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The World Supply Chain Disruption in the perspective of Covid-19 outbreak from China

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Abstract:

The new coronavirus, first emerged in the Chinese city of Wuhan last December, has infected more than30, 00,000 people in at least 206 countries and territories globally, according to the WHO, till date. The virus outbreak hasbecome one of the biggest threats to the global economy and financial markets. Major institutions and bankshave cut their forecasts for the global economy, with the Organization for Economic Co-operation andDevelopment being one of the latest to do so. Meanwhile, fears of the coronavirus impact on the global economyhave rocked markets worldwide, with stock prices and bond yields plunging. The supply chain management system is also affected by the same phenomenon Worldwide. Based on the aforesaid perspective the disruption of World Supply chain due to the outbreak of Covid-19 from China is discussed in this paper.

Keywords: Covid-19, Disruption, Supply Chain Management System, etc.

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Introduction:

The COVID-19 pandemic represents a major shock to the global economy. Most of the countries will need to take bold quarantine and lock-down measures, as has been done in Italy, Spain, Germany, France, UK, USA, UAE, Iran, Malaysia, Singapore and almost every country in the world to prevent an explosion of the epidemic which would lead to many deaths and the collapse of healthcare systems.

The economic consequences of such measures are major, and are felt through both supply and demand-side channels. A coordinated and bold response by authorities' is necessary. First, ample national funds need to be provided to national health services. Second, targeted measures to support individuals (such as the self-employed), companies and the local communities most affected should be put in place or reinforced. Third, broad macroeconomic insurance needs to be provided because targeted measures will not cover the many second-round effects of the shock.
To alleviate financial and cash-flow constraints, and to provide incentives to preserve employment, it is recommended to the Government to halve companies' social security contributions for at least three to six months, or cut the payroll tax. Such measures could amount to support of some 2.5 percent of GDP and would be funded by increased national deficits. Last but not least, the Central Bank should provide abundant liquidity, increase swap lines to ensure sufficient dollar liquidity and increase its sovereign-bond purchase programme to prevent distress in sovereign bond markets. Whatever it takes needs to be the motto to preserve lives and reduce the impact on the economy of the epidemic.

Research Background:

China has been a major beneficiary of global economic development since few decades. The COVID-19 pandemic has resulted in an unprecedented situation in the world. Supply chains in major industries such as aviation, pharmaceutical, medical equipment, etc. have got disrupted. One reason for this is because China is a major canter in the global value chains for these industries. The role of China as the central hub in many GVS has brought losses of about $50 billion in global exports. Chinese suppliers are crucial for many industries that operate globally. The long-term effect on the supply chain is hard to predict. But two major changes may be anticipated going forward, namely vertical integration and geographic diversification. For

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example, India obtains China which are valued at billion and meets 90% of all API requirements from imports. Further, India's dependence on API imports has increased over which stood at 0.3 % in 1991. The current economic situation has been termed as the worst since 1939. The IMF projects global growth in 2020 to fall by3 percent. Global trade is expected to fall due to the pandemic crisis and the decline may be greater than the one experienced after the financial crisis of 2008.

Supply Chain around the world is already beginning to be impacted negatively. In the short run, to lower dependence on global value chains, significant investments would be required, which may not be feasible due to lack of funds. In this regard, the role of the policies of governments may provide some direction, Japan, for example, has taken measures to reduce its reliance on China as a manufacturing hub. It is willing to relocate back to Japan. Japanese firms themselves are making future plans to diversify production across Southeast Asia.

China Plays the Vital Role in Covid-19 Situation:

China is critical to the global economy and flow of goods across the world.

China is likely to be considered as a heaven to outsourcing of raw materials and spare parts at unbeatable quote. Thus, the importance and the acceptance of China to global trade have grown magnificently. Moreover, they own almost 36% of total shipping line round the globe including COSCO, CSG, OOCL. Apart from that, China has 34 major ports and more than 2000 minor ports round the country which are playing an positive role for the economic development of the country and turns china as one of the major hub of logistics. Shipping companies that carry goods from China to the rest of the world say they are reducing the number of seaborne vessels, as measures to stop the spread of the corona virus crimp demand for their services and threaten to disrupt global supply chains. About 80% of world goods trade by volume is carried by sea and China is home to seven of the world's 10 busiest container ports, according to the United Nations Conference on Trade and Development. Nearby Singapore and South Korea each have a mega port too.

