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Impact of Covid-19 pandemic on global supply chain

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Abstract

Global supply chain plays an extremely important role in global economic development. The Covid-19 pandemic first appeared in China and spread rapidly to many countries around the world. To ensure safety and limit the infection, countries around the world have in turn introduced control measures. This is a strong blow to the supply chain of goods, thereby affecting production enterprises. It directly affects the interruption of the supply of input materials for the production processes. China is the second largest economy in the world and is considered the factory of the

world. When China had a special epidemic when the government of this country implemented the Zero Covid policy, since then many restrictive policies on import and export of goods and input materials were conducted, disrupting the supply chain in the world, many manufacturing industries lack input materials. This article has also mentioned the extremely important role of global supply chain, the causes of supply chain disruptions, and suggested solutions.

Keywords: COVID-19 Pandemic, Global Supply Chain

1. Introduction

In order to develop the economy, enterprises in countries need raw materials for the production process, it is also possible that the output materials of one industry are the input materials of other industries. Currently, when the globalization process is taking place strongly and the linkage and specialization in production are clearly defined, many enterprises only produce components of the product, for that reason. Businesses and countries always depend on each other for raw materials for production. When a part or a certain supply process is interrupted, it will affect the transmission to other industries and countries and cause local disruption. The Covid 19 pandemic first appeared in China and then quickly spread to other countries around the world, including many developed countries such as the United States, Japan and Europe, when the epidemic broke out strongly. Strongly, countries have had to take measures to limit the spread of the disease, including measures directly related to production such as closing production facilities, restricting the movement and the concentration of people, strict control over the import and export of goods. These are the main causes of disruption to the global supply chain. China is the second largest economy in the world and also a largest supplier supplying many input production materials to other countries, when this country strictly controlled the import and export of goods to ensure that the disease did not spread, the supply chain disruption was aggravated. Below, we will take a closer look at the impact of the Covid-19 pandemic on the supply chain worldwide, including Vietnam, and show the response of countries to the impact of this pandemic on the supply chain.

2. Theoretical basis

2.1 Global supply chains

2.1.1 Supply Chain

According to Association of Supply Chain Management Professionals, a supply chain is defined as follows. "A supply chain is a system of organizations, people, activities, information, and resources involved in the movement of a product or service from a supplier or producer to a consumer". "A supply chain is a system of organizations, people, activities, information, and resources involved in the movement of a product or service from a supplier or producer to a consumer". Many people often confuse supply chain and logistics. Although these two concepts have many similarities, they are in fact completely different.

Once not clearly defined, it will be difficult for managers to effectively manage the supply chain. In fact, “logistics” is the term for logistics activities. That is, warehouse management, transportation, delivery and distribution of goods. A supply chain consists of a network of activities, information, and resources that move a product or service from the supplier to the final consumer.

2.1.2 Global supply chain

A global supply chain is a network of companies and suppliers around the globe, consisting of different activities, people, entities, information and resources, that perform a necessary process. From supplying raw materials to manufacturing and distributing products to consumers.

2.2 Supply chain characteristics

The main objective of the supply chain is to deliver the items or products in the required quantity, quality and time at the most competitive cost throughout the entire process, from the supply stage to the final delivery. For this, the supply chain must include certain characteristics:

Balance: a supply chain is a sequence of coordinated activities of a certain complexity. The complete cycle involves many human and material resources. For the whole process to be completed successfully, all the parties involved must work correctly. Therefore, it is important that each stage or phase be well planned, detailed and simplified to minimize potential risks.

Efficiency: reducing costs and executing stages appropriately are the hallmarks of a well-functioning supply chain. An efficient supply chain that is agile and reacts quickly to changing market patterns or emerging global incidents, such as a health crisis. That is, respond effectively to changes in supply and demand.

Coordination: suppliers, transport, manufacturers, customers, technology make up the supply chain. They have to work independently but in an organized way for the product to reach the end customer with satisfaction.

