COVID-19 pandemic: A snapshot of global economic repercussions and possible retaliation

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1 May 2020

COVID-19 Pandemic: A Snapshot of Global Economic Repercussions and Possible Retaliations

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Abstract: Both human and economic cost of COVID-19 tsunami has continued to peak as nobody can even envisage when and how the shock will be solved. The value of life is uncountable on the other hand every sign clears that economic plunge will be prolonged and painful. The purpose of this paper is to provide a snapshot of global economic disaster, focusing especially on major regions (China, USA, and Italy) due to COVID-19 and possible economic responses to mitigate the severity of this pandemic. The paper first provides an overview of global economic imbalances reflected by growing medical and financial emergencies, falling asset prices, tightening financial conditions, abatement of global GDP, world trade and supply chain disruptions, the constraint on tourism and traveling, raising uneven inflation, augmenting poverty, the suffering of migrants, political discord and antagonism may lead to being the unexpected worst economic downturn in the history. Along with identifying these imbalances, possible economic responses have been presented amid shock of COVID-19 and strategies for recoveries. The paper concludes that containing initiatives and economics of pandemics is not enough to beat the novel coronavirus (COVID-19) without solidarity and consensus among nations around the globe.

Key Words: COVID-19, Financial crisis, Recession, Helicopter money, Monetary policies

JEL Code*:* A120, G01, P34, E62, E52

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1.0 Introduction

COVID-19 pandemic is looking like throwing a big stone in a pond and waves flood all the edges. Like this statement novel coronavirus hits more than 185 countries and territories including more than 217000 have died and 920, 000 have recovered (Johns Hopkins University and Medicine, 29 April 2020) and make the balanced world imbalance. So coronavirus pandemic spreads with a pace which only known by its creator and itself, really unknown to all. There is no specific medication working against 2019-nCoV on top of that infection increases at a geometric rate (Shedlock, 2020). The world is now drifting on uncertainty in every sector. COVID-19, a perfect storm, raises uncertainty and breaks down the regular global medical, financial, political, geopolitical, socioeconomic chain (Roubini, 2020). Coronavirus first hits as a medical crisis turned into a bundle of crises especially economic disaster. Countries leaders mostly focus on virus containment measures, no other way to restrict highly contagious novel coronavirus (2019-nCoV), and thinking if labors are not getting healthcare also continues to stop working the global economy will fall trip towards a severe recession (Roach, 2020). Great crises have seen among the countries during lock lockdown period surging medical cost, a crisis of medical equipment, a risky time for doctors and administrative groups, and falling down economy due to novel coronavirus pandemic. Basically, according to the scientists, there is no way to halt the surging of infection except social distancing of the entire population, households quarantine, isolating infected and suspected cases, and overall lockdown of the countries (Sault, 2020). Effective Containing measures are acting to draw up the outbreak of SARS-COV-2 though raises global economic uncertainty than past outbreaks (SARS, Ebola, flu) gradually (Ahir, Bloom, and Furceri; 2020). However, it can easily assumable that easing lockdown permits people to work but questionable for their life survival. Giving the highest priority on lives, every government should concern not to lift quarantine restrictions earlier even economic crisis is already forecasted. So there is no compromise with lives and livelihood and global leaders should put concentration on limiting the spread of COVID-19 followed by the economic recovery. This is a really big dilemma in decision making for them in between restricting people and reopen the economy again (Davies, 2020). Already it is clear to all extended lockdown leads to turn down the infection rate but raises prolong economic pain. Along the infection trajectory global economy already predicting irrecoverable cost may incur shortly as the virus and economic distress are sudden and mysterious (szlezak, Reeves and Swartz, 2020).

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SARS-COV-2 has dreadfully interrupted on world economy every level. To limit the outburst of a novel coronavirus, the scale and pace of collapse in economic activities that have followed are different from anything experienced in the world's history.

As the virus is so contagious, world trade and supply chain have been damaged, traveling is 100% restricted, migration is prohibited, the capital market has crushed, the food crisis has risen and finally global economy is going to see an unprecedented rescission. This paper tries to focus on some of the major economic areas, severely affected by the sudden hit of COVID-19 picturing advanced and developing economies as well as emerging economies also.

The paper has three major phases, as the first phase is introductory part, discussing on the dilemma between containing measures and economic emergency, secondly trying to give an overview of the sudden shock on advanced, developing and emerging economies from COVID-19, and finally discussing on possible economic responses to fix the global financial and economic stability during full swing of SARS-COV-2 and after the virus is truly beaten.

2.0 Snapshot of global economic imbalances, a shock of COVID-19

SAARS-COV-2 crisis starts with an unprecedented humanitarian crisis as millions of people infected within a very short period, emergency health care facilities, and sufficient support was unavailable in the whole world. Such a sudden worse hit of COVID-19 in the medical sector forwarded to the financial and economic arena. As the virus is so contagious by nature, staying at home and maintaining social distances are the measures of controlling the outbreak which slow down the economic activities, a sign of severe global recession like no other (Lacina, 2020) after the great depression in the 1930s. So the second quarter in 2020 is not treated as the medical crisis rather economic crisis (Oliver, 2020). The world was suffering severe medical equipment crisis at the very first hit of COVID-19, lead to change the global demand for products pattern because the major concern was to save the lives. Apart from this, to control the contagion of COVID-19 preventive measures are to maintain quarantine and social distancing also force people to think newly about their consumption of daily necessaries, the consequence was to put huge pressure on supply of existing domestic and global goods and services. This panic clearly showed the

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differences in purchasing power and income inequality so far (Oliver, 2020) may lead to severe social inequality (Kalache, 2020) especially in medical and economic issues.

The world is showing pathetic scenarios that rich people can easily afford their forecasted 5-6 months demand instantaneously but poor and job layoff people had to wait for the government stimulus package, relief, and philanthropic gifts. The virus not only provides a snapshot of inequality within the nations but also across the whole world as developed countries put more effort and pressure on other countries to purchase necessary equipment like hospital equipment, N-95 masks, ventilators, and hydroxychloroquine (C18H26ClN3O) etc. to save their lives by showing financial and political power (Netland, 2020). Poor nations first concentrate on sources of finance then medical equipment whether rich nations are showing the opposite scenario of unlocking trillion dollars to construct new hospitals and keep their lives and economies alive (Vera, 2020). Priority in treatment and very important person (VIP) considerations are not the solutions to block the COVID- 19 because the researchers have already agreed about the contagious nature of this virus, first seemed in a sea food market Wuhan in china (Sault, 2020) now covering the whole world.

Asia and the Pacific regions are not getting rescue from the thrash of COVID-19. The outbreak covers these zones and continues to take a humanitarian toll, creates an economic crisis, and layoffs millions of jobs (Kihara and Leussink, 2020). As to contain the outbreak of novel coronavirus, people have to stay at home, which has a great negative impact on the global economy. It has been predicted that the world economy is changing continuously since COVID-19 had started from Wuhan. The growth forecast in Asia and Pacific lowering down 2.2 percent which was expected to rise at 5.5 percent in September 2019 (Evans and Acosta, 2020). However, the Asian Development Bank (ADB) expects Asia may able to reopen the economy early of 2020 and rebound the growth forecasted to 6.2 percent in 2021. Unfortunately, the virus is spreading slowly but steadily all over the world. Experts are observing the movement and trying to assume the level of uncertainty and severity arises from COVID-19 both in the global economy and medical sectors. Prolong existence of COVID-19 may force China to bear a loss of $690 billion (5% of its GDP) and the expected growth will decline at 2.2 for middle and low-income countries.

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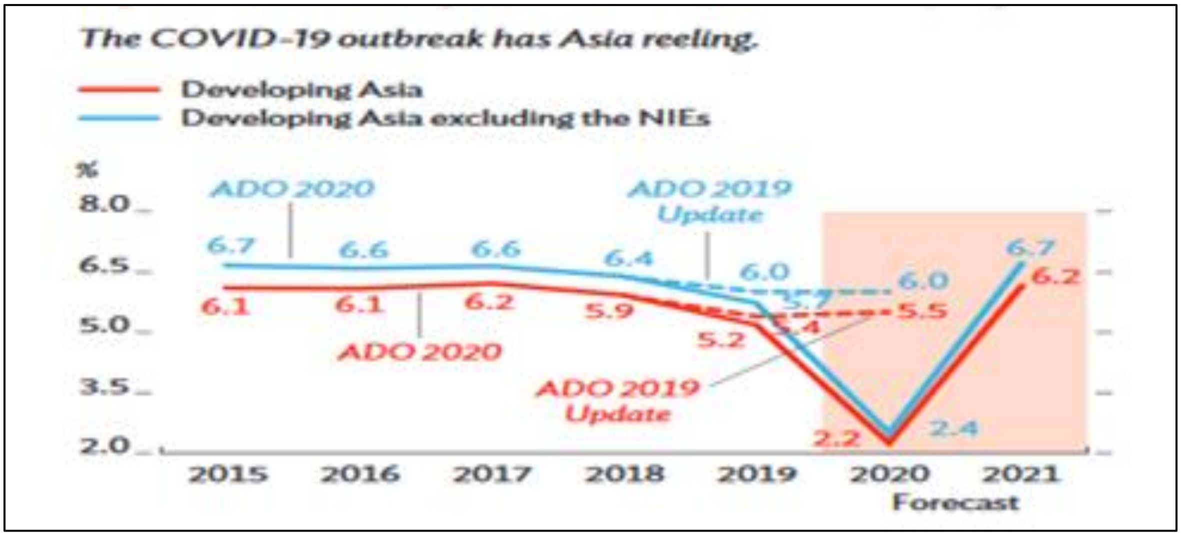
Figure-1: GDP growth outlook in developing Asia



Source: Asian Development Outlook Database (8 April, 2020)

Growth prediction of World Bank is also alike ADB for Asia but little bit differences in number. With sufficient fiscal and monetary stimuli (Choudhury, 2020; Lee, 2020), the growth of East Asia Pacific (excluding China) will fall to 1.3 percent in 2020. The scenario will be worse if lingering the containing measures, helps to uplift the global recession and disrupts the value chain continuously, growth will fall to -2.8% and poverty will grow by further 11 million amid the COVID-19 pandemic (World Bank Group (OKR), 2020). According to the world economic forum, the number of poor and hungry will increase by 2 percent (Tembo and Adhikari, 2020). So it would be a hunger pandemic, around 265 million people will suffer in acute hunger according to the UN World Food Program (Kretchmer, 2020).

As People do not have a chance to continue their work under lockdown the total production level fall abruptly along with rising demand for food increases gradually which creates intense pressure on food supply viewed as accelerating foods price so far. Inflation in East Asia increases to 15.9 % in 2019, expecting more price hike in the future. So unpreceded rising of food price and prolong lockdown may lead the world in food crisis.