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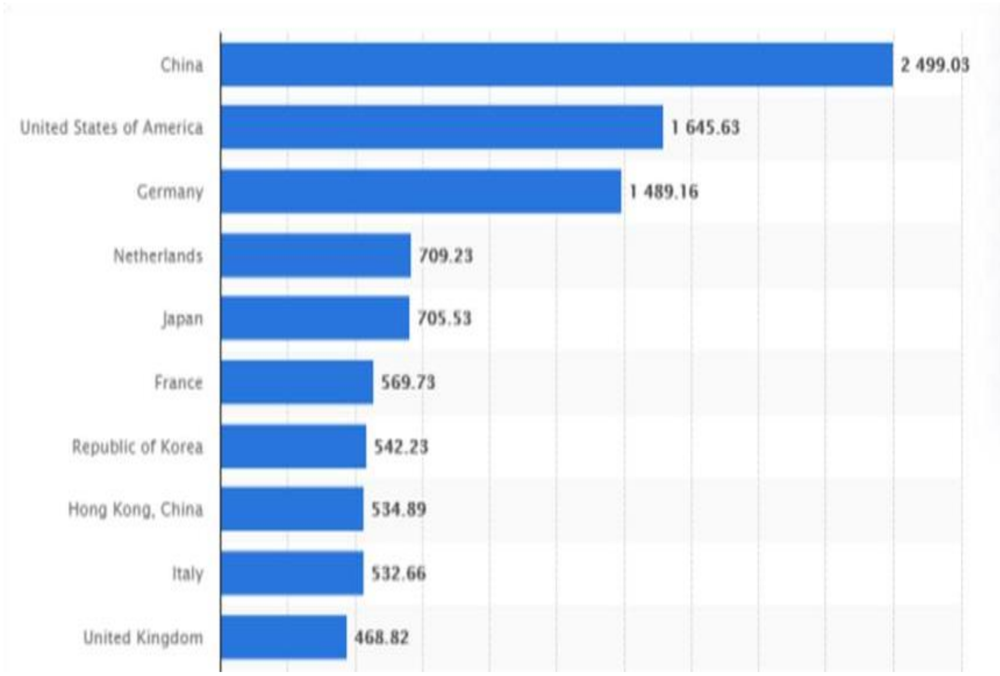

Figure-1: China's Exporting Status in the World

China led the world in exports in 2019. China was followed by the United States, with exports valued at 1.64 trillion US dollars, and Germany, with exports valued at 1.49 trillion US dollars. The value of goods exported from China grew immensely between 2002 and 2014. In 2002, China's exports were valued at about 327 billion US dollars. China's export value grew to 2 trillion US dollars in 2012, the first year in which China exported more than 2 trillion US dollars' worth of goods. Year over year export growth remained above 17 percent between 2002 and 2012, except in 2009 and 2012. In 2010, export value grew by over 30 percent. By 2018,China accounted for about 12.8% of global merchandise exports and about 4.6% of global service exports. China's greatest export product category in 2014 was machinery and transport equipment, of which they exported one trillion US dollars' worth.

China: The mother Hub of the World's Supply Chain:

China, key trading partner for over 100 countries, has become a hub of global supply chains. Reports on how the COVID-19 outbreak is affecting global supply chain and disrupting manufacturing operations around the world are increasing daily. But the worst, many fear, is yet to come.

