Economic Impact of COVID-19 Pandemic: A Critical Review

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Abstract:

Coronavirus disease 2019 (COVID-19) is a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic caused by the novel coronavirus. The propagation of the virus has been exponential; currently, COVID-19 cases are present worldwide in 213 countries, areas, or territories. Globally researchers are working and sharing their input on COVID-19 epidemiology, prevention, treatment, and clinical and diagnostic trends. This paper contains a brief historical and comparative overview of selected pandemics, particularly concerning the COVID-19 pandemic and its impact on the global economy. When new patients are diagnosed, the epidemiological information provided in the paper is subject to change and the status of current cases is updated on a regular basis.

Keywords: COVID – 19, Swine Flu, Global Economy, Health

1. Introduction

In Wuhan, the capital city of Hubei Province, China, local health officials reported unknown cases of viral pneumonia late in December 2019.Soon after, cases spread very quickly to other areas of China. By January 7, 2020, scientists in China had isolated a novel corona virus from these viral pneumonia patients by using real-time reverse transcription polymerase chain reaction (RT-PCR). Accordingly, the virus was identified as coronavirus 2 (SARS-CoV-2) severe acute respiratory syndromes. The disease was subsequently named by the World Health Organisation

(WHO as corona virus disease 2019 (COVID-19). The COVID-19 pandemic, a public health emergency of international concern (PHEIC), was announced by the WHO on January 30, 2020.

43,103 COVID-19 cases were confirmed in 25 countries on 7 February 2020. Similarly, 77,780 cases were confirmed in China alone in February 2020 and 2,459 in 33 other countries worldwide. The cumulative number was 80 239, including 2,700 deaths worldwide. Professional consensus, standards and recommendations for the diagnosis, treatment and prevention of transmission have been identified with the incremental identification of coronavirus[1] [2]. SARS-CoV-2-related pneumonia is an emerging illness worldwide. Due to the unusual replication process, coronaviruses have a high recombination and mutation rate, which promotes their acclimatization to new host and ecological niches [3][4]. Until 2003, limited study evidence was available on these deadly viruses and only ten coronaviruses were identified. However, in 2003, a viral triggered respiratory illness, severe acute respiratory syndrome SARS), erupted and spread to more than 12 states in America, Asia and Europe, killing 800 people in the SARS epidemic [5][6].

The purpose of this chapter is to give insights into the economic problems posed by COVID-19. In relation to the historical context, effect and existence of previous pandemics, it is important to determine the COVID-19 pandemic. This chapter initially gives a brief description of the past and existence of a number of pandemics and compares them to the pandemic of COVID-19. The emphasis is then on understanding the economic trade-offs between the occurrence of infections with COVID-19 and the level of economic activity. This is accompanied by a critical debate on the desirability of isolating social classes with a view to regulating the occurrence of COVID-19 and ultimately reducing pandemic economic losses. The views of Acemoglu et al. [7] in that regard are given special consideration. The critical question of the degree to which individuals should be granted liberty in relation to COVID-19 regulation is discussed and brief remarks follow on the conditions that are likely to impede the economic recovery from COVID-19[8][9].

2. Pandemics in the Past Century

The last century has seen a plethora of outbreaks and epidemics. Coronaviruses such as SARS-CoV and MERS-CoV are thought to be responsible for a majority of these outbreaks Table 1. Various influenza viruses (H1N1, H2N2 and H3N2) have been at the helm of all the four

pandemics in the previous 105 years. The H1N1 virus alone has been responsible for following two pandemics

1) The Spanish flu of 1918-1919 and

2) Swine flu in 2009-2010, while the H2N2 and H3N2 influenza viruses have been liable for the Asian flu of 1957-1958, and the Hong Kong flu of 1968-1969, respectively. In this section, we provide an overview of all these pandemics.

2.1 Spanish Flu Pandemic (1918-1919)

The Spanish flu is known by many people to be the deadliest pandemic throughout the entire existence of humankind, with the assessed number of fatalities 20 million to 50 million, including 675,000 Americans [10]. The H1N1 virus brought about the disease with genes of avian origin. In contrast to most diseases, Spanish flu had a peculiar attribute of being extremely deadly against the youthful and healthy people. It was on the ground that the virus attacked hosts by causing cytokine storms in the immune system of patients, which generally lead to death[11]. Since youngsters had more strong immune systems as compared to aged people, they were bound to be affected by the virus.

