CORONA VIRUS

AND ITS IMPACT ON THE US ECONOMY

May 2020 , Prasiddha Rajaure

ABSTRACT

Rising effects of the Corona Virus have been causing increasing calamities in the global economy. From manufacturing to service, there are no industries that remain unaffected by the virus. The purpose of this paper is to address the ways by which the Corona Virus has affected various aspects of the US economy, what changes have occurred since the virus first struck and how could it possibly act as a hindrance to the US economy in the future. Using the Ideas, Editorials and Opinions analysis, this study inspected and evaluated the incidence of COVID-19 in the United States from late December 2019 to early May 2020, and the possible consequences the virus might have in the upcoming days. Coronavirus didn't just infect humans but also the economic sectors. The sectors concerning leisure and hospitality were found to be affected the most due to the virus, followed by employment services and then transportation. It could take until 2023 for the nation to fully recover from the effects of the virus. This study definitely answers the questions regarding the extent to which the US economy has been affected by the virus and the afflictions that could be caused in the days to come. Further studies are needed to establish effective solutions that could help to recover from the adversities caused.

Keywords: corona, unemployment, reserves, monetary policy, fiscal policy, household

INTRODUCTION

Since the outbreak of the lethal coronavirus, the world has continually been suffering and has surrendered to the wrath it possesses in the form of lockdowns globally. The difficult calculation for governments is trading off between the lives of people who will die from the coronavirus and the economic damage caused to the nation.

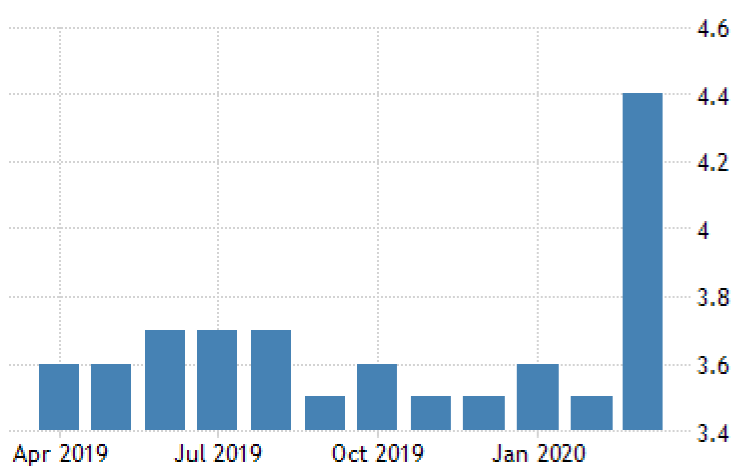
Virus that originated in bats and pangolins showcased a gradual transmission to humans in Wuhan, China during late December 2019. Since then, the virus has mostly spread through person-to-person contact. Panic and alarm rose amidst the citizens as several cases of unusual pneumonia had been identified in Wuhan, a port city of 11 million people in the central Hubei province, on December 31, 2019. On January 7, officials announced they had identified a new virus, according to the WHO. The novel virus was named 2019-nCoV and was identified as belonging to the coronavirus family, which included SARS and the common cold.

Coronavirus is common and spread through being in proximity to an infected person and inhaling droplets generated when they cough or sneeze, or touching a surface where these droplets land and then touching one's face or nose.

Proving to be hazardous in the health sector already, the COVID-19 has not failed to devastate the global economy too. As the duration of lockdowns keeps on increasing relative to the expanding transmission of COVID-19 worldwide, various economies have been paralyzed, unemployment keeps on increasing and factories are shut bringing manufacturing to a halt. The US economy lost 701,000 jobs in March (worst since the depths of the Great Recession in March 2009), according to the Labor Department's report. The unemployment rate shot up to 4.4%, from a near 50-year low of 3.5%. It was the highest unemployment rate since August 2017 and the largest single-month change in the jobless rate since January 1975. This is much steeper than the 100,000 loss consensus estimate from economists. This demonstrates the unpredictable impact of the virus on the economy. Economists state that they've seen nothing like the current crisis since in the last seventy-five years, since the second world war.

Following this, one of the worst predictions came from the St. Louis Fed, which has predicted that unemployment in the US could rise above 30% for example. If that happens, that will be higher than in the Great Depression. The unemployment rate peaked at 24.9% in 1933, according to historical estimates from the Bureau of Labor Statistics.

Stifel chief economist Lindsey Piegza is also forecasting peak unemployment of about 30%, saying in a report that "as we continue to keep the economy closed, more than 45 million Americans are expected to lose their jobs."



Source: TradingEconomics United States Unemployment Rate

In this paper, we are going to discuss the COVID-19 and its impact on the US Economy. We are going to compare the COVID-19 to the 1918 Flu Pandemic (otherwise known as the Spanish Flu), analyze the economy during these cases of flu and compare the current state of the economy to the economic recessions and economic depressions in the past.

The foremost solution put forward to control the spread of the COVID-19 is social distancing. But is it worth practicing and does it suit the economy?

The practice of Non-Pharmaceutical Interventions(NPIs) such as social distancing, closure of schools, theatres, and churches, ban on public gatherings and funerals, the quarantine on suspected cases, and restrictions on business hours were practiced during the 1918 Flu Pandemic as well. It was found that cities that implemented NPIs early suffered no excessive economic effects over the medium term. On the contrary, cities that intervened earlier and more aggressively experienced a relative increase in real economic activity after the pandemic subsided. Altogether, findings by the World Economic Forum suggest that pandemics can have substantial economic costs, and NPIs can lead to both better economic outcomes and lower mortality rates. This thus, means that Non-Pharmaceutical Intervention(NPI) actually is an effective way of controlling the transmission of the virus, along with supporting the deterioration of the economy.

However, during the current outbreak of the coronavirus, when the US already has more fatalities than china(where the illness was first reported), it still hasn't performed nationwide lockdown. As of 31st March 2020, out of the 50 states in the United States, only 32 states have taken steps to stay at home. As more and more of the population spend time in their houses, there will be less labor force engaged in production. This is the main reason for the stagnant economy of the United States currently.

Unemployment and Exchange Rates:

According to the Phillips Curve, we know that when the rate of unemployment increases, inflation decreases. This might be one of the reasons the US is able to balance the value of USD in the Foreign Exchange market. In fact, the dollar seems to be appreciating against emerging market currencies.

Relative to the past, and in particular the 2007-2008 Great Financial Crisis (GFC), the recent prompt activation of central bank Foreign Exchange swap lines appears to have tempered dollar movements. The figures below display the recurrent pattern of dollar movements during the outbreak of COVID-19.