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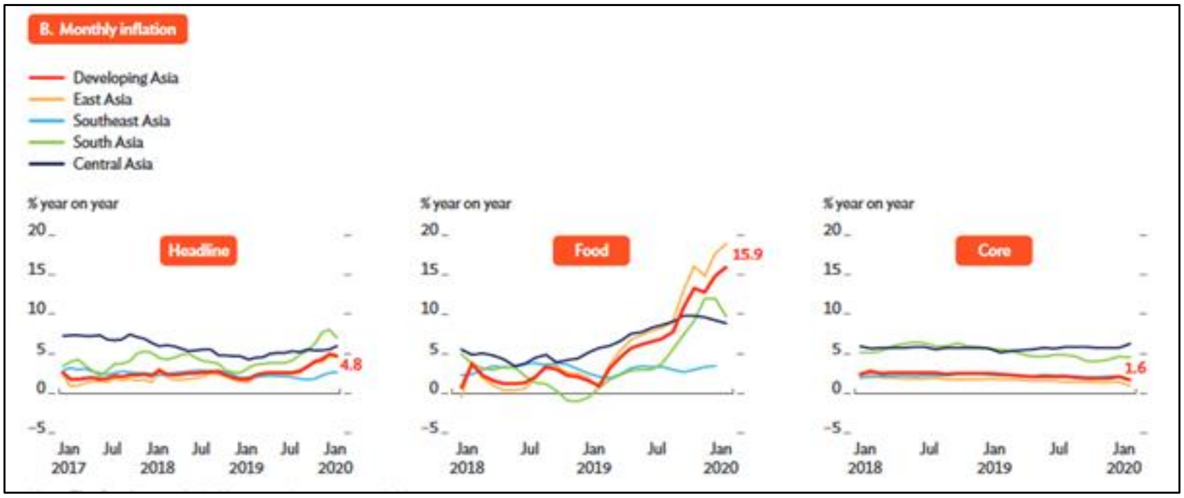
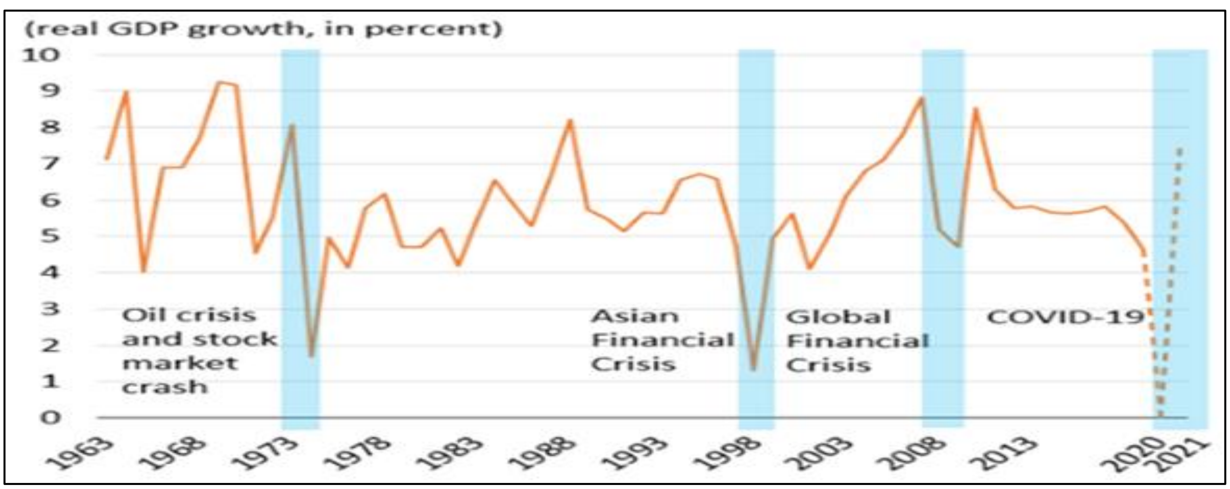
Figure-2: Higher inflation mainly reflected food price spikes as core inflation remained stable



Source: CEIC Data Company (accessed 21st March 2020), ADB estimates. Note: The Pacific is excluded because data is not available

There is huge uncertainty in 2020 growth progress for Asia due to COVID-19. Most of the economists think that Asia will not excel 0% growth even in 2021 because of coronavirus pandemic. This a real economic shock which is worse more than the global financial crisis (4.7% growth) and the Asian financial crisis (1.3% growth)

Figure-3: Output fall across Asia due to COVID-19



Source: IMF Staff Calculations

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Actually two key factors, global and China slowdown are active for degrading the economic growth in Asia which had not been 60 years before. The global economy is severely affected as the USA predicts a 6% decline and Europe predicts a 6.1% contraction of growth in 2020. On the other hand, china's growth is predicted to drop from 6.1 percent in 2019 to 1.2 percent 2020 which is totally different from past global financial crises when china had given a handsome stimulus amount of about 8% of GDP with maintaining 9.4% GDP in its own economy. So without a comprehensive and coordination motive, Asia will fall in big financial turbulence amid coronavirus pandemic (Rhee, 2020).

The global market moves to uncertainty as the big economic players USA and China are also within that uncertainty. The long term consequences will be acute because the world depends on china's growth as well as tech from the USA. According to, Mark Zandi, Moody's chief economist, predicts that if the virus would be pandemic may be a sign of global and US recession. Some scholars said the pandemic hits on the US economy more than like 9/11 and 2008 financial crises. US government is doubtful about the virus whether it is a result of trade war with china or natural pandemic which came from Wuhan (Wharton, 2020).

The global business continues based on trust, interdependency, and governance which severely interrupted by COVID-19 enhances the ***standalone business risk*** and amplifies ***vulnerabilities***. The world is now globalized and economies are interdependent within the nations. But this lethal virus erodes the trust among countries and develops economic antagonism between major powers. This is a real dilemma for effective governance as opening businesses help to outbreak coronavirus, on the other hand, shutting down the economic activities means a financial crisis. Coronavirus expected to impact tech industry shipments. Estimated impact of the COVID-19 outbreak on global tech shipments in Q1 2020* is as follows

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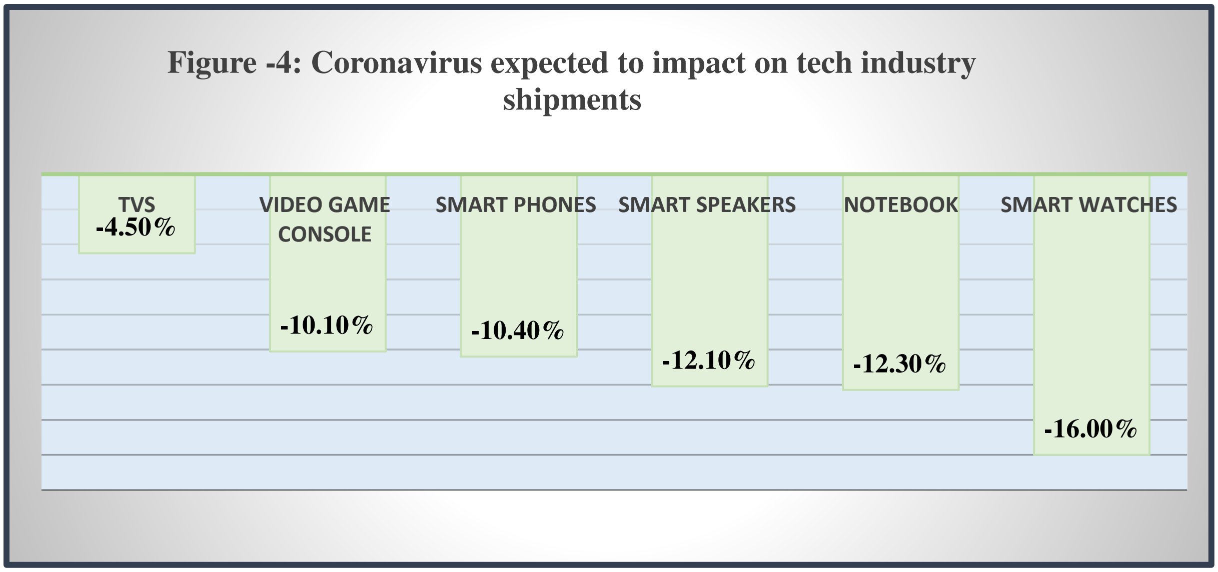

Source: Author developed from Trend Force (Smart phone forecast refers to production volume instead of shipments)

Businesses will inescapably be impacted as travel restrictions and quarantines force people to avoid attending in the workplace, disrupting supply chain horning sales, warnings across various businesses. China's GDP will lessen at least 0.5% point in 2020 which resemblances taking 0.1% point off global GDP growth. Falling down the growth in the emerging markets due to societal unrest and political uncertainty may fail to absorb fast-growing workforces. So businesses, need to have flexibility and innovation to survive in this deadly condition (Bingham and Hariharan, 2020).

The capital market is the representative of any country's economy. Most economists agree that the market is unprepared to be free. Renowned indexes namely Dow Jones Industrial Average and S&P have been flattening down 20% over the first quarter of 2020. Some of the economists said that it would be the toughest decision for the policymaker how and when they open up the economy (Taylor, 2020). The resumption of the economy is not like the state before coronavirus came into the world. It is not possible to open up the economy 100% instantly. So most of the policymakers and economists are confused that when, where, and how they open up the economy again as the virus is unprecedented and creates uncertainty in every economy.

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The exact economic impact of the capital market cannot be accounted for right now. Another report explains the US stock market already have confronted a serious downfall which they did not observe before 123 years old since 1896 giving an example of Dow Jones Industrial Average. Similarly, S&P has undergone 37 stock market corrections since the beginning of 1950. So it is not only seeming down swinging of stock prices but also the analyst said it, stock market coronavirus crash (Williams, 2020). However ASX 200 lifts little bit but investors' confidence level lowering down 66 points due to coronavirus pandemic according to NAB survey (Chau, 2020).

It is quite tough to assume exactly the numeric number or percentage of the stock market crash but clear to observe that coronavirus hits the capital market in the whole world. Stocks have been lurched lower worldwide by COVID-19, reflecting falling trend of world's topmost indexes like S&P, Dow Jones Industrial Average and Nasdaq Composite Index even treasury securities are in huge pressure because continuous selling by investors for cover losses and enhancing liquid cash to meet daily need or demand also. US economy faced a crash in 1987 and 2008 but that were internal reasons, addressed by fiscal and monetary stimulus but COVID-19 not only creates an imbalance in balance sheets but also it creates an imbalance in the economy, society, or the whole world because of its pandemic nature. Stock price falling does matter because people and businesses will reluctant to invest in the capital market rather they spend more to meet their demand which outbreaks inflation and sap the spending power. In the U.S. the Fed has cut its benchmark federal funds rate by 1.5 percentage points (Coy, 2020) which may not cover the prolonged impact of the novel coronavirus.

US economy, World's largest economy, sharply facing plummet in every sector, especially in the job sector. According to Fed's St. Louis, the US capital market follows a downturn and most of the index's prices are falling 20-25%. The unemployment rate is predicting to rise at 32.1% in the USA around 47 million people will lose their jobs and riskier jobs off because of freezing the spread of coronavirus pandemic, is an economic shock which the USA never experienced in the last century (Cox, 2020). Also, The International Labor Organization (ILO) estimates nearly 25 million will lose their job due to lockdown for COVID 19 pandemic, has an impact on the manufacturing and service sectors. JP Morgan, US-based a multinational investment bank, predicts

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recession will hit the USA and European economies by July. They also think that US, GDP will shrink by 3% and Eurozone GDP will contract by 3.3% in the second quarter (Winck, 2020) which are only forecasted numbers but what actually will happen is uncertain because how long quarantine, work cancellation and social distancing order will stay nobody knows.

Coronavirus outbreak suffers both credit losses and market losses, making financial instability in the banking as well as in the global financial system. It is assumed that the outbreak of COVID-19 will test the reserve, capital, and liquidity buffer experiencing from financial crisis 2007-2008. US real estate and mortgage loans are in huge pressure because most of the tenants are out of work, don't able to pay the rent. IMF predicted USD 10 trillion of unused credit lines at the end of 2019 will put huge pressure on liquidity supply. The prolonged economic shutdown breaks down the financial system, reflecting a perfect storm as domestic fund outflow augments quickly even less option to collecting external debt financing, which really puts enormous pressure on more leveraged and worst creditworthy borrowers (Schroeder, 2020).

A sudden rise of uncertainty both in the world economy and financial sectors is the most concerning issue for countries' heads right now. COVID -19. The recent global financial stability report shows the world economy is not in stable situation because the virus has triggered an economic downturn, was a snapshot of declining the value of the financial assets more than 20008-2009. For example, equity markets experienced a 30% decline in value. Continual spreading of novel coronavirus have forced to jump the credit spreads, creates pressure on short and middle term funding markets. COVID- 19 strains the market volatility followed by extreme liquidity deterioration, contributing to abrupt asset price moves.