2.2 Asian Flu Pandemic (1957-1958)

The Asian flu pandemic started in February of 1957 in Singapore. It was the second major pandemic of the 20th century after the Spanish flu pandemic of 1918. It is expected to have caused 116,000 passing in the US and an aggregate of 1.4 million fatalities all over the world[12]. It was recognized to be the type A H2N2 virus similar to H1N1, is accepted to be of avian origin in Guizhou, China. Eleven years after the episode, the H2N2 virus subsequently mutated to a strain that is no longer able to affect humans.

2.3 Hong Kong Flu Pandemic (1968-1969)

The Hong Kong flu was a category two flu pandemic was the third major influenza pandemic of the 20th century and executed an expected 1 to 4 million people all around. It was caused by the H3N2 virus, which is accepted to have radiated from the H2N2 virus that caused the Asian flu pandemic. The H3N2 virus included a mutated version of the HA antigen present in H2N2 however held the same N2 antigen. The impact of the Hong Kong flu pandemic across the world has been portrayed as sporadic, which is believed to have been because of the earlier immunity

developed against the N2 antigen by virtue of the Asian flu pandemic . Unlike the H1N1 virus behind the Spanish flu pandemic, the H3N2 virus was more aggressive towards people above the age of 65.

2.4 Swine Flu Pandemic (2009-2010)

Throughout the spring of 2009, another strain of the type A H1N1 influenza virus radiated, leading to the swine flu pandemic. Like the Spanish flu, which was caused by other strains of the same virus, the swine flu pandemic was more lethal against people below 65 years of age. Pre-acquired immunity in older people by previous exposure to the H1N1 virus was accepted to be one of the reasons for the same. The US Centres for Disease Control and Prevention (CDCP) estimated that there had been more than 43.3 million cases, 195,086 hospitalizations and 8868 deaths in the US only. At the same time, the worldwide tally of fatalities remains over 151,700[13].

Table 1: Major viral diseases (1915 - present)

Disease	**Spanish Flu**	**Asian Flu**	**Hong Kong Flu**	**SARS**	**Swine Flu**	**MERS**	**EVD**	**COVID-19**
Causative Agent	H1N1	H2N2	H3N2	SARS-CoV	H1N1 (new strain)	MERS-CoV	Zaire ebolavirus	SARS-CoV-2
Year	1818-1919	1957-1958	1968-1969	2002-2004	2009-2010	2012 present	2014-2016	2019 – present
Death	~ 50 million	~1.1 million	~1 million	774	~151,700 to 575,400	871*	11,325	8,92,880
Classification	Pandemic	Pandemic	Pandemic	Outbreak	Pandemic	Epidemic	Epidemic	Pandemic

Data Source: WHO, CDC

3 Impact of the Covid-19 Pandemic on the Global Economy

Because of the absence of any solid treatment strategy, social distancing presently has been identified as an ideal guard strategy against the COVID-19 pandemic. Be that as it may, the need for social distancing has incited Governments around the globe to impose/force lockdowns, which has marked a tremendous scratch in the economy. All trivial and non-essential services have been compelled to shut down, causing virtually all intents and purposes all the modern segments to confront significant disruptions in the supply chain and thus, putting billions of people in danger of losing their positions. Besides, the rapid outbreak of COVID-19 has

constrained Governments to limit the exchange of a majority of goods across country borders, leaving global exchange streams on the verge of collapse. As per the projections set forth by JPMorgan Chase & Co., the COVID-19 pandemic can deaden the global economy, with an expected loss of more than 5.5 trillion US dollars in the following 18-24 months[14]. In this section, we analyze the impact of the COVID-19 pandemic on the overall economy by thoroughly dissecting its impact on various monetary sectors.

3.1 Automotive Industries

The automotive industry has seen significant disruptions underway because of stringent lockdown measures upheld in several countries worldwide as a push to contain the pandemic. As social distancing is enforced and people are required to stay in their homes, usage of automobiles, including both public and private transport, has declined across the world. The only automobiles now being in use are the vehicles associated with essential services.