Figure 1 plots the evolution of key exchange rates against the dollar, indexed relative to 25th February 2020, when the US yield curve inverted (measured using the difference between 10-year and 1-year US zero-coupon government bond yields). For a couple of weeks after the inversion, the US dollar lost value against the euro and the Japanese yen – while sterling remained broadly stable – and EM currencies depreciated somewhat. After that, from around the second week of March, the dollar strengthened markedly against all currencies to 19th March, when the Federal Reserve announced the establishment of temporary swap lines with a range of central banks—in addition to the extensions to its pre-existing swap line arrangements announced on 15th March.

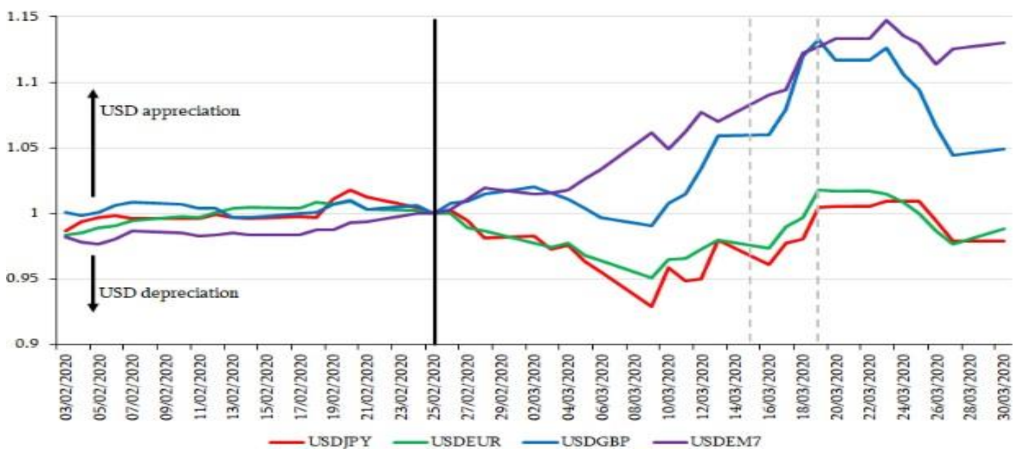
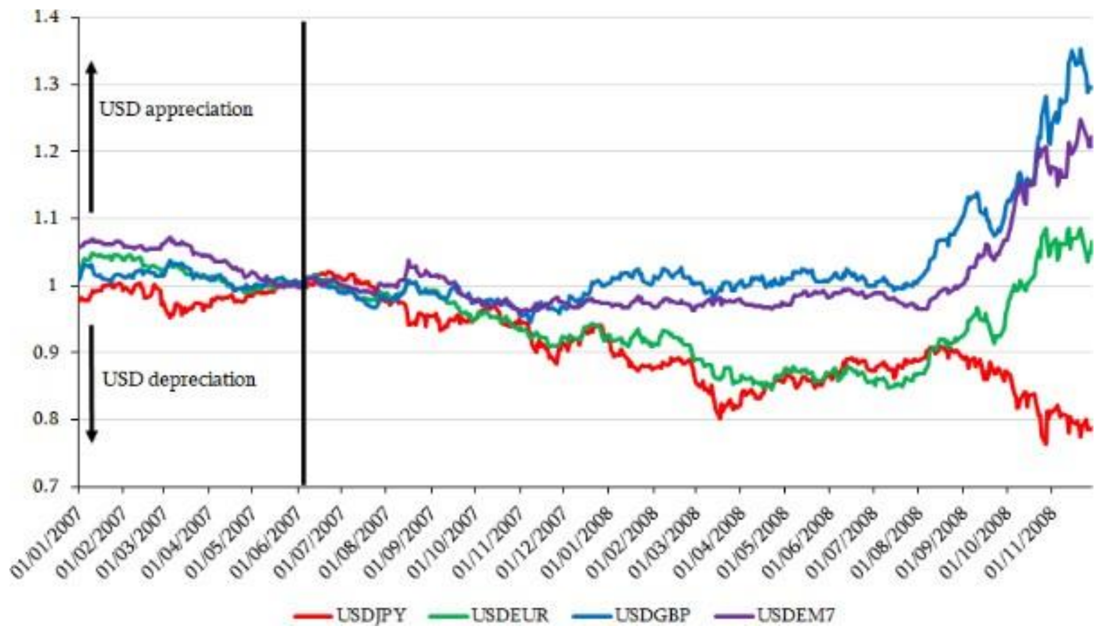


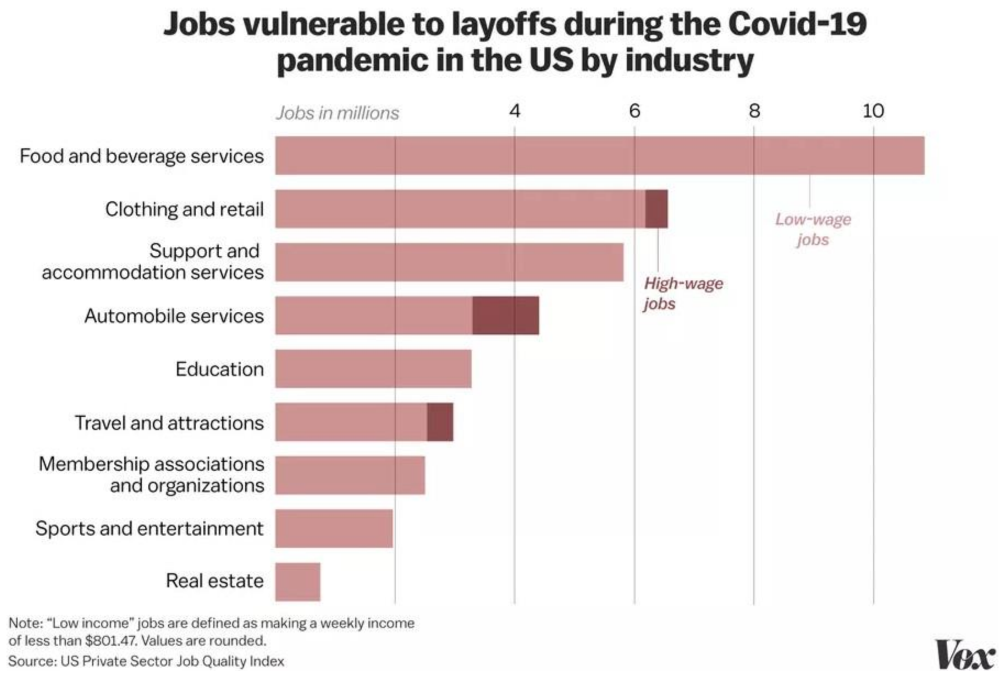
Figure 1 COVID FX: Exchange rate dynamics around 25th February 2020 US yield curve inversion
Note: Vertical solid black line denotes the date of the US yield curve inversion, on 25th February 2020, where yield curve slope defined as the 10 minus 1-year yield zero-coupon yield. Exchange rates normalized relative to this date. Vertical dashed grey lines denote dates of Federal Reserve announcements to (a) extend the maturity of its existing swap line agreements with the Bank of Canada, Bank of England, Bank of Japan, ECB and SNB on 15th March 2020 and (b) establish temporary swap line arrangements with central banks in Australia, Brazil, Denmark, Korea, Mexico, Norway, New Zealand, Singapore, and Sweden on 19th March 2020. USDEM7 a PPP-weighted average of 7 EM currencies: Brazil, India, Indonesia, Mexico, Russia, South Africa, Turkey. Dates: 3rd February 2020 to 30th March 2020.
Data Source: Datastream.

