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Of Economics and Business

Chair of International Economics

## **Supply Chain and de-globalization issue during Covid-19**

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# Table of Content

1. Introduction.....	4
1.1. Contents .....	5
2. Historical Context.....	6
2.1. The Great Recession .....	6
2.2. The Great and the Greater Trade Collapse.....	8
3. Theory on Comparative Advantage and Standard Trade Model .....	11
3.1. Comparative Advantage.....	12
3.2. The Standard Trade Model.....	12
4. De-globalization Trend .....	14
5. The Economic Outbreak .....	17
6. General Solutions Proposed .....	21
6.1. Trade Logistics .....	21
6.2. Trade Policies.....	22
6.3. Logistics and Policies Practical Applications.....	23
6.4. WTO Solutions.....	24
7. Conclusions.....	26
8. Bibliography.....	28

## Abstract

The Covid-19 plague took most of the world by surprise. Since the first cases in China in December 2019, the virus began to spread rapidly from country to country posing a serious healthcare threat. Governments responded issuing lockdowns and transportation restrictions, with diverse actuation polices and times, trying to avoid a contagious wave that could have paralysed the world.

The first measures, while generally effective from a sanitary point of view, came with some costs: the bulk of manpower was at home, unable both to work and to consume while simultaneously incapable to produce and supply. Side-by-side the health crisis was rising an economic disaster similar and more devastating than the Great Recession.

This thesis deals with Global Value Chains and their struggle to keep up with the Covid crisis, which brought up deglobalization ideas to strengthen the modern economic system against exogenous shocks.

Starting by analysing the progression of the virus and its influence on international trade, the effectiveness of a full interdependence between countries in uncertain times will be discussed. Arguments against globalization will be compared with the current economic trend to explore different points of view, trying to highlight weaknesses and risky elements of a globally connected world and possible new trends of international economy to mitigate them.

# 1. Introduction

The COVID-19 pandemic is causing humanity to suffer all around the world. We find ourselves fighting against an invisible health threat, that requires immediate, joint and swift intervention. Reaching global scale, it is imperative that the crisis is resolved before polluting other areas under humans' domain. It is well known that healthcare and the economic system are closely connected: COVID-19 is most definitely spreading economic suffering worldwide. The virus may in fact be as contagious economically as it is medically.

Indeed, the current Globalized World, from an economic standpoint, can operate thanks to trade. Nations and their inhabitants, can focus in producing and specializing in what they know best, proceeding then in exporting excesses of production and importing goods they might be lacking. This concept led to modern Global Value Chains, where the final sold good encapsulates the contribution of every Country it passed through.

The contagion between health and economy through Value Chains is inevitable and had catastrophic consequences: *“The coronavirus pandemic led to a 3% drop in global trade values in the first quarter of 2020. The downturn is expected to accelerate in the second quarter, according to UNCTAD forecasts, which project a quarter-on-quarter decline of 27%<sup>1</sup>.”*

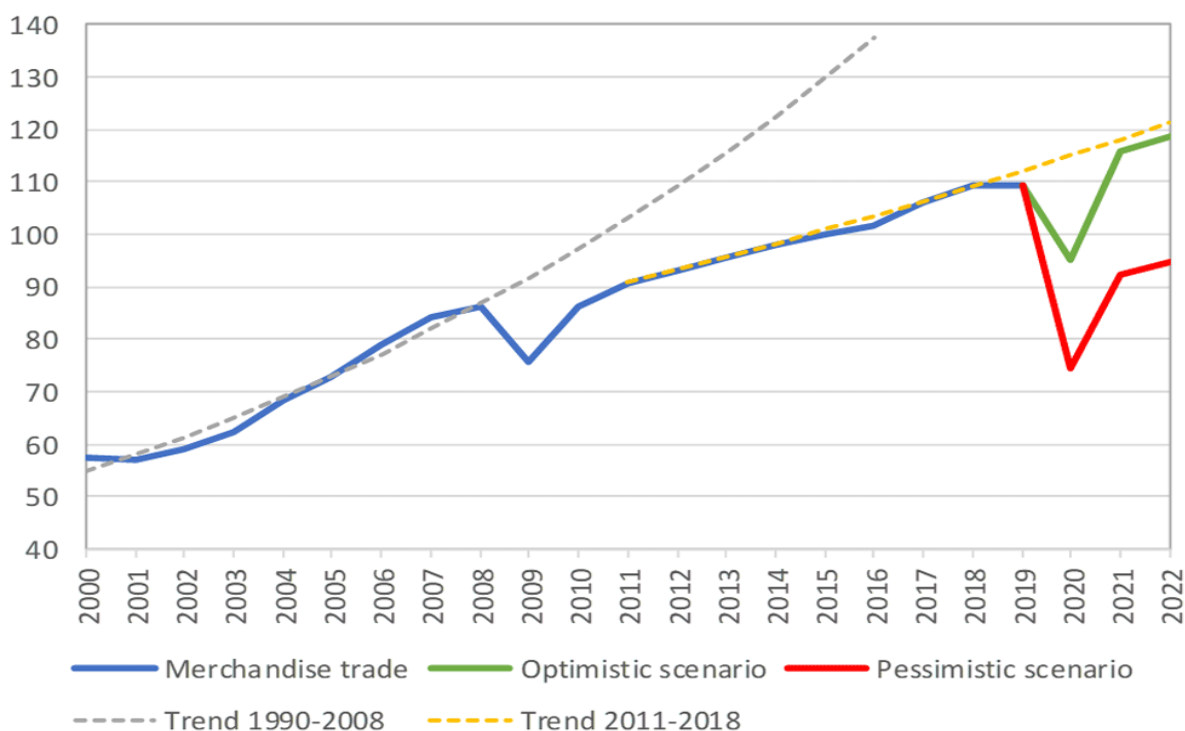


Figure 1 World merchandise trade volume, 2000-2022, Source WTO Secretariat

To slow the spread of the disease, governments around the world have imposed draconian containment policies – what the IMF has called “The Great Lockdown”.

<sup>1</sup> COVID-19 triggers marked decline in global trade, new data shows, United Nations Conference on Trade and Development, May 2020 <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2369>

Restrictions on our economic, personal, and social lives have become necessary. The pandemic has changed the world faster than most expected and in ways few anticipated.<sup>2</sup>

Controlling the epidemic means ‘flattening the epidemiologic curve’. A flatter curve saves lives, both directly (fewer get ill and so fewer die) and indirectly, since it avoids bottlenecks in the healthcare system that typically result in suboptimal treatment.

When the epidemic was starting to going global, restrictions and government procedures situation (such as domestic and transnational transport restrictions and lockdowns), put in place to face the abnormal seemed outdated and sometimes overdone and under the opinion of some, unfit to solve definitively the issue, while surely being economically disruptive.

The COVID-19 pandemic is comparable to the Great Depression of 2008-9, as they both induced protectionist policies in the form of trade restrictions and tariffs, discriminating against foreign commercial interests.

Opinions are on the rise pointing at globalization as a vector for the contagion, opposing the Value Chains system and suggesting a turn-back. The question to be asked is “should governments react to sharp falls in national income and the prospect of a second global wave of COVID-19 by turning inward and further weakening cross-border commercial ties?”<sup>3</sup>

## 1.1. Contents

The thesis starts by analysing the historical framework of the Great Depression of 2008-9, highlighting its similarities and differences with the COVID-19 economic crisis (Chapter 2). Then a synthesis of Global Supply Chain mechanisms is reported (Chapter 3) to introduce the analysis of main impacts due to COVID pandemic effects (Chapter 4). As we will see, the aforementioned crisis marked the beginning of trends against globalization in the economic world, that will be reviewed in more details in Chapter 5. Starting from these ideas, some mid-term measures with possible mitigation effects to exit the global economic crisis are reported in Chapter 6.

