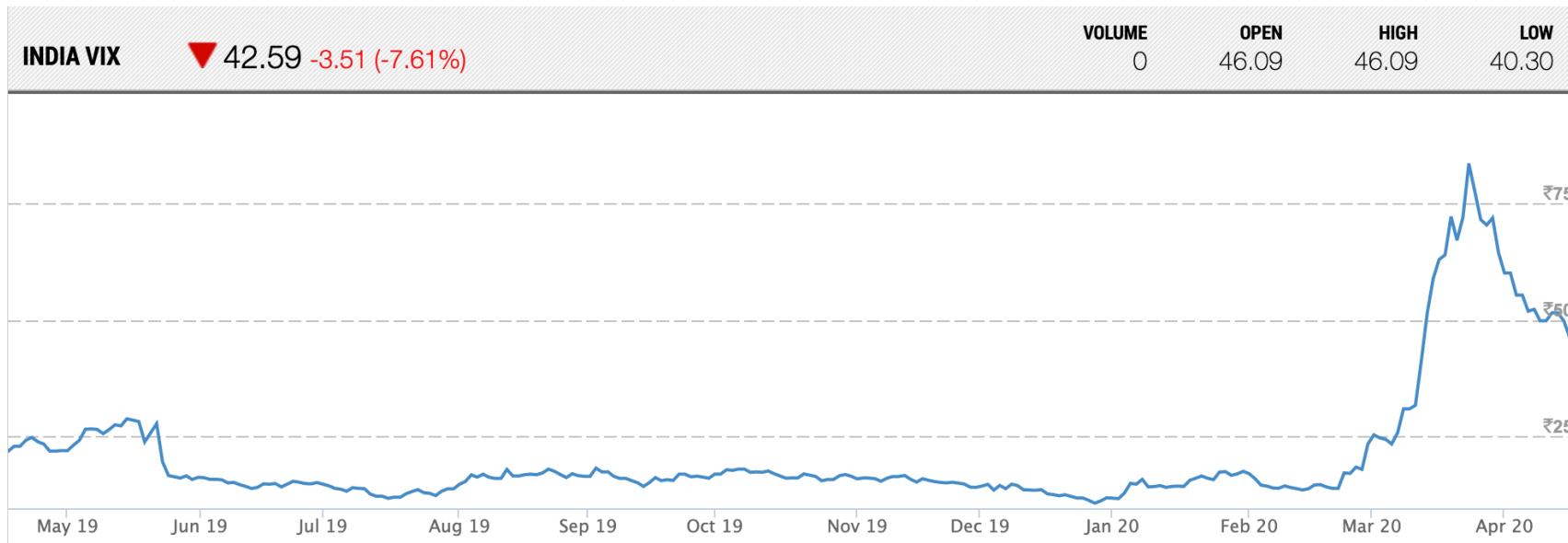
$$\Delta K_i = \frac{K_{i+1} - K_{i-1}}{2}$$

R Risk-free interest rate to expiration

$Q(K_i)$ The midpoint of the bid-ask spread for each option with strike K_i .

⁵ Please see "More than you ever wanted to know about volatility swaps" by Kresimir Demeterfi, Emanuel Derman, Michael Kamal and Joseph Zou, Goldman Sachs Quantitative Strategies Research Notes, March 1999.

Inferences using Volatility Index (VIX)



- Due to the announcement of COVID-19 as a pandemic and the lockdown, volatility reached an all time high of 86.63 on 24th March 2020(beating the previous all-time high of 85.13 during the global financial crisis in 2008).
- A fiscal stimulus package of 23 billion dollars and cutting of repo rate to 4.4% was announced. Loan rates were also reduced to attract small businesses.
- Resulted in more investments made in the banking sector and hence had reduced the volatility. Also, there were many investments made in the pharmaceutical industries in companies due to manufacturing of hand sanitizers to meet the demand of the public.
- The government has announced that 45% of the economic activity will resume on 20th April 2020 in green zone areas, which can further reduce the volatility in the market and aim to bring it to the normal range (Between 15 and 20).

1) Airlines And Airport Operators

According to *Indian Ratings and Research*, international and domestic passenger load factors dropped by 570 basis points year-on-year and 100 basis points year-on-year respectively. India Ratings has estimated that the three low-cost carriers will require additional funding of about **Rs 3,500 crore** even if the outbreak is contained in the next three months and **Rs 14,500 crore** if the outbreak persists for in the next 12 months ratings roundup report for the second-half of this fiscal.

USA: Distressed airlines can rely on a \$71 billion support package.

Europe: Finnair has secured a \$650 million loan guarantee, airlines in Norway have been promised \$540 million while Swedish carriers can avail of \$500 million.

UAE: Government is fully supporting Emirates through equity infusion

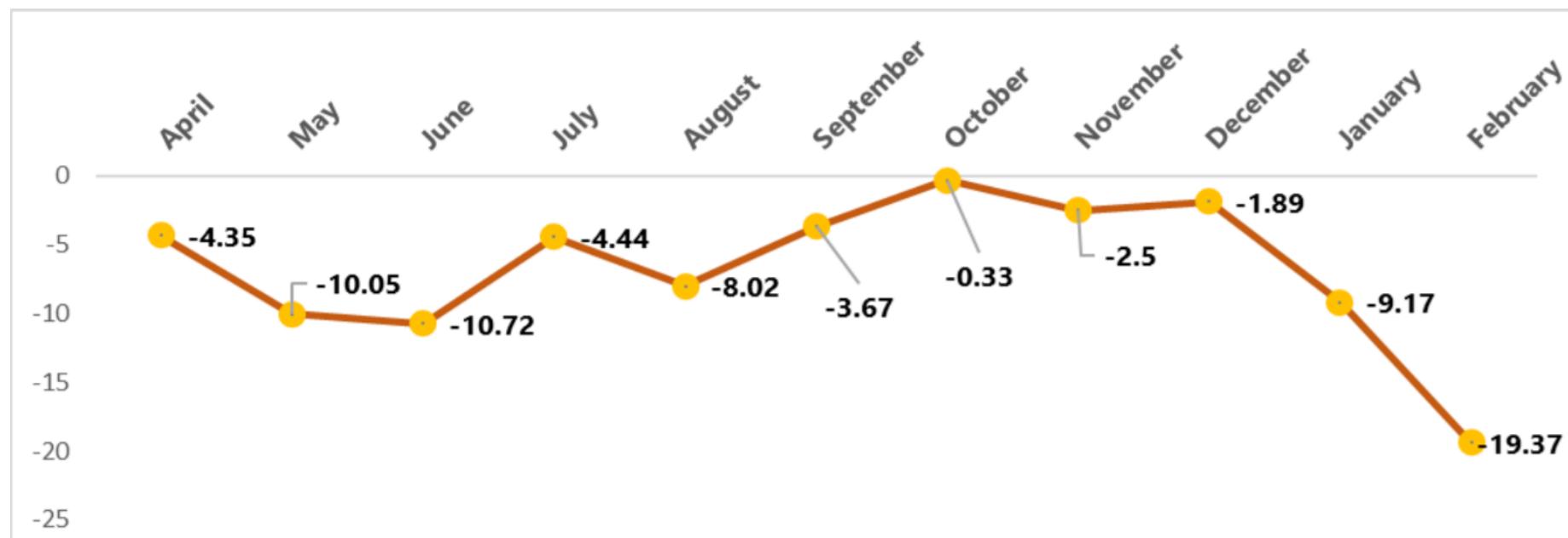
Singapore: Recently announced a \$500 million package for the aviation sector, a \$2.8 billion bridging loan and a \$10 billion rights in equity and convertible bonds.