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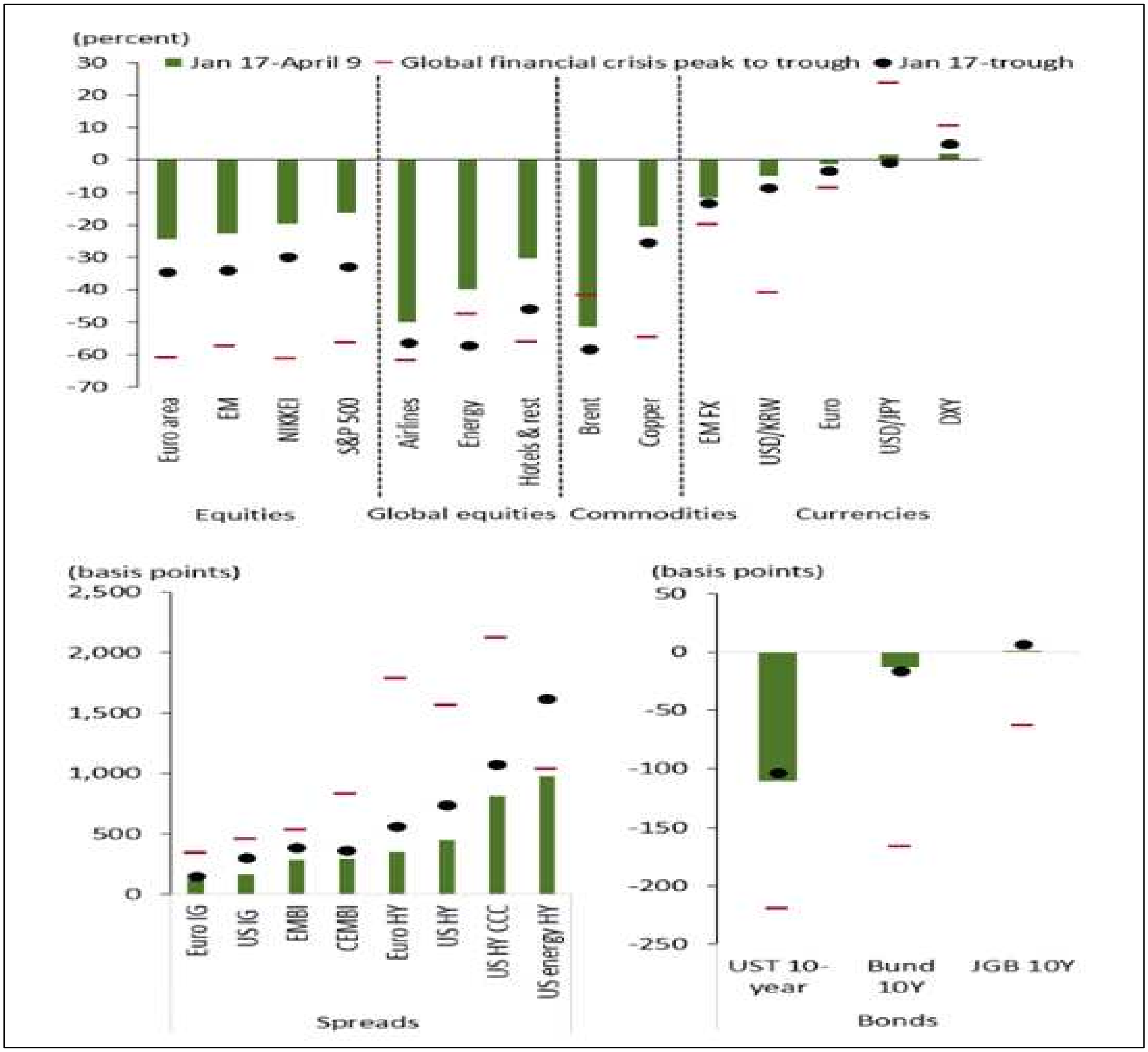
Figure-5: Asset prices plummet (Prices of risk assets, such as equities, commodities and high yield bonds have fall sharply)



Source: Bloomberg Finance L.P and IMF calculations

Note: EM = emerging markets, FX = foreign currency, KRW = Korean won, JP = Japanese yen, DXY = dollar index, IG = Investment grade, HY = high yield EMBI = JP Morgan Emerging Market Bond Index, CEMBI = JP Morgan Corporate Emerging Market Bond Index, UST = US Treasury notes or bond, JOB = Japanese Government Bond

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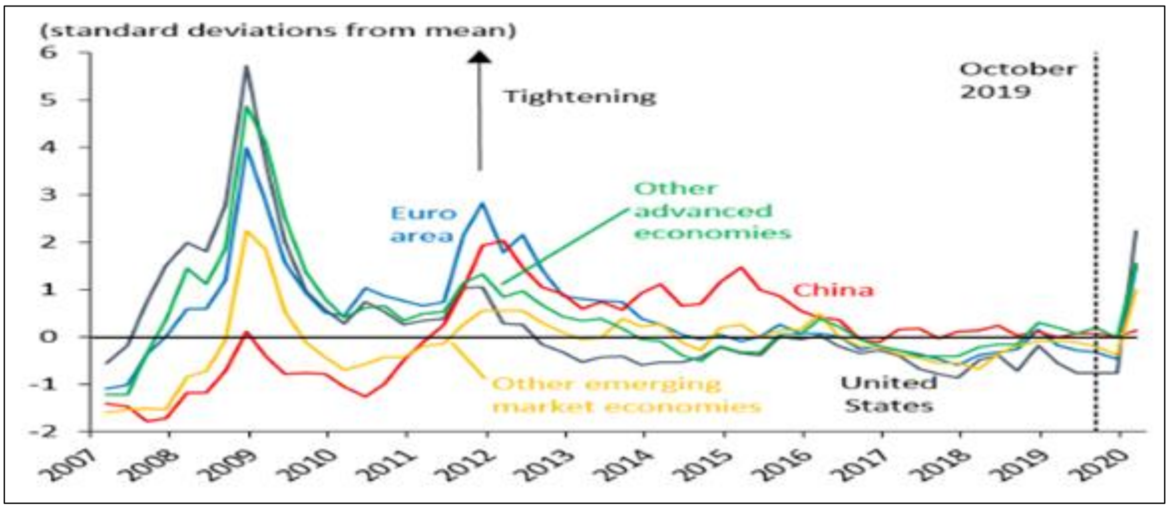
Most of the investors' confidence falls at zero levels as the market is controlled by unprecedented Virus, 2019-nCoV. Several stimulus packages had already been introduced by governments and different organizations to regain the positive sentiment of the investors on the capital market, the biggest player in the economy. Unfortunately, sentiment continues to fall because of the widespread outbreak of coronavirus, and the world's financial conditions begin tighter comparing the initial shock.

Figure-6: Unprecedented sharp tightening of financial Conditions (The speed at which global financial conditions have tightened is unprecedented)



Sources: Bank for International Settlements; Bloomberg Finance L.P ; Haver Analytics ; IMF. International Financial database; and IMF Staff Calculations. ***Note:*** *Other advanced economies comprises Australia Denmark Japan, Canada, Korea, Hong Kong SAR, Norway Switzerland, Singapore, Sweden and UK. Other emerging market economies comprises Brazil, India, Mexico, Poland, Russia and Turkey*

As to control the outburst of COVID- 19, countries implement different containment initiatives already mentioned, like quarantines and social distancing practices the world has been put in a great lockdown. IMF forecasts that global growth will fall to -3% if requiring containment mounts in the second quarter and recedes from July to December in 2020, makes the lockdown worst since the great depression in the 1930s so far. All in all sharp tightening of the world financial conditions,

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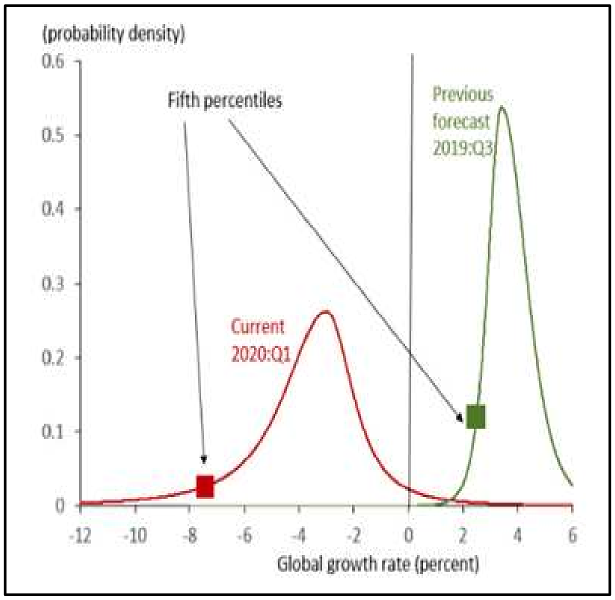
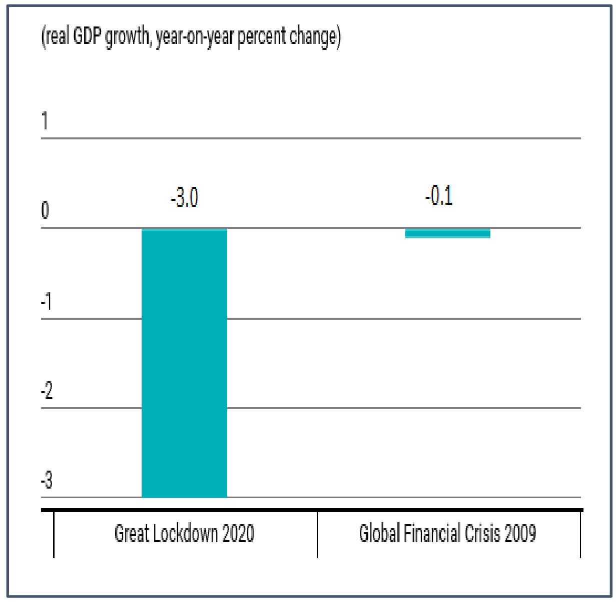
massive deterioration of economic outlook panorama, and unprecedented portfolio outflow posing a great threat for emerging markets.

Figure-7: The great lockdown and Global growth is at risk (The world economy will experience the worst recession the great depression

Figure 7(a): Unprecedented portfolio outflows	**Figure 7(b): Skyrocketing Spreads**





Source: IMF Staff Calculation

It is a burning crisis for countries' administration whether they impose more restrictions on people's movement or reopen the economy purpose is to reduce the financial crisis. containing measures disrupt the financial stability and creates economic vulnerabilities like the downfall of interest rates, large portfolio outflows forced to sell at falling markets, deleveraging the portfolio for getting margin call from broker will exacerbate selling pressure, risky credit markets (high yield, borrowers have lower credit ratings and borrowing costs have risen sharply leveraged loan and anomalies in private debt markets) come to an unexpected stop and mostly markets default chances have risen abruptly which may convert the recession into a depression in the long run.