3.1.1 Relevant Statistics

In China, the automobile industry registered an 18% drop in deals in year-over-year (YoY) deals of January 2020. Despite regulation endeavours, this number raised to 79.1% in February 2020, which is the greatest ever YoY drop experienced by the Chinese automotive industry[15]. In March 2020, the YoYdeals of traveller vehicles and business vehicles in India saw a decline of 52% and89%, respectively, as dealers had to shut down their showrooms following government specifications to restrict the spread of COVID-19 [16] [17]. As indicated by the European Automobile Manufacturers Association (ACEA), the consolidated production losses in the European Union (EU) and the United Kingdom add up to more than 2.1 million vehicles starting in April 2020. Moreover, the employment of more than 1.1 million people has been antagonistically affected due to factory shutdowns[18]. In the USA, the COVID-19 outbreak has constrained the majority of automakers, including General Motors, Fiat, Ford, and many others, to suspend their production activities[19]. According to the assessments published by the Alliance for Automotive Innovation in March 2020, 93% of all automobile production plants had to shut down in the USA following the COVID-19 outbreak[20].

3.2 Aviation Industry

The COVID-19 pandemic massively impacted the aeronautics business. Affected countries, which include almost all the nations, have been compelled to impose travel prohibitions on both international and domestic flights. The only active aviation includes critical supply routes that support cargo and freight aircraft.

3.2.1 Relevant Statistics

As per an ongoing report published by the International Air Transport Association (IATA), the global air travel demand increased by just 2.4% in January 2020, which is the most reduced YoY increase enlisted in the most recent decade[21]. The significant disruption in travel demand, however, was recorded between 24 and 30 March 2020, when the reported number of operational flights plummeted to 280,000, a sharp decline from 780,000 flights revealed in a similar period in 2019[22]. As shown by the most recent IATA estimates, the aircraft industry is well on target to lose as much as 314 billion US dollars in incomes inclusive, taking after the COVID-19 crisis[23]. As aircraft services are moderated down, the intrigued for the procurement of new aircraft has moreover dropped. The total number of aircraft orders has diminished from 1858 in 2018 to 235 in 2020[21]. Figure 1 shows the unemployment in the aviation industry in some regions as a result of the coronavirus pandemic. Figure 2 displays the loss in revenue in the aviation industry of some regions as a result of COVID-19 pandemic.

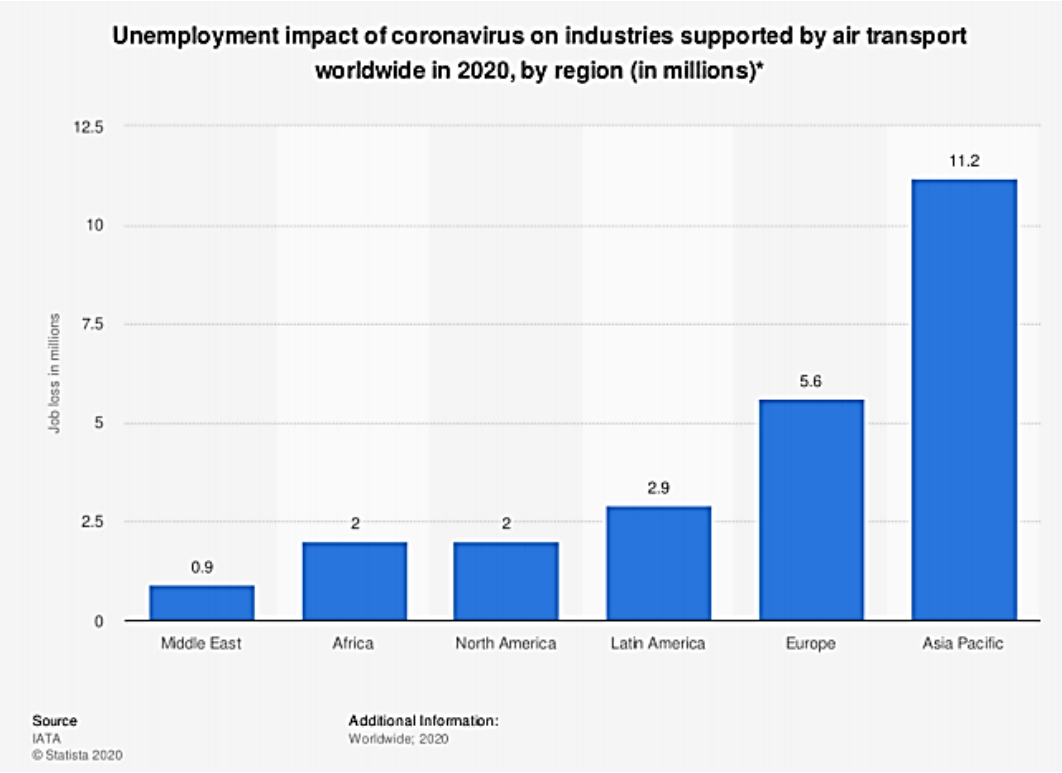

Figure 1: Airline Industry Unemployment Due to COVID-19 Outbreak [24]