2) Gems and Jewelry

The GJEPC has noted that after the outbreak of Covid-19 Declining rate of gem and jewelry exports doubled to **(-)11.32%** during Dec-February 2020 as compared to **(-)5.53%** registered during April-Nov 2019 and this is projected that Gem and Jewelry exports would bear the loss of **US\$2.57 billion** by the end of April 2020 due to this dreadful crisis. Gem & Jewelry exports recorded the highest fall of **(-) 19.37%** in Feb 2020.

The export trends are as follows-

Source: *GJEPC Statistical department*



3) Automobiles

There are currently about **15,000** auto dealerships (includes 2,3 and 4 wheelers) across India. It is expected that there will be closures of at least **8-10% of** these dealerships in the next six months.

4) Real Estate And Construction

According to Knight Frank India survey, both residential and commercial real estate sectors are expected to be hit in term of launches, sales and prices. The ongoing Covid19 outbreak and its impact on economy have pushed sentiment in real estate to its all-time lowest level in the quarter ended March.

Around **42%** of the respondents believe that the next six months will be one of the worst phases in terms of new supply additions across the major office markets in the country. The sentiment score had revived in the December quarter after being in the pessimistic zone (below 50 mark) for two consecutive quarters. The revival was however short-lived, as the current sentiment score has dropped to 31 in the March quarter, showed the Knight Frank India, FICCI-NAREDCO Real Estate Sentiment Index. Out of key regions, sentiment in western and northern India markets are most impacted.

5) Steel

Steel is a major metal accounting for **63 per cent** India's imports and 68 per cent of exports. A decline in the steel output in China, which is India's largest supplier of finished steel and steel products, has roiled the domestic market. Major domestic companies are now looking for suppliers in alternative markets such as Turkey and Brazil. China had increased VAT (value added tax) rebate on exports from **10 per cent** to **13 per cent** to boost steel production and dump it on other countries as their economy comes out of the virus attack.

Coming out of Covid, the Indian steel companies not only have to cope with lower infrastructure spending by the cash-strapped government but also take on market under-cutting by China in the export market. analysis suggests that if the lockdown is extended for the entire month of April then mill inventory levels could rise to 15.5 mt by end-April 2020, representing a **sharp rise of 19 per cent**. Tata Steel has already cut down its production and almost all steel industries are facing labour shortage.

6) Energy

Electricity demand in the country has already been impacted and is expected to **decline by 20-25 percent** on a year-on-year basis during the period of lockdown as industrial and commercial establishments are shut down and passenger railway services non-operative, according to ICRA Ratings. ICRA also fears that state distribution companies will delay payments to power generation and transmission companies. This, in turn, could lead to power generation and transmission companies requiring further liquidity, beyond their debt service reserve and undrawn working capital limits.

7) Technology sector

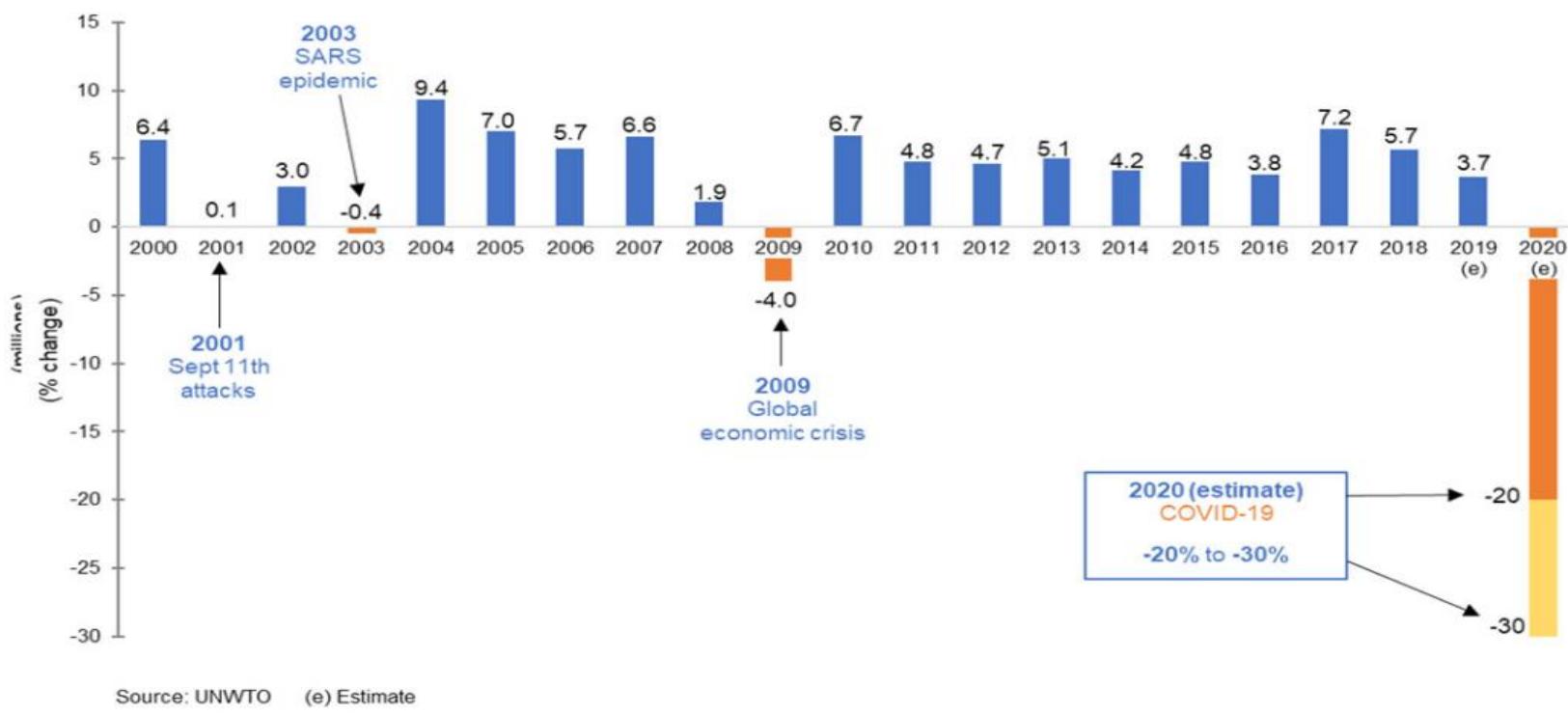
Indian IT services industry is expected to see an adverse impact for a short-term due to COVID-19 outbreak with the sector clocking a lower growth of **3-5 per cent** in current financial year, according to ratings agency ICRA. ICRA previously expected the sector to grow at **6-8 per cent**.