The overall pattern in Figure 1 is not new and, in Figure 2, we illustrate that a similar pattern emerged during the GFC. Preceding that, the US yield curve was inverted for a protracted period of time, from June 2006 until June 2007. Following the end of this period of inversion, FX dynamics followed a pattern that, qualitatively, is very close to Figure 1. The euro and, to a lesser extent sterling, first strengthened relative to the dollar after the end of the inversion, before strong dollar appreciation in the second half of 2008. Relative to Figure 1 and the current COVID crisis, however, the FX patterns from the GFC are in comparative ‘slow motion’ (it did not feel that way at the time): the time scale for Figure 2 is months, but days in Figure 1. In the COVID-19 crisis, the dollar started to appreciate within two weeks of the initial yield curve inversion. In 2007-2008, it materialized after six months.

Figure 2 Exchange rate dynamics around the end of the 2006-2007 US yield curve inversion



This risk aversion applied by the USA seemed to work as the USD placed itself as the strongest currency in the FX market (as of April 5, 2020) while the other currencies such as the GBP, CAD and JPY seemed to be trailing behind. The main reason for the US being able to apply the risk aversion is because it is the *de facto global currency* and the global reserve currency(Global Reserve is the large quantity of currency maintained by central banks and other major financial institutions to prepare for investments, transactions and international debt obligations, or to influence their domestic exchange rate. A large percentage of commodities, such as gold and oil, are priced in the reserve currency, causing other countries to hold this currency to pay for these goods), more than 61% of all foreign reserves and approximately 40% of the world’s debt are denominated in US dollars. This great significance of USD leads countries to prioritize it amongst all other currencies.



Production, Pricing, and Revenue:

During a global crisis such as the COVID-19 outbreak itself, it is obvious for the manufacturing industries to decline their production. Similar is the case currently with the United States as well. Production from most industries is declining rapidly while some are getting chances to flourish as well. However, compared to the ones declining, the revenue generated by the ones flourishing is minimal. The industries which are hit hardest are those which are related to the consumers directly, that may be retailing, entertainment or hospitality, many of which have simply been locked down. Moreover, many of these companies will have high costs which still need to be kept meeting. This means such companies have lots of costs continuing and absolutely no revenues, which is the worst possible outcome. In order to cover these shocks the House of Representatives if the United States passed a historic stimulus package known as the Coronavirus Aid, Relief and Economic Security or "CARES" act on March 27, which contained an unprecedented $2.3 trillion(around 11% of the GDP) in total financial relief for businesses, public institutions and individuals hit hard by the COVID-19 pandemic. The package also includes a substantial additional $600 per week on top of existing state benefits to help the jobless navigate the crisis. As of April 9, more than 16 million people filed their weekly jobless claims. This means that the burden on the government to provide the benefits to every such individual is very heavy and could worsen the current economic condition even more. Accordingly, economists have come down to estimate that in 2020, the US GDP is to be down by 3.3%, the Eurozone GDP down by 4%, and the UK GDP down by 3.9%. With such a decline in GDP, the US revenue would decrease drastically and might get difficult for the country to keep up with the increasing needs of its citizens(unemployment benefits, transfer payments, business loans etc.). During such situations application of Nudge Theory and other aspects of behavioral economics could be handy to manipulate the choice architecture of consumers, henceforth handle the current economic situation.

As the terror caused by the COVID-19 outbreak caused panic amongst the people, they began buying more of various products in the supermarket and ended up with a stock in their houses. A report by **Nielsen** released on March 2 showed oat milk sales rising by 305.5% over a one week period, topping the shelf-stable consumer packaged goods category that month.

During the mid-March period, the demand for orange juice(believed to be beneficial for preventing COVID-19) spiked by 40%, ending up at a price of $1.17 per pound. Later on, however, the Washington Law Firm sent warning letters to the Citrus Department for claims about the ability of products to treat or even prevent the coronavirus. Similarly, in Chicago, the price of wheat has risen 15% since mid-March and reached as high as $5.72 per bushel. Major food distributors including US Foods and Performance Food Group are begging the Treasury Department to prioritize loan applications from their sector as companies shift operations to supply retailers. Furthermore, food wastage has become a bigger issue as traditionally big, bulk buyers-like college dorms, Disney, and other theme parks and restaurant chains-suddenly stop receiving deliveries. As a result, millions of gallons of milk are being dumped, and farmers have no alternative but to turn fresh vegetables into mulch. Coast-to-coast shutdowns of businesses and stay-at-home orders in order to contain the new coronavirus pandemic took their toll on US consumer prices in March, sending them down by the most in five years. The hit to overall consumer demand with more than 16 million people thrown out of work so far is likely to persist, suggesting prices will remain weak for some time to come. Airlines are operating at a fraction of their pre-crisis capacity and national hotel chains have largely shut their doors due to the absence of travelers. As a result, airline fares plunged 12.6% between February and March, and hotel lodging costs tumbled 7.7%. For both, it was the largest drop since the Bureau of Labor Statics began tracking them. Auto dealer showrooms were widely affected by the business closures, and the spike in unemployment put a new vehicle purchase beyond the reach of millions of American consumers. As a result, new passenger vehicle prices are dropping fast. In March, new car prices dropped by the most in nearly three years and light truck prices skidded by the most since August 2009. Major automakers such as Ford, Toyota, and others are continuing with plans to restart US vehicle production in April. The automakers would be allowed to reopen plants despite Trump's extension because it is a guideline, not an order. Ford announced plans to restart production at "key" US plants on April 14, a week after plans to partially resume operations at a plant in Mexico. Fiat Chrysler said its Michigan headquarters, plants in the US and Canada, and construction projects "are intended to remain closed until April 14." Toyota, according to company spokesman Victor Vanov, said that the president's extension has not changed its plans to resume production at its plants on April 20. Honda confirmed that its plan to restart production remains April 7 and for Nissan, it remains since April 6.