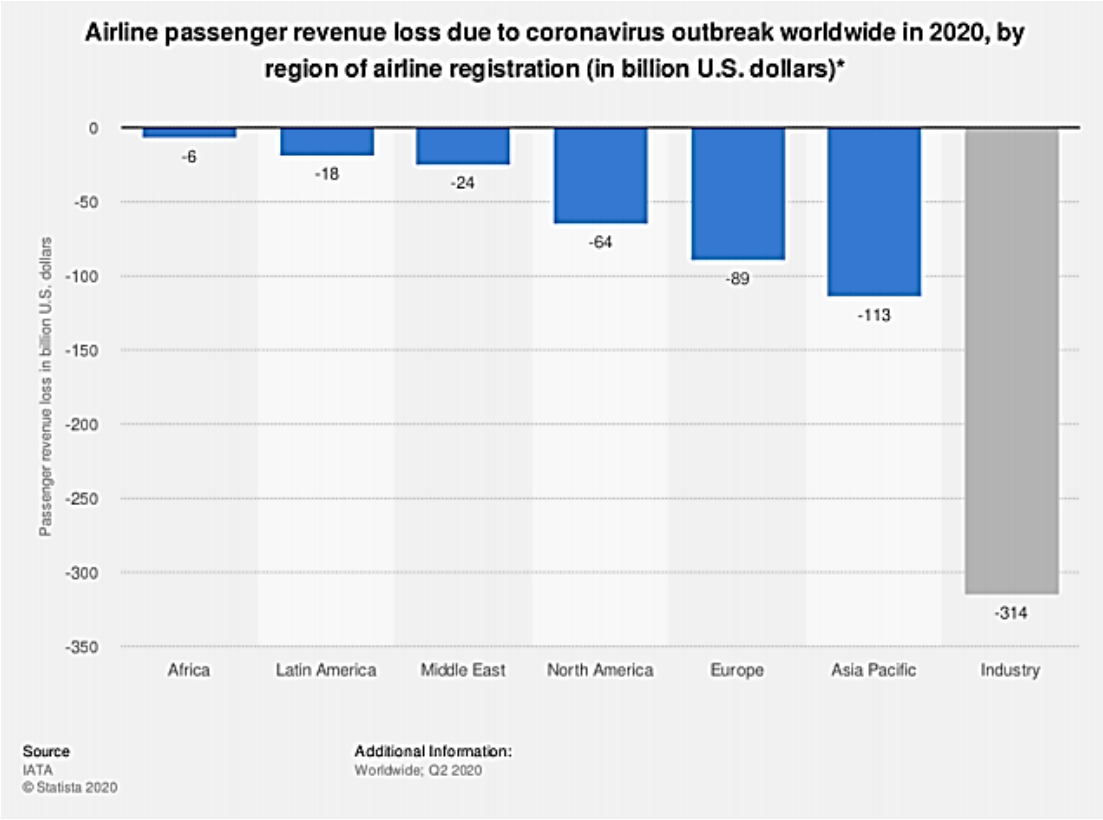

Figure 2: Airline Passenger Revenue Loss Due to COVID-19 Outbreak [24]

3.3 Tour and Travel Industry

The tour and travel industry has been one of the affected industries following the outbreak of COVID-19. Revenues generated from the tourism sector account for 10% of the world's GDP. Therefore, any adversity looked by the tourism sector has the potential to dent the global economy harshly.

3.3.1 Relevant Statistics

As per the World Travel & Tourism Council (WTTC) assessments, the COVID-19 pandemic could prompt a cutback of around 50 million people related to the tourism industry worldwide[25].

As per the figures issued by the United Nations World Tourism Organisation (UNWTO), international visitor appearances could fall by up to 30% in 2020, which relates to lost 300-450 billion US dollars in International Tourism Receipts (ITRs). Figure 3 shows the forecasted change in revenue from the tourism sector in different regions from 2019 to 2020.