8) Power sector

Lower electricity demand and cheaper electricity prices are going to have an impact in the gas-based generation as most gas energy generators are set to take a hit in their revenues in 2020. Nuclear power availability in Europe is expected to remain consistent as many countries, including the UK and Germany, have put safety measures in place to guarantee the continuation of operations. However, France, having the largest nuclear fleet, expects the plant availability to fall from the past three-year average. Covid-19 is expected to delay project development and would impact renewable auctions. The most significant near-term impacts on renewable plants that are already contracted or under construction may be felt through supply chains. Crude oil prices have seen a drastic decline since December 2019, **decreasing by more than 60%**.

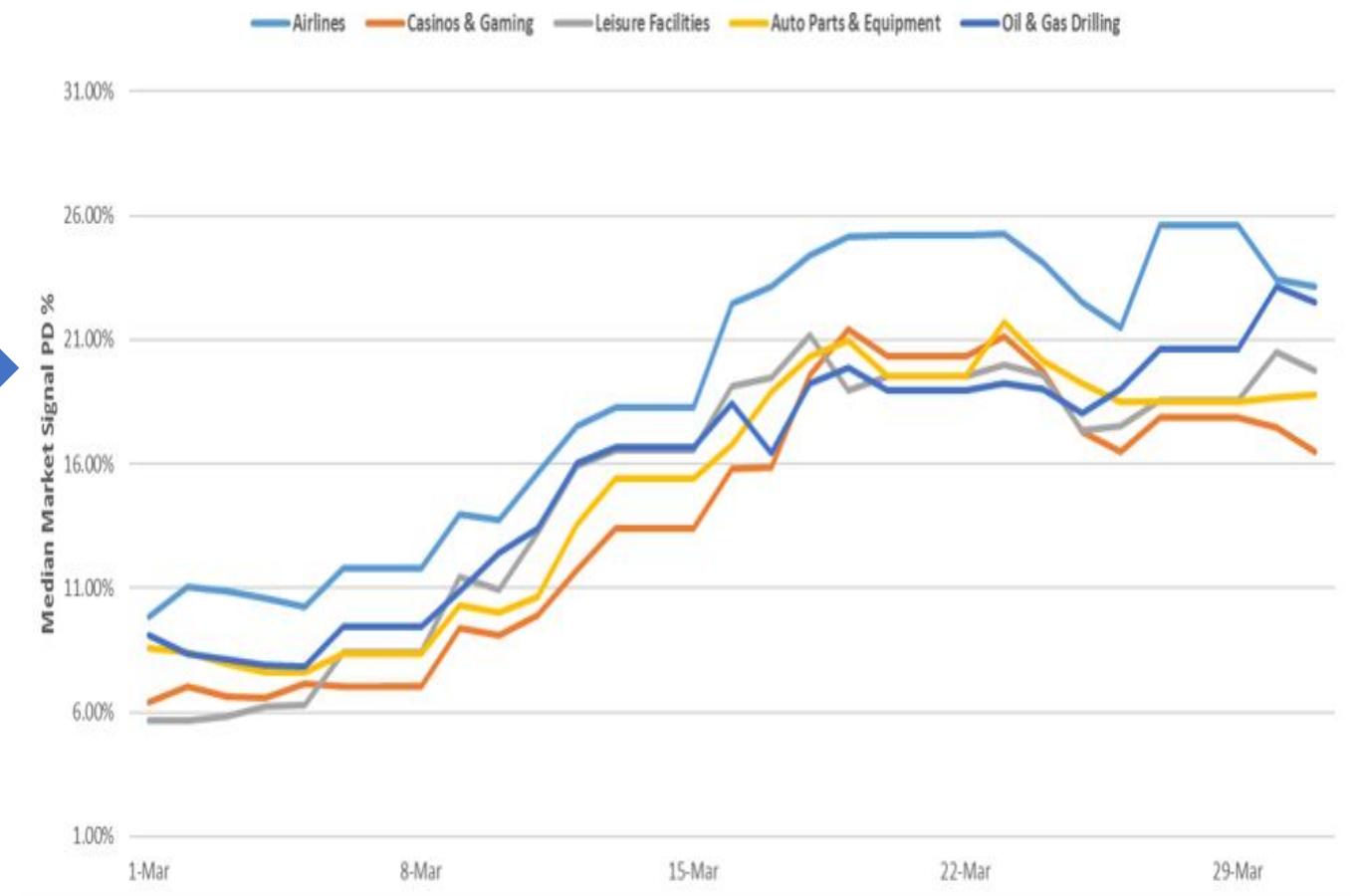
9) TRAVEL AND TOURISM

UNWTO estimates international tourist arrivals could decline by 20% to 30% in 2020. This would translate into a loss of **300 to 450 US\$ billion** in international tourism receipts (exports) – almost one third of **the US\$ 1.5 trillion** generated globally in the worst-case scenario.



Note: If we point out Credit Analytics PD (Probability of default) Model Market signals, we can conclude that the Airlines industry have been affected the most due to the ongoing pandemic.

Top 5 Industries Impacted By COVID-19 In March
Powered By Credit Analytics PD Model Market Signals