Transparency: there is a continuous flow of information throughout the process, from supply to final delivery. A well-functioning supply chain is one with dynamic communication.

2.3 The role of the supply chain

Supply chains play an extremely important role, directly affecting production and business activities of enterprises. At the same time, the supply chain is also considered an important step in business development. If the supply chain operates effectively, the enterprise will gain a competitive advantage, have a firm foothold in the domestic and foreign markets and increase its ability to reach out. A product needs to go through many processes before it can reach the consumer. Such processes can transform raw materials into finished products and send them to distributors. Distributors distribute goods to retail locations, where many consumers shop. All these processes are part of the supply chain. Therefore, the supply chain plays an extremely important role in bringing products and services to consumers in the most convenient and optimal way. A company with high product sales and consistently increasing profits means that its supply chain is doing very well.

2.4 Stages of the supply chain

Sourcing: This phase focuses on the activities required to

obtain the raw materials and by-products required for the production of the products to be sold. In this phase of the supply chain, it is important to have the availability and quantities of materials and their timing well planned and coordinated.

Manufacturing: Includes all processes involved in creating and preparing a product. That is, the operations required to convert raw materials into products and mass produce them. Industrial process optimization plays an important role in standardizing operations and thus in a faster and more efficient cycle.

Storage: A central stage of the supply chain, storage, which involves the temporary handling of goods and the control of their quality and quantity within a specific space so that their inflow and outflow benefit profit for the company. During this period, many factors can mark the difference between effectively managing a supply chain and a company's operations and business going astray. Warehouses and/or distribution centers are the focal point of this phase. Proper management will anticipate any peak production levels or fluctuations in demand and their effect on the inventory and its management. At the same time, storage management takes into account storage and provisioning costs to avoid any price increase of the final product or service, ensure optimal response to different levels of demand, and maintain inventory at the level required by the business. For this, choosing the type of industrial warehouse racking to install in the warehouse will be the key.

Distribution and delivery: Consider the final stage of the supply chain, when the product reaches the final customer. This includes product leaving warehouses and distribution centers to be delivered to end customers. The goal, in addition to delivering the goods to the final destination, should be for the product to reach the customer in good condition and on time as agreed. Although the end stage of the supply chain cycle is the distribution and delivery phase, another phase may also be included. This is the return phase, where a reverse process is initiated when the end customer sends the product back to the company. The rise of e-commerce in recent years has forced supply chains to change.

3. Situation analysis

3.1 Overview of the COVID-19 pandemic and its developments

Coronavirus 2019 (2019-nCoV) is a new respiratory virus that causes illness in humans and can be spread from person to person. This virus was identified during an outbreak investigation that originated in a large seafood and animal market in Wuhan, Hubei province, China. 2019-nCoV is a new virus that has not been identified before. In addition to this newly discovered coronavirus, there are many other coronavirus strains known today that are capable of infecting humans with many variants that are more infectious and more resistant to vaccines.

Origin of 2019-nCoV

Health authorities and health partners are working to identify the source of 2019-nCoV as a beta coronavirus that, like MERS and SAR, all originated in a bat host. Coronaviruses are a large family of viruses that are common in many different animals including camels, cats, and bats. Analysis of the genetic tree of this virus is ongoing to know

the specific origin of the virus. SARS, another coronavirus that appears to infect humans, originated in civets, while MERS, another coronavirus that infects humans, originated in camels

The transmission mechanism of 2019-nCoV

This virus originally emerged from an animal source but has the potential to spread from person to person. It is important to note that person-to-person spread can occur continuously. In humans, the virus is spread from person to person through contact with the bodily fluids of an infected person. Depending on how contagious the virus is, coughing, sneezing, or shaking hands can expose people around you. The virus can also be spread from someone touching an object that an infected person has touched, and then touching their mouth, nose, or eyes. Caregivers can also be exposed to the virus when handling patient waste

Is 2019-nCoV the same as MERS – CoV or SARS?