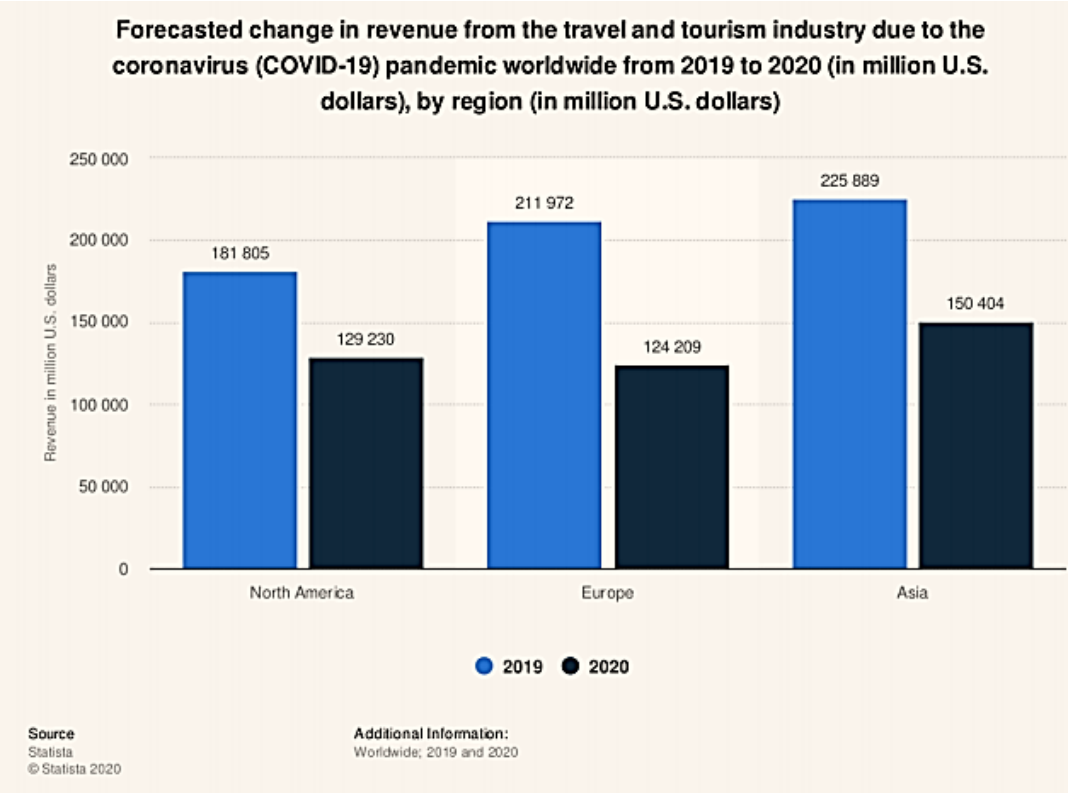

Figure 3: Forecasted change in Revenue in the Travel and Tourism Industry due to COVID-19 pandemic (in million U.S. dollars) [26]

3.4 Oil Industry

The closure of international and domestic passenger aircraft over the world has brought about an extraordinary decline in the consumption of aviation fuel. Similarly, on the ground, all unnecessary traffic remains slowed down, causing a sharp decrease in the global oil demand.

3.4.1 Relevant Statistics

In China, the demand for crude petroleum has fallen by around 3 million barrels per day (which relates to 20% of the total consumption)[27]. The Brent crude petroleum benchmark crumbled over 65% in the first quarter of 2020, while the West Texas Intermediate (WTI) benchmark recorded a drop of over 66%. With oil prices plunging to about 25 US dollars, both these

benchmarks have recorded their most awful ever quarter in history[28]. Figure 4 shows that in 2020 the growth of worldwide demand for oil will decline for the first time since 2009.