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<sup>2</sup> Baldwin, R. and Evenett, S., *COVID-19 and Trade Policy: Why Turning Inward Won't Work*, VoxEU, April 2020

<sup>3</sup> Ibidem

## 2. Historical Context

COVID-19 was first seen as a China shock, then as an Asian regional shock. It is now clear that the virus travelled rapidly outside the Asian continent, reaching the size of a worldwide pandemic and now we are facing a global and common shock. Last time the world suffered a global shock was in the aftermath of Lehman's collapse in September 2008.

### 2.1. The Great Recession

“The economic shock of the COVID-19 pandemic inevitably invites comparisons to the global financial crisis of 2008-09: governments have intervened with monetary and fiscal policy to counter the downturn and provide temporary income support to businesses and households.”<sup>4</sup>

The Subprime Crisis burst out in August 2007. What was thought to be a financial crisis regionalized in North America, during the course of a year led to a global downfall in the financial sector.

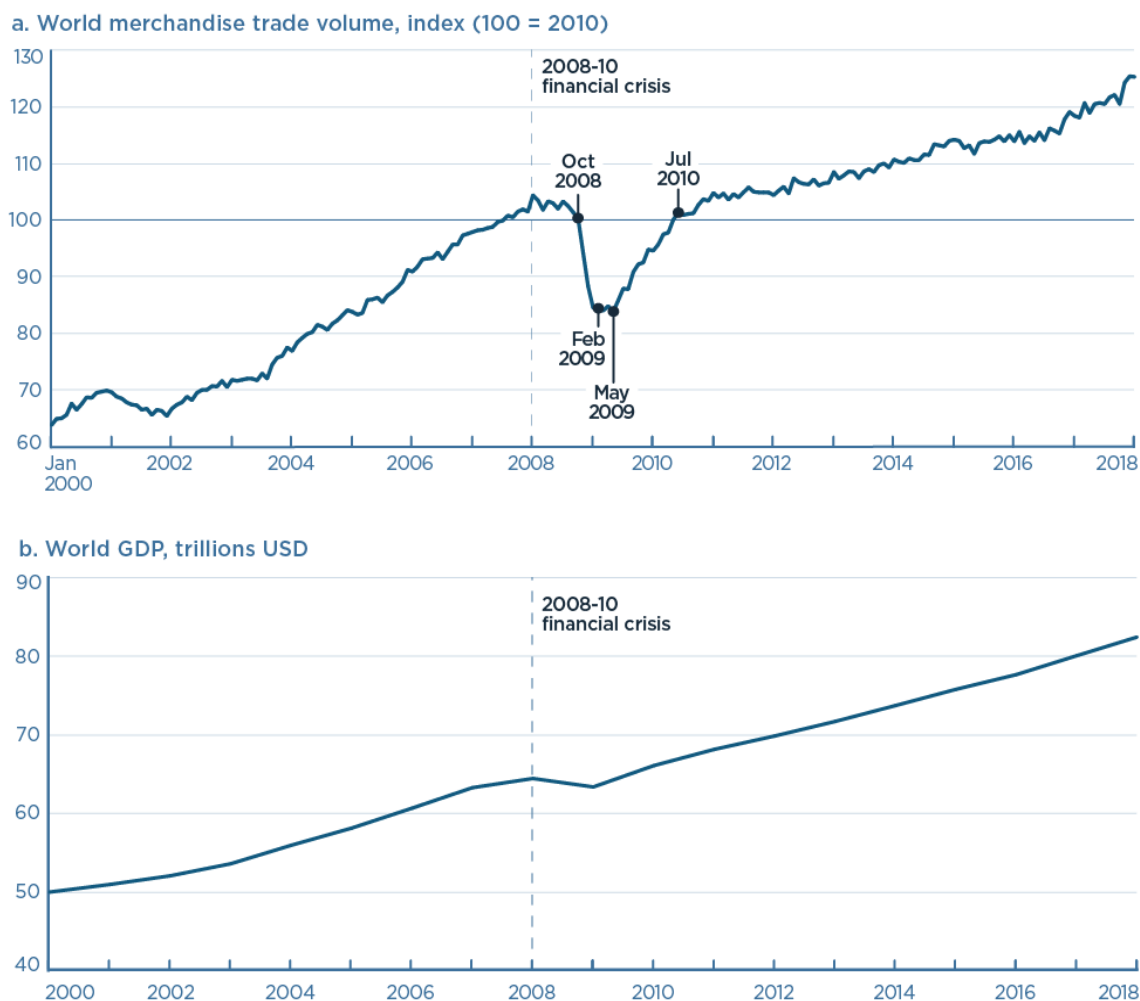
As exports and imports plummeted, the rest of the world waited, witnessing the shock that would have thrown the economic system to the crisis that we now know as the Great Recession. The mismanaging by the US Fed and the “wait-and-see” approach by other Nations was detrimental for economy and trade.

At its trough in May 2009, world merchandise trade volume had declined 16 percent from the level in October 2008. Annual average merchandise trade volume dropped 12.8 percent year-on-year in 2009. By comparison, global GDP dropped 1.7 percent in 2009, only about one-seventh of the percentage decline in trade. It took only four months for merchandise trade to plunge from a high in October 2008 to a low in February 2009 but roughly 18 months to steadily return, in July 2010, to its precrisis level.

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<sup>4</sup> *Trade set to plunge as COVID-19 pandemic upends global economy*, World Trade Organization, April 2020 [https://www.wto.org/english/news\\_e/pres20\\_e/pr855\\_e.htm](https://www.wto.org/english/news_e/pres20_e/pr855_e.htm)

## World trade in goods fell faster and steeper than world GDP during the 2008-10 financial crisis



**Note:** GDP is measured in constant 2010 US dollars.

**Source:** World Trade Monitor, CPB Netherlands Bureau for Economic Policy Analysis; World Bank, <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD> (accessed on April 16, 2020).

Figure 2 Value of goods in world trade, Source World Trade Monitor

The current pandemic is different, economically speaking, from other pandemics occurred at global scale. Previous pandemics hit nations that were – at the time – far less economically dominant, and those pandemics were far smaller; the number of COVID-19 cases is at least eight or nine times larger than the number of SARS cases.

The COVID-19 outbreak was triggered in December 2019 in the city of Wuhan, which is in the Hubei province of China. As the virus continued to spread across the world, the World Health Organization (WHO) has declared a public health emergency of international concern to coordinate international responses to the disease. Restrictions on movement and social distancing to slow the spread of the disease have meant that labour supply, transport and travel

have been directly affected in ways they were not, during the Subprime Crisis. Whole sectors of national economies have been shut down, including hotels, restaurants, non-essential retail trade, tourism and significant shares of manufacturing. In the automotive sector, Toyota, Renault, Hyundai, Volkswagen and Volvo faced a one-month complete shutdown and car sales have shuddered to a near-halt, the industry could be going bankrupt.<sup>5</sup>

“Continental, one of the world’s largest car parts maker and which makes everything from brakes to radios to augmented reality windscreens, said dozens of its 2,300 automotive suppliers were on the brink of collapse”<sup>6</sup>

The coronavirus pandemic led to a 3% drop in global trade values in the first quarter of 2020 and the future doesn’t seem so bright. According to the Organization for Economic Cooperation and Development (OECD) each month of strict containment measures will knock two percentage points off annual GDP growth in OECD economies.<sup>7</sup>

Realistic prospects put global trade in 2020 falling between 13% and 32%, with some recovery in 2021<sup>8</sup>. Compared with the 2008-9 financial crisis, the turnback will be slower due to the scale and the nature of the pandemic. Moreover, the global economy was already in trouble when COVID-19 struck. Global growth in 2021 is projected to rebound to 5.8 per cent<sup>9</sup> on the best-case scenario that the health emergency is faced quickly.