Coronaviruses are a large family of viruses, several of which cause illness in humans and viruses that are transmitted between animals, including camels, cats, and bats. The recently emerged 2019-nCoV is not the same as the coronavirus that causes Middle East Respiratory Syndrome (MERS) or the coronavirus that causes it. However, genetic analyzes showed that the virus emerged from a virus related to SARS. Currently, investigations are ongoing to find out more.

3.2 Analysis of the impacts of COVID-19 on the global supply chain

3.2.1 Heavy impact on economic growth and global trading volume

Since the first outbreak of the Covid-19 pandemic, more than 220 countries and territories have reported at least 1 infection so far. By early April 2021, there were more than 137 million confirmed cases of Covid-19, including more than 2.9 million deaths reported to the World Health Organization. The situation will be much worse if the pandemic is not completely resolved. The world is experiencing its worst recession since the Second World War and the global economy will shrink by about 3% in 2020. Hence, according to the World Trade Organization, global trade volume demand from 13% to 32% in 2021. According to an August 2020 report by Zhitao Xu, Adel Elomri, Laoucine Kerbache and Abdelfatteh El Omri, the estimated global trade volumes by major economic regions are shown in Figure 1, in where "O-2020" and "P-2020" represent optimistic and pessimistic scenarios for the year. The threat of the expanding Covid-19 outbreak has raised concerns worldwide about the damage and recovery of the global supply chain.

To avoid large-scale infection, a series of precautionary measures to limit the spread of Covid-19 have been adopted by governments, including travel restrictions, temporary closure of factories and shops, blockade residential areas. These constraints lead to shortages of labor and raw materials. As a result, the global supply chain has faced delays and inventory shortages. The effects of Covid-19 have been far-reaching, and according to some analysts, they won't go away before the end of 2022. The Covid-19 pandemic is not the first disaster to have a sudden impact on global supply chains. Several other natural disasters, such as the 2011 great earthquake in Japan, the SARS outbreak in

China in 2003 and the 2004 tsunami in Indonesia, have resulted in shortages of raw materials and products. Products. It is worth noting that production is restored from these disasters in a matter of weeks, and the effects of Covid-19 are distinct from all previous disasters. Most previous disasters, such as earthquakes, tsunamis, nuclear or radioactive accidents, and wars, were often confined to specific geographic areas for relatively short periods of time. However, within four months of the first outbreak, the Covid-19 virus has spread across the planet, causing billions of people to be completely blocked, causing major economic sectors to partially or completely shut down. total. In addition, with the inability to predict when this pandemic will be contained, any infected area of the globe is a high-risk area for a new outbreak. In contrast to other natural or man-made disasters or infectious pandemics, Covid-19 not only disrupts local supply chains, but also profoundly affects global supply chains at all stages, from the source to the end customer.

According to data from Tradeshift - a global platform that helps with supply chain management, has shown the extent of the pandemic's impact on trade and purchasing power. In China, since mid-February 2020, the number of domestic and international commercial transactions has decreased by 56% per week. The United States, United Kingdom and Europe followed with an initial decline of 26% in early April and continued to decline by 17% at the end of April. Furthermore, trade activity in all regions subject to the blockade was even. almost "frozen". According to Tradeshift, the total number of weekly transactions on the platform since March 9, 2020 has decreased by 9.8% on average, compared to before. At the same time, two adverse effects caused by the aforementioned decline on global trade have also appeared.

Firstly, it takes longer to pay bills, as opposed to the previous trend of quick payments. According to Tradeshift data, businesses took an average of 36.7 days to pay their bills in 2019, up from 36.8 days in 2018. However, in the first quarter of 2020, the average payment term increased by 1.7%, to 37.4 days. when there is a blockade order. The number of invoices and orders also dropped significantly since the end of March 2020.