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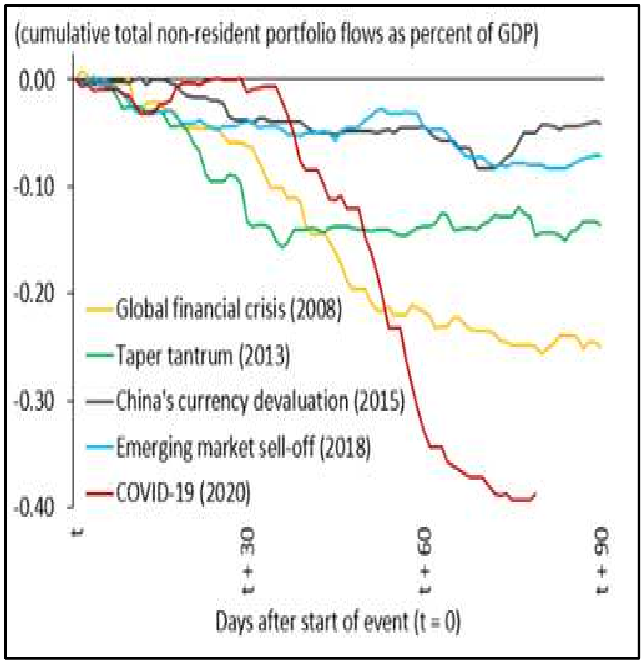
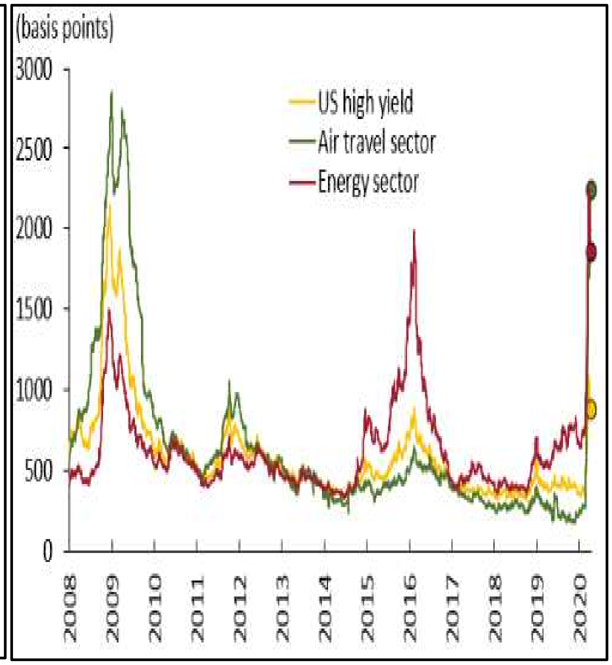
Figure-8 (a): Unprecedented portfolio outflows



Source: Bloomberg Finance L.P; EPFR Global; Haver Analytics; Institute pf International Finance and IMF Staff calculations

Figure 8 (b): Skyrocketing spreads (lower credit rating, have risen borrowing costs)



Source: Bank of America, Bloomberg Finance LP and IMF staff calculations, Note: US high yield refers to spreads of High yield -rated bonds (BB + rating and below)

Scenario of the banking sector is to the extent different from other economic sectors, able to avoid liquidity crisis by introducing different substantial and coordinative measures from central banks although unfortunately bank equity did not rescue from the sharp downturn of the price which really makes nervous potential investors. Stress testing and measuring resilience should continue because of slowing down of economic activities may suffer the banking sector in long run (Adrian and Natalucci, 2020)

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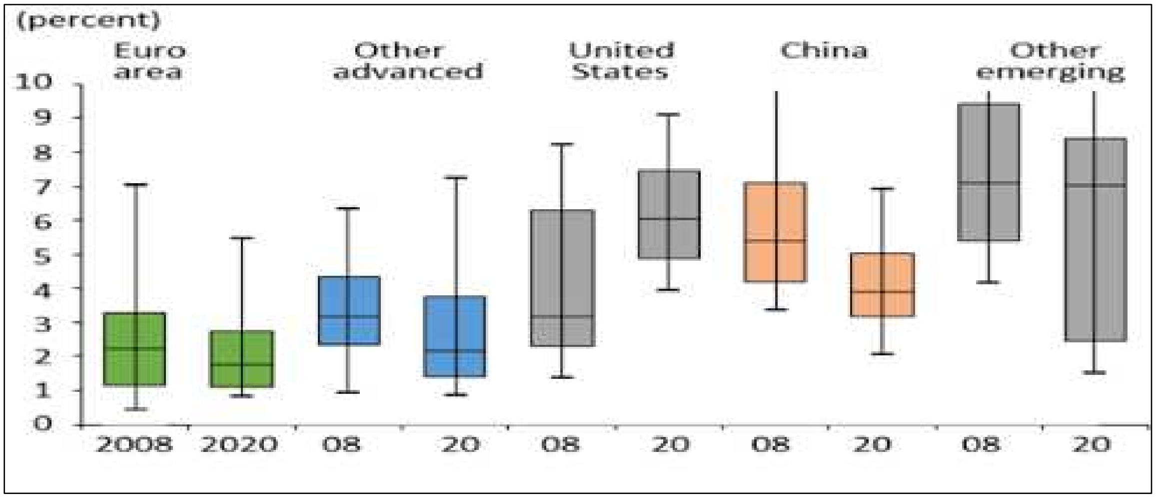
Figure-9: Lower Bank Capitalization (Measures of bank capitalization – capital relative to assets – based on equity market valuations have worsened significantly)



Sources: Bloomberg Finance L.P and IMF Staff Calculations. ***Note:*** *Other advanced economies comprises Australia Denmark Japan, Canada, Korea, Hong Kong SAR, Norway Switzerland, Singapore, Sweden and UK. Other emerging market economies comprises Brazil, India, Mexico, Poland, Russia, South Africa and Turkey.*

Many developed and emerging countries depend on tourism, travel, hospitality, and entertainment for the overall economic development are facing a severe downturn in growth. This is a global financial crisis, hit both the advanced and emerging markets and developing economies also. As already mentioned, forecasted growth for the advanced economies would be -6.1 % and the developing and emerging economies growth may be -1% excluding China growth would be -2.2% in 2020 (Gopinath, 2020).

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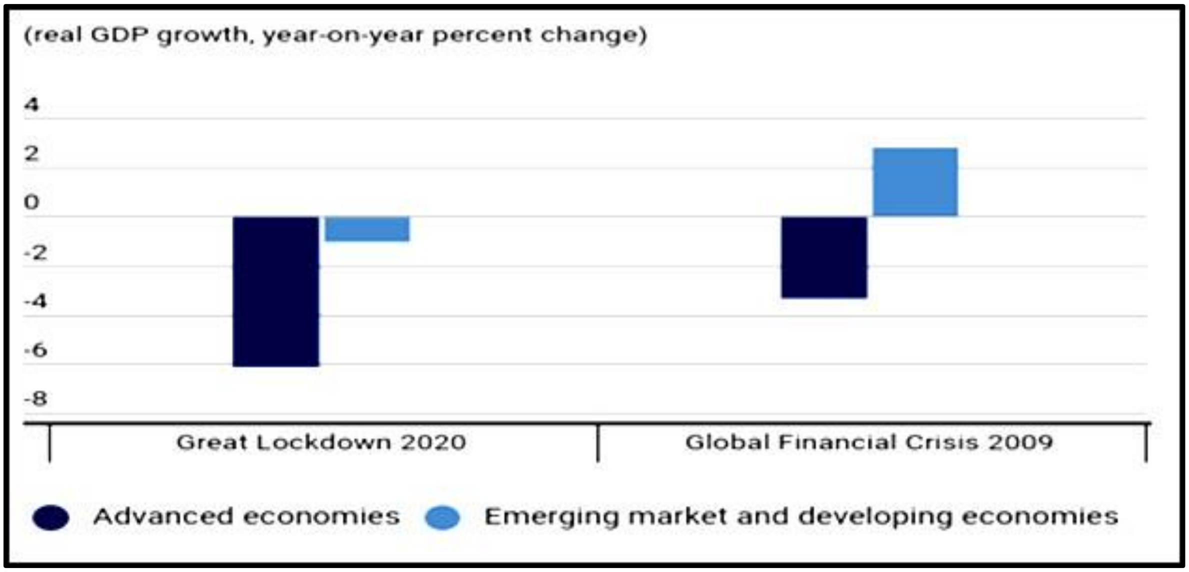
Figure-10: Global crisis (Major economies have also been downgraded)



Source: IMF, World Economic Outlook

World trade and commerce are not spared from the outbreak of COVID-19. WTO thinks novel coronavirus pandemic would be more severe than the 2008-09 financial crisis, expected to plunge between 13% and 32 % in 2020. Countries, mostly depend on exporting from North America and Asia will suffer more in 2020. Automotive and electronic sectors have complex value chain are least affected due to coronavirus pandemic. On the other hand service sectors like travel, transport, tourism, and bank (Bangladesh) have severely affected directly. (WTO, PRESS/855PRESS RELEASE, 2020)

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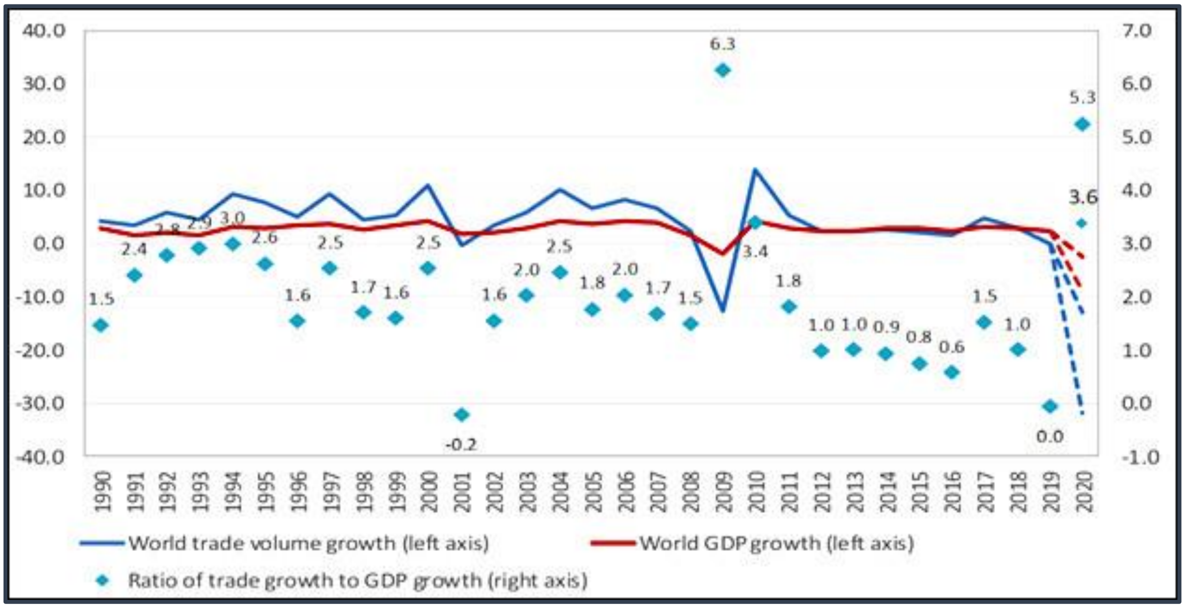
Figure-11: Ratio of world merchandise trade growth to world GDP growth, 1990-2020 (% change and ratio)



Source: WTO Secretariat for trade and consensus estimates for historical GDP. Projections for GDP based on scenarios simulated with WTO Global Trade Mode

Migrant workers are those who are most impacted by COVID-19 with suffering because of having no financial support, job security, rare health care services, scarcity of clean water, the acute need of proper sanitation, having overcrowded homes, have limited access to information or services and having no financial reserves (Muggah and Zanuso, 2020). The situation of millions of migrant workers is in between living cramp and unsanitary conditions or return to the home (Guermond and Datta, 2020). Most of us are not aware to recognize the contribution of migrant workers for particular countries and the global economy (Hyland, 2020). Without proper health care, advanced economies and emerging economies and developing economies (severe cut of GDP in India, Pakistan, and Bangladesh for locking down more than three weeks (Khan and Khan, 2020) will suffer significantly in the future. Also, ILO briefs that global unemployment will rise by 24.7 million, or the true number would be far higher (Nebehay, 2020).