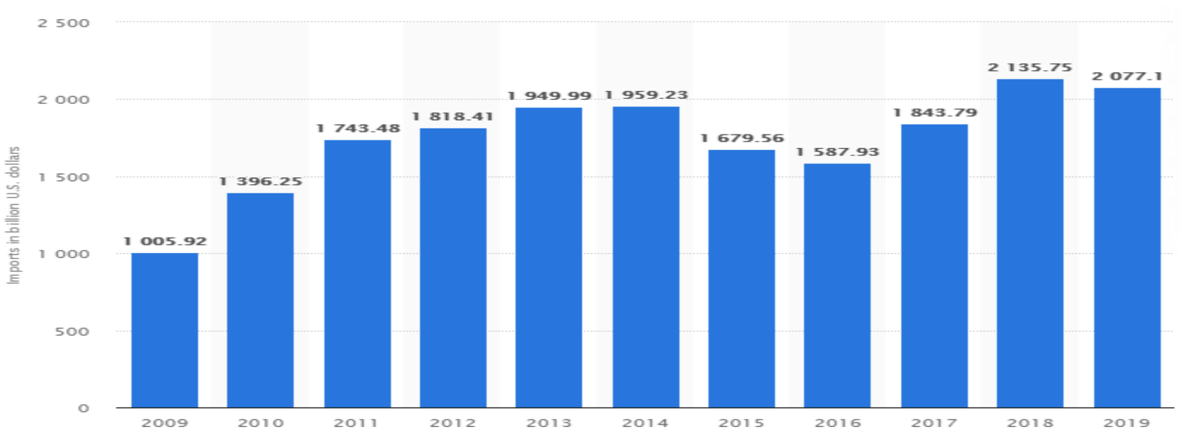

Figure-2: China: import of goods from 2009 to 2019

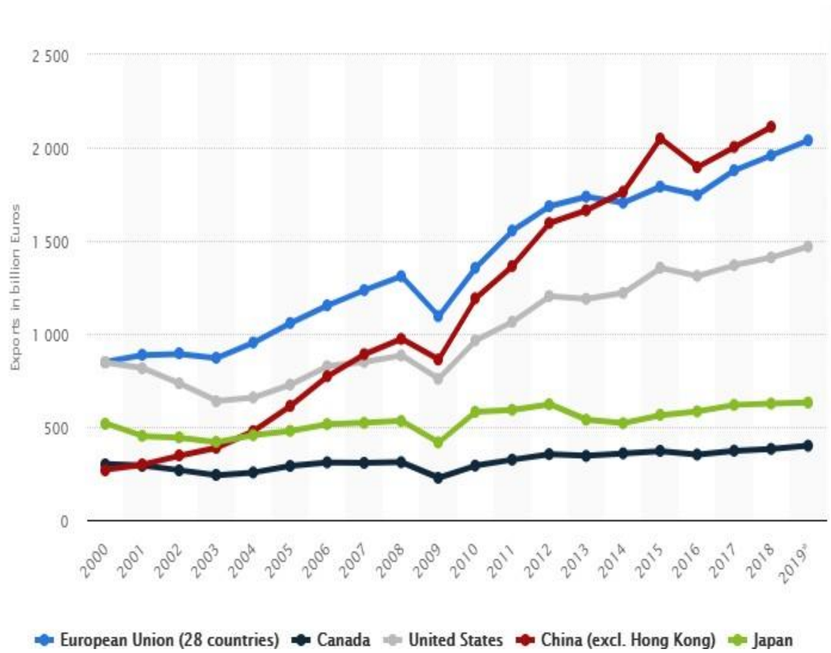

Figure-3: Export Comparison between different countries

In 2019, the total value of Chinese imports and exports amounted to about 31.55 trillion yuan. This indicated approximately 3.4 percent growth compared to the previous year. In 2012, China surpassed the United States to become to the world's largest trading country in terms of exports and imports of goods. While the United States remained the largest import nation with an import value of around 2.4 trillion U.S. dollars in 2017,Chinarankedfirstinglobalexportswith an export value of some 2.5 trillion U.S. dollars in 2018. The second statistic shows the value of exports of

selected countries from 1999 to 2019. In 2019, the United States exported goods worth approximately 1.47 trillion Euros where china exported more than 2.2 trillion Euros.
According to the National Bureau of Statistics of China, the European Union was the most important export partner of China as of 2019. Exports to the EU are dominated by industrial and consumer goods such as machinery and equipment, as well as footwear and clothing. Chinese imports from the EU are mainly machinery and transport equipment, chemical products and miscellaneous articles. In 2019, the United States was the second most significant export partner of China with a share in total exports of about 17 percent. China is also one of the United States' most potential markets for exports. As of 2019,exportsfromtheUnitedStatestoChinahad expanded more than fivefold since China joined the World Trade Organization in 2001.