Second, the lack of orders throughout the supply chain is causing another wave of slow new orders and lower invoicing. It is known that the average weekly order volume on the Tradeshift platform has decreased by 15.9% since March 9; while the number of invoices decreased by 16.7% during the same period. Not stopping there, in the second quarter of 2020, commercial activity continued to decline by 14.8% compared to the first quarter. In Europe, Covid-19 has hit the UK the hardest with trading volume down 23.1%. Elsewhere, trading volume across the eurozone fell 21.9% overall, including a 44.5% drop before the lockdown began April 13/ 2020. Outside of Europe, trade in the US fell 16.1%. As for China, trade transactions were rampant again when the country eased its blockade in late February and early March 2020. China's average weekly online transaction jumped a staggering 430% after factories reopened and started filling backlog orders. Although overall trading in the country increased 31.8% QoQ, this is not good news. Trade flows in China typically decline in Q1 due to the Lunar New Year holiday. And if we compare Q2 2020 with Q4 2019, we see that the overall trading volume has dropped significantly from where it should have been.

3.2.2 Supply chains and goods disrupted across most sectors

According to a report by Sean Harapko, RPA global supply chain leader, the Covid-19 pandemic is a global disruption to commercial, financial, health and educational systems, businesses and society. Accordingly, the disruption of the supply chain has negatively affected 72% of the surveyed units. Among them, all car manufacturers and 97 percent of companies that manufacture industrial products said that Covid-19 had a particularly severe impact on them. Additionally, 47% of all companies said the pandemic has disrupted the workforce, while many employees are required to work from home, others - especially in factory environments - must prefer to work from home. respond to new requirements for physical distancing, contact tracing, and greater use of personal protective equipment.

Only a few industries (accounting for 11%) reported having a positive impact during the pandemic. These companies are mostly in the life sciences sector and the positive impacts can be largely attributed to the essential products they manufacture. The pandemic has also required some life sciences companies to double down on making essential new products like Covid-19 tests or vaccines. Other sectors, especially consumer products, were unable to keep products on shelves in the early days of the pandemic because toilet paper, canned goods, flour and other staples were in high demand.

High-tech products: The high-tech industry includes products such as smartphones, virtual reality headsets and other tech accessories, Covid-19 has messed up the industry's supply chain due to the lack of various parts. For example, Apple had to delay the delivery of its new products to the market due to the shutdown of Foxconn factories in China. Samsung and LG have stopped production at their factories in South Korea and India. Another example is Tesla Motors which has closed its factories in Shanghai, California and New York.

Aviation sector: Airbus, Boeing and Lockheed have had to suspend production activities at some of their factories in Europe and the US.

Auto Parts: Most auto manufacturers are shutting down production at some of their factories in China and other countries. Global output for the Automotive Industry is expected to decline by 13%. Volkswagen is closing car factories in China due to travel restrictions and a shortage of parts. General Motors has restarted factories in China but at a very low production rate for the same basic reasons. Hyundai has closed its assembly plants in South Korea, mainly due to a shortage of parts from China. Nissan's plants in Asia, Africa and the Middle East have ceased production.

Medicines and medical devices: Chinese manufacturers are estimated to account for 40% of all active pharmaceutical ingredients (APIs) used worldwide. India is the third largest drug exporter in the world, thus playing a central role as a supplier of essential Covid-19 medicines. However, more than 70% of India's bulk drug production depends on raw materials from China, so Indian pharmaceutical companies are facing severe shortages of raw materials due to manufacturers. Their supply in China suspended production. In addition to medicines, we are seeing shortages of personal protective equipment. The current global shortage of personal protective equipment, especially medical masks, respirators, protective gear, shoes, gowns and goggles, is

seriously affecting containment. virus. This is because frontline healthcare workers are at high risk of being infected, and hundreds of healthcare workers have died in Spain, Italy and the US. Furthermore, global demand is not only driven by Covid-19 but also by misinformation, fake news, panic shopping and product stockpiling, which will inevitably exacerbate shortages. Global.