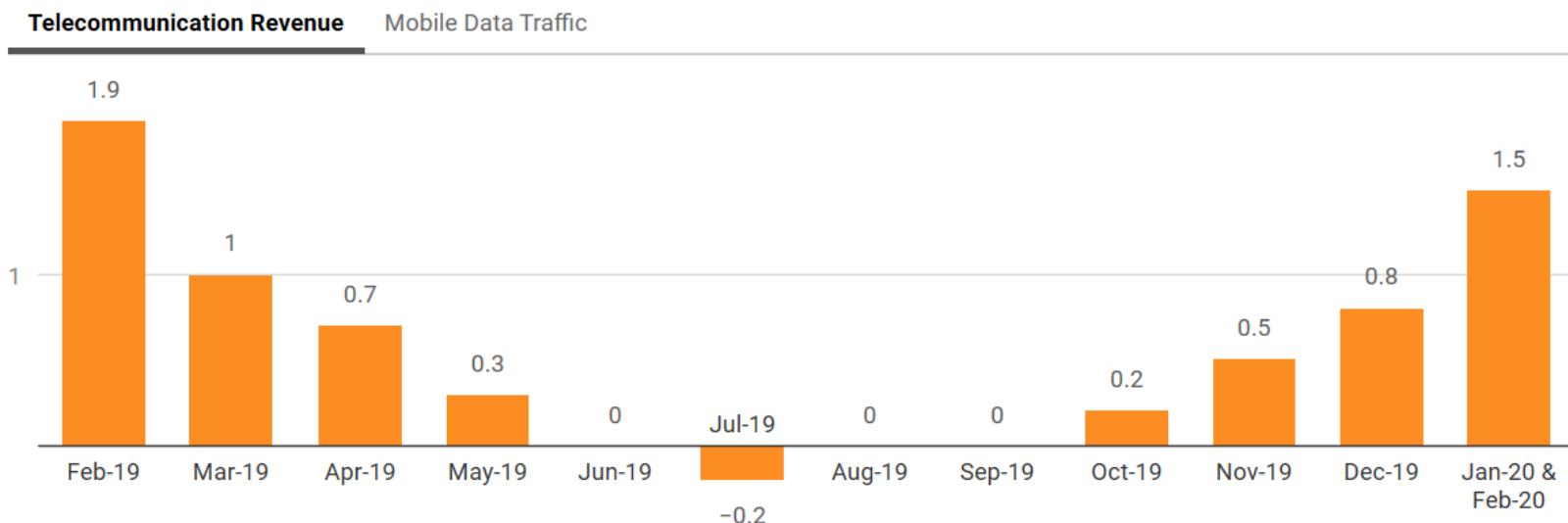
II) The sectors which are not affected-

The market sectors which are facing the least impact of COVID-19 or may even benefit from this pandemic are-

SECTOR	% Decline since Feb 20	1 year fwd PE (consensus)
PHARMA		
IPCA Labs	-6.70	21.80
Abbott	-16.80	37.48
Torrent Pharma	-15.80	25.90
DIAGNOSTICS/HOSPITALS		
Thyrocare	-21.90	17.50
Metropolis	-30.00	32.30
CONSUMER GOODS		
HUL	-15.60	47.10
Godrej	-29.40	24.60
Dabur	-20.90	37.20
FERTILIZER/AGROCHEMICALS		
Rallis India	-35.50	12.40
Coromandal	-20.10	13.70
Bayer CropScience	-31.40	23.90
SPECIALITY CHEMICALS		
Galaxy Surfactants	-32.40	15.20
Vinati Organics	-30.30	18.60

TELECOM

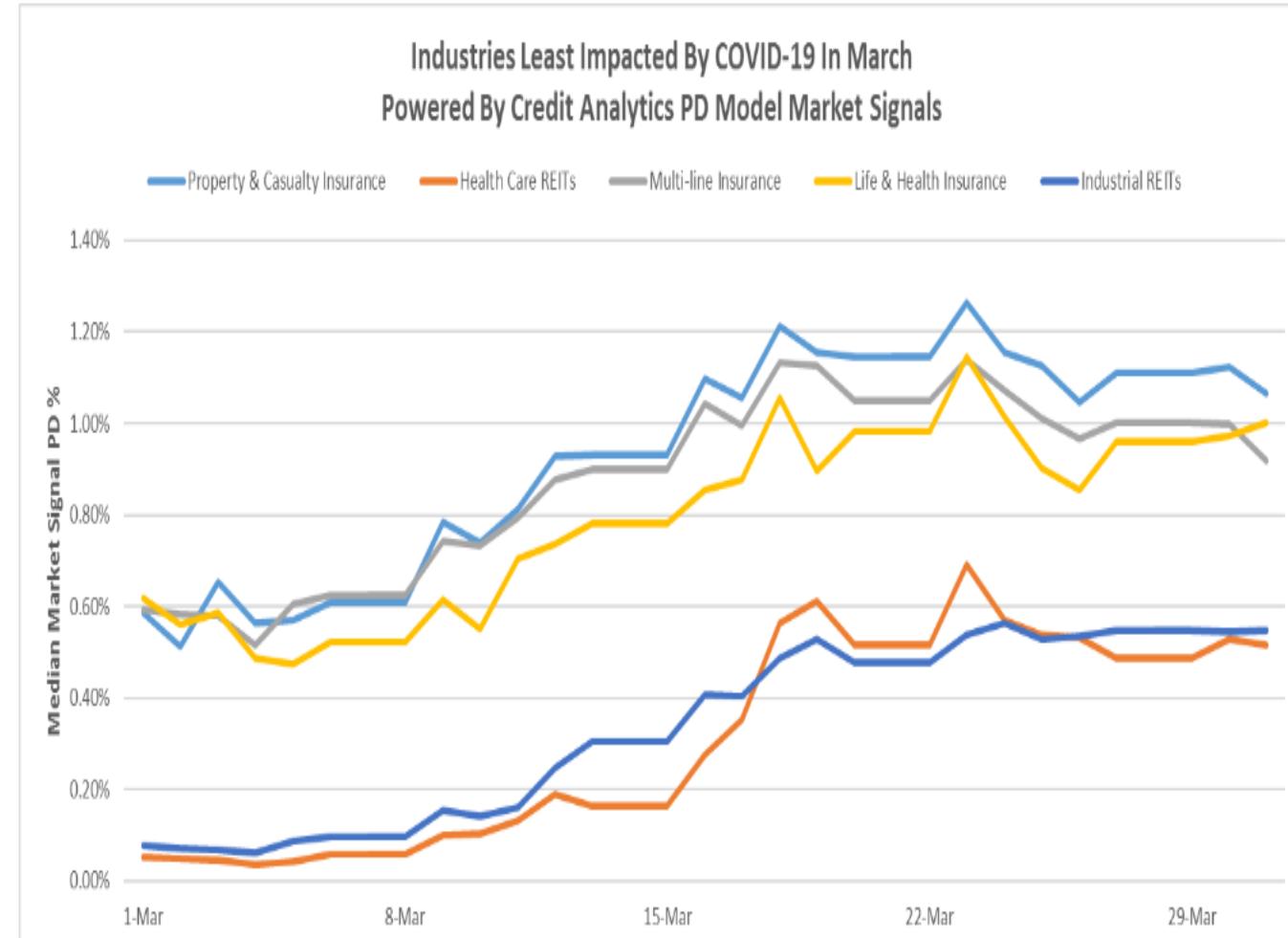
In January and February, when China—the epicenter of the virus outbreak—was under lockdown, revenue of telecommunications services rose **1.5 percent** compared to last year, according to the data released by the Ministry of Industry and Information Technology of the People's Republic of China. The growth rate for the first two months of 2020 was the highest in the last 12 months.



Source: Ministry Of Industry & Information Technology, People's Republic Of China

Note: From a PD perspective, **Insurance (Property & Casualty, Multi-Line, Life & Health)** and **REITs (Health Care, Industrial)** industry sectors were least impacted, yet still showed rising PDs.

A tool like Credit Analytics PDMS model allows the surveillance of credit risk from an individual company perspective, as well as providing a macro view for different countries and industries via benchmarks. The five industries least impacted by COVID-19 are:



2020-March Russia–Saudi Arabia oil price war

On 8 March 2020, Saudi Arabia initiated a price war with Russia, facilitating a 65% quarterly fall in the price of oil. The price war was triggered by a breakup in dialogue between OPEC and Russia over proposed oil-production cuts in the midst of the 2019–20 coronavirus pandemic.

Beginning in 2014, the oil production worldwide increased, and prices crashed from \$114 in 2014 to \$24 in 2016. In September 2016, Saudi Arabia and Russia agreed to cooperate in managing the price of oil, creating "OPEC+."