The economic shutdown may be reversed if economies could reopen quickly. But because economies are so interconnected, the risk of global trade to not pick up still remains. If the pandemic is protracted, a U or L-shaped recovery, or even a second Great Depression may be on the horizon.

## 2.2. The Great and the Greater Trade Collapse

In today’s COVID Crisis, we have all the makings of the 2008-2009 demand side shock, but topping that with a massive, supply-side shocks across most sectors of most major economies.

The supply-side ‘lightning strike’ is not limited to one sector, or to one geography. The virus – or more precisely, the government containment policies meant to combat COVID – is keeping workers away from work, and consumers away from consumption in a very direct, sudden, and synchronised manner. Production in almost all sectors has been shut down or severely curtailed. China’s manufacturing may be on the mend, but easing the supply-side constraints brings it up against the demand-side shock.

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<sup>5</sup> Financial Times, *Weakest link in supply chain threatens car industry revival*, April 2020, <https://www.ft.com/content/9d3b2243-5e26-4890-918f-ec1daee33ffb>

<sup>6</sup> Ibidem

<sup>7</sup> *COVID-19: How far will global merchandise trade fall?*, Peterson Institute for International Economics, April 2020 <https://www.piie.com/blogs/trade-and-investment-policy-watch/covid-19-how-far-will-global-merchandise-trade-fall>

<sup>8</sup> *Trade and COVID-19: The WTO’s 2020 and 2021 trade forecast*, VoxEU, April 2020, <https://voxeu.org/article/trade-and-covid-19-wto-s-2020-and-2021-trade-forecast>

<sup>9</sup> *Will the macroeconomic policy response to COVID-19 be enough?*, EastAsiaForum, June 2020, <https://www.eastasiaforum.org/2020/06/13/will-the-macroeconomic-policy-response-to-covid-19-be-enough/>



Supply-chain contagion was not a major amplifier of the 2009-08 trade catastrophe since the demand shock back then was globally synchronised; producers everywhere shut down together. This time, the fact that the pandemic first struck ‘Factor Asia’, then struck ‘Factory Europe’, and then struck ‘Factory North America’ is creating a separate cause of collapse (Baldwin 2020).

The increased dependence is really increased interdependence.

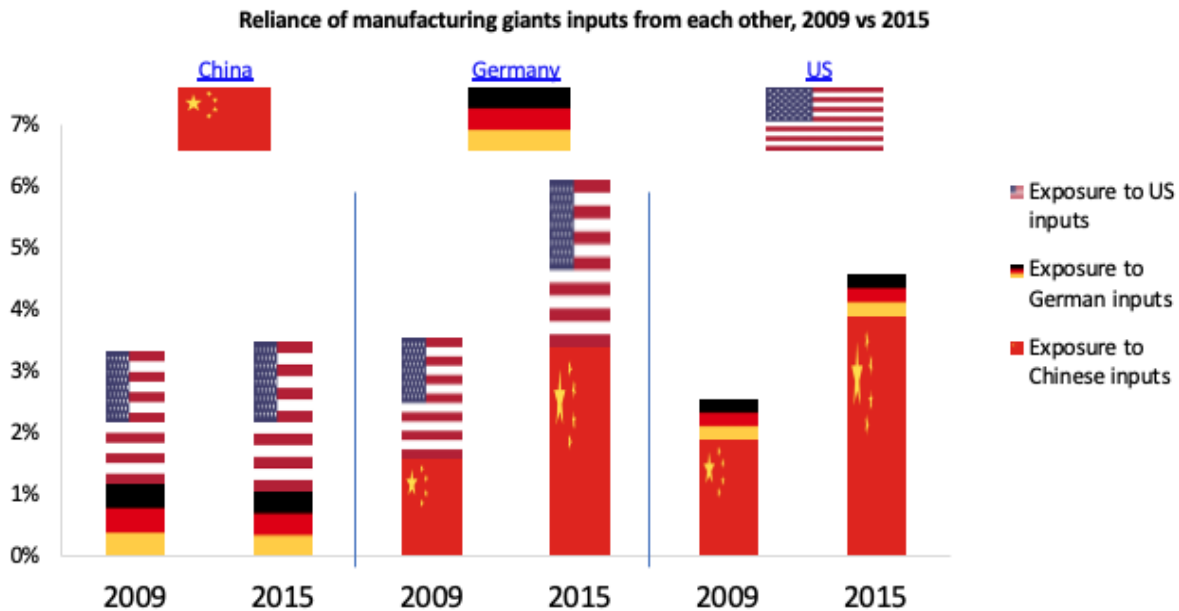


Figure 3 Global manufacturing hubs’ interdependence, Source: computations by Richard Baldwin and Rebecca Freeman

Manufacturers around the world rely on Chinese inputs, but Chinese manufacturers rely on inputs from the US and Germany. This suggests that the Greater Trade Collapse of 2020 may have wave-like properties – not unlike the wave-like pattern of the pandemic that some epidemiologists are predicting. As China gears back up having mastered the first epidemic wave, the explosions of cases in the two other manufacturing giants, Germany and America, are likely to create reverse supply-chain contagion – the industrial equivalent of reinfection. All nations will see their exports and imports fall together as in 2009.

One huge difference is the lack of leadership. In 2009, leaders like Gordon Brown, Barack Obama, Angela Merkel, Manmohan Singh and others held the first Leaders’ Summit of the G20. National leaders agreed that protectionism should be avoided so as to ensure that the first Great Recession did not become the second Great Depression. “Today, the US – led by a feckless, know-nothing government with an instinctive aversion to multilateral cooperation and an ongoing war against world trade – will not form the committee to save the world.”<sup>10</sup>

Blatant example of economic misconduct is Trump’s trade policy against China, that started with the trade war crippling the US fight against the COVID-19 pandemic. The administration’s tariffs on Chinese medical products contributed to shortages and higher prices

<sup>10</sup> Baldwin, R., *The Greater Trade Collapse of 2020: Learnings from the 2008-09 Great Trade Collapse*, VoxEU, April 2020 <https://voxeu.org/article/greater-trade-collapse-2020>

for protective equipment necessary to face the health crisis. “Trump’s tariffs had been slapped on nearly \$5 billion of US imports of medical goods from China, about 26 percent of all medical goods imported from all countries. Now that there are potential supply shortages globally, the US health crisis demands that the administration comprehensively and permanently reverse these policies of self-harm.”<sup>11</sup> A potential for crisis is not limited to the unnecessary costs and health equipment bottlenecks that Trump’s trade war with China has created. The mistreatment of many trading partners, imposition of tariffs and threats of tariffs on their exports, tampered with the possibility of getting new intermediate supplies for production onshore. Following the American lead, other Nations are now lashing out and restricting the flow of medical equipment outside of their borders, including to the United States.

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<sup>11</sup> *Trump's trade policy is hampering the US fight against COVID-19*, Peterson Institute for International Economics, March 2020 <https://www.piie.com/blogs/trade-and-investment-policy-watch/trumps-trade-policy-hampering-us-fight-against-covid-19>

### 3. Theory on Comparative Advantage and Standard Trade Model

Why do countries trade? Everyone taking part in an exchange ultimately will be better off. In practice, International Trade is a fundamental part of the economic system, a socially aiding agent and the main drive for globalization.

The first benefit of trade arises from the necessity of essential (or not) resources that are physically unavailable in the country, a common example is the oil that runs our cars, engines and machinery; easily found in some geographical areas but completely non-existent in others.

Contrary to popular believes, an international trade agreement can even stem from countries with different cultures, technologies, productivity capabilities, wages and still benefit both parties. As a matter of fact, more than 30% of world output is sold across national borders.