The United States faced a staggering shock as the number of jobless claims was equivalent to about 10% of its workforce. This is not only a shock for the current stage but a shock for the future as well. As the jobless claims skyrocket, the number of benefits to be provided increases, while the income tax to be received ride a steep downward slope. Furthermore, as the due date for filing federal income tax returns and making federal income tax payments due on 15 April 2020, is automatically postponed to 15 July 2020 with no additional interest or penalties, the period the United States has to depend on the national reserves increases, adding a heavy burden on the reserves. According to a report by McKinsey & Company, the United States' and Eurozone's economies could take until 2023 to recover from the impact of the COVID-19 crisis. If the public health response, including social distancing and lockdown measures, is initially successful but fails to prevent a resurgence in the virus, the world will experience a "muted" economic recovery, says McKinsey. In this scenario, while the global economy would recover to pre-crisis levels by the third quarter of 2022, the US economy would need until the first quarter of 2023 and Europe until the third quarter of the same year. However, if the public health response is stronger and more successful - controlling the spread of the virus in each country within two-to-three months - the outlook could be more positive, with economic recovery by the third quarter of 2020 for the US, the fourth quarter of 2020 for China and the first quarter of 2021 for the Eurozone.

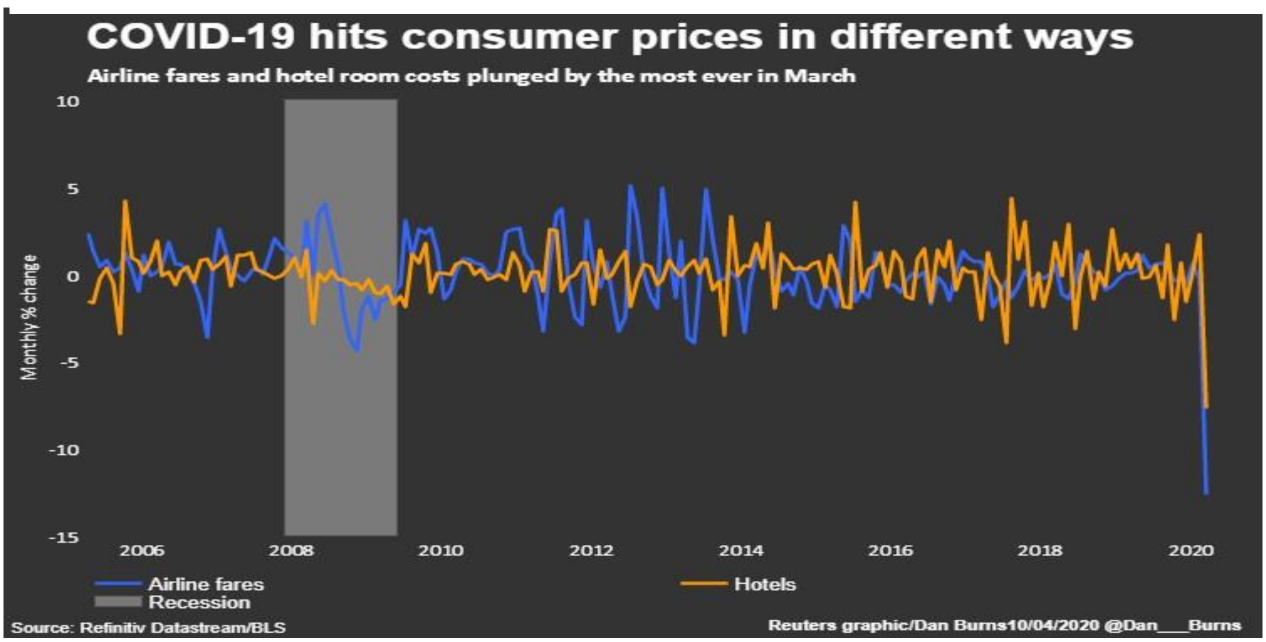
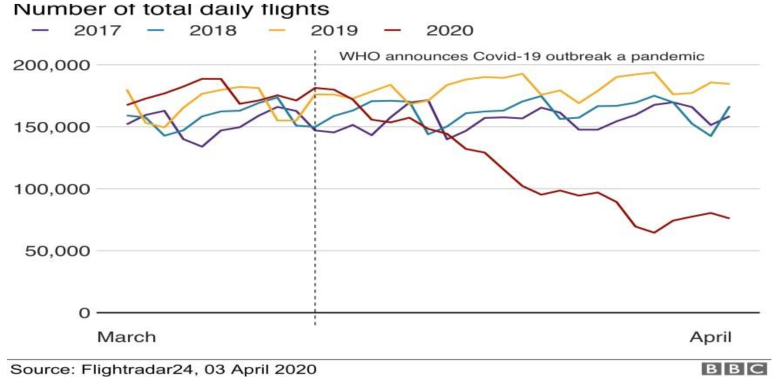