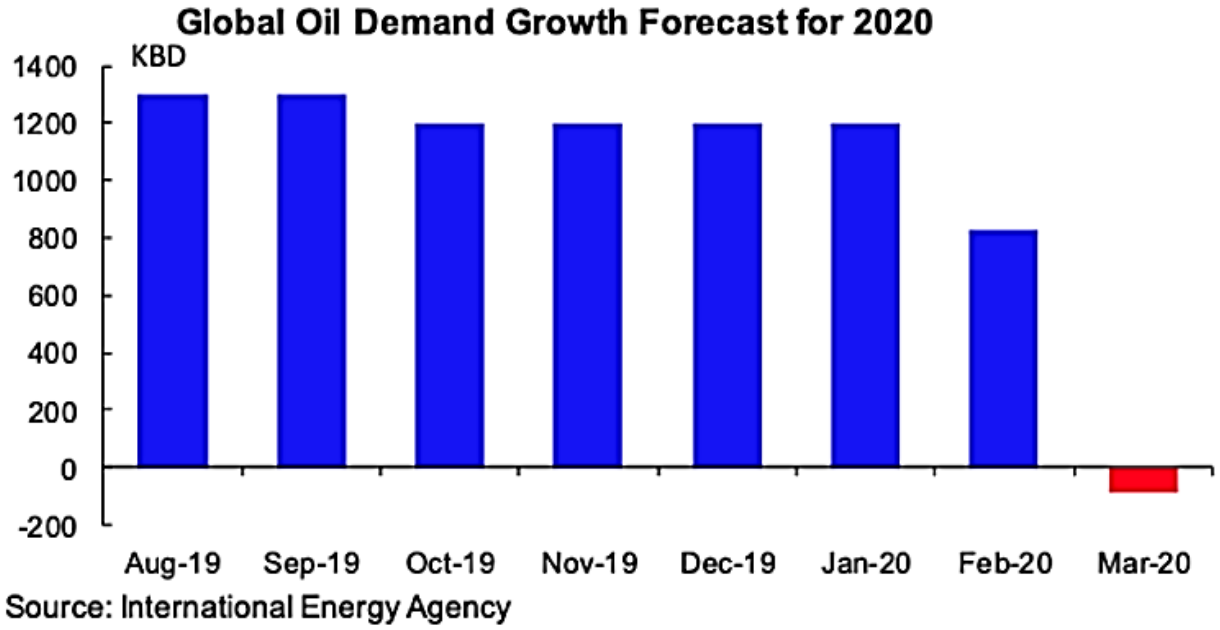

Figure 4: Fall in Oil Demand Due to COVID-19 [29]

3.5 Construction Industry

Construction firms are probably going to confront severe disturbances and postponements in current projects because of the COVID-19 pandemic. Because of a dominant part of the workforce being unable to function because of self-quarantine guidelines, most construction firms will be needed to stop all superfluous activities until the episode is contained. It would probably bring about the large scale re-scheduling of existing ventures, which might lead to severe misfortunes for the industry.

3.5.1 Relevant Statistics

Within simply the initial two months of the year, fixed asset investment in China dropped by 30.3%, while the real estate development dropped by 16.3% [30]. The widespread impact of the COVID-19 episode on the development division in China and other driving economies has provoked Global Data to update its estimate for construction growth in 2020 from 3.1% to 0.5% [31].

3.6 Food Industry

In contrast with other sectors, the impact of the COVID-19 pandemic has not been as extreme on the food industry. Recognition of food as an essential commodity has permitted supply chains related to food items to stay operational. Actually, according to the Food and Agriculture Organization (FAO) of the United Nations (UN), packaged food demand has raised altogether in the months following the COVID-19 episode[32]. In any case, that does not state that any search of the imagination has not influenced the industry. While supply chains for essential food items are kept open, restaurants, cafes, and other luxury food service providers have been forced to shut down[33]. Besides, a few grocery store owners and supermarkets are often finding themselves unable to meet the rising demands owing to 'panic buying' and stocking up of food supplies by the majorities[34].

3.7 Healthcare and Medical Industry

The COVID-19 pandemic has a devastating effect on healthcare services over the world. While most industrial sectors have been economically influenced because of the idleness caused because of lockdown measures and travel boycotts, what the healthcare industry is witnessing is long away from stagnation. Hospitals over the world are now confronting a deficiency of ventilators, intensive care units (ICUs), and personal protective equipment (PPE) required managing the COVID-19 patients. The healthcare systems of even the most developed countries in the world are on the edge of breakdown due to the exponentially increasing number of COVID-19 patients [35].

It is seen in Figure 5 that there is fewer doctors than comparable economically advanced countries in the United States of America per 1000 people. There are 4.1 doctors per 1000 people in Spain and Italy, and they have had trouble dealing with the rise in the number of positive cases of COVID-19. As the US has the largest number of positive cases of COVID-19 in the world and fewer doctors per 1000 individuals, it is impossible for it to handle the epidemic. India is more than US populated and has 0.8 doctors per 1 000. India is a developing nation. The impact of the pandemic will be much more serious in India as the number of doctors in contrast with the population is very poor. Therefore the pandemic in developed countries such as India faces a significant health risk.