Food supply chain: From seeds to dry products such as rice and wheat, as well as fresh foods, such as meat, vegetables and fruits, are mainly affected by 2 aspects: farming and transport. Almost all stages of food production, such as seeding, picking and delivery, are labor intensive. India, the world's largest rice exporter, has stopped exporting due to labor shortages and logistical disruptions. The world's third-largest rice exporter, Vietnam, plans to reduce its quota by 40 percent year-on-year. Lack of transport personnel, flight cancellations, time-consuming checks and quarantines at customs, have hampered the transportation of fresh food.

International logistics disruption: Labor shortage due to travel restrictions, for example, some experts and technicians from China are unable to get to the camera assembly line in India. Similarly, technicians from Korea cannot come to Samsung factory in Vietnam.

Textile: The textile industry is a labor-intensive and highly globalized industry. Quarantine measures, retail store closures, loss of income as well as fear of spending money during a recession have curbed consumer demand for textiles. In the European Union, the Textile and Apparel industry is forecast to face a 50% decline in sales in 2020. McKinsey & Company predicts that the revenue of the apparel and footwear sector will be 27 lower. % - 30% by 2020. According to a survey by the Responsible Business Alliance, 50% of factories and their supply plants are not operating at full capacity and 15% of all factories are operating at full capacity. The shortage of raw materials and inputs along with the shortage of workers also contributed to the significant decline of the Textile and Garment industry.

Retail activity: With Covid-19 dominating the headlines, panic behavior has prompted people to switch to buying basic products like toilet paper and non-biodegradable products. dry bulk). A Search Engine Journal survey found that sales of basic consumer goods jumped 53% during the early stages of the outbreak in the US. However, in China, due to a sharp drop in consumer confidence, average sales fell 29% in categories such as home appliances and furniture, as well as clothing and electronics. Similarly, in the US, retail sales fell 8.7%.

3.3 Positive impact

The COVID-19 pandemic also brings new and clearer insights into development opportunities. For example, during the period of the COVID-19 epidemic and the implementation of social distancing, meetings, learning, and webinars flourished at different scales and levels, showing that the potential of the internet has not yet been discovered. fully exploited so far. For example, the National Assembly of Vietnam has pioneered online sessions; The United Nations General Assembly held an online meeting for the first time in its history on June 6, 2020 - a time when the epidemic was still complicated and unpredictable; or the ASEAN Inter-Parliamentary General Assembly meeting online in September 2020. Many schools at all levels, many domestic and foreign meetings are conducted online. This saves costs and reduces travel time for everyone. However,

along with that, the institution also needs a change to respond to that digital transformation. The COVID-19 pandemic is having a strong impact on the global value chain through its centers. During the COVID-19 pandemic, hard-hit countries are also the hubs of the global production network such as China, Japan, South Korea, and the US. When the pandemic broke out, social distancing measures were implemented, many production activities halted. The interrupted supply chain affects investment and global trade activities, thereby reducing the growth of the world economy in general and many countries and regions in particular.

Due to the impact of COVID - 19, global foreign direct investment (FDI) in 2020 is assessed by the United Nations Conference on Trade and Development (UNCTAD) to shrink "from US\$1,540 billion in 2019 to USD 1,540 billion in 2019. less than \$1 trillion". According to UNCTAD's forecast, in 2021, FDI inflows will decrease further by 5% - 10% and may start to recover from 2022(2). Until now, the epidemic is still complicated in many countries around the world, the possibility of FDI inflows recovering is very unclear. On August 4, 2020, the World Trade Organization (WTO) forecasted a 13% decline in global trade in 2020. The global production structure is highly concentrated, with some major centers in the world. input suppliers, play an important role in global production networks and value chains. Therefore, the COVID-19 shock affecting production centers will seriously affect global production and trade activities. In addition, some countries turning to "self-sufficiency" during the epidemic as a response to the COVID-19 pandemic will further worsen global trade. The COVID-19 pandemic has impacted the two pillars of global economic growth, trade and investment, and will therefore also have a negative impact on global output growth. The World Bank's forecast shows that the global economy will be even worse, shrinking at 5.2% in 2020. US economic growth is forecasted to decrease by 8% by the IMF, the growth of the region. The euro area fell 10.5%, Japan fell 5.8%.