Nature is beauty and beauty always attracts people. People in the world do not think about money when their mind cherish to see natural beauty. COVID-19 hits in the travel and tourism sectors

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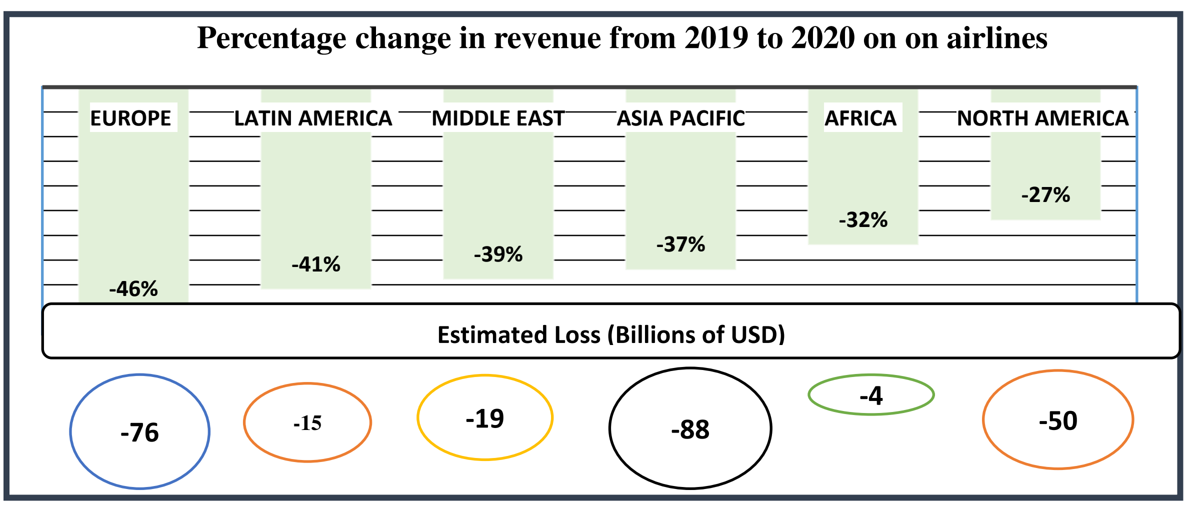
severely. The World Travel and Tourism Council predicts (WTTC), COVID-19 pandemic will cost 75 million jobs and $ 2.1 trillion if lockdown lasts several more months (Becker April 2, 2020). It has been forecasted that the loss would be equivalent to three months travel in 2020 could lead to the plunging of jobs between 12-14%. International travel and tourism could be adversely impacted by up to 25% this year equivalent to a loss of three months of travel (Faus, 2020) so far.

It is very tough to represent an exact picture of the tourism and travel sector's losses due to the COVID-19 pandemic as the data changing followed by gradual changing of conditions. Policymakers fall in a big dilemma whether they absorb losses or sacrifice the lives for economic stability. They put more emphasis on the lives of the people. But this quarantine period or lockdown situation also hampers the production sector that counted as economic loss. Like the Tourism sector, British Airways are no exception to be affected, reportedly poised to dangle more than 35,000 staffers. Based on travel restrictions, International air transport association (IATA) estimates that global air transport industry revenues could fall $252 billion, 44 percent below 2019s numbers, more than double from the previous assumed amount USD 113 billion (Becker, April 2, 2020). All in all the impact of this pandemic is six or seven times worse than 9/11 for the USA.

Figure-12: Percentage change in revenue from 2019 to 2020 (Per passenger and kilometers)



Source: Author developed based on International Air Transport Association (IATA) April 2, 2020

So precise prediction is impossible as the situation is changing dynamically. The research institutes and researchers are also in a big dilemma to forecast what will happen at last. Like the air industry

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cruise industry has already faced damage as companies lost USD 750 million from January to April 2020, guess more in the future.

The European epidemic in Italy is not new because it is the center of the trade zone since the middle ages and the Renaissance. Northern Italy is a densely populated zone where the outbreak of COVID-19 forced to break down the health care system, elevates the financial crisis. Taking initiatives like quarantine, social distancing, and banning travel will create a great opportunity loss of exporting 16 billion to China. The outbreak will cost $38000 per capita GDP and a 67% employment rate (against 59% nationwide) in northern Italy. This contagious virus forced to cancel the Milan Furniture Fair, business trips, and loss in the tourism sector counting 14% of total GDP (Subacchi, 2020). It is not a war to save lives but to save the economy also. Because already recession has been declared due to COVID-19 (Rogoff, 2020). If the recession will continue more than a year could be converted into great depression (Secard, 2020). Herd immunity or vaccine is a must to control the outburst of SARS-COV-2, as it is so contagious, taking a humanitarian toll, damaging social interaction, and creating an imbalance in the global economy (Schwab and Vanham, 2020).

Today's world resemblances as globalized, actually not because countries are quite concerned only about their countries. On the other hand, countries have not that option to help directly now because the invisible virus is so much transmissible from person to person. Fiscal stimulus has been sanctioned and distributed to the poor which push up overall global debt, reached 184 trillion which is 11 % higher than that of GDP in 2009. On the other hand, Trade represents around 60% of global domestic products which cannot boom in isolation (Brende, 2020).

The world economy has faced a little bit of liquidity crisis and food inflation at the very initial strike of COVID-19. Excessive withdrawal money from banks for purchasing necessaries and hoarding foods changes both individual's lifestyle and economic transactions due to 2019-nCoV. So after passing six or more months things will change totally because they have ended up their hoarding foods and necessaries and economic pain would be much deeper and longer. Only China fights more than four months and able to control the spike of infection rate. All in all, everything is changing slowly but unstoppable so far.

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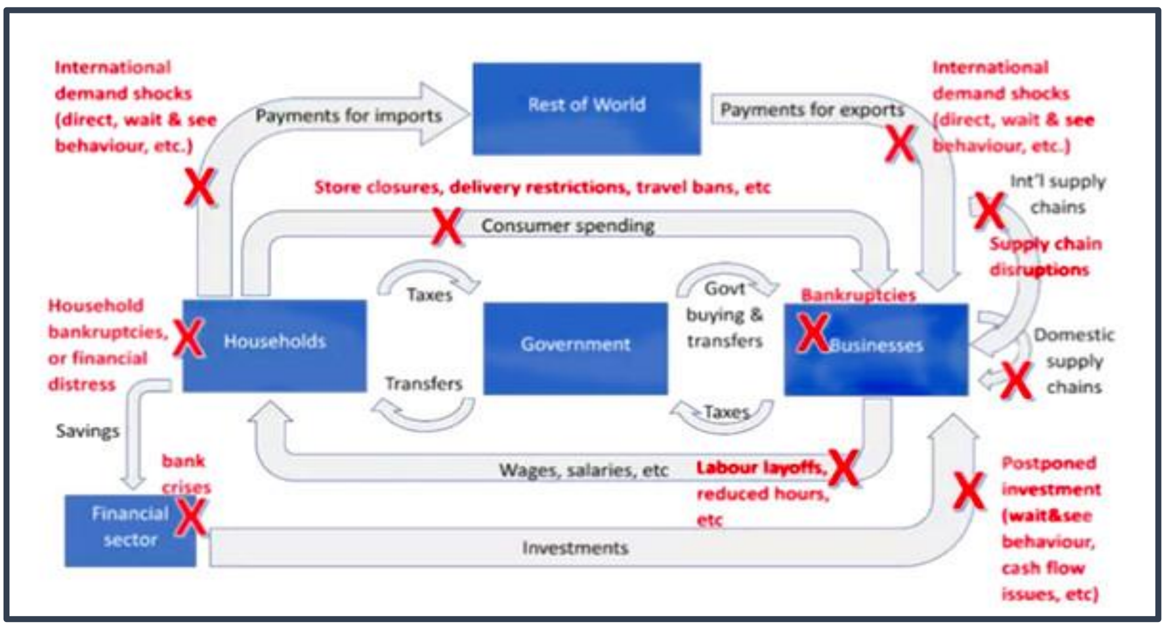
3.0 Economics of pandemics

3.1 Economic responses amid COVID-19 pandemic

To alive global economy within the lockdown and quarantine, effective economic responses should be getting heightened priority which work both resisting the outbreak of COVID-19 and saving the economy. Famous economists and researchers are continuously analyzing and working on this issue and produce different economical strategies, alleviate shock and worse impact of COVID-19 in the global economy discussed as follows.

The world is in now both medical and financial crises due to unprecedented shock by COVID-19. The more important task to flatten both infections and the recession curve. The economy is like a body and sudden shock is like a virus. So intensive care, ventilators, and beds must be restructured quickly to alive the global economic system (Hutt, 2020).

Figure-13: Reducing Economic Scar Tissue (Governments need to address red crosses in this diagram)



Source: Centre for Economic Policy Research (CEPR)

Helicopter money (Bhansali, 2020) or advocating fiscal firepower (Davies, 2012) should be introduced for forwarding economic burden to the government to save the lives and livelihoods,

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reduce personal and corporate insolvencies, keep spending money without having a job and ensure health care spending and public investment (Hutt, 2020), ignoring the rising inflation and government debt, even legacy of this mechanism is questionable and cause to undermine the individual's effectiveness (Galí, 2020).

To alleviate the unprecedented shock from COVID-19 needs to finance an unusual amount of money (a record of about $100 billion of portfolio outflow is severe more than any other crisis). So liquidity crisis in the short term will put a huge impact on the longer run solvency issues. Bilateral swap lines among the countries would be an option to alleviate the acute demand of short term liquidity but Fed and other major central banks cannot open swap lines for the whole world (Okamoto, 2020). The IMF announced up to $1-trillion cost-effective financing toolkit SLL (Short-term Liquidity Line) aims to minimize the risk of shocks evolving into deeper crises and spilling over to other member countries (Gay, 2020).

Effective and impactful policies should be taken to get back the normal life, reopen the economy, and recovery the crisis. The war against COVID -19 is divided into two phases one is in full swing spread of the virus and another one is the recovery phase (Dell'Ariccia, Mauro, Spilimberg and Zettelmeyer, 2020). To face the first phase government should aware to save the lives by quarantining at home and limiting the movement of people with allocating money for hospitals and new labs to prevent, detect, control, treat, and contain the virus, giving relief and wage subsidies to people and firms timely, Expanding and extending transfers *(*social safety nets and unemployment insurance benefits), providing tax relief both for distressed people and companies (Brondolo, 2009) and Creating a business continuity plan (Mauro and Gaspar, 2020). IMF is helping its member countries to control the COVID-19 disaster by introducing emergency financing, augmenting existing lending programs, grants for debt relief, and initiating New financing arrangement. The recovery phase will ensure economic policies get a normal path again. People leave their homes to join their tasks again. Flattening trend of interest rates and inflation, sizable public debt would be common scenarios in this phase if containing initiatives are successful to control the spread of the COVID-19. More details about economic recovery from the COVID-19 pandemic have discussed in section 3.2.

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Table-1: Policy Options (Policies in support of households, businesses and the financial sector involve a mix of liquidity and solvency measures

	Liquidity	***Solvency***
Households	Suspension of mortgage payments and student loans	Cash transfer
	Tax and social security contribution deferrals	Unemployment Insurance
		Meal Vouchers for students who are away from school
Business	Extension of loan maturities	Equity injections
	Tax and social security contribution deferrals 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 sectors	Liquidity provisions for financial intermediaries	Equity injections
	Actions to preserve market liquidity	Government guarantees

Source: Author developed, based on International Monetary Fund (IMF). *Note: Liquidity measures loans or payment deferral; Solvency measures include transfers, payment waivers and nonrefundable goods of services.*

UNDP implies two directive policies both from monetary and fiscal authorities. Central banks can supply the liquidity by buying treasuries or lending the institutions directly for paying salary to the job layoffs workers or SMEs with calculating inflation in the economy. Another mechanism is supplying acute demand for liquidity from government, deferring corporate and labor income taxes for future payments.