Economic theory and empirical data tell us that countries engage in international trade for two basic reasons: countries, like people trade because they differ from each other. Nations can benefit from their differences by settling agreements in which each does the things it does relatively better or by providing resources and skills that would otherwise be exclusive to some country. The other mean for exchange is that countries trade to achieve economies of scale in production: if each country specializes in producing a limited range of goods, it can boost the output of those goods at a larger scale and consequently be more efficient.

To fully explore the reasons for trade, the concept of Comparative Advantage will be analysed.

When thinking about production, in a macro environment like the world, an actor can't be self-sufficient and efficient at the same time. Countries, in this regard, behave like individuals: it is unfavourable to do everything alone, but specialization comes with its trade-off as well. The term Opportunity Cost is used by economist to define such trade-off. The opportunity cost encapsulates one of economics' core problem, it being the managing of scarce resources and the drive for efficiency. In the real world, opportunity cost arises when choosing the subject of production and where to issue resources; any material, skill or simply time devolved in producing something can't be used to make something else. To provide an example, Germany is specialized in the automotive industry, but the machinery, energy and labour force required to make cars could be used to produce furniture or computers. The opportunity cost of building cars is the theoretical number of tables that would be produced using the same resources. On the basis of natural resources, specialized skills and machinery, culture and internal environment, every country should focus its efforts in outputting the product that can be produced more efficiently. Nations have different opportunity costs that offer the possibility of a mutually beneficial rearrangement of world production.

### 3.1. Comparative Advantage

A country has a Comparative Advantage in producing a good if the opportunity cost of producing that good in terms of other goods is lower in that country than it is in other countries. We therefore have an essential insight about comparative advantage and international trade: *Trade between two countries can benefit both countries if each country exports the goods in which it has a comparative advantage.* (Krugman et al., 2012)

Economists consider different kinds of advantage in international trade:

- Comparative Advantage: the ability of an economy to produce goods and services at a lower opportunity cost than that of trade partners and selling output of production at a lower price than its competitors realizing stronger sales margins
- Absolute Advantage: producing a product or service at a lower absolute cost per unit using a smaller number of inputs or a more efficient process than another entity producing the same good or service
- Competitive Advantage: company, economy, country, or individual that can provide customers with greater value than competitors, enacting a low-cost strategy or targeting a narrow segment of consumer pool

### 3.2. The Standard Trade Model

The theoretical model that better suits the analysis conducted in this paper is the standard trade model, that allows the understanding of real world trade patterns, the effects of tariffs and subsidies on international trade and recognize the link between terms of trade and nations' welfare.

The Standard Trade Model relies on four key economic concepts:

1. the relationship between the production possibility frontier (variations in the amounts that can be produced of two products both depending upon the same finite resources) and the relative supply curve;
2. the relationship between relative prices and relative demand;
3. the determination of world equilibrium by world relative supply and world relative demand;
4. the effect of the terms of trade on a nation's welfare: price of exports divided by price of imports of a country.

The standard trade model lets us derive the world relative supply from the production possibility frontier and a world relative demand curve from preferences. Country's terms of trade (relation between price of exports and price of imports) can be determined by finding the meeting point between world relative supply and demand curves and can give a good level of a country's welfare.

To build and understand a simplified version of the standard trade model we must define an economy as follows: two countries (Home and Foreign) and two goods. Then a production possibility frontier curve must be compiled, together with the relative price of the goods and

the isovalue line (lines along which the value of output is constant). With the data just described, we can already compute the level of output that each country is able to produce, using the resources they are endowed with. The subsequent point of analysis is the indifference curve, that estimates the summed tastes of individuals and allows to figure out which good must be imported and what can be exported. In the end we will have a good reference point to understanding nation's trading options with the world.

By repeating this study for every country and good that we are willing to inspect, the optimal price for international trade can be gauged and countries' terms of trade are computed.

These concepts are the basis to understanding the effects of import tariffs and export subsidies on countries' economies. Tariffs (taxes on imports to drive consumption of domestic goods) and subsidies (domestic financial easing to induce exports) are some of governments tools with the main purpose to promote certain industries, fix the balance of payments or for income distribution.

Tariffs and export subsidies are often treated as similar policies, since they both seem to support domestic producers, but they have opposite effects on the terms of trade. The implications of tariffs, within the country, are a rise in relative price of the targeted good, that leads consumers away from the product (since is more expensive) and attracts suppliers (due to the higher profitability). Subsidies, alike drive the relative price of the good up, pushing suppliers to produce more and consumers to substitute in favour of the good subject to the policy.

Depending on the size of the country, both measures bring world relative demand down for the good in question due to the increase in supply. Tariffs and subsidies also worsen Home's terms of trade and distort the internal economy.

The theory shows that these measures are complicated to correctly undertake and almost always result in a deterioration of trade, undermining the economy of the nation as well as the world.

## 4. De-globalization Trend

The world is in a dual crisis threatening the health of millions of people as well as the world economy. Since the crisis began in China, the “world’s factory”, there are arguments now for breaking up global value chains and bringing back industries closer to home. The reason being that it is dangerous to heavily rely on imports, from both an economic and public health perspective.

“Among trade policymakers and diplomats, it is a maxim that sharp economic downturns engender protectionism. Given the scale of this year’s forecasted GDP reductions in the major trading nations, concerns have arisen that governments will resort to protectionism and that economic policy will take a decisive inward turn.”<sup>12</sup>

The COVID-19 pandemic is driving the world economy to retreat from global economic integration. Policymakers and business leaders are now questioning whether global supply chains have been stretched too far. In an environment where alliances are uncertain and international cooperation is absent, they are also asking whether they should reduce their economic interdependence. National security and public health concerns are providing new rationales for protectionism, especially for medical gear and food, and an emphasis on domestic sourcing.<sup>13</sup>

Since the advent of industrialization, the impulse to global trade and interaction started growing at a steady rate, allowing for cheaper and diverse goods to be exchanged. Globalization reversed from the outbreak of World War I in 1914 until the end of World War II in 1945. Various factors caused economic dislocation: the Wars, the Spanish flu of 1918, monetary instability, immigrants restrictions and the Great Depression of 1930. The world economy suffered.

After World Wars II, the United States helped establishing institutions for economic cooperation, such as the General Agreement on Tariffs and Trade, enabling countries to open their economies once again to trade and investment.