3.4 Impact of the Covid-19 pandemic on Vietnam's economy

Through 35 years of renovation (1986 - 2020), Vietnam's economy has achieved many great achievements. Economic growth has always been positive, there have been many years of high growth rates of around 8%; the poverty rate fell sharply from 58% in 1993 to 11.3% in 2009 and less than 4% in 2019; People's income has improved markedly, people's living standards have been improved. However, during more than three decades of renovation, Vietnam's economy was repeatedly affected by external shocks such as the Asian financial crisis in 1997, the world financial crisis in 2008 and the global financial crisis. Epidemiology in 2020. Unlike the previous two financial-monetary shocks, this COVID-19 shock is unprecedented, having a strong impact on many countries in the world in general and Vietnam in particular. Although the COVID-19 pandemic has impacted many areas of our economy, it is focused on two main factors: supply and demand. For the demand factor, the COVID-19 epidemic along with the implementation of necessary social distancing measures, meanwhile, major economies (USA, China, EU, Japan, Korea) also suffered and greatly affected and the implementation of social distancing measures led to a

decline in economic growth, leading to a decrease in import demand, including goods imported from Vietnam.

Vietnam is one of the few countries with a positive growth rate in the context of complicated developments of the COVID-19 pandemic. According to the General Statistics Office, in the first 6 months of 2020, the total retail sales of consumer goods and services decreased by 0.8% compared to the same period in 2019, and if the price factor is excluded, it will decrease even more. stronger, at 5.3% (up 8.5%) in the same period in 2019. In which, retail sales of goods in the first 6 months of 2020 increased by 3.4% over the same period in 2019. Essential items for life such as food, utensils, tools and equipment family gain; but items such as garments, means of transport, cultural products, education which are heavily affected by social distancing measures have a decreasing rate.

Also in the first 6 months of 2020, revenue from accommodation and food services decreased by 18.1% over the same period in 2019; tourism revenue decreased by 53.2% - this is the area most severely affected by the COVID-19 epidemic and from the implementation of social distancing measures.

As for investment demand, in the first six months of 2020, social investment capital increased by 3.4% over the same period last year - the lowest increase in the 2016-2020 period, of which the state sector increased by 7, 4%; the non-state sector increased by 4.6% and the FDI sector decreased by 3.8%. Investment capital in the FDI sector decreased the most, from 9.7% growth in the first 6 months of 2019 to negative growth of 3.8% over the same period in 2020; investment capital growth from the non-state sector decreased from 16.4% in the first 6 months of 2019 to 7.4% year-on-year in 2020. However, the only bright spot was the investment capital of the region. The state sector increased from 3% in the first 6 months of 2019 to 7.4% over the same period in 2020. In a time of economic difficulties and a decline in aggregate demand, the State played an important role to limit decline in aggregate demand.

Notably, in the first 6 months of 2020, export turnover increased by 7.3% over the same period last year; the domestic economic sector increased by 10.8% and the FDI sector (including crude oil) increased by 5.9%. Thus, the domestic economic sector still maintains an increase in export turnover of over 10%; The FDI sector has a decrease in the export value of goods in 2020 and an increase in 2019, thus making the export turnover of the economy increase in 2019 and decrease in 2020. This situation shows that the export turnover of the FDI sector will increase. Our country's economy is very dependent on the FDI sector and the COVID-19 pandemic has negatively impacted investment and the global value chain is also affecting the export of our economy.

In general, due to the impact of the COVID-19 pandemic, the economy's demand (consumption, investment, export) decreased, thereby reducing production activities and economic growth. The Government's measures currently being implemented are mainly aimed at stimulating aggregate demand and restoring production. As for the supply factor, the COVID-19 pandemic disrupted input and labor supply chains. For example, in the auto industry, due to scarce input components and social distancing, domestic automobile manufacturers such as Honda, Nissan, Toyota, Ford, and Hyundai... must declare announced to suspend production, only when the social distancing period ends and

supply chains are reconnected, will auto manufacturing businesses return to operation.