By January 2020, OPEC+ had cut oil production by 2.1 million barrels per day (bpd).

On 5 March 2020 OPEC summit was held in Vienna for the lack of demand for oil, globally, due to the Covid-19 pandemic.

At the summit, OPEC agreed to cut oil production by an additional 1.5 million barrels per day through the second quarter of the year, with the group expected to review the policy on 9 June during their next meeting.

On 6th March 2020, Russia rejected the demand, marking the end of the unofficial partnership, with oil prices falling 10% after the announcement.

On 8 March 2020, Saudi Arabia announced unexpected price discounts of \$6 to \$8 per barrel to customers in Europe, Asia, and the United States. The announcement triggered a free fall in oil prices.

On 9 March 2020, stock markets worldwide reported major losses thanks in part to a combination of price war and fears over the coronavirus pandemic. Effects were felt outside of oil prices and stock markets as well.

On 10 March, Saudi Arabia announced that it would increase its production from 9.7 million barrels per day to 12.3 million, while Russia planned to increase oil production by 300,000 barrels per day.

As demand continued to fall dramatically, oil prices went down further, reaching a 17-year low on 18 March where Brent was priced at \$24.72 a barrel and WTI at \$20.48 a barrel.

Oil prices remained depressed for the rest of March. On 2 April, US President claimed that a reduction of 10-15 million barrels in production would be possible.

The next day, Russian President Vladimir Putin ordered the energy minister to prepare an OPEC meeting and stated that global production could be cut by 10 million barrels.

On 9 April, OPEC and Russia agreed to reduce by 10 million bpd.

IMPLEMENTATION OF ECONOMIC POLICIES

Role of policies

- Essential targeted policies are needed to support the economies of countries through the epidemic so that the fundamental economic relationship between workers and businesses, lenders and borrowers, and suppliers and end-users, remains intact. The motive of these policies are to prevent bankruptcy and job-loss scenarios. The pace of recovery will depend crucially on policies undertaken during the crisis.

Suggested policies

- As we have reported in the previous section that not all the businesses are affected. But the businesses which are hit by supply disruptions and a drop in demand should be the target. Tax relief and wage subsidies can be key to the recovery process from such pandemics. Unemployment is basically a financial time-bomb and not creating an unemployment chaos should be the primary aim of the country. It can be cured by relaxing eligibility or by increasing benefits like sick leave. No worker wants to compromise his health for the sake of job and the policies should ensure can stay at home without fear of loosing jobs.
- Governments of respective countries should offer temporary credit guarantees for the near-term liquidity of firms. Temporary and time-bound extensions of loan maturities will be effective. Providing loan guarantees to struggling businesses will aid the economy. If the crisis worsens, the establishment or expansion of large state holding companies will take over private firms, as in the United States and Europe during the Great Depression.
- Asset purchases can lift confidence and support financial markets if there is a marked risk of a sizable tightening in financial conditions (with actions by large central banks also generating favorable spillovers for vulnerable countries).

- Essential sections need to be functioned. Resources for COVID-19 testing and treatment are the most essential. Healthcare sector can not be taken lightly, IMF officials have repeated again and again. France's early seizing of medical masks and the activation of the Defense Production Act in the United States to ensure the production of medical equipment illustrate this.
- If subsidized loans are being given to a large corporation, conditions should be imposed, like guarantee of jobs of its employees, limiting CEO compensation, and stock repurchases. Bankruptcy would ensure that equity holders share some of the costs, but would also cause significant economic dislocation. An intermediate option which is being suggested by experts is for the government to take an equity stake in the firm. When liquidity is the problem, credit by the central bank (through asset purchase programs) or other government controlled financial intermediaries (through loans and guarantees) has proven effective in previous crises.

	LIQUIDITY	SOLVENCY
HOUSEHOLDS	Suspension of mortgage payments, student loans	Cash transfers
BUSINESSES	Tax and social security contribution deferrals	Unemployment insurance Meal vouchers for students who are away from school
	Extension of loan maturities	Equity injections
	Tax and social security contribution deferrals	Subsidies for maintaining employment
	Purchase of commercial paper and bonds	Direct subsidies based on past sales (tax based)
	Direct credit provisions by central bank	
	Credit guarantees	
FINANCIAL SECTOR	Liquidity provision for financial intermediaries	Equity injections
	Actions to preserve market liquidity	Government guarantees

Note: Liquidity measures include loans or payment deferrals.
 Solvency measures include transfers, payment waivers, and non-refundable goods or services

Policy Responses To Covid-19

U.S.A :

- Federal Reserve bank's historic actions have been: cutting interest rates close to zero, reducing bank reserve requirements to zero, rapidly purchasing hundreds of billions of dollars in Treasury bonds and mortgage-backed securities, buying corporate and municipal debt, and extending emergency credit to nonbanks.
- Meanwhile, on the fiscal side, lawmakers passed a \$2.3 trillion stimulus package. It includes direct payments of up to \$1200 to individuals, hundreds of billions of dollars in low interest loans and grants to businesses, increases to unemployment benefits, providing a food net for most vulnerable and support for hospitals and health-care providers.

U.K :

- Among its emergency measures, the Treasury has pledged to pay 80 percent of workers' salaries (to a max of £2,500 per person per month) for several months to keep companies from resorting to huge layoffs; offered to reimburse self-employed workers for lost wages; deferred tax payments; increased unemployment benefits; established a loan program for small and midsize companies; and provided rescue aid to charities.
- In an extraordinary move in early April, the central bank agreed to directly finance the government's spending during the crisis, freeing it from having to issue debt in the bond market. All told, the rescue efforts could see Britain spend upward of 400 billion pounds, or about 15 percent of GDP.

Japan :

- The Japanese government has responded with a massive relief package, worth nearly \$1 trillion. The headline figure is equal to about 20 percent of Japan's GDP, but analysts say the actual spending impact will be much smaller. Bailout measures include cash payments to citizens and small and midsize businesses, interest-free loans, delayed tax payments, and travel and tourism coupons.

Germany :

- It is allocating at least 350 billion euros—or about 10 percent of its GDP—to prop up the eurozone's largest economy. Funds will be spent to bail out struggling businesses, including by making unlimited loans and potentially taking equity stakes.

European Union :

- Eurozone finance ministers agreed to a 500-billion-euro package to provide emergency lending and other assistance to member countries, businesses, and workers. The bank is set to buy up to 750 billion euros in additional bonds this year to help its members amid the downturn.