China's position at the heart of many GVCs is illustrated by the fact that the production decline is also associated with major contractions in international trade flows. The country's imports decreased by 4% in US dollar terms in January and February combined from the same period a year earlier, while exports dropped by 17 per cent over the same time period. Wuhan specifically is very important to many global supply chains. While it has been a traditional base for manufacturing for decades, it has also become an area of modern industrial change. Major industries include high technology (opto-electronic technology, pharmaceuticals, biology engineering, and environmental protection) and modern manufacturing (automotive, steel and iron manufacturing). 163 of the Fortune 1000 have Tier 1 suppliers (those they do direct business with) in the impacted area,2 and 938 have one or more Tier 2 suppliers (which feed the first tier) in this same impacted area. Just because you don't have any direct suppliers in the impacted areas in China, does not mean that they are safe from disruption. Visibility to only Tier 1 suppliers will likely be insufficient for most organizations looking to manage supply disruption risks. However, very few organizations can trace their supply chain beyond their Tier 1 suppliers, and advanced digital solutions are generally required to trace supply networks reliably across the multiple tiers of suppliers that are required to fully understand supply-side risk.

COVID-19 is Changing Global Supply Chain:

Protectionism will not create a recession, but it will deepen it: This synchronized, global lockdown caused by Covid-19 has struck at the core of global value chains hub regions including

China, Europe and the U.S. Over the past four decades, the creation of global value chains has demonstrated how to produce and market products in a cost-efficient manner around the world. Trade barriers have gone up remarkably easily in the last few weeks. In fact, the WTO has reported that so far 80 countries have introduced export prohibitions or restrictions as a result of the Covid-19 pandemic.

- **Diversify or Re-shore?** More generally, there is a strong political will around the world to strengthen resilience in supply chains and to reduce trade dependencies that have been laid bare by this crisis. Policymakers differ on the correct approach to achieve such resilience and can be broadly divided into two camps: the free trade supporters call for a diversification of supplies, whereas the more interventionists believe the right remedy is to repatriate (parts of) the supply chains.
- **Choices of policymaker's matter:** International coordination will be key to prevent the global trade system from fraying. At the inaugural G20 summit in 2008, a strong, joint commitment helped to keep barriers to trade and investment largely at bay, speeding up global recovery from the financial crisis.

Top Three Reasons Why Supply chain is Rolling due to China:

The COVID-19 pandemic underlines the importance of strong global cooperation to contain the deadly virus but also spotlights the dangers of over-reliance on international supply chains in manufacturing everything from cars to pharmaceuticals. The wide-scale supply chain disruption caused by corona virus doesn't have a simple fix.

- **Shutdowns cause work and supply bottlenecks in the factories:** Citywide closures and quarantines have led to work and supply shortages as Chinese authorities from different areas of responsibility try to contain the outbreak of corona virus (Covid-19). In more serious cases, some cities – most notably Wuhan in the center of the Corona virus (Covid-19) epidemic – have introduced "sealed management" initiatives that have led to residential areas being sealed off, limiting workers' ability to return to work.

- **Floating quarantine:** The shutdowns mean that some ships can't get into Chinese ports, as the loading and discharging of goods slows, Others are stuck in dock, waiting for workers to return to ports so that construction and repairs can be completed. In Singapore, authorities are requiring all vessels that have called at ports in mainland China over the past 14 days to submit a health declaration form. According to port authorities, some shipping companies have taken additional measures, including canceling shore leave for crew, but port operations have not been disrupted. Giant shipping companies such as Maersk, MSC, Mediterranean Shipping, Hyundai, COSCO, CSG, Hapag-Lloyd and CMA-CGM have said that they have reduced the number of vessels on routes connecting China and Hong Kong with India, Canada, the United States and West Africa.

- **Logistics Shortage:** Most countries have restricted or stopped international flights and air travel, which has led to a deferred slowdown as far as the movement of goods are concerned. The shipping sector has also been hit as vessels are placed under quarantine for weeks before being allowed into the ports thereby slowing down processes. Shipping companies that carry goods from China to the rest of the world say they are reducing the number of seaborne vessels, as measures to stop the spread of the corona virus crimp demand for their services and threaten to disrupt global supply chains.