Fig. Change in airline fares due to COVID-19 outbreak



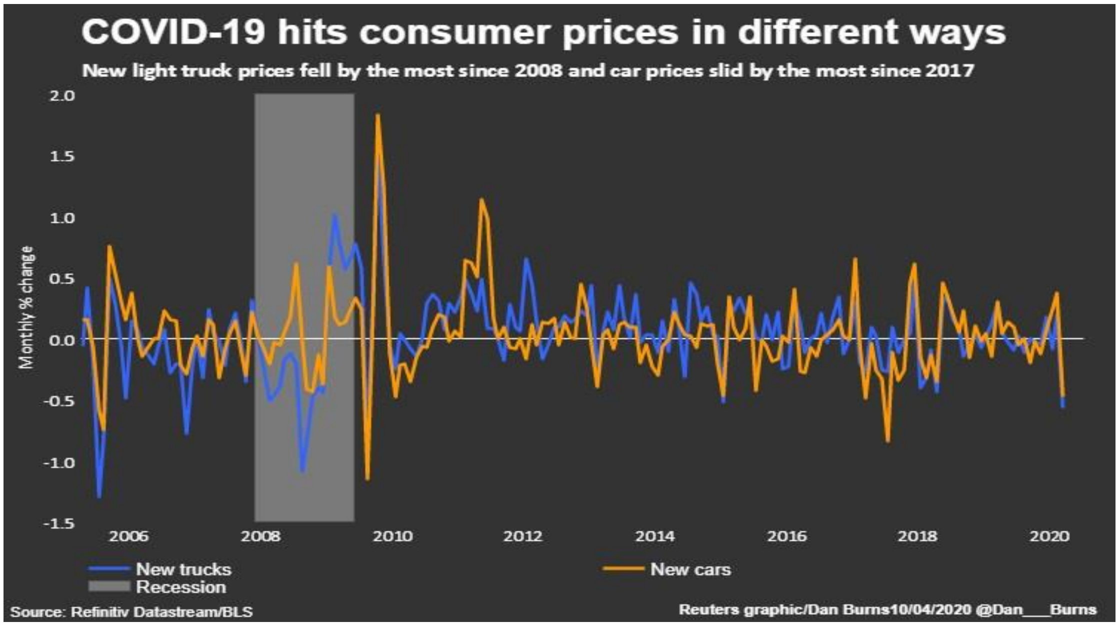


Fig. Change in auto-vehicles prices due to COVID-19 outbreak

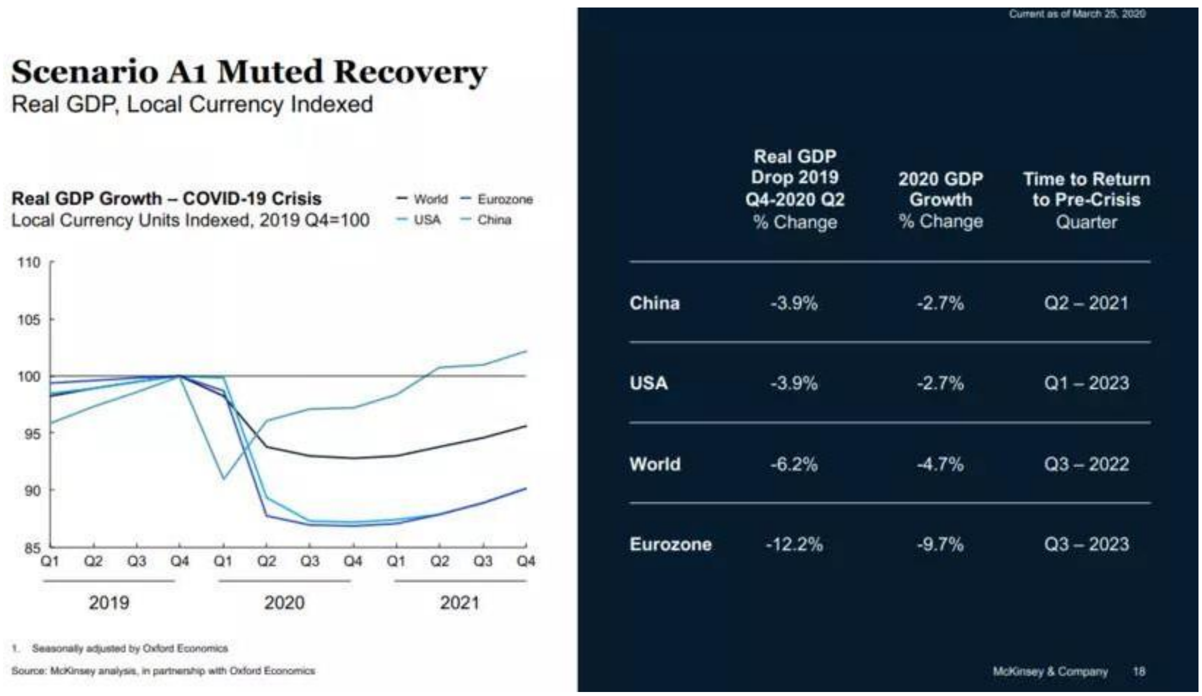


Fig. Effect on GDP due to COVID-19

The modern economy relies on goods and materials crossing borders. When trade does not take place, production around the world is endangered. The coronavirus caused a break in the biggest link in this vast global supply chain. Ultimately, long times will be taken to rebuild the supply chain and continue the smooth flow of the economy. Current estimates by economists reveal that a year-long lockdown would cost the US and the Eurozone perhaps a third of their

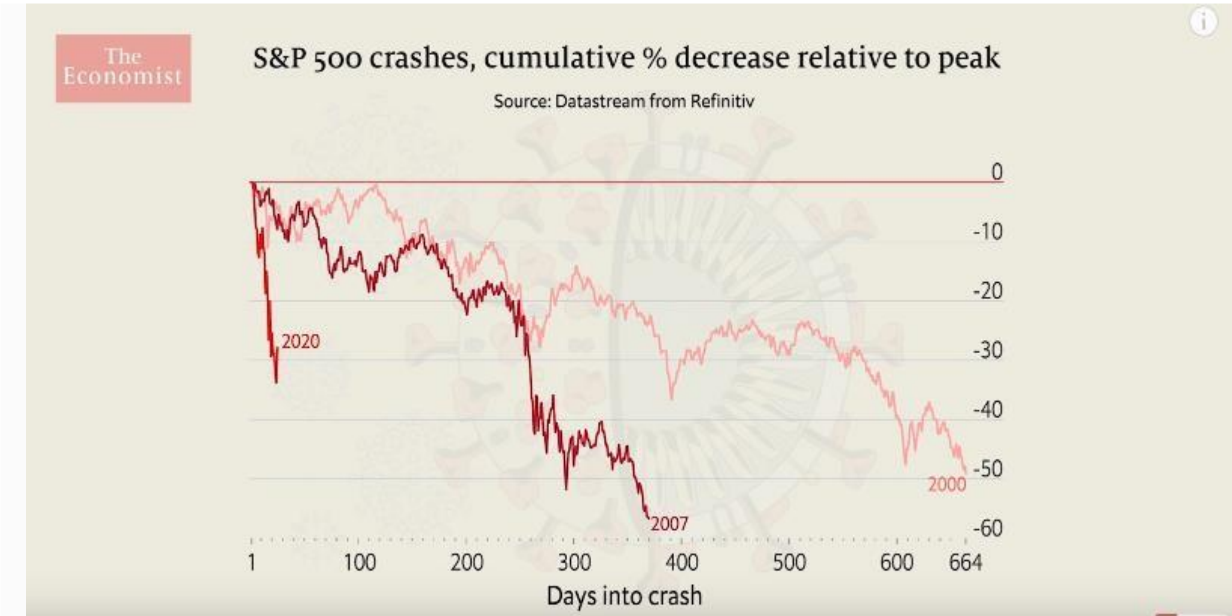
GDP. Models looking into the US suggest that ending lockdowns would lessen that damage, but would lead to around one million extra deaths.