IMF :

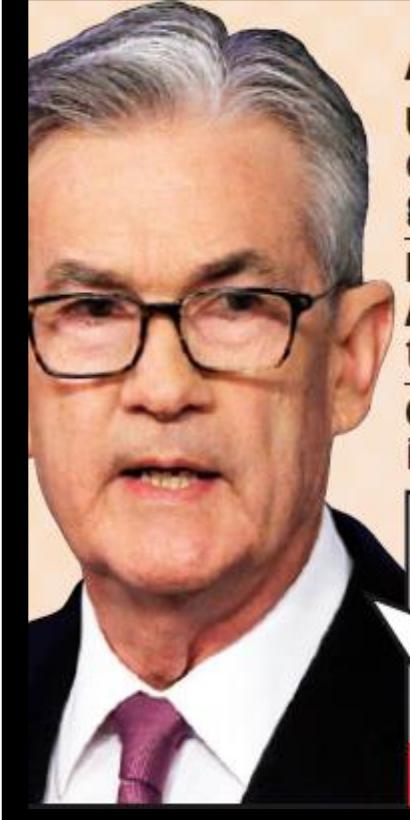
- The IMF has set aside \$100 billion to lend to member countries that are facing acute financial crises because of the coronavirus, with preference given to emerging economies. By early April, more than ninety countries had requested bailouts.

Most Common Strategies For Outcome

SECTORS	LIQUIDITY	SOLVENCY
HOUSEHOLDS	Suspension of mortgage payments & student loans	Cash transfers
	Tax & social contribution deferrals	Unemployment insurance
	-	Meal vouchers for students away from school
BUSINESSES	Extension of loan	Equity injection
	Tax and social sec. Deferral	Subsidies for maintaining employment
	Purchase of commercial paper & bons	Direct subsidies based on past sales (Tax based)
FINANCIAL SECTOR	Direct credit provision by central bank & credit guarantee	-
	Liquidify provision for financial intermediaries	Equity injection
	Actions to preserve market liquidity	Government guarantees

Role of Central Banks

- The world's most powerful central banks have found themselves shoved violently back into crisis-management mode.
- To avoid repeating the errors of the 2008 global financial crisis, central banks have to combine stimulus with a range of structural reforms.
- Central Banks throughout the world have taken some big decisions by flooring interest rates, embarking on massive securities-buying programs, reopening emergency financing windows and creating new ones.
- Tools deployed: Interest-rate cuts, asset purchases, currency interventions and liquidity injections.



Action Taken Report

US Fed: 50 bps rate cut – biggest since global financial crisis	Central Bank of Malaysia: 25 bps cut to 10-year low of 2.5%
Reserve Bank of Australia: 25 bps cut to record low 0.5%	European and Japanese central banks: Easing monetary stance
G-7 countries: Ready to take action, including fiscal measures	

The spread of the coronavirus has brought new challenges and risks... A rate cut will not reduce the rate of infection – it won't fix a broken supply chain... But we do believe our action will provide a meaningful boost to the economy

JEROME POWELL Federal Reserve Chairman

Role of Central Banks

Global central banks have stepped up their crisis-fighting to keep markets functioning and economies growing as the coronavirus looks increasingly likely to tip the world into its first recession since the financial crisis.

Steps taken by some Central Banks:

US Fed:

- Rate Cuts
 - Cut rates twice on an emergency basis in the month of March
 - First cut was of a half percentage point, on March 3, and the second was of a full point, on March 15
- Repo Market
 - Central bank pivoted to offering almost unlimited support in the overnight lending markets for cash.
 - The Fed also announced that it broadened its repo agreements with foreign central banks
- Discount Window
 - Policymakers have lowered the rate charged on the funding to 0.25% and extended the length of the loans offered from one day to 90 days.

Role of Central Banks

Bank of Japan:

- Ramped up measures to ease corporate funding strains and pledged to buy unlimited amounts of government bonds to cushion blow from the pandemic
- Ramped up buying of Commercial Paper (CP) and Corporate Bonds
- Extended maturity of the bonds it accepts from 3yrs to 5yrs
- Raised the limit of CP it holds per entity to 50% from previous 25%, and to 30% for Corporate bonds

People's Bank of China:

- It would cut the reserve ratio requirement for smaller banks by 1 percentage point in two phases, this will release around 400 billion yuan (\$56.4 billion) into the banking system.
- Grace Period: Defaults resulting from the coronavirus outbreak will not be included in non-performing loans for a period of time

Role of Central Banks

European Central Bank:

- Launched a €120 billion stimulus package, decided on 12 March
- Deployed a massive stimulus package a 750-billion-euro (\$813 billion) package known as the Pandemic Emergency Purchase Programme (PEPP)
- Together this amounts to 7.3% of euro area GDP

Reserve Bank of Australia:

- A three-year funding facility for at least A\$90 billion to the country's banks at a fixed rate of 0.25%
- Government said it would buy A\$15 billion of residential mortgage-backed securities and other asset backed securities over the next 12 months
- Together, that would pump more than A\$100 billion into the economy



The Role of the IMF

The Fund has already received financing requests and inquiries from over **20** countries. More requests are expected, and the Fund is prepared to utilize the full range of tools at its disposal:

As a first line of defence, the Fund can deploy the Rapid Financing Instrument (**RFI**) and the Rapid Credit Facility (**RCF**)—to help countries with urgent BOP needs. These instruments could provide support in the order of **\$50 billion** to emerging and developing countries.

Emergency financing under the RCF and RFI can pave the way for new Fund-supported programs with larger loans, drawing on the IMF's **\$1 trillion** lending capacity.

The Fund already has **40** ongoing arrangements—both disbursing and precautionary—with combined commitments of about **\$200 billion**. In many cases, these arrangements can provide another vehicle for the rapid disbursement of crisis financing.



The Role of the IMF

The Fund's Catastrophe Containment and Relief Trust (CCRT) can provide the poorest and most affected countries with grants to pay off debt service to the Fund, freeing up vital resources for containment and mitigation of the pandemic.

The IMF will continue to play its role at the **center of the Global Financial Safety Net**, facilitating and coordinating support from other International Financial Institutions, Regional Financing Arrangements, and bilateral donors.

With the crisis evolving quickly, the Fund recognizes that speed is of the essence. To this end, planning is also underway to ensure that, if the crisis deepens, additional contingency measures can be activated rapidly.

How the IMF Can Help Countries Address Economic Effects of Coronavirus



Emergency Financing

The Rapid Credit Facility (RCF) and Rapid Financing Instrument (RFI) can provide quick one off financing to respond to health disasters.

Catastrophe Containment and Relief Trust

The IMF can provide debt relief grants for the poorest and most vulnerable countries to help address public health disasters.



Augmentation under existing programs

The IMF can rapidly augment existing programs to accommodate urgent needs arising from the coronavirus.

New financing arrangement

The IMF can provide support through a new loan under its existing standard facilities.



Capacity development

The IMF is closely engaged with the authorities of affected member countries, working to reprioritize technical assistance and training activities.



The Role of The IMF

Support through new financing arrangement under existing facilities such as Stand-By Arrangements (SBA).

- SBA framework allows the Fund to respond flexibly to countries' external financing needs-and to support their adjustment policies with short-term financing.

Continuous to support vulnerable countries through capacity development.

- Capacity development efforts help countries achieve their growth and development objectives and are an important contribution to countries' progress toward the Sustainable Development Goals (SDGs).

At a Glance: The IMF's Firepower

The IMF is able to lend about \$1 trillion to its member countries

THIS MONEY COMES FROM 3 DIFFERENT SOURCES:

First line of defense

Quotas

In normal times, the IMF uses its quota-based resources to finance lending.