The corona virus outbreak puts a strain on every sector of the logistics industry. Italy's logistics market, one of the countries most affected by the pandemic, is expected to see 18.1 percent contraction in a pessimistic scenario. The corona virus outbreak has put every sector of the logistics industry under strain. In a scenario, the industry's economic activity in 2020 could be down by 10.2 percent worldwide. The global logistics industry is anticipated to be affected by the outbreak of COVID-19. In a worst-case scenario, the industry's gross value added could be down 6.1 percent in 2020

The impact of COVID-19 on the supply chains and economy:

The global effects on supply chains have resulted mostly from the serious situation in China, and we can talk about those effects in two distinct ways. First, it's having an impact on the supply of inputs for many manufacturers and retailers all over the world, and that's important because China is a huge source of components and finished goods. The longer plants in China sit idle, the emptier the global pipeline of parts and components circling the globe, which is meant to feed manufacturers and retailers all over the world. If the disruption continues, we may see many manufacturers, and maybe even retailers, suspending their operations as they run out of the key inputs they need.

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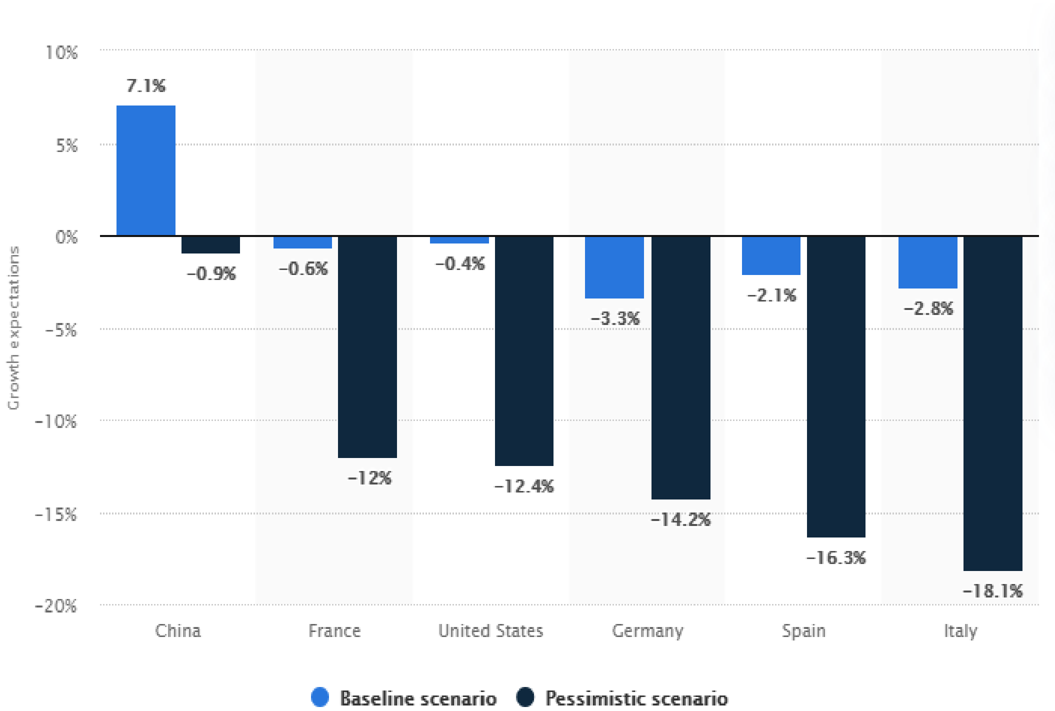

Figure-4: Estimated impact of the corona virus (COVID-19) epidemic on selected logistics markets worldwide in 2020

Second, China is also a major market for goods and services. Anywhere in the world, local economies that depend on China as a customer are feeling the effects, as consumers in China limit their travel and consumption, and as manufacturers in China slow down or suspend their production. For example, a recent article in *The New York Times* explained how truck drivers in Mongolia are losing their income because they can no longer deliver coal to China—the border is closed, and the demand for coal is way down anyway. The flow of tourists from China has come to a screeching halt, and that's affecting the tourism sector in many countries, from freelancing guides to major hotels, especially in Asia.

Conclusions:

After every one of these disasters and resulting disruptions, there was a sort of taking stock of how we are managing risk in supply chains. Until the early 2000s, supply chains stretched across the globe as manufacturing shifted where labor was cheap, and they also became leaner, because stuff sitting in the pipeline can easily become obsolete when product lifetimes are short, for example, in fashion apparel and consumer electronics. But many global brands learned, from

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disruptions like SARS or the Tohoku earthquake in Japan, that a disruption to production in one corner of the world could starve the entire chain from much-needed inputs.

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