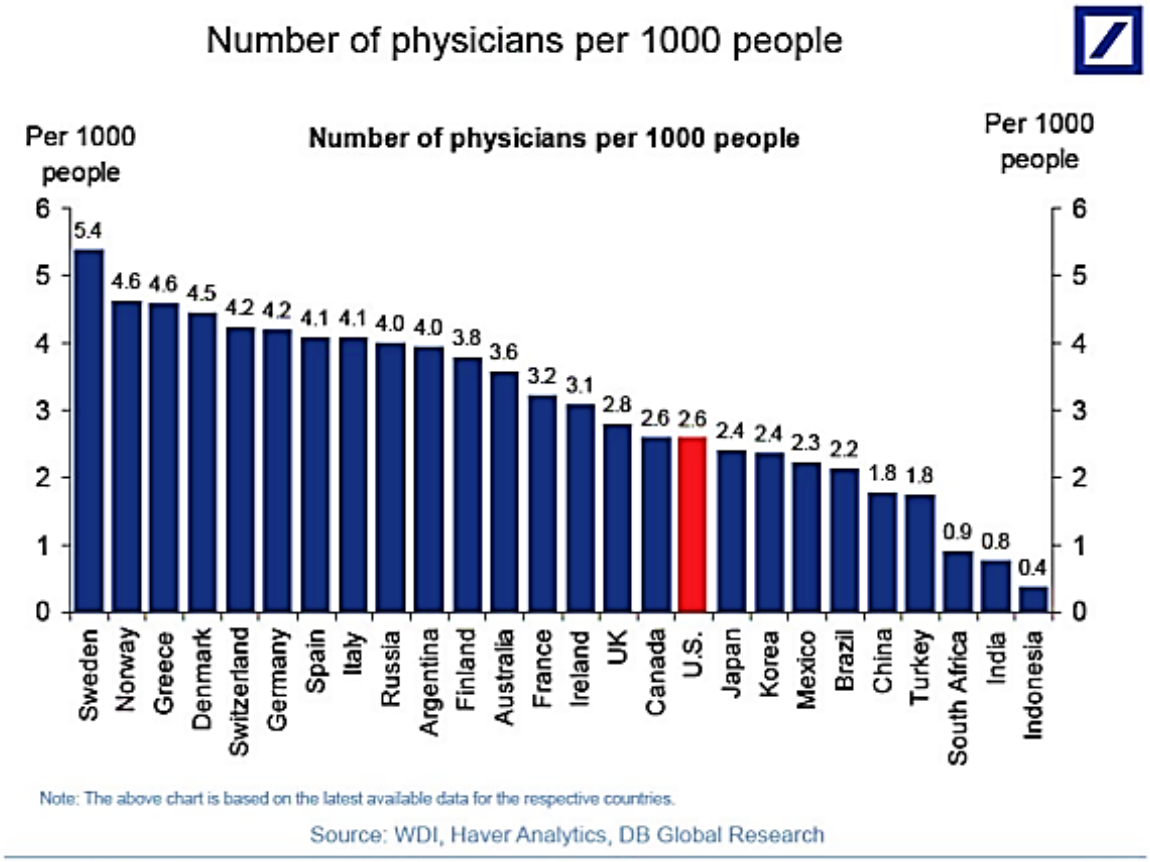

Figure 5: Physicians per 1000 people in different countries [36]

3.8 Telecommunications Industry

The effect of the COVID-19 episode on the broadcast communications industry has been intermittent. Various telecommunication (media) service providers (TSPs) and internet (web) service providers (ISPs) have detailed seeing enormous increase inactivity [37]. The large scale utilization of network bandwidth has been attributed to the Governments's lockdown endeavours, which have constrained the educational institutions to use the online teaching, and companies to permit their employees to telecommute. In any case, the COVID-19 pandemic has not left the telecommunications sector unscathed. Much like other industrial companies, a majority of TSPs & ISPs have recorded a massive drop in their share prices over the recent months. In Global Data's share price analysis of some of the top TSPs worldwide, it was revealed that share prices of telecom behemoths AT&T, China Telecom, and Telefonica plunged by over 20% between Jan 1 and Mar 25 2020.

The enormous scope implications of the COVID-19 pandemic on the worldwide economy are ascribed to the inadequate response system adopted following its initial outbreak. Although the response to the COVID-19 pandemic has been more organized than the response to previous epidemics and pandemics, a couple of issues in the current epidemic/pandemic response system remain. Table 2 records all the hidden issues with the current response, along with the key learning points for future public health emergency management. These exercises are exceptionally applicable for other health crises but also in case there is a second/third wave of the COVID-19 pandemic later on [38].