\$440 billion
(SDR 320 billion)

Second line of defense

Multilateral borrowing arrangements

If the IMF believes that its quota resources might fall short—for example, in the event of a major financial crisis—it can activate the New Arrangements to Borrow (NAB).

\$196 billion
(SDR 143 billion)

Third line of defense

Bilateral borrowing agreements

As a third line of defense, the IMF has access to bilateral borrowing agreements to supplement quotas and NAB resources in case tail risks materialize.

\$344 billion
(SDR 250billion)*

* Data as of end-Feb, 2020

The Role of IMF

What is the fund doing to help countries during the Pandemic

- *Emergency financing*- This allows the Fund to provide emergency assistance without the need to have a full-fledged program in place.
- *Grants for debt relief*- The IMF Executive Board recently approved immediate debt service relief to **25** countries under the IMF's revamped Catastrophe Containment and Relief Trust (CCRT)
- *Calls for bilateral debt relief*- This would serve as a powerful, fast-acting initiative that will do much to safeguard the lives and livelihoods of millions of the most vulnerable people.
- *Enhancing liquidity*- The Fund has also approved the establishment of a Short-term Liquidity Line (SLL) to further strengthen the global financial safety.
- *Adjusting existing lending arrangements*- Augmenting existing lending programs to accommodate urgent new needs arising from the coronavirus.

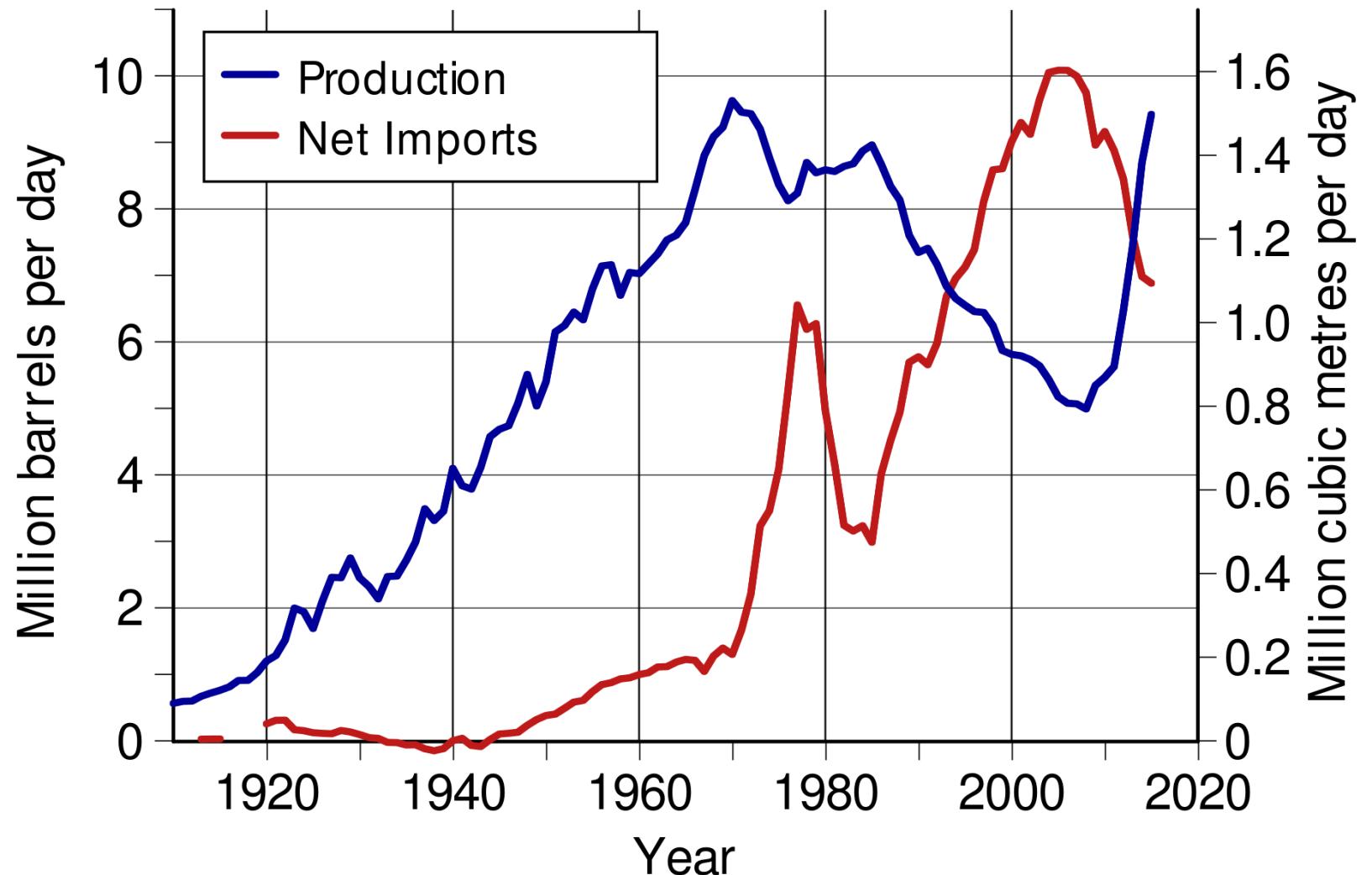
1970's Oil Crisis

- An oil crisis was seen in US due to 2 major reasons: (i)A peak in oil production in the 60's, resulting in more imports and (ii) increase in oil price imposed by the OPEC.
- Most notable crisis seen was in 1973 which resulted due to US supporting Israel in the Yom Kippur war.
- This caused the Middle east to increase the price on exports to the US and other supporting countries.
- Also in 1979, an energy crisis was prevailing due to the protests of oil workers in Iran.

1980's Oil Glut

- Due to the events that took place in the 1970's Oil Crisis, the price was at an all time high.
- This caused the oil demand to reduce greatly, thus causing an accumulation of oil(Also called an oil glut).
- Also due to the OPEC countries overestimating the demand, this caused high production being done, thereby reducing the prices to nearly half of what it was.
- This decrease in oil price benefitted oil consuming countries like US, saving it from the energy crisis.

U.S. Crude Oil Production and Imports



What can we learn from it?

- Currently due to the COVID-19 pandemic and the Russian-Saudi Arabia oil war, oil demand has reduced by so much that there is no place to store oil being produced. This drove the oil price to a negative value.
- This scenario is like the 1980's oil glut.
- As we have seen that the 1980's oil glut proved to be beneficial to the countries that reduced oil production, we can say that countries should reduce the oil production by a great amount until oil demand is restored. However oil production cuts are usually not done due to high maintenance costs and well damages.
- An agreement among oil producing countries to cut production will come into effect starting 8th May.
- As we have seen with the oil glut, as the prices reduced, demand slowly started to pick up and the oil prices started to increase. A similar scenario can be expected now, as the energy demand will start to increase. However like the oil glut, this may take some time due to the huge amounts of oil being stored.