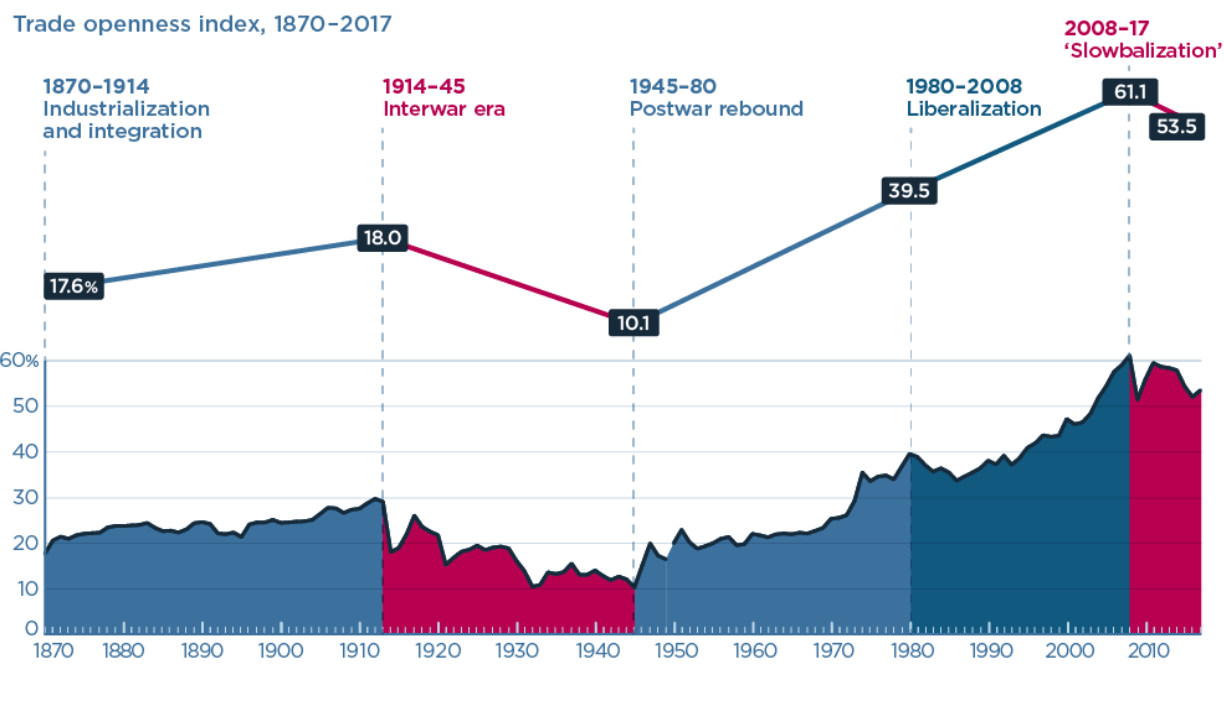
The historical peak of economic integration was reached much later, between the late 1900s and the early 2000s until the financial crisis of 2008, when China and India dismantled trade barriers excluding them from global trade.

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<sup>12</sup> Baldwin, R. and Evenett, S., *COVID-19 and Trade Policy: Why Turning Inward Won’t Work*, VoxEU, April 2020

<sup>13</sup> *The pandemic adds momentum to the deglobalization trend*, Peterson Institute for International Economics, April 2020 <https://www.piie.com/blogs/realtime-economic-issues-watch/pandemic-adds-momentum-deglobalization-trend>

## Globalization is in retreat for the first time since World War II



**Note:** The trade openness index is defined as the sum of world exports and imports divided by world GDP. 1870 to 1949 data are from Klasing and Milionis (2014); 1950 to 2017 data are from Penn World Tables (9.0).

**Source:** Our World in Data, <https://ourworldindata.org/grapher/globalization-over-5-centuries>.

Figure 4 World Trade rates, 1870-2017, Source Our World in Data

Since the Great Recession, world trade growth has declined, being abnormally weak in recent years. The volume of world trade came to a falling point in 2019, in contrast to the steady growth of world economy.

“We are now in an era of "Slowbalization" or peak globalization”<sup>14</sup>

The growth of global value chains, the spread of supply networks across countries, has flattened. China began to focus on promoting the indigenous development of leading industries with economic policies. China remains among the leading countries in matter of exports, but as a share of its GDP they have fallen from 31 percent in 2008 to just 17 percent in 2019.

The United States has embraced a protectionist policy: “America First” policy. Further shifting away from trade liberalization and withdrawing from the Trans-Pacific Partnership. It initiated also a “trade war” against China, reducing trade volumes between the two.

The COVID-19 pandemic only fuelled the deglobalization trend, backed also by the sharp drop in WTO forecasted world trade volumes and GDP.

<sup>14</sup> *The pandemic adds momentum to the deglobalization trend*, Peterson Institute for International Economics, April 2020 <https://www.piie.com/blogs/realtime-economic-issues-watch/pandemic-adds-momentum-deglobalization-trend>

As the French President Emmanuel Macron said, the coronavirus “will change the nature of globalization, with which we have lived for the past 40 years,” stating it was “clear that this kind of globalization was reaching the end of its cycle.”<sup>15</sup>

The pandemic has reinforced concerns around the world that supply chains have gone too far. Export bans have been imposed over concerns about inadequate domestic production of medical equipment, personal protective equipment, and pharmaceuticals. Such policies will only have the effect of worsening shortages and driving prices up, instead of boosting production. Protectionism is proving to be no substitute for stockpiling and preparedness, which have been inadequate in recent years.

A country restricting trade puts of a dangerous precedent that others are very likely to follow. As Adam Smith pointed out in his *Wealth of Nations* long ago: “The very bad policy of one country may thus render it in some measure dangerous and imprudent to establish what would otherwise be the best policy in another.”<sup>16</sup>

Experience also points at the tendency of countries in fear to turn inward. Many of them are now rethinking trade dependence. Phil Hogan, the European Union’s commissioner for trade, has stated, “we need to think about how to ensure the EU’s strategic autonomy.”<sup>17</sup>

The world economy is at a critical inflection point in history in which fears about dependence on others are growing. An inward turn would not spell the end of globalization, only a partial reversal. But undoing the resulting damage is likely to prove difficult.

In March, the Japanese government planned to break supply chain dependence on China by promoting an increase in domestic manufacturing output to protect the economy.<sup>18</sup>

Australia as well, that has built its economy on free trade and shipping raw materials to China, is taking radical steps towards protectionism and trade independence.<sup>19</sup>

The main policy being enacted to fight COVID-19 is the restriction on medical gear exports, limiting or banning altogether the outflow of respirators, face masks, medicines and other personal protection equipment (PPE). These measures damage importers and also exporters: as they raise prices, discourage investment, and cause retaliation.

Countries like United States are also promoting “Nation-made” products, again trying to reduce interdependence and strengthening the internal economy by also limiting foreign imports.

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<sup>15</sup> *The pandemic adds momentum to the deglobalization trend*, Peterson Institute for International Economics, April 2020 <https://www.piie.com/blogs/realtime-economic-issues-watch/pandemic-adds-momentum-deglobalization-trend>

<sup>16</sup> Ibidem

<sup>17</sup> Ibidem

<sup>18</sup> *Japan aims to break supply chain dependence on China in light of COVID-19*, *Business*, The Japan Times, March 2020, <https://www.japantimes.co.jp/news/2020/03/06/business/japan-aims-break-supply-chain-dependence-china/#.XpnFWJl7muU>

<sup>19</sup> *Coronavirus shortages prompt Australia to bring manufacturing home*, *Financial Times*, April 2020, <https://www.ft.com/content/04ac783d-8ced-4e66-9437-78b607cbd8d4?segmentID=22a4a564-acc0-bdcd-29ab-405d952fdcc3&campaign=march20>



## 5. The Economic Outbreak

The coronavirus, COVID-19, hit China at the start of December and due to the highly contagious nature of the virus, it started spreading quickly and on a wide scale. Other than the medical distress, it is causing severe harming to the economy because of the healthcare disposition by the government. Quarantines, travel restrictions and factory closures are slowing down (in some cases paralyzing) several service sector activities.

There are supply, demand, and confidence channels through which the virus affects the economy. We can break down the three major contagion paths through which the pandemic is disrupting the economy:

- Supply: due to social distancing restrictions many factories can't operate, polluting global value chains and causing closures as well as shortages in various segments
- Demand: the service sector was severely struck by the pandemic, causing a fall in demand for leisure activities like travel, entertainment and tourism also hitting education services
- Confidence: a previously unknown virus means also unknown medical treatment and dubious prevention procedures, leading to uncertainty regarding future consumption, investment and supply options.

The economic concern started arising when China, the manufacturing titan of the world, went into lockdown. As the world's largest trading nation and the second-largest economy, the lockdown in China affected importers, manufacturers and consumers everywhere.

In fact, in the last two decades China has become prevalent in the global economy. It's rising importance is not only related to its status as a manufacturer and exporter of consumer products, but because China is the main supplier of intermediate inputs for manufacturing companies abroad. As of today, about 20 percent of global trade in manufacturing intermediate products originates in China (up from 4 percent in 2002).<sup>20</sup>

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<sup>20</sup> *Global trade impact of the coronavirus (COVID-19) epidemic*, United Nations Conference on Trade and Development, March 2020, <https://unctad.org/en/PublicationsLibrary/ditcinf2020d1.pdf>

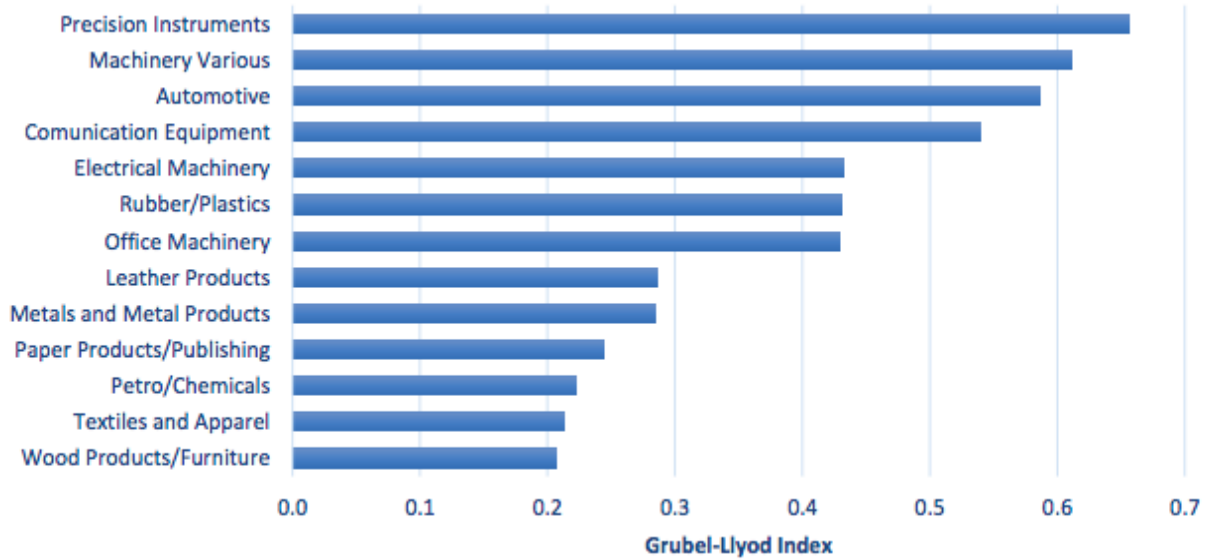


Figure 5 China Integration in Global Value Chains, by sector, Source UNCTAD

Nations are connected by international trade, it being an important vehicle for international contagion. Different sectors were subject of direct and indirect disruptions in both supply and demand: the drop in GDP was reflected in lower imports, causing aggregate demand to drop. Which in turn leads to fewer exports and more exposure for the nation's trading partners. World trade is very complex and is composed of various nodes interconnected and dependent to each other, meaning that a shortage of exports from China affects directly its main partners but also indirectly countries that trade with others and rely on China for minor steps of the production process.

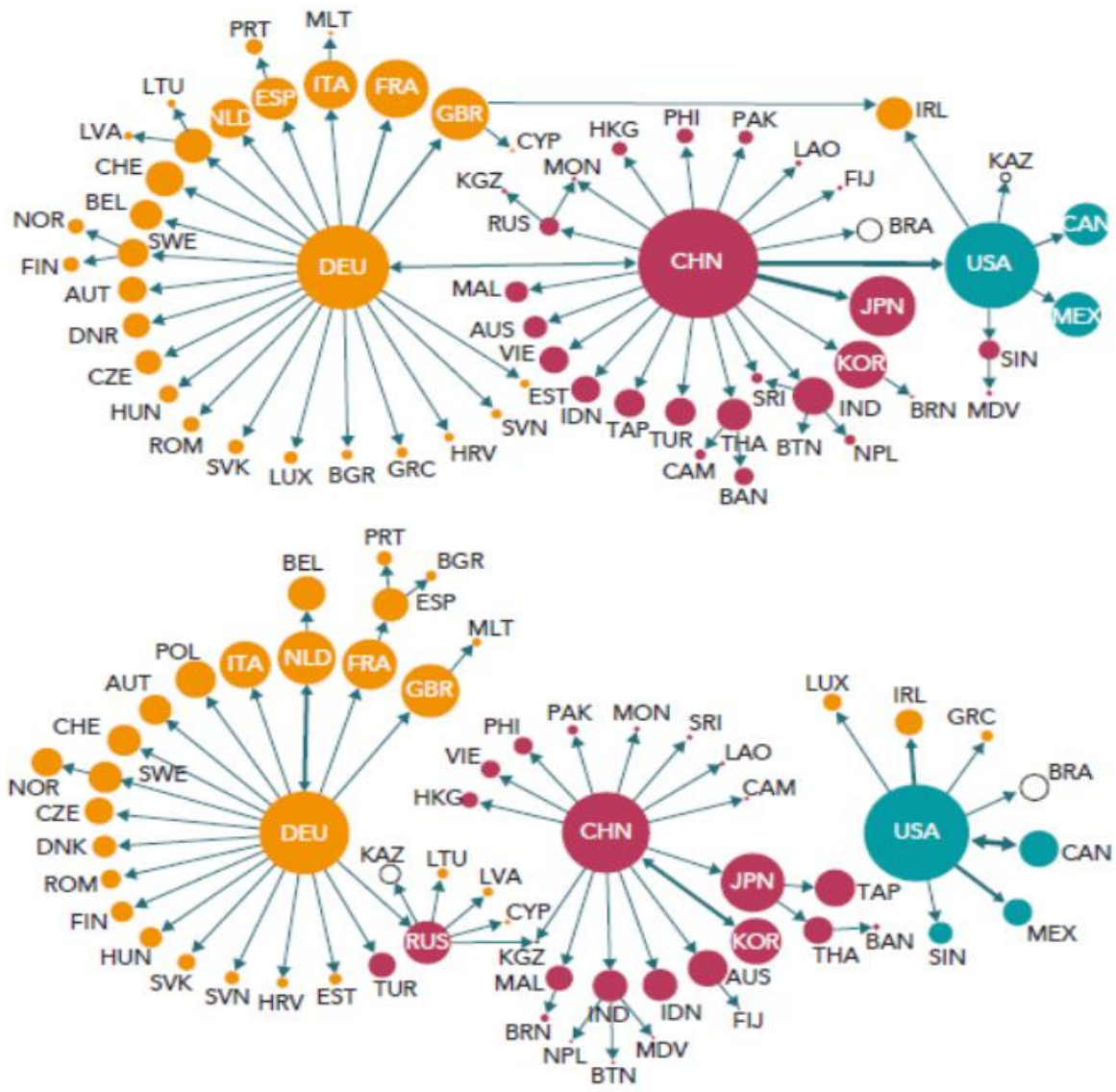


Figure 6 Exports of final goods (top) - Global Value Chain (bottom), Source WTO (2019)

The rest of the world began to feel the effect of the virus and global supply chains took a hard hit. Further amplifying the impact on the manufacturing industry: manufactured goods are ‘postpone-able’ and thus more susceptible to ‘sudden stop’ demand shocks, as we saw in the Great Trade Collapse of 2009.<sup>21</sup>

Shortages of food in some countries and medical and protective equipment in most have led to the widespread use of export restrictions and the rapid repurposing of factories to boost self-sufficiency where possible. But the trend of shortening supply chain and keeping the food, medical and protective equipment in national boundaries is a tempting fallacy from which will be hard to turn back.

As the Australian economist Shiro Armstrong, in June’s article of EastAsiaForum argues: “economic nationalism is ‘gathering momentum in many countries’ and that ‘will make the

<sup>21</sup> Baldwin, R., and Freeman, R., *Supply chain contagion waves: Thinking ahead on manufacturing ‘contagion and reinfection’ from the COVID concussion*, VoxEU, April 2020, <https://voxeu.org/article/covid-concussion-and-supply-chain-contagion-waves>

world poorer, weaker and less secure'. Reducing vulnerability in supply chains by on-shoring production, putting up barriers to foreign investment and shortening supply chains is 'the North Korean model of eliminating risk in international economic engagement'.<sup>22</sup>

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<sup>22</sup> *COVID-19 doesn't spell the end of supply chains*, EastAsiaForum, June 2020  
<https://www.eastasiaforum.org/2020/06/07/covid-19-doesnt-spell-the-end-of-supply-chains/>

## 6. General Solutions Proposed

During the pandemic most of nations' efforts were aimed at dampening the international spread of the virus and mitigating the potential consequences on the long run. Policymakers are taking various measures to ensure international trade and transport in these difficult times. The theme is to avoid halting the economy “keeping ships moving, ports open and cross-border and transit trade flowing, while ensuring that border agencies can safely undertake all necessary controls.”<sup>23</sup>

Border agencies need to address the challenge of expediting imports, exports and transit, especially of medical supplies, while adopting epidemic prevention measures and ensuring adequate customs clearance. Governments have to secure the supply of critical goods (as protective equipment and medicine) and necessity goods (like energy and food). Policymakers and government should act with this purpose in mind, posing their attention on global supply chains and the transport of goods. Turning inwards won't work, the answer to the pandemic isn't a protectionist response that could harm the post COVID world. On the contrary, efforts must be made on strengthening the transport system, focusing on efficiency and robustness.

A major issue that have to be undertake is the pandemic impact on developing countries, especially the poorest. For them trade can be a potent, cost-effective mitigating tool to fight the devastating effect of the crisis. From economic point of view, developed countries must implement trade policies to protect, not only themselves, but also countless lives across the world by easing the access to medical supplies. Policies that put this access at risk should be restrained. Global cooperation is critical to meeting this challenge.

To address these issues, governments need to work together by adopting common approaches across the global network of supply chain. Widespread economic collapse and disruptions must be avoided at all costs, otherwise the post-pandemic economic recovery will be harsh and slow reaction times could potentially worse long-term development projects.

Governments, public agencies and policymakers all around the world are working on viable solutions to the COVID-19 crisis, on this chapter we will review the most accredited.

### 6.1. Trade Logistics

In April, UNCTAD released an action plan<sup>24</sup> to allow a smooth functioning of the international trade network. It starts with a key concept: governments must ensure uninterrupted shipping, stating that around 80 per cent of global trade volume is transported by commercial shipping, moving the world's food, energy and raw materials, other than manufactured goods and components. Therefore, ports are the first infrastructure to be kept fully operative and in line to the contagion prevention provisions to allow non-stop activity and flow of goods, avoiding as much as possible delays and unnecessary interference.

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<sup>23</sup> *Covid-19: a 10-Point action plan to strengthen international trade and transport facilitation in times of pandemic*, UNCTAD Policy Brief, April 2020 [https://unctad.org/en/PublicationsLibrary/presspb2020d3\\_en.pdf](https://unctad.org/en/PublicationsLibrary/presspb2020d3_en.pdf)

<sup>24</sup> Ibidem

Critical goods need to be protected and the international supply should proceed quickly. To facilitate transport the World Customs Organization, as of April, has issued a list of Harmonized System codes for critical medical equipment that helps Governments and customs agencies to allow for fast-track clearance.

Cross-border transport is to be facilitated: lorries, trains, aeroplanes and relevant transport workers need to be able to cross borders in order to keep supply chains functioning and limits on transport operation may need to be suspended. National Governments, in particular transit countries, and regional organizations should support transit, transport and trade corridors and maintain customs transit regimes and other transit-related facilitation procedures.

The legal aspect is also key and need special attention to allow free and continuous flow of goods and services across borders. In critical times extraordinary measures are to be taken and flexibility is a necessity, the unprecedented disruptions associated with the pandemic and its massive socioeconomic consequences are giving rise to a plethora of legal issues affecting traders across the globe. Industry and traders need to be encouraged to waive some of their legal rights and agree on moratoriums for payments, performance and the like, where appropriate.

Other suggestion proposed by UNCTAD are eliminating paperwork, like certificates and contracts, by resolving to electronic submission and paperless transaction to further avoid human interaction.

## 6.2. Trade Policies

The first response from governments to shortages and uncertainty of the global value chain system was concern. The tendency was to cut ties with the unreliable exterior world with tariffs that now need to be reduced. Tariff rates on pharmaceuticals and medical equipment are not very high, but other articles like disinfectants and other personal protective products still face high tariffs and nontariff barriers that need to be taken care of to fight the pandemic. Soap, the first line of protection against COVID-19, is subject to a global average tariff of 17 percent, with 72 countries applying import duties in excess of 15 percent. Tariffs on health and hygiene products are a regressive form of taxation that targets the sick.<sup>25</sup>

Such protectionist measures to strengthen resilience against the virus are having the opposite effect and must be eliminated in order to lower the cost of inputs like active ingredients and other chemical products, encouraging domestic investment and production. The indicative list of essential COVID-19 medical supplies published by the World Customs Organization is leading the change towards the future. A number of countries have already announced tariff reductions in certain categories of critical medical supplies, even though temporarily. US tariffs on imports from China risk shortages of ventilators and other medical products.

Expand access to technical standards and expedite conformity assessment procedures. Medical gear is, rightfully so, subject to stringent standards on design, manufacturing, and market placement to protect consumer safety and public health. In difficult times those disposition need to change to avoid dampening the production and distribution of critical goods. To

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<sup>25</sup> *A memo to trade ministers on how trade policy can help fight COVID-19*, Peterson Institute for International Economics, March 2020 <https://www.piie.com/blogs/trade-and-investment-policy-watch/memo-trade-ministers-how-trade-policy-can-help-fight-covid>

overcome this problem, the European Union made freely available its basic standards for certain personal protective equipment and medical devices, lifting the requirement that firms purchase and use European standards according to intellectual property rules. This measure could allow an easy and quick conversion for some factories to aid in producing higher quantity of protective equipment. The European Commission has recommended speedier conformity assessment procedures and market surveillance of these products.

### 6.3. Logistics and Policies Practical Applications

Trade policies and innovative logistics practices can play a key role in the recovery. As COVID-19 wreaks havoc across industries and nations, countries need to keep supply chains up and running. The groundwork for a revitalized global trade system to help restore the world economy should also be planned. Governments and individuals must work together to face the crisis, and some cases of such a cooperation already started, as reported in the following examples.

#### **Allow health professionals to move across borders**

In February 2020, two nurses in Wuhan pleaded for health workers from around the world to come to China. Few months later China sent 300 intensive care doctors to Italy. In the United States, New Jersey has authorized the temporary practice of foreign doctors licensed and in good standing in another country. Bureaucracy needs to work side-by-side medicine, to ensure healthcare to the neediest and to underdeveloped countries.

#### **Share knowledge via e-health and other digital interactions**

Governments have worked in the United States to promote telemedicine to screen high-risk patients, interact and monitor COVID-19, and control health care systems. To share knowledge and experience, the global health community is moving to emerging technology, data and cross-border eHealth experiences. General rules to promote cross-border trade in digital services, notably to provide a safe atmosphere for digital health sector exchanges, may facilitate rapid sharing of information and case management.

#### **Ensure that intellectual property regimes do not hinder access to new technologies and drugs**

Organizations around the globe are rushing to create testing tools, vaccinations, and antivirals for COVID-19 prevention and treatment while policymakers are trying to speed up approvals. New technologies — such as parts of respirators produced by Italian engineers in 3D printing — can fix shortages. Yet security under intellectual property regimes needs to be weighed against the pandemic's global significance. Current challenges need to be addressed. International cooperation could provide greater clarity to safeguard access for all.

#### **Avoid export restrictions**

It is estimated that more than 24 nations have taken measures to restrict their exports of medical supplies, such as masks, medicines and their ingredients. The European Union, for example, has placed limits on exports of medical equipment outside the trade market and India has done the same with its exports of drugs and drug ingredients. During the food crisis of 2006–08 a similar phenomenon occurred, when export restrictions reduced global food supplies and caused price surges.

In the past, violation of these restrictions has proven difficult to control multilaterally, given the damage they do to exporters and importers alike by raising expenses, restricting investment, and causing retaliation. Countries should understand that they are self-defeating, despite the present appeal of these measures. The World Health Organization reports that production will increase by 40 per cent to satisfy increasing global demand for personal protective equipment (face masks, goggles, etc.). The approach is to use incentives or other measures to boost global production and to speed up delivery.

### **Take collective trade action**

Lastly, policymakers should strengthen global trade cooperation, not inhibit it already. They should decide on eliminating export bans, lifting recent restrictions and maintaining self-restraint when the effect is detrimental. Governments could also negotiate agreements to slash tariffs and nontariff barriers on health-related products, building, for example, on the WTO initiative on trade in pharmaceuticals. Increased certainty of open markets would stimulate investment. Governments should also create a comprehensive mechanism for encouraging international regulation in medical services or e-health services to promote the flow between medical information and expertise. Importantly, they will use the WTO to manage such negotiations. While international cooperation on trade has suffered the onslaught of geopolitical competition, this is the time to collectively promote greater global alignment between public health and trade policies to save lives.<sup>26</sup>

## **6.4. WTO Solutions**

Medical devices, ranging from the easiest personal protection system, such as disposable masks, to the advanced ones, such as ventilators, were all in severe shortage. COVID-19 test kits, disinfectants and sterilization products; medical instruments (e.g. syringes, needles, some equipment, electrocardiographs and infrared thermometers), protective gear (e.g. gloves or masks) and various forms of medical and surgical furniture were all required and could not be completely fulfilled.<sup>27</sup>

First solutions tackled were stockpiling, international trade and government-supported investment in relevant manufacturing capacity. Each having advantages and drawbacks and a role to play in coming up with a solution sufficient to meet the challenge.

Stockpiling can be the way to go for some countries, as it doesn't majorly effect trade and can act as a back-up in case of emergency situations, but it comes with some costs like infrastructures for storing and maintaining the goods, as well as deterioration times. Although a stockpile could provide some buffer, it is important to meet an increase in critical demand from either international trade or, as another alternative, increased production output.

“A consideration for relying on a resort to manufacturing in a crisis is whether it is sufficiently flexible to convert normal commercial production to immediate needs, from fashion wear to surgical gowns, from making beer to making disinfectant (both are actual examples of

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<sup>26</sup> *How the G20 Can Hasten Recovery from COVID-19*, “PIIE BRIEFING 20-1”, April 2020  
<https://www.piie.com/sites/default/files/documents/piieb20-1.pdf>

<sup>27</sup> *DDG Wolff: Trade, global cooperation can best deliver adequate medical supplies*, World Trade Organization, September 2020 [https://www.wto.org/english/news\\_e/news20\\_e/ddgaw\\_04sep20\\_e.htm](https://www.wto.org/english/news_e/news20_e/ddgaw_04sep20_e.htm)



successful conversions).”<sup>28</sup> As well as the equipment being adaptable, the workers must be versatile.

Another option for access to medical supplies is relying on imports, which can work in the long run but doesn’t prevent the initial shock in the short term. Everywhere at the start of a pandemic, demand for vital goods skyrockets — if not all at once, then in waves that come near enough together to place strain on the stocks available for commerce. Imports may also be less available because of export restrictions in their country of origin, or because of foreign governments' pre-emptive purchases. Importing can also, as a practical matter, be constrained by an importing country’s financial capacity.

Shortly after the lockdown, WTO began to collect and disseminate information on Members’ individual trade responses to the pandemic. Some Members imposed export control regimes for essential products. A substantial number suspended their tariffs on imports of critical supplies and otherwise facilitated trade. A concept paper was produced by some Members suggesting “enhancement of the current WTO disciplines applicable to trade in essential goods, a schedule of collaboration in times of crisis and the reciprocal elimination of tariffs on pharmaceutical and medical goods with a binding effect.”

The paper presents three main parts: permanent tariff elimination, disciplines relating to essential goods in crisis situations, and other disciplines irrespective of the crisis. The solution to the crisis may include restricting the length and reach of export restrictions for healthcare goods, calling for the sharing of information on requirements and availability, tariff suspensions, developing an awareness of the implementation of the 'fair share of supply' norm under the GATT exceptions. Also, to allow for consultations, to list best practices for requirements, to streamline customs processes, to partake in shared public procurement while raising adherents' own segregation in public procurement, to reduce the burden of import licensing and to allow for greater transparency. The third portion of steps may discuss governing remanufactured products for knowledge-sharing purposes, as well as creating a lasting structure for cooperation and accessibility.

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<sup>28</sup> Ibidem

## 7. Conclusions

The Covid-19 pandemic affected global economy like no other crisis in recent times, taking the world by storm for its rapidity and broad spectrum. The initial shock was severely underestimated by most governments, easing its spread in diverse economic sectors, almost paralyzing various manufacturing industries and halting many services providers. Lockdowns inhibited travel, entertainment and catering services, as well as preventing workers from running factories causing delays in goods' production.

This crisis stands out from the other for its causes and scale, it was compared to the 2008-9 housing crisis, but after the initial trend became clear that the similarities came short. Unlike the Great Depression, the current emergency hit the "real" side of the economy before the financial one and won't be fixed by only a monetary policy. After the first months the crisis reached a dramatic expansion surmounting the others, hitting both demand and supply.

This paper focused the analysis on the latter, taking a broad look on what happens when a link of the chain comes missing in an interconnected economic world. Value chain disruptions were the among the main topics of discussion during the first months of 2020 as the virus spread across Nations and industrial sectors. The issue arose because many manufacturing goods, such as cars, electronic equipment or the much-needed facemasks, have to pass through several production steps (even between countries) to become the final product or they must be imported altogether. However, when some of the steps can't be completed or the products can't be exported, the whole system starts to collapse. The health regulation, while limiting the rates of infection, were also lowering people's standards of life and harming the economy.

Globalization allowed economy to grow internationally as nations can make the most of their resources and skills, but during the Covid-19 pandemic the trust in the System was put to test and deglobalization ideas were developed to fight the crisis. The main arguments targeted the dependence from other countries in the production of medical equipment, that was then extended to different segments of the economy and the solution proposed were to "on-shore" many industries to break international reliance and strengthen national economy.

The abandonment of globalization however doesn't seem to be the most rational choice: the theory and empirical data support international trade and it is reasonable to think that a joint intervention to settle the crisis can be the best and fastest solution.

What happened elsewhere can happen in everyone's own country and a protectionist mindset could possibly cause further harm by limiting national economy and estranging allies.

In a non-globalized world, an outbreak like the one we are experiencing would have produced the same effects and the same economic distress: international trade, while possibly being an additional disruption mean in crisis situation (such as pandemic or natural disaster), can act as a safety network against some unpredictable adverse events.

Globalization isn't the source of the problem and can be a powerful tool to fight this crisis if we manage to make the most of it. Emergent example is China itself, that right after facing the virus in national borders, sent equipment and specialized doctors worldwide.

The Covid-19 crisis hurt everybody everywhere but in this indiscriminate people came together with a solidarity that will be key to rebuilding the society and economy of a post pandemic world.

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