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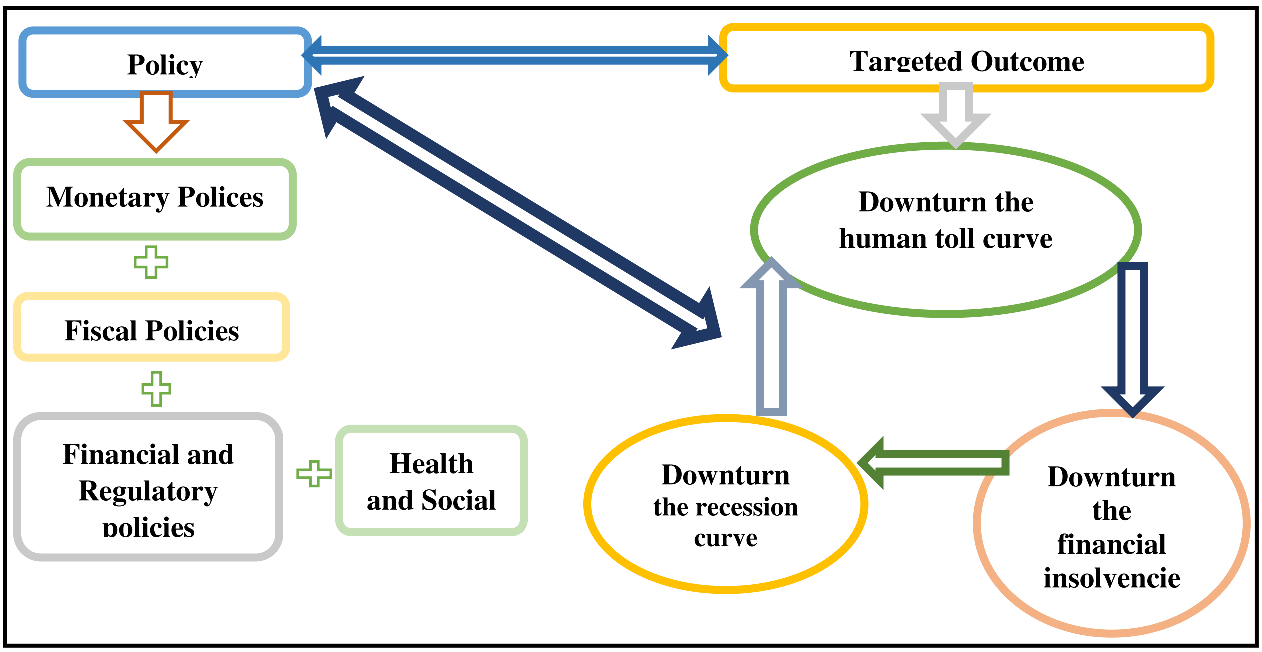
Considering no tradeoff between lives and livelihoods, lockdown leads to shutting down in the economy. So policymakers propose collaborative fiscal, monetary, and financial Policies including currency swap, liquidity facilities, tax relief, loan forbearance and expanded unemployment insurance, concessional financing, grants, and debt relief among should be provided by bilateral creditors and international financial institutions (Gopinath, 2020). So all the policies should be compiled in a bundle to flatten the three spikes human suffering, recession, and bankruptcies curves (Izvorski, Mahajan, Moorty and Vincelette, 2020).

Figure-14: A policy framework for mitigating the impact of the COVID-19 crisis



Source: Author developed based on online news reports.

Most LDC (Least developed countries) and poor countries are quite unprepared to control the sudden shock of falling out of the economic crisis with their limited resources and technologies. Though developing early warning system (Okhowat, 2020), quick identification of the infected person (WHO, 2020) and giving proper treatment and medication, providing financial support and implementing safety net policies, introducing more contactless and technological innovations to complete the tasks (Sengyee, 2020), keep aiding to continue trade flows providing investment-related support (Tembo and Adhikari, 2020).

As the coronavirus is so virulent and infectious the public health should get priority before anything, which relates to an economic cost because testing kit, medication, ventilators, and ICU beds are the results of trillion dollars spending. So rapid and effective global collaboration (Woods and Batniji, 2020) among international governments, global leaders should be keeping away from politicizing on COVID-19 (Lacina, 2020) , corporations along with their innovative and diversified technologies and supply chain mechanisms (Blyth, 2020;) and businesses of all shapes and sizes should take proper initiatives (Thackeray, 2020; Henderson, 2020; D'Auria and Smet, 2020) to enhance resiliency (government should build public trust and watchdog on corruption, transparency, and wastefulness; Howell, 2020) for eradicating forecasted recession quickly (Schwab and Vanham, 2020).

Investment in infrastructure would be an option along with targeted monetary and fiscal policies (Sandbu, 2020) to come out from the COVID-19 crisis. However, this approach is applicable for developed countries because they have enough fund but they have lack of compliance in decision making system at the municipality and state level and high labor cost increases the construction cost. Merging technological capabilities with traditional infrastructure will enhance economic growth (Kivity, 2020).

COVID-19 forces to rebuild businesses, trade, and economic transactions procedures as organizations use cloud computing systems are overcoming the impacts of the coronavirus pandemic. In many countries, small businesses fall under pressure to supply their products regularly. While business owners are trying to introduce visibility of value chain, curtail supply chains to respond nearer customers demand, leveraging the technologies for getting the best output using few resources and evaluating different scenarios to fight against coronavirus pandemic (Betti and Hong, 2020). Big businesses and restaurants are emphasizing on sufficient home delivery and retail support that ensure social distancing as well as meeting demand both. So most businesses are trying to keep in mind agility, scalability, and automation for newly reforming and restructuring current shape to survive in this situation. Contactless payment (ATM, Debit Card and Credit card, etc.) and delivery system is the main motto to survive as well as not to spread this virus. Working and socialization could be from the remote zone as people use Zoom, Slack, and Microsoft's Teams to complete their responsibilities and tasks.

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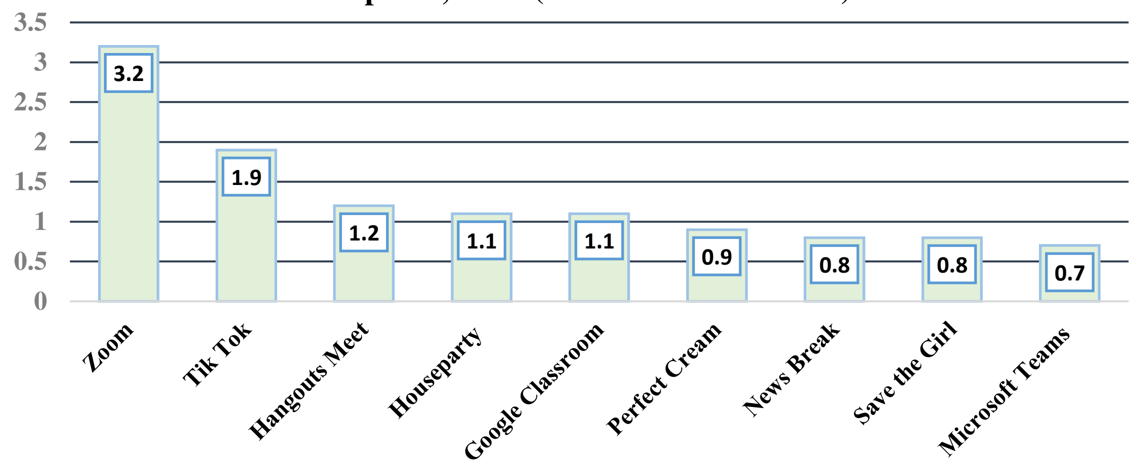
Figure-15: Most downloaded apps in the U.S from march 26 to April 1, 2020 (in million downloads)



Source: Author developed from Priori Data (Statista)

So these changes in the economic transaction can earn short and medium-term successes but to survive in the future and fight against this fatal virus, businesses should concern about potential cloud computing where they adopt robotic automation and artificial intelligence (Joshi, 2020).

3.2 Possible economic recovery measures

To optimize economic recovery against shock from novel coronavirus, governments must have a robust capital market, independent central bank, and sound banking sector can introduce SPV (Special Purpose Vehicle). The idea of SPV would be a public risk-sharing mechanism to support the distressed SMEs (Board of Governors of the Federal Reserve System, 2020). As SMEs are getting a working capital loan from the central banks' mechanism SPV they can maintain the employment and continue their production line (Kang and Rhee, 2020)

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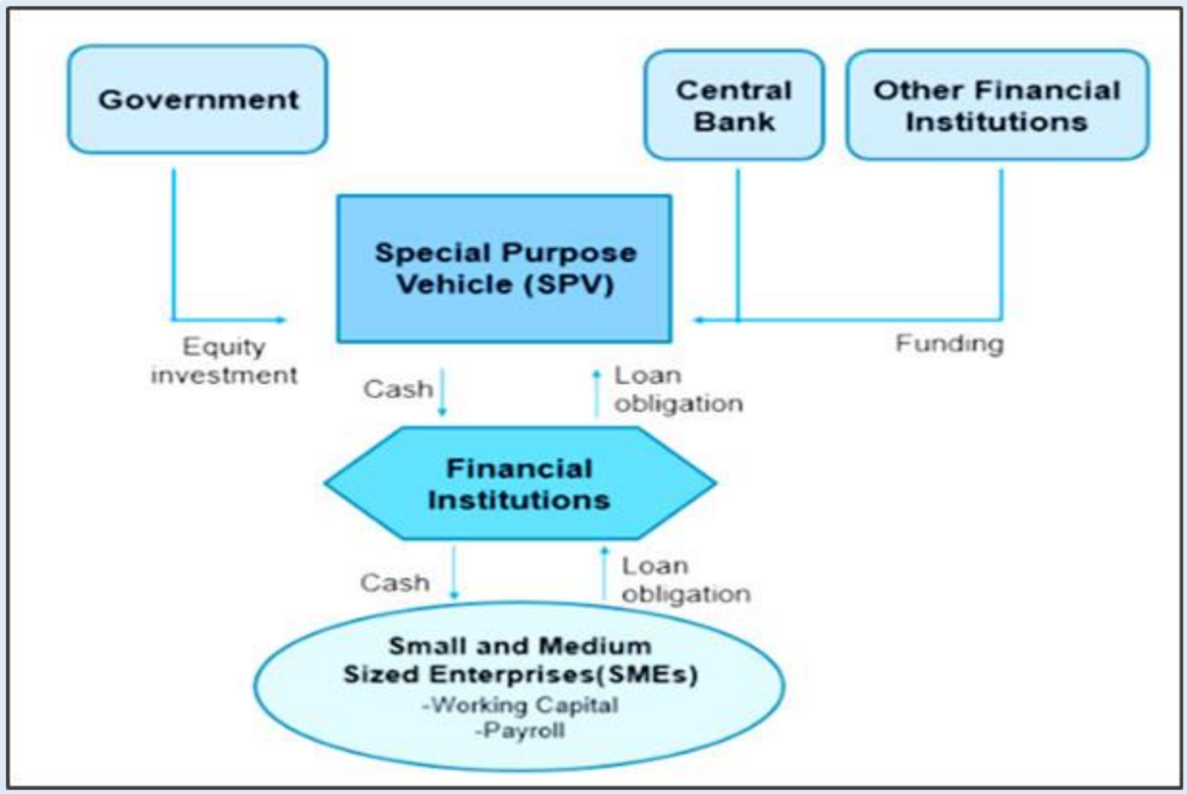
Figure-16: Financing smaller firms (A central bank lending program can incorporate public risk sharing; April 23, 2020)



Source: IMF staff

Abrupt attract of COVID-19 on lives and economy, made it extremely difficult to guess about its venomous shape and movement. The Vigorous and contagious nature of COVID-19 made it tough for economists about the exact future recovery structure (Ranasinghe and Carvalho, 2020). If freeing the containment and reopen the businesses and institutions in Q3 and Q4, possibly the economy will rebound look like V. It can be U shape scenario if the recovery will take more than two or three quarters. When easing lockdown may boost the economy but unemployment and corporate insolvencies start too high, recovery will look like W . When easing lockdown is not possible earlier, social distancing protracted for over a year and needs big stimulus to normalize the economy will need L shape recovery. The Sharp economic downturn and gradual recovery would be looking like a tick mark style called swoosh recovery.

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Governments should concern on the allocation of the stimulus package (Ahmed, 2020; Islam and Divadkar, 2020), an economic rescue, spending to the distress people, led great intervention on production and distribution of goods and services (Phelps, 2020) and avoiding corruption by rebuilding trust, integrity, transparency, and compliance in every sector.

China, Europe, and the US, central of global value chain hub region have been stuck severely including industrial production has fallen by 13.5% in china both January and February combined comparing with other years due to COVID-19 (Seric, Görg, Mösle and Windisch, 2020). New 3Rs (resilience, responsiveness, and reconfigurability) must have been added with traditional supply chain metrics (cost, quality, and delivery) to avoid disruptions in the international production network for the upcoming future (Chandra, 2020).