Many businesses, especially those with foreign experts and foreign workers, are heavily affected by COVID-19 when the labor supply is in short supply. Labor costs during this period are also higher when businesses have to invest in more masks, antiseptic water, and implement safety measures at work to avoid virus infection. From a social perspective, COVID-19 has an impact on increasing the poverty and near-poor rates in terms of income and temporarily reducing the income of households and workers. According to the survey results of UNDP and UN WOMEN (2020), "in December 2019, the average poverty rate was 11.3%. This rate increased to 50.7% in April 2020. The rate of near-poor households increased from 3.8% in December 2019 to 6.5% in April 2020. More importantly, households belonging to ethnic minorities and households with informal workers and families of immigrants are more affected by the epidemic. Also, according to the survey results of UNDP and UN WOMEN (2020), "the average income of ethnic minority households in April and May 2020 is only 25.0% and 35.7, respectively % compared to December 2019 level. Meanwhile, these figures are higher, estimated at 30.3% and 52% for Kinh and Hoa households, respectively. In April and May 2020, the average income of migrant households is estimated to be only 25.1% and 43.2% respectively compared to the level of December 2019. These figures are 30.8% and 52.5% for non-migrant households, respectively. However, in the face of this shock, the State quickly implemented strong solutions, first to limit the spread of the disease, and then to develop the economy. The solutions have shown initial success when controlling the disease, preventing it from spreading in the community for a long time (over 3 months) and socio-economic development activities, especially tourism activities. The calendar is also starting on the way to prosperity again before the epidemic breaks out again at the end of July 2020.

3.5 Industries are severely affected by the Covid-19 pandemic

3.5.1 Aviation

According to the International Civil Aviation Organization (ICAO), in 2020, international and domestic passengers will decrease by 1.38 billion and 1.32 billion respectively, down 74% and 50% compared to 2019 and at the same time, revenue decreased by 250 billion USD for international and 120 billion USD for domestic. In 2021, the wave of Delta variants continues to sweep through many countries around the world, the hope of a recovery of the world aviation industry becomes even more fragile. According to the International Civil Aviation Organization, in the first 6 months of 2021, the number of seats provided by the aviation industry will decrease by 42-47%, the number of passengers transported by 47-57%, the revenue is expected to decrease. down 156 billion. Compared to 2019 is 181 billion US dollars. In addition, more than 20 airlines globally have declared bankruptcy or have to stop operating permanently, including famous names such as: Thai Airways (Thailand), Virgin Australia (Australia), AirAsia Japan (Thailand), AirAsia Japan (Thailand). Japan), Norwegian Air (Norway), Cathay Dragon (Hong Kong). When the COVID-19 wave subsided earlier this summer, American Airlines seemed to have a good chance of recovering, as passenger volume reached 80% of pre-

pandemic levels. But hopes of a recovery were soon dashed as the number of new COVID-19 infections in the United States has increased rapidly since August, sending passengers to cancel flights and panicking investors.