Table 2: Lessons drawn from the current response to the COVID-19 pandemic Source: [38].

Underlying Issue	Event	Repercussion	Learning Objective
Lack of Transparency	Coercion of researchers who recognized the COVID-19 soon after it came into existence.	Delayed dissemination of knowledge regarding COVID-19 patients.	Establish stringent guidelines ensuring the immediate release of information concerning potential health emergencies.
Delayed Travel Restrictions	Aviation services worked at international frontiers for more than a month after the initial outbreak of the disease with insufficient screening measures.	Infected individuals were able to travel across international borders with ease, thereby exacerbating the outbreak.	Following the outbreak of a disease, precautions, such as health screening measures and travel restrictions should be introduced sooner.
Delayed Lockdown Measures	The epicenter of the COVID-19, Wuhan, established lockdown measures almost a month after the infection's initial identification.	Difficulty in containing the spread of the disease as infected individuals freely transmitted the virus.	Isolate high-risk regions immediately after the identification of a potential health risk.
Public Misinformation	Dissemination of false information, confusion, and conspiracy theories.	Rise of xenophobia and frivolous fears surrounding the COVID-19.	Establish rigid policies for monitoring the spread of inaccurate information.
Announcement Delay	Global public health emergency declared by the WHO almost one month after the initial outbreak.	The potential disastrous implications of the outbreak were not acknowledged.	Proactively monitor the impact of the disease to recognize its threat status promptly.
Cognitive Bias	The initial warnings issued by several scientists about the COVID-19 ignored. Policy measures adopted by various governments met with cynicism.	Deliberate defiance of government orders leading to further spread of the disease.	Individuals should make an effort to overcome their cognitive biases and follow government orders.
Insufficient Stock of PPE	The inability of various governments worldwide to provide their healthcare workers with adequate protective gear.	Several healthcare workers exposed to the disease.	A higher degree of pandemic preparedness is required.

4 Issues Requiring Further Attention and Research

The occurrence of COVID-19 has posed several serious problems that require further attention and analysis. Some of them are listed below.

1. How are we going to value human life? And what point is it legally and socially appropriate for economic assessment? It would be beneficial to provide more research on the extent to which people would be able to save others' lives. The emphasis put on the

lives of various social classes, e.g. the elderly, possibly differs in different cultures, may evolve over time and may decline as societies grow more individualistic, for example, owing to the increased omnipresence of the brand system and the greater geographical mobility of people. By such shifts, family Bonds can be broken.

2. What is the size of the economic and social costs of schools and educational facilities being locked down? Is there a reduction of intellectual resources to what extent, and which social classes are most adversely affected?

3. Will the negative psychological and psychiatric consequences of the pandemic be put at an economic price? The high levels of personal financial indebtedness current before the outbreak of the pandemic and due to the persistence of opportunities to access 'simple' financing and credit have increased these costs to what extent?

4. More attention needs to be extended to the effects of policy interventions to reduce higher unemployment and underemployment (which existed due to the pandemic).

.5. It would also be useful to provide more evidence that social movements support various strategies for the control of the COVID-19 pandemic or do not support them and why they do so.

What social groups endorse accelerated return-to-work policies, for instance, and why? It is possible that these policies are funded not only by those who rely on jobs for their livelihood, but also by a group of capitalists and investors who are worried about declining returns on their savings as a result of decreased economic activity.

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5 Conclusion

The coronavirus is easily spreading across the globe. The pandemic has significant economic consequences, impacting world markets, interest rates, liquidity in the capital system and causing demand and supply shocks in various economic sectors. It remains unclear how long recovery attempts are going to take for the economies around the world from the global pandemic. The economic effect of COVID-19 on eight business areas was examined in this chapter. Collaboration between government, decision makers, health workers as well as the common public is important in the recovery procedures. If citizens follow the policies of government and politicians on social distancing, a smooth recovery is not feasible. This chapter helps readers understand the global decline of the COVID-19 Pandemic and how the pandemic impacted multiple industries. A detailed review has been carried out of each sector under consideration in this chapter, to allow us to understand clearly how the pandemic is triggering a serious economic and fiscal slowdown. Further study into the global, economic and financial effects of the coronavirus pandemic is encouraged for readers.

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