Monetary Policy Changes

With economies cutting lending rate, and providing stimulus packages lending is going to be very cheap and savings rate may fall.

India

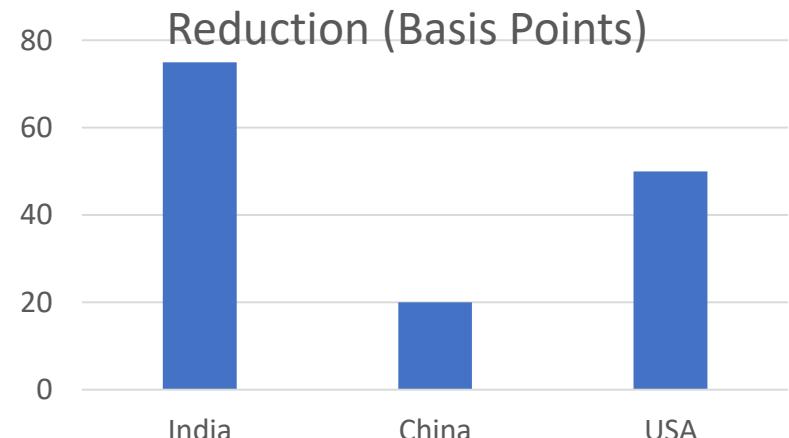
- Announced liquidity measures to the tune of 3.7 trillion Rupees (1.8 percent of GDP)
- The limit for FPI investment in corporate bonds has been increased to 15 percent of outstanding stock for FY 2020/21.
- RBI announced a second FX swap (\$2 billion dollars, 6 months, auction-based).

China

- Liquidity injection of RMB 3.27 trillion (gross) into the banking system via open market operations
- Policy banks' credit extension to micro- and small enterprises (RMB 350 billion)
- Expansion of re-lending and re-discounting facilities by RMB 1.8 trillion to support manufacturers of medical supplies and daily necessities micro-, small- and medium-sized firms

USA

- Commercial Paper Funding Facility to facilitate the issuance of commercial paper by companies and municipal issuers.
- Paycheck Protection Program Liquidity Facility (PPPLF) to provide liquidity to financial institutions.
- Lower the community bank leverage ratio to 8 percent. Provide extension transition for the Current Expected Credit Loss accounting standard.



Health Sector Expansion

- Owing to the exponential increase of COVID-19 cases in the world, a need to expand healthcare is essential.
- Common problems that are faced are:
 1. Protective equipment shortage for doctors and other healthcare professionals
 2. Number of critical care beds
 3. Number of ventilators available
 4. Availability of masks

Investments

- In the United States, a \$2 trillion was announced out of which \$274 billion is provided to the state and local governments towards direct COVID-19 response and \$100 billion is being provided to healthcare providers.
- In India, a Rs. 15,000 crore ‘India COVID-19 emergency response, health system preparedness package’ has been announced, which is to be given in 3 phases. Rs 7,774 crore, has been provisioned for COVID-19 Emergency Response.

Measures Taken

- In order to increase the number of beds available, countries like India and France have made the railway coaches to be converted into critical care beds. Indian Govt. estimates to have 20,000 extra beds this way.
- For meeting the demands for masks and other protective equipment, The Indian Govt. has planned to import the extras from China.
- Hydroxychloroquine, an antimalarial has been found to be a possible cure for COVID-19. The Indian Govt. has placed orders locally from Zydus Cadila and Ipcा Laboratories for production. They plan on using 10 crores of the tablets and exporting the rest to various countries in need of it. It costs Rs. 3(approx.) per tablet.
- After facing delays in the delivery of rapid testing kits from China on April 8th, the Indian Govt. had cleared made-in-India kits. Initially, the ICMR had given manufacturing approval to HLL Lifecare Ltd. and Voxtur Bio Ltd. It is still in development with many companies facing issues such as availability of positive COVID 19 samples which is passed on by ICMR and low accuracy of the testing kits.

'India COVID-19 emergency response, health system preparedness package'

- The 'India COVID-19 emergency response, health system preparedness package' is a 3 phase Rs.15,000 cr package announced by the Indian Govt.
- The objectives of the package include mounting emergency response to slow and limit COVID-19 in India through by development of diagnostics and COVID-dedicated treatment facilities, centralized procurement of essential medical equipment and drugs required for treatment of infected patients, strengthen and build resilient National and State health systems to support prevention and preparedness for future disease outbreaks, and setting up of laboratories.

Enhancing Public Investments

The investment climate across the globe takes a swing during such pandemics. Due to COVID-19 scenario, investments into Indian real estate sector has declined **58%** from a year ago to **\$712 million** during the quarter ended March. Total investments in financial year 2019-20 witnessed a decrease of **13%** at **\$4.26 billion** which is the lowest for four years, showed a JLL India report. Enhancing public investments one way or the other, is a key step in the economical recovery of a country.

Economies recovery from the COVID-19 pandemic:

One of the effective options is Foreign direct Investment (FDI) in digital economy. FDI is considered by experts as the largest source of finance for developing economies. The World Economic Forum's new Digital FDI initiative seeks to identify policies, regulations and measures that governments can adopt to attract such investment. As we know that the digital economy hosts a variety of business models. If governments with their policies, actively promote their digital economy, they can attract investments. Southeast Asia is a notable example where policies and measures have encouraged investment, such as the billions being invested in Gojek and Grab, ridesharing and delivery firms competing for market share in this region. Success in attracting foreign investment in digital infrastructure can significantly benefit small and medium enterprises. For example, Visa invested in Nigeria's Interswitch, a payment switch and processing company, making Interswitch a unicorn overnight.

Personal Investment



With most of the stocks taking a downhill, cryptocurrency like bitcoins are great options for private investments. If you compare this with the Stock Exchange of Thailand(SET Index) Thai stocks have been decreasing since the start of the year, and after BTC has recovered, Thai stocks are still roaming around their rock bottom prices. Its hard to comment on their recovery. We believe that digital assets can act as an alternative financial instrument, especially in times of crisis. Cryptocurrency as an asset class has outperformed others like stocks, bonds and commodities since the rout began on February 20 as punters believe that this could remain untouched by the Coronavirus inflicted pain on economies.

Rich Dad Poor Dad author Robert Kiyosaki has repeatedly said that the dollar is dead and people should invest their stimulus money in bitcoin. Virgin Galactic chairman Chamath Palihapitiya has long vouched for allocating at least 1% of portfolios in bitcoin.

Meet the Team



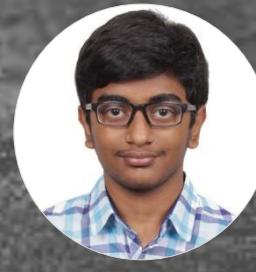
Tejas
Shajapurkar

*Project
Leader*



Mayank Jha

*Project
Leader*



Sudarshan
Kannapadi

*Project
Manager*



Nishanth
Chandaran

*Project
Manager*



Yash
Shroff

*Project
Manager*



Jamshidh

*Project
Manager*