3.5.2 Tourism

According to the World Tourism Organization (UNWTO), the COVID-19 pandemic is expected to cost the global economy about \$2.4 trillion due to the collapse of the international tourism industry in 2021. Among them, the countries that depend on the tourism industry with the highest GDP reduction due to the drop in tourism industry because of the COVID-19 pandemic include Turkey (-9.1%), Ecuador (-9. %), South Africa (-8.1%), Ireland (-5.9%). Previously, in July 2020, the United Nations Conference on Trade and Development (UNCTAD) also forecasted that the period of international travel stagnation would last from 4-12 months, causing the global economy to decline. huge damage is estimated at 1.2 - 3.3 trillion USD in fact, the number of damages is much more terrible, because the stagnation time has not yet ended. Global tourism, in both developed and developing countries, has been severely impacted by the pandemic, with tourism arrivals estimated to decline by 60-80%. According to the United Nations Report, international tourist arrivals fell by about 1 billion, or 73% in 2020, while in the first quarter of 2021, the decrease was 88%. The most affected regions are Northeast Asia, Southeast Asia, Oceania, North Africa and South Asia; while those less affected are North America, Western Europe and the Caribbean. For Vietnam, 2020 is considered a "sad tourism year" for Vietnam when it was seriously affected by the COVID-19 pandemic. The number of international visitors to Vietnam only reached about 3.7 million arrivals, down 79. 5% compared to 2019; domestic tourists reached 56 million arrivals, down 34.1%; total revenue from tourists reached 312 trillion VND, down 58.7%, equivalent to 19 billion USD. In the first seven months of 2021, international visitors to our country are estimated at 95.7 thousand arrivals, down 97.5% over the same period last year. Domestic tourists also decreased quite sharply, if in April 2021, the number of domestic tourists reached 9 million, then by July 2021, it will only be 0.5 million. Currently, although almost the end of summer has passed, the whole society is still straining against the epidemic, tourism activities in most localities are almost paralyzed. In addition, the COVID-19 epidemic also caused a sharp decrease in the demand for information search of domestic tourists during this time. According to data from Google's Destination Insights tool, from the beginning of March to the end of April 2021 when the COVID-19 epidemic in the country was under control, the number of domestic tourists searching for information increased sharply compared to 3 months at the beginning of the year as compared to the same period of 2020. But from the end of April 2021, the 4th outbreak of the epidemic in Vietnam, the search volume of domestic tourists rapidly decreased and remained at a very low level.

4. Management implications and solutions

4.1 Solutions of countries to the COVID-19 pandemic

On February 24, 2021, the French Government spokesman Gabriel Attal said that the country needs to put new restrictive measures in localities to avoid having to impose a new blockade order nationwide. Spokesman Attal stated that

the infection situation is worrying in some areas of France. In Italy, Health Minister Roberto Speranza said that the country is not yet ready to relax restrictions on business activities and travel because the number of COVID-19 cases is still at risk of increasing. The rising Italian government is accelerating its COVID-19 vaccination campaign and has ordered the restriction of non-essential travel between 20 regions of the country to prevent the spread. In Belgium, travel in and out of the country has been banned. The German federal government on February 24 established a task force in charge of expanding production facilities, purchasing raw materials as well as jobs related to COVID-19 vaccines. This measure was introduced in the context of the vaccination program in Germany progressing slowly. Israel has announced that it will issue a "Green Card" to those who have received 2 doses of the vaccine. The Israeli Ministry of Health said that it is implementing a plan to issue certificates to people who have received 2 doses of the COVID-19 vaccine so that they can participate in entertainment, entertainment and shopping activities. This "green card" contains a security code in a QR stamp to prevent counterfeiting.

5. Conclusions, limitations and directions for further research

The COVID-19 pandemic has affected the entire economy around the world but according to different impact mechanisms, especially the global supply chain. The magnitude of the impact depends on the structures of each economy as well as its linkages with the rest of the world.

In the immediate future, it is impossible to predict what follows the global crisis caused by the Covid-19 outbreak. However, businesses can plan to mitigate potential impacts by developing robust supply chain processes and recovery readiness plans. The effectiveness of emergency preparedness and response is highly dependent on a thorough and thorough understanding of the impact of Covid-19 on global supply chains. This pandemic forces companies to reassess their supply chains for efficiency and agility in the event of a problem. A set of contingency-based continuity plans is provided to help companies better equipped to mitigate risk by emphasizing responsiveness to the disruptions in supply chains.

Vietnam is facing great opportunities to catch the wave of shifting and restructuring global supply chains. This wave not only gives us the opportunity to penetrate deeper into high-value-added links in the supply chain, but also helps us attract high-tech FDI flows, thereby helping to improve domestic production and national economic development. Vietnam needs to promote its strengths and overcome weaknesses by resolute and strong measures, in order to make the most of these opportunities, and bring our country to participate more deeply in global value chains, as well as as affirming a new position of Vietnam on the world economic map.

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