Monetary and Fiscal Policies:

It is no wonder that the COVID-19 outbreak has caused chaos all over the globe, which includes economically powerful nations such as the UK, the USA, or China. The United States, in order to stabilize the economy from any intense casualties that may be caused in this crisis, has mobilized specific monetary and fiscal policies currently. The core problem the economy is likely to face right now is not a lack of liquidity, but a temporary halt of activity due to health restrictions and a fundamental question of solvency for many firms and individuals. One solution brought up by the US Fed and the chair of the Fed Jerome Hayden Powell is that the interest rates will remain near zero until the economy is back on track and inflation moves back to two percent. This has led most observers to anticipate rates near zero for many years to come. Furthermore, due to this same anticipation, the long term treasury rates will have fallen to unprecedented lows. Similarly, several liquidity facilities have been directed towards a different part of the economy as well. The Fed has implemented programs to provide medium-term(up to 4 years) financial support to non-financial corporate. The US Federal Reserve has also begun sizable purchases of assets along with injections of liquidity into financial markets. These actions are important but unlikely to shield the economy from widespread damage. First, the shutting of the businesses and limits on travel has caused the economy to contract regardless of policy. Second, as the Federal Reserve has already lowered rates to zero, it is out of conventional ammunition to stimulate the economy, leaving it to use alternate tools like asset purchases or forward guidance. Reserve typically stimulates the economy by making it easier and less expensive to borrow, encouraging firms and consumers to accelerate investment and purchasing decisions. In this case, the uncertainty about the eventual outcomes of the COVID- 19 pandemic and the economic fallout has made it very difficult for firms to borrow regardless of rates (the credit risk may keep banks from lending), and more importantly, the option value of waiting to see the resolution of the pandemic has slowed any investment or major purchase decisions. This is why economists are afraid that the monetary tools are not sufficient to sustain the economy alone. However, the implementation of various fiscal policies might cushion the downward shock as much as possible and set the conditions for the economy to bounce back after the restrictions on economic activity are removed. Fiscal policy can be used to guarantee loans and provide direct support to firms that are in trouble to prevent systemic problems in order to maintain their payrolls. In addition, the government can distribute funds directly to households to ensure that families have a financial cushion and that there is adequate purchasing power in the economy as households whether social distancing and when restrictions are lifted. Finally, the federal government can provide financial support to states. As states have limited capacity to borrow, and their costs continuously grow up(due to health and public safety measures) but revenues go down (due to lower tax returns), they are often forced to cut spending. Federal support can shore up state spending, especially as states are on the front lines of the public health crisis. Over time, the emphasis of fiscal policy should shift toward increasing spending and resources in the economy to restart economic activity. For this, the fiscal package should be large enough to address immediate needs and persist over the longer-term through public-health based and economic-condition-based triggers. At present, fiscal policy responses are primarily aimed at cushioning the blow to households, states, and firms. That alone will likely require the largest single fiscal policy package ever (likely well in excess of a trillion dollars, but the potential need is possibly much larger). One way to scope a plan appropriately would be to pass everything that is clearly needed now and allow subsequent payments (to households, states, and firms) to vary with health and economic conditions over time. Such an open-ended commitment could be massive, but if appropriate triggers for later spending are put in place, and those thresholds of economic or health distress are crossed, then it would be appropriate to have such a large package. Throughout the month of March, any potential response mentioned has seemed too small a week later. As such, it would make sense, to begin with, a very large package and allow for continual fiscal activity if conditions warrant. While the budgetary impact may be substantial, at present, the United States government borrows at historically low rates. Markets do not doubt US government solvency, and any longer-run budget concerns should be addressed after the current crisis is past.

Stock Market, Lending, and Reserves:

The stock market has been all over the place amid the coronavirus crisis. Major indexes plunged as the gravity of the situation began to take hold in February and March, and stocks became pretty volatile. The stock market right now is signifying underlying turmoil in the economy. As stocks plunged at the takeoff of the crisis in the US, a lot of investors appeared to have pulled out their money and parked it in cash, and uncertainty has created an enormous amount of volatility. Over the past two months, the world's biggest stock markets have turned red. According to The Economist(monthly magazine), the stock market falls like that because investors suddenly have to recalculate the future for the economy and corporate profits and adjust their figures sharply downwards. These investors tend to sell assets that are the most liquid, which often are the big companies in the S&P 500. Hence, the S&P 500 had its quickest bear- market decline in history due to the COVID-19 outbreak. Furthermore, when the dot-com bubble burst in 2000, it took almost two years for the S&P 500 to drop by 49%. Similarly, 2007 to 2009 financial crisis led S&P 500 to a fall of almost 60% in just over a year. The corona virus pandemic has already seen the market fall by a third in just one month, meaning that in the worst case, the pandemic might be a lot more vulnerable than the crises in the past.



Economists explain the reason behind the current curve to be the spontaneous shock. In the financial crisis, there was quite a lot leading up(it was 18 months of bad news), but this genuinely is a bolt from the blue where the investors were not pricing the risk of a pandemic at all. Additionally, the governments had never in the past imposed the kind of lockdown on a global economy that they have this time. Therefore, this is not something that people had in their models. Fed has taken a huge range of additional actions to ease strains in short-term money markets and also in corporate and municipal bond markets. Fed has restarted most of the emergency lending facilities that they put in place in 2008 and has invented some new lending facilities to deal with problems that weren't so important back then. JPMorgan Chase is raising borrowing standards for most new home loans as the bank moves to mitigate lending risk stemming from the novel coronavirus disruption. From April 14 onwards, customers applying for a new mortgage are required to have a credit score of at least 700 and make a down payment equal to 20% of the home's value. This change highlights how banks are quickly shifting gears to respond to the darkening US economic outlook and stress in the housing market, after measures to contain the virus put 16 million people out of work and plunged the country into recession.