Some other things are recommended that investors can invest for a long time horizon which may offset the short time pain and panic. The capital market analysts already mentioned some of the stocks like Amazon, Alexion Pharmaceuticals, and Bank of America could be the option of investing for a long time horizon. Work from home, distant working and the revival of the online economy can perform as pivotal points in envisaging the future courses. New technologies, ideas, and innovations to work from the remote zone (Stewart, 2020) will reduce interruptions and enhance efficiency and working hours in the future. Several economists also argued that if the government remove visas restrictions or simplifying the visas, cut the travel taxes and introducing incentives once the pandemic is under control it will take 10 months to get its normal level but again it is totally dilemma that when the government will get rescue from this COVID-19 pandemic and reopen travel and tourism sectors because all things are interlinked but uncertain.

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4.0 Concluding Remarks

The COVID-19 pandemic starts with medical emergencies now converts into an uncertain economic disaster, interrupts in leading regular life and halts economic activities, really upsetting to compare with 2008 great financial crisis, which was a financial shock different from COVID-19, as shock from novel coronavirus is unprecedented , affects both medical and economic sectors severely, repercussions are unexpected deaths, trade and supply chain disruptions, travel and tourism restriction, job layoffs, augmenting poverty and hunger, etc. Necessary measures to contain the virus – quarantine, school, university and daycare closures, and shutdowns of non-essential businesses, social distancing, and asking people to work from home – are bringing economies to a squealing halt. Monetary and fiscal policies should be collaborative to mitigate not only liquidity and solvency crises but also to restore market confidence and get a sustainable recovery in every sector. Capital markets, SMEs (Small Medium Enterprises), and communities may reduce their sufferings of getting support from stimulus packages but not enough to contain deaths and alleviate economic losses immediately. So along with these policies, philanthropic contributions to needy people, giving sufficient health care support and ensuring working environment to migrants, technological innovations, social innovations, restricting misinformation to reduce infodemic, updating infrastructure, solidarity within boundaries and beyond the nations, avoiding corruption, establishing informal network amid this pandemic, emphasize more on the digital economy, developing globally connected supply chain systems, setting up a green zone (a mathematical model to get out from lockdown), increasing political consensus in the globe and reducing global fragmentation should be guaranteed to block outbreak of deadly novel coronavirus and resumption global economy. If we treat it as a war between humanity versus COVID-19, then one effective vaccine can change the game. That moment would be the time of proving the world is globalized with solidarity and unity. Keeping that hope in mind all researchers, economists, medical officers, and people in the world are working to confront COVID-19.

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References

Adrian, T. and Natalucci, F., 2020. COVID-19 Crisis Poses Threat to Financial Stability. *IMFBlog*,[online] Available at: <https://blogs.imf.org/2020/04/14/covid-19-crisis-poses-threat-to-financial-stability/> [Accessed 22 April 2020].

Ahir, H., Bloom, N. and Furceri, D., 2020. Global Uncertainty Related to Coronavirus at Record High. *IMFBlog*, [online] Available at: <https://blogs.imf.org/2020/04/04/global-uncertainty-related-to-coronavirus-at-record-high/> [Accessed 29 April 2020].

Ahmed, A., 2020. India outlines $23 billion stimulus to help poor hit by lockdown. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/india-stimulus-support-lockdown-pandemic-covid19-epidemic-economics/> [Accessed 28 April 2020].

Becker, E., 2020. How hard will the coronavirus hit the travel industry? *National Geographic*, [online] Available at: <https://www.nationalgeographic.com/travel/2020/04/how-coronavirus-is-impacting-the-travel-industry/> [Accessed 11 April 2020].

Betti, F. and Hong, P., 2020. Coronavirus is disrupting global value chains. Here's how companies can respond. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/02/how-coronavirus-disrupts-global-value-chains> [Accessed 21 April 2020].

Bhansali, V., 2020. Helicopter Money Is Here! *Forbes (Markets)*, [online] Available at: <https://www.forbes.com/sites/vineerbhansali/2020/03/17/helicopter-money-is-here/#7f3dab59781e> [Accessed 25 April 2020].

Bingham, R. and Hariharan, K., 2020. This is the impact of the Coronavirus on business. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/02/why-is-coronavirus-a-global-business-risk> [Accessed 21 April 2020].

Blyth, N., 2020. How companies can build resilience against pandemics. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/how-companies-build-

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

resilience-against-pandemics/> [Accessed 27 April 2020].

Board of Governors of the Federal Reserve System, 2020. *Federal Reserve Takes Additional Actions To Provide Up To $2.3 Trillion In Loans To Support The Economy*. [Online] Available at: <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200409a.htm> [Accessed 26 April 2020].

Brende, B., 2020. Great Recession showed countries can't fight the coronavirus economic crisis alone. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/covid-19-coronavirus-economic-crisis-great-recession/> [Accessed 28 April 2020].

Brondolo, J., 2009. Collecting Taxes during an Economic Crisis: Challenges and Policy Options. *IMF*, [online] Available at: <https://www.imf.org/en/Publications/IMF-Staff-Position-Notes/Issues/2016/12/31/Collecting-Taxes-During-an-Economic-Crisis-Challenges-and-Policy-Options-23092> [Accessed 27 April 2020].

Business Standard, 2020. Global financial conditions tightened abruptly due to COVID-19: IMF. [Online] Available at: <https://www.business-standard.com/article/news-ani/global-financial-conditions-tightened-abruptly-due-to-covid-19-imf-120041401654_1.html> [Accessed 19 April 2020].

Chandra, P., 2020. 3 ways you can prepare your supply chain for the post-COVID-19 economy. *Markets N*, [online] Available at: <https://blog.marketsn.com/covid19-and-supply-chains/> [Accessed 28 April 2020].

Chau, D., 2020. ASX lifts, while collapse in business confidence points to 'unprecedented' recession: NAB report. *ABC News*, [online] Available at: <https://www.abc.net.au/news/2020-04-14/dow-jones-wall-street-asx-coronavirus-market-confidence/12146232> [Accessed 14 April 2020].

Choudhury, S., 2020. India announces $22.5 billion stimulus package to help those affected by the lockdown. *CNBC*, [online] Available at: <https://www.cnbc.com/2020/03/26/coronavirus-

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

india-needs-a-support-package-larger-than-20-billion-dollars.html> [Accessed 24 April 2020].

Cox, J., 2020. Coronavirus job losses could total 47 million, unemployment rate may hit 32%, Fed estimates. *CNBC*, [online] Available at: <https://www.cnbc.com/2020/03/30/coronavirus-job-losses-could-total-47-million-unemployment-rate-of-32percent-fed-says.html> [Accessed 28 April 2020].

Coy, P., 2020. The Great Coronavirus Crash of 2020 Is Different. *Bloomberg Businessweek*, [online] Available at: <https://www.bloomberg.com/news/articles/2020-03-19/the-great-coronavirus-crash-of-2020-is-different> [Accessed 12 April 2020].

D'Auria, G. and Smet, A., 2020. 5 ways to manage a crisis, according to McKinsey. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/covid19-economy-china-health-coronavirus-economics-global/> [Accessed 27 April 2020].

Davies, G., 2020. UK coronavirus lockdown: what are the rules, and when will it be lifted? *The Telegraph*, [online] Available at: <https://www.telegraph.co.uk/news/2020/04/29/uk-rules-lockdown-restrictions-coronavirus/> [Accessed 29 April 2020].

Davies, P., 2012. Asia’s fiscal firepower to the rescue. *Financial Times*, [online] Available at: <https://www.ft.com/content/03ad4bd7-f5ac-3c29-8e5e-680bbd59e059> [Accessed 25 April 2020].

Dell’Ariccia, G., Mauro, P., Spilimberg, A. and Zettelmeyer, J., 2020. Economic Policies for the COVID-19 War. *IMFBlog*, [online] Available at: <https://blogs.imf.org/2020/04/01/economic-policies-for-the-covid-19-war/> [Accessed 25 April 2020].

Evans, D. and Acosta, A., 2020. The Economic Impact of COVID-19 in Asia and the Pacific: A Round-Up of Analysis from the Past Week. *Center for Global Development*, [online] Available at: <https://www.cgdev.org/blog/the-economic-impact-covid-19-asia-and-pacific-round-up-analysis-past-week> [Accessed 24 April 2020].

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

Faus, J., 2020. This is how coronavirus could affect the travel and tourism industry. *Reuters and World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/world-travel-coronavirus-covid19-jobs-pandemic-tourism-aviation/> [Accessed 28 April 2020].

Gali, J., 2020. Helicopter money: The time is now. *VOX CEPR Policy Portal*, [online] Available at: <https://voxeu.org/article/helicopter-money-time-now> [Accessed 25 April 2020].

Gandel, S., 2020. How will the U.S. pay for $2 trillion coronavirus stimulus package? [Online] Available at: <https://www.cbsnews.com/news/coronavirus-stimulus-package-pay-united-states/> [Accessed 3 May 2020].

Gay, A., 2020. A cost-effective way to help emerging markets fight Covid-19. *Financial Times*, [online] Available at: <https://www.ft.com/content/777cd7da-7269-11ea-90ce-5fb6c07a27f2> [Accessed 25 April 2020].

Gopinath, G., 2020. The Great Lockdown: Worst Economic Downturn since the Great Depression. *IMFBlog*, [online] Available at: <https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/> [Accessed 22 April 2020].

Guermond, V. and Datta, K., 2020. How coronavirus could hit the billions migrant workers send home. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/how-coronavirus-could-hit-the-billions-migrant-workers-send-home/> [Accessed 23 April 2020].

Henderson, M., 2020. 3 ways businesses must prepare for coronavirus. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/how-should-business-prepare-for-coronavirus/> [Accessed 27 April 2020].

Howell, W., 2020. How to boost global resilience to COVID-19. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/how-to-boost-global-resilience-to-covid-19> [Accessed 27 April 2020].

Hutt, R., 2020. 'Act fast and do whatever it takes' to fight the COVID-19 crisis, say leading

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

economists. *World Economic Forun*, [online] Available at: <https://www.weforum.org/agenda/2020/03/covid-19-economic-crisis-recession-economists/> [Accessed 25 April 2020].

Hyland, K., 2020. Statement on the COVID-19 Implications for Migrant Workers. *Institute for Human Rights and Business*, [online] Available at: <https://www.ihrb.org/news-events/news-events/statement-covid-19-migrant-workers> [Accessed 23 April 2020].

Islam, S. and Divadkar, Y., 2020. How Bangladesh's leaders should respond to the economic threats of COVID-19. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/covid-19-coronavirus-bangladesh/> [Accessed 28 April 2020].

Izvorski, I., Mahajan, S., Moorty, L. and Vincelette, G., 2020. A policy framework for mitigating the economic impact of COVID-19. *Brookings*, [online] Available at: <https://www.brookings.edu/blog/future-development/2020/04/20/a-policy-framework-for-mitigating-the-economic-impact-of-covid-19/> [Accessed 26 April 2020].

Joshi, M., 2020. Who will be the winners in a post-pandemic economy? *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/post-pandemic-economy-favour-fastest-movers/> [Accessed 21 April 2020].

Kalache, A., 2020. Coronavirus makes inequality a public health issue. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/coronavirus-makes-inequality-a-public-health-issue/> [Accessed 24 April 2020].

Kang, K. and Rhee, C., 2020. A Post-Coronavirus Recovery in Asia—Extending a "Whatever it Takes" Lifeline to Small Businesses. *IMFBlog*, [online] Available at: <https://blogs.imf.org/2020/04/23/a-post-coronavirus-recovery-in-asia-extending-a-whatever-it-takes-lifeline-to-small-businesses/> [Accessed 26 April 2020].

Khan, D. and Khan, L., 2020. The Economic Impact of COVID-19 on Developing Countries. *Inter Press Service*, [online] Available at: <http://www.ipsnews.net/2020/04/the-economic-impact-of-covid-19-on-developing-countries/> [Accessed 23 April 2020].

