

# The Covid 19 Pandemic – Challenges for Maritime Transport and Global Logistics Supply Chains

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**ABSTRACT:** The outbreak of the Covid 19 pandemic and the actions that all countries took in its aftermath all over the world in the first quarter of 2020 and later, i.e., during lockdowns and other restrictive measures, introducing a short and medium-term freezing of economic activity, had a strong impact on their economies and, consequently, also on the global economy. They hit seriously its particularly sensitive sectors, such as industry, trade and transport.

The aim of undertaken research is to evaluate the impact of the pandemic on the functioning of maritime transport sector as well as to indicate its consequences for the global supply chains between 2020 and 2021 (first quarter). The research is mainly focused on assessing the impact of the Covid 19 pandemic on the global shipping and especially container one that is contemporarily the most vital link of the global intermodal land-sea supply chains.

The analyses take into account the adaptive measures taken by ship operators and other individual parties being an integral link of the global supply chains with an aim to mitigate the effects of radical slowdown in industrial and global trade activity. The research was based on the analyses, reports and several business information carried out by specialized international organizations as well as ship carriers and logistics providers.

The obtained research results indicate the need to reconfigure global logistics supply chains and increase their resilience by introducing new digital solutions. It is high time to introduce new smart, green digital supply chains and subsequently to reconfigure them much more towards the regional trade and economic relations and ties among countries (reshoring). Such activities aiming at rebuilding the logistic supply chains may at the same time change the presently existing business environment in global maritime shipping, enforcing not only changes in ship owners' business models but also serious structural alterations on the shipping freight markets.

## 1 INTRODUCTION

The globalization processes defining the pace and directions for the development of world economy, advancing with significant but variable rate for more than three decades, have been subject to numerous disturbances caused by the emerging crises (e.g., SARS 2003, financial crisis 2008/2009) and protectionist actions (US-China trade war from 2018, US-EU, various embargoes etc.). However, none of

them caused such rapid loss of momentum or so numerous and broad, unambiguously adverse economic and social effects on a global scale as the crisis caused by the need to fight the coronavirus pandemic (COVID-19), which emerged in the first half of 2020. The lockdown and phasing-out of business activity by nearly all countries, including the main driving forces of global economy, and its duration within subsequent waves of the pandemic, caused a crisis incomparable to any other known to date.

The crisis caused by the COVID-19 pandemic appears to be the black swan, and not as before, a huge financial crisis or sudden economic collapse in a particular region in the world. Thus, the types of reaction how to fight this crisis are different than those previously known and applied, and in addition, different in their form and character. Furthermore, the crisis also occurred in other than previously known conditions regarding the functioning of global economy. It has entered deeply into the development of economy 4.0, based on digitalization, gradually implementing the development model typical of the sharing economy. As a result, the status has also changed – the development level, structure and the mechanism of its operations. The real and regulatory sphere of global economy has significantly changed, including its ability to respond to crises. This was the result of progress made in the area of economic deregulation and market liberalisation (regulatory aspect) as well as the expansion of outsourcing and offshoring, and the implementation of digital solutions (real aspect).

The progressive structural changes in the area of world production, consumption and trade have been accompanied at the same time by phenomena such as the strengthening of cooperative relations between transnational corporations and companies, and thereby the increasing interdependence between them, as demonstrated by the development of supply chains, including global value chains, which carried almost 79% of the value of world trade in 2019 [5]. The processes of economy integration and individual, rather fragmented types of markets have also intensified.

However, these processes and phenomena have generated new risks, not always vivid and clear in the era of prosperity. They were often underestimated; entities often failed to take appropriate actions to effectively manage the risks and changes that occurred in the real-world economy. These include, inter alia, the risk related to deindustrialisation of Europe - mainly the highly developed economies in this region, and underestimating China's growing economic power and its gradually increasing role in the global economy.

Already in 2003, during the SARS epidemic, China's share in global production totalled only 4% and 5.8% in the world trade (4th place), and today, China's share totals 16% in both production and world trade (1st place) [14]. It means that every economic and not only economic event that occurs in that area, has a strong impact on the global economy.

## 2 GLOBAL ECONOMIC EFFECTS OF PERIODIC ECONOMIC HIBERNATION

The effects of preventive measures taken by particular countries, aiming to limit the spread of COVID-19 were revealed not only on a micro and macro, but also on the mega scale. They became strongly evident on the financial and labour markets, as well as the freight and service markets, which affected the functioning of global chains and supply networks. In the macroeconomic context, the aggregated effects of

fighting the pandemic were revealed mainly as a significant decrease in GDP and employment. In the first and second quarter of 2020, the countries such as the USA and Germany observed a decrease in GDP from 10.6 to 11.9%, and the UK even by 22.1%, which proves that the countries faced a significant technical recession [2]. In such cases, the return to the path of growth, even after significant acceleration in the rate of growth in the two subsequent quarters, will take quite a long time, and fighting high unemployment and decrease in consumer and investment demand will lead to a decrease in budget revenue and substantial increase in the budget deficit and public debt. Therefore, the stability of public finances in highly developed countries providing billions for the support of sectors in deep crisis – including the transport sector, is hanging in the balance and its disturbance equivalent to destabilization of the world's financial system may lead to another global economic and financial crisis. Then, the successive waves of the pandemic could result in a meltdown of the existing world economic systems.

The extremely difficult economic situation of the countries with high share in the world trade, observed after the first wave of pandemic, is broadly reflected by global PMI indexes (Purchasing Managers' Indexes) which determine the activity in the area of new export orders, both in goods and services. (fig. 1). They showed, even in the service sector, the value of only 21.7 points, and in the freight sector 27.1 points, which is definitely lower than the level observed during the crisis in 2009. We should remember that the decrease in PMI below 50 points indicates the decrease in economic activity and, if persistent, it may constitute the beginning of recession, followed by a crisis.

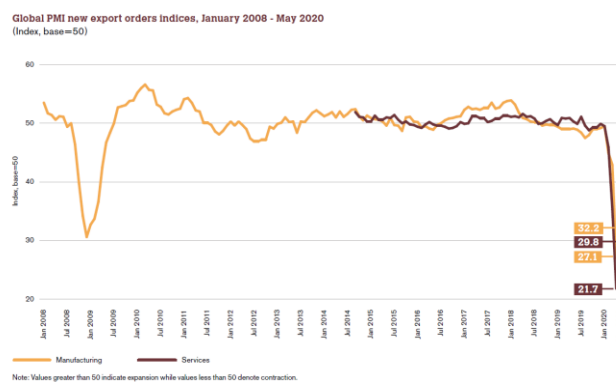


Figure 1 Global PMI new export orders indices (January 2008 – May 2020). Source: [14, 15]

The recession proved that the gross world product and the world trade have fallen markedly during this period in terms of volume and value. In 2020, the world gross domestic product compared to 2019 dropped as per the optimistic scenario presented by WTO by 2.5% and as per the probable scenario presented by UNCTAD, Oxford Economics, IMF and Economies Intelligent Unit by 4.3% [15]. The scale of decrease in the volume of global trading in the first half of 2020 compared to the earlier period was presented in fig. 2. The decrease in the volume of global trading was incomparably higher than the reduction in the rate of growth of the world GDP. In the era of globalisation, the commodity markets

respond more energetically to crisis phenomena than the world economy, as a complex structure, the development of which is defined by many sectors of production ultimately constituting the world gross domestic product.

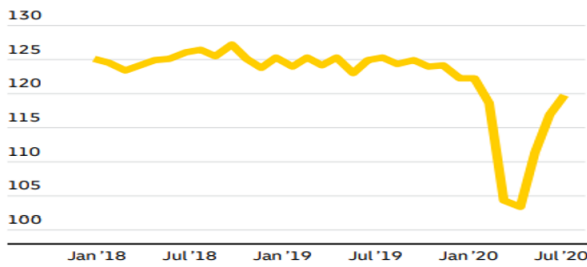


Figure 2 Volume of global trade (2008 = 100)  
Source: [5]

As a result, in 2020 we could observe a major drop in the volume of maritime trade