Since the coronavirus outbreak, the price of every vital commodity has fallen. It has led to the price of oil below $50 a barrel. Furthermore, the demand for copper and even iron is going down. It is obvious that the economy is going through a recession. An important question currently is whether the recession is going to be "V-shaped", "U-shaped" or even worse "L-shaped". Most experts talk of a "V-shaped" recovery once quarantines are removed and spending and production resume. This would be a quick rebound to normalcy after a sharp fall but the last few weeks have cast doubt on this estimation, which explains the rapid selloff. If the outbreak extends into summer, that's a significant loss of demand that can't be made up later and supply chains will take longer to repair. On the other hand, former chair of the Federal Reserve, Janet Yellen explains that if the lockdown ends reasonably soon and the monetary and fiscal supports that are now in place enable households and businesses to resume activity, we are likely to experience a "V-shaped" recovery with positive growth by the fourth quarter of the year. But she explains that to be the best-case scenario and rather, the damage may occur that could lead to a prolonged recession. Even the president of Minneapolis Federal Reserve, Neel Kashkari, expressed that until an effective therapy or vaccine is not discovered, it is hard to experience a "V-shaped" recovery.

Stocks rose on April 9, coming off as one of their best weeks ever. The DOW rallied nearly 13% while the S&P 500 was up 12%, its best weekly performance since 1974. They were just less than 20% off their February record highs. Tech-heavy Nasdaq Composite bucked the broader market's negative trend, rising 0.5% to 8,192.42 as Netflix jumped 7% to a 52-week high on April 12. This rise in stocks was possible due to the massive stimulus from the Federal Reserve. It was after the Federal Reserve announced it will provide an additional $2.3 trillion in loans to support households, businesses and local governments. Before this rise, DOW Jones Index had experienced its worst first quarter ever.

The massive fiscal and monetary response by governments to manage and mitigate the financial effects of the pandemic has triggered inflationary concerns among some investors. As a hedge against inflation, gold is still viewed by many market participants as the "currency of last resort, according to S&P DOW Jones Indices.

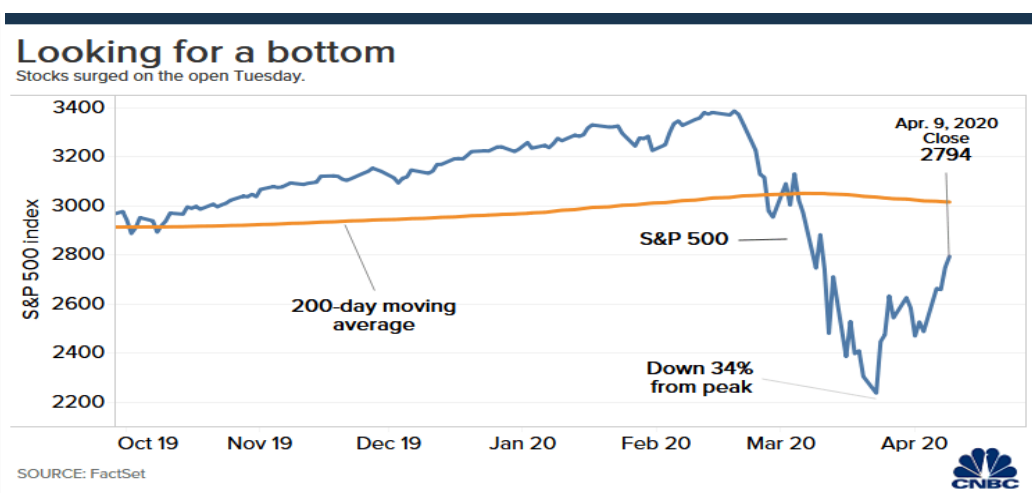


Fig. Stock Index affected due to COVID-19

Furthermore, one of the greatest changes that have taken place not only in the United States but in the overall global economy is the price of oil and petroleum, agreements to cut oil production, and changes in the global oil demand. Oil prices have dropped more than 50% since early March as the coronavirus outbreak has hit global fuel demand. The main reason for the price of oil to decline sharply was the oversupply concerns pressuring the prices. Brent crude fell to $22.58 a barrel on March 30th while US crude finished at $20.09 a barrel, their lowest since 2002. At this time, US oil had already lost 68% of its value since the recent peak of $63.27 a barrel on January 6. As Saudi Arabia couldn't convince Russia to perform production cuts initially, oil prices continued to fall by more than half just in March. However, later on, Saudi Arabia and Russia agreed to record oil production cuts on April 12 in an effort to revive the market from a debilitating corona-induced slump. Members of OPEC and their allies, including Russia and Mexico have agreed to cut oil production by 9.7 million barrels a day in May and June(the deepest cut ever agreed to by the world's oil producers). This will amount to 10% of the world's normal supply of oil. The group will steadily ramp up production until the agreement expires in April 2022 and the dangers of COVID-19 minimize and start to disappear. While historic, the deal yet is unlikely to solve the demand crisis. This is because traders feared that an OPEC deal to slash global supplies by 10% would not offset a historic drop.

Oil prices spiked higher early April 13, before falling back to trade little changed. Brent, the global benchmark, was last down 0.3% to $31.38 a barrel. US oil prices were flat at $22.77 a barrel. Despite recent gains, prices are still below where they were trading earlier this year- above $60 a barrel. Initially, Mexico had proposed to cut its oil production by 400,000 barrels a day, but Mexican President Andrés Manuel López Obrador, later on, said his country would cut its output by only 100,000 barrels per day. While the amount was far less than what was proposed initially, López Obrador added that US President Donald Trump offered to cut production by 250,000 barrels a day to compensate for Mexico which Donald Trump confirmed as well. Additionally, he mentioned that the US leadership in this would prove to be useful to save about 2 million jobs in total, both directly and indirectly.

Gold prices seem to be increasing rapidly due to two main factors. The first being the safe-haven buying resulting from global uncertainty, tied to the shutdown in China, the ongoing US-China trade war, and Eurozone weakness. The second factor is the low to negative yields on high-quality government bonds. When funds have to pay for lending to governments, the attractiveness of gold increases, especially when the cost to hold is at a historical low. While gold performed well in the lead-up to the stock market crash — reaching a seven-year high of US$1,684 per ounce on March 6 — when it became clear on March 12 that the US economy would take a serious hit, gold began to fall at the same time as equities. Gold performed in a fashion similar to the 2008 financial crisis, in that funds with positions in gold in the futures markets were forced to sell their gold to meet margin calls, raise cash and buy US treasuries. From the week beginning March 23, however, the gold price rebounded at the same time as a bear market rally in US stocks. Since then, gold is back up above the highs before the stock market crash, with the Comex price reaching US$1,752.6/oz on April 7 on an intraday basis. Meanwhile, silver, despite record retail investment, has sunk to its lowest price in 11 years due to low industrial demand. Looking at the platinum group metals, or PGM, lockdowns in South Africa and plummeting global auto sales have severely shocked prices. This disruption has kept an uneasy balance, however, and has not yet fundamentally changed the price trajectories of upward for palladium and rhodium, and downward for platinum.

The coronavirus has shocked commodity prices

Commodity	Price	Unit	Price 01/02/20	Price 03/31/20	% change
Iron Ore	Platts 62% IODEX	US$/dmt	93	84	-10%
Copper	LME 3 Month	US$/tonne	6,166	4,797	-22%
Lead	LME 3 Month	US$/tonne	1,904	1,712	-10%
Zinc	LME 3 Month	US$/tonne	2,299	1,868	-19%
Nickel	LME 3 Month	US$/tonne	14,075	11,235	-20%
Gold	LBMA PM	US$/oz	1,527	1,609	5%
Silver	LBMA	US$/oz	17.93	13.93	-22%
Platinum	LBMA	US$/oz	987	727	-26%
Palladium	LBMA	US$/oz	1,946	2,307	19%
Rhodium	Johnson Matthey London 0900	US$/oz	6,050	10,700	77%
Cobalt	LME 3 Month	US$/tonne	32,750	30,000	-8%
U3O8	Nymex	US$/lb	25.05	27.40	9%
Lithium Carbonate	CIF Asia	US$/tonne	9,250	8,750	-5%

Data as of March 31, 2020.
Sources: S&P Global Market Intelligence; S&P Global Platts; Benchmark Minerals; LME; Johnson Matthey

Fig. Commodity Prices during COVID-19 Crisis

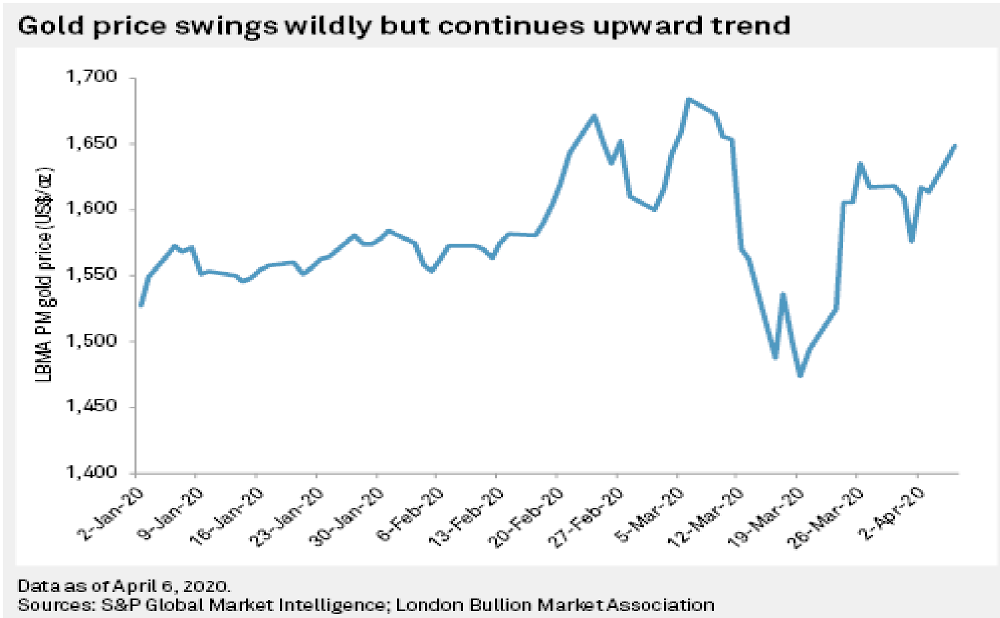


Fig. Gold Prices during COVID-19 Crisis

Appendix

Major Sources of Data: Vox Media, Aljazeera, The Economist, The Economist (Columnist Philip Coggan), World Economic Forum, CNN, CNNBusiness, BBC, IMF, FitchRatings, Politico, CNBC, S&P Global.

Swap Lines: Swap line is a reciprocal currency arrangement between central banks. That means the central banks agree to keep a supply of their country's currency available to trade to another central bank at the going exchange rate. The purpose of swap lines is to keep liquidity in the currency available for central bank to lend their private banks to maintain reserve requirements. The liquidity is necessary to keep financial markets functioning smoothly during crises.

Yield Curve Inversion: The yield curve is a graphical representation of yields on similar bonds across a variety of maturities, also known as the term structure of interest rates. A normal yield curve slopes upward, reflecting the fact that short-term interest rates are usually lower than long-term rates. That is a result of increased risk and liquidity premiums for long-term investments. When a yield curve inverts, long-term interest rates fall below short-term interest rates as investors require greater return for locking up their fund. This type of curve is the rarest of three main curve types(normal, flat and inverted) and is considered to be a predictor of economic recession.

De Facto Global Currency: A de facto currency is a unit of money that is not legal tender in a country but is treated as such by most od the populace. The United States dollar and European Union euro are the most common de facto currencies.

V–shaped recovery: It is a type of economic recession and recovery that resembles a “V” shape in charting. It is characterized by a sharp economic decline followed by a quick and sustained recovery.

U-shaped recovery: It is a type of economic recession and recovery that resembles a “U” shape in charting. It is experienced when an economy goes through a gradual decline in metrics such as employment, GDP and industrial output followed by a gradual rise back to its previous peak.

L-shaped recovery: These are the worst case scenarios. Such recessions fall quickly but struggle or fail to recover.

Credit Scores: A credit score is a number ranging from 300-850 that depicts a consumer's creditworthiness. The higher the credit score, the more attractive the borrower. A credit score is based on credit history: number of open accounts, total levels of debt, and repayment history. Lenders use credit scores to evaluate the probability that an individual will repay loans in a timely manner.

S&P 500: It is a stock market index that measures the stock performance of 500 large companies listed on stock exchanges in the United States.

OPEC: The Organization of the Petroleum Exporting Countries. It includes 13 countries: Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates, and Venezuela.

Forward Guidance: If a central bank gives forward guidance, it means it is providing information about its future monetary policy intentions, based on its assessment of the outlook for price stability.

Comex: It is an international commodity exchange where buyers and sellers electronically meet to invest in precious metals. Today, it is the largest gold exchange in the world.

Behavioral Economics: Behavioral economics studies the effects of psychological, cognitive, emotional, cultural and social factors on the economic decisions of individuals and institutions and how those decisions vary from those implied by classical theory.

Choice Architecture: It is the design of different ways in which choices can be presented to consumers, and the impact of the presentation determines consumer-decision making.