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

Kihara, L. and Leussink, D., 2020. Here's how coronavirus has affected Asia's factories. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/asias-factory-activity-coronavirus/> [Accessed 24 April 2020].

Kivity, S., 2020. Why infrastructure is the only way to fight a COVID-19 recession in the US. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/covid-19-recession-us-infrastructure-solution/> [Accessed 27 April 2020].

Kretchmer, H., 2020. Coronavirus could trigger a hunger pandemic – unless urgent action is taken. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/covid-19-coronavirus-could-double-acute-hunger-un-warns> [Accessed 24 April 2020].

Lacina, L., 2020. COVID-19 sparked an economic crisis 'like no other' - but these measures can help now: WHO, IMF. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/who-briefing-0403-economic-response-vulnerable/> [Accessed 24 April 2020].

Lacina, L., 2020. 'That's enough' - Global leaders must unite to fight COVID-19: WHO briefing. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/coronavirus-covid-08-april-who-briefing/> [Accessed 27 April 2020].

Lee, Y., 2020. Singapore announces third stimulus package worth $3.6 billion to soften coronavirus impact. *CNBC*, [online] Available at: <https://www.cnbc.com/2020/04/06/coronavirus-singapore-plans-third-stimulus-package-to-support-economy.html> [Accessed 24 April 2020].

Lalon, R., 2020. *COVID-19 Vs Bangladesh: Is It Possible To Recover The Impending Economic Distress Amid This Pandemic?* [Online] Available at: <http://dx.doi.org/10.2139/ssrn.3579697> [Accessed 4 May 2020].

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

Mauro, P. and Gaspar, V., 2020. Fiscal Policies to Protect People during the Coronavirus Outbreak. *IMFBlog*, [online] Available at: <https://blogs.imf.org/2020/03/05/fiscal-policies-to-protect-people-during-the-coronavirus-outbreak/?utm_medium=email&utm_source=govdelivery> [Accessed 27 April 2020].

Muggah, R. and Zanuso, V., 2020. Migrants and mayors are the unsung heroes of COVID-19. Here's why. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/migrants-and-mayors-are-the-unsung-heroes-of-covid-19-heres-why/> [Accessed 24 April 2020].

NASDAQ, [online] Available at: <https://www.reuters.com/article/us-imf-worldbank-financial-stability/pandemic-exposing-cracks-in-financial-system-bank-losses-likely-imf-idUSKCN21W273> [Accessed 19 April 2020].

Nebehay, S., 2020. Exclusive: Coronavirus crisis could destroy far more than 25 million jobs - ILO official. *Reuters*, [online] Available at: <https://www.reuters.com/article/us-health-coronavirus-unemployment-exclu/exclusive-coronavirus-crisis-could-destroy-far-more-than-25-million-jobs-ilo-official-idUSKBN21D2MM> [Accessed 23 April 2020].

Netland, T., 2020. A better answer to the ventilator shortage as the pandemic rages on. [Online] Available at: <https://www.weforum.org/agenda/2020/04/covid-19-ventilator-shortage-manufacturing-solution/> [Accessed 24 April 2020].

Okamoto, G., 2020. The Short-term Liquidity Line: A New IMF Tool to Help in the Crisis. *IMFBlog*, [online] Available at: <https://blogs.imf.org/2020/04/22/the-short-term-liquidity-line-a-new-imf-tool-to-help-in-the-crisis/> [Accessed 25 April 2020].

Okhowat, A., 2020. Sharing tools and data will help us beat COVID-19. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/sharing-data-to-beat-covid-19/> [Accessed 26 April 2020].

Oliver, L., 2020. Coronavirus: a pandemic in the age of inequality. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/coronavirus-pandemic-inequality-among-workers/> [Accessed 24 April 2020].

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

Oliver, L., 2020. Most people see COVID-19 as an economic crisis first, health risk second, survey finds. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/covid-19-public-perception-economic-health-crisis-coronavirus-pandemic-ipsos/> [Accessed 24 April 2020].

Phelps, E., 2020. US: What will the post-pandemic economy look like? *World Economic Forum and Project Syndicate*, [online] Available at: <https://www.weforum.org/agenda/2020/03/insuring-the-survival-of-post-pandemic-economies/> [Accessed 28 April 2020].

Ranasinghe, D. and Carvalho, R., 2020. Coronavirus: 5 predictions for how the economy might recover. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/alphabet-soup-how-will-post-virus-economic-recovery-shape-up/> [Accessed 26 April 2020].

Rhee, C., 2020. COVID-19 Pandemic and the Asia-Pacific Region: Lowest growth since the 1960s. *IMF Blog*, [online] Available at: <https://blogs.imf.org/2020/04/15/covid-19-pandemic-and-the-asia-pacific-region-lowest-growth-since-the-1960s/> [Accessed 21 April 2020].

Roach, S., 2020. The False Crisis Comparison. *Project Syndicate*, [online] Available at: <https://www.project-syndicate.org/commentary/covid-19-crisis-nothing-like-2008-by-stephen-s-roach-2020-03> [Accessed 3 May 2020].

Roach, S., 2020. Why decisive health action matters more than financial decisions in the COVID-19 crisis. *Project Syndicate and World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/covid19-economic-crisis/> [Accessed 29 April 2020].

Rogoff, K., 2020. Mapping the COVID-19 Recession. *Project Syndicate*, [online] Available at: <https://www.project-syndicate.org/commentary/mapping-covid19-global-recession-worst-in-150-years-by-kenneth-rogoff-2020-04> [Accessed 30 April 2020].

Roubini, N., 2020. The Coming Greater Depression of the 2020s. *Project Syndicate*, [online]

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

Available at: <https://www.project-syndicate.org/commentary/greater-depression-covid19-headwinds-by-nouriel-roubini-2020-04> [Accessed 29 April 2020].

Sandbu, M., 2020. Huge fiscal spending is needed to fight the coronavirus downturn. *The Financial Times*, [online] Available at: <https://www.ft.com/content/9963f71e-67b2-11ea-800d-da70cff6e4d3> [Accessed 27 April 2020].

Sault, S., 2020. What we know about the Wuhan coronavirus and urgent plans to develop a vaccine. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/01/wuhan-coronavirus-china-cepi-vaccine-davos/> [Accessed 24 April 2020].

Sault, S., 2020. Why lockdowns can halt the spread of COVID-19. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/why-lockdowns-work-epidemics-coronavirus-covid19/> [Accessed 29 April 2020].

Schroeder, P., 2020. Pandemic exposing 'cracks' in financial system, bank losses 'likely' - IMF.

Schwab, K. and Vanham, G., 2020. What we must do to prevent a global COVID-19 depression. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/covid-19-how-to-prevent-a-global-depression/> [Accessed 27 April 2020].

Secard, R., 2020. IMF: 2020 Will Feature Worst Economic Downturn since the Great Depression. *Industry Week*, [online] Available at: <https://www.industryweek.com/home/contact/22028728/ryan-secard> [Accessed 30 April 2020].

Securitization: Overview. 2016. [Video] Yale School of Management.

Sengyee, L., 2020. How China's industrial internet is fighting COVID-19. *Worl Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/china-covid-19-digital-response/> [Accessed 26 April 2020].

Seric, A., Gorg, H., Mosle, S. and Windisch, M., 2020. Managing COVID-19: How the pandemic

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

disrupts global value chains. *UNIDO*, [online] Available at: <https://iap.unido.org/articles/managing-covid-19-how-pandemic-disrupts-global-value-chains> [Accessed 28 April 2020].

Shedlock, M., 2020. Coronavirus Geometric Progression Suggests 100,000 Infections in a Week. *FXSTREET*, [online] Available at: <https://www.fxstreet.com/analysis/coronavirus-geometric-progression-suggests-100-000-infections-in-a-week-202001290321> [Accessed 29 April 2020].

Stewart, K., 2020. How to navigate the transition to remote work during the COVID-19 pandemic. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/covid-19-transition-to-remote-work/> [Accessed 28 April 2020].

Subacchi, P., 2020. How could Coronavirus impact Italy's economy? *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/italy-coronavirus-econoic-slow-down-virus-outbreak/> [Accessed 21 April 2020].

szlezak, p., Reeves, M. and Swartz, P., 2020. Understanding the Economic Shock of Coronavirus. *Harvaerd Business Review*, [online] Available at: <https://hbr.org/2020/03/understanding-the-economic-shock-of-coronavirus> [Accessed 29 April 2020].

Taylor, C., 2020. Markets 'totally unprepared' for how long economies will take to normalize after coronavirus, economist says. *CNBC*, [online] Available at: <https://www.cnbc.com/2020/04/07/coronavirus-markets-unprepared-for-time-economies-need-to-normalize.html> [Accessed 28 April 2020].

Tembo, D. and Adhikari, R., 2020. How poor countries can deal with the economic shock of COVID-19. *World Economic Forum*, [online] Available at: <http://How poor countries can deal with the economic shock of COVID-19> [Accessed 24 April 2020].

Thackeray, D., 2020. 7 ways businesses can respond to the coronavirus. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/mckinsey-business-response-to-coronavirus/> [Accessed 27 April 2020].

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

UNDP (Latin America and Caribbean), 2020. A Conceptual Framework for Analyzing the Economic Impact of COVID-19 and its Policy Implication. [Online] Available at: <https://www.undp.org/content/dam/rblac/Policy%20Papers%20COVID%2019/UNDP-RBLAC-CD19-PDS-Number1-EN-F2.pdf> [Accessed 25 April 2020].

Ventura, L., 2020. Corruption can have no place in our COVID-19 recovery. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/corruption-no-place-covid-coronavirus-recovery/> [Accessed 28 April 2020].

Vera, C., 2020. As coronavirus spreads to poorer countries, here's how the world can help. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/03/coronavirus-developing-countries-inequality-debt-oxfam/> [Accessed 24 April 2020].

WHO, 2020. *Advice on the Use of Point-Of-Care Immunodiagnostic Tests for COVID-19*. [Online] Available at: <https://www.who.int/news-room/commentaries/detail/advice-on-the-use-of-point-of-care-immunodiagnostic-tests-for-covid-19> [Accessed 26 April 2020].

Wharton, K., 2020. Global uncertainty: The economic fallout from coronavirus. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/02/containing-the-coronavirus-what-s-the-risk-to-the-global-economy> [Accessed 21 April 2020].

Williams, S., 2020. Coronavirus Stock Market Crash: 3 Stocks You Need to Own. *NASDAQ*, [online] Available at: <https://www.nasdaq.com/articles/coronavirus-stock-market-crash%3A-3-stocks-you-need-to-own-2020-03-22> [Accessed 11 April 2020].

Winck, B., 2020. JPMorgan officially forecasts a coronavirus-driven recession will rock the US and Europe by July. *Markets Insider*, [online] Available at: <https://markets.businessinsider.com/news/stocks/coronavirus-fuel-recession-forecast-us-europe-economic-july-market-jpmorgan-2020-3-1028994637> [Accessed 28 April 2020].

Woods, N. and Batniji, R., 2020. There's only one option for a global coronavirus exit strategy. *World Economic Forum*, [online] Available at: <https://www.weforum.org/agenda/2020/04/there-s-only-one-option-for-a-global-

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com

coronavirus-exit-strategy/> [Accessed 27 April 2020].

World Bank Group (OKR), 2020. East Asia and Pacific in the Time of COVID-19. [Online] Available at: <https://openknowledge.worldbank.org/handle/10986/33477> [Accessed 24 April 2020].

WTO, PRESS/855PRESS RELEASE, 2020. Trade set to plunge as COVID-19 pandemic upends global economy. [Online] Available at: <https://www.wto.org/english/news_e/pres20_e/pr855_e.htm> [Accessed 22 April 2020].

Md. Khaled Bin Amir, Lecturer at the Department of Banking and Insurance, University of Dhaka, Dhaka Bangladesh, Email: k.b.a.bank.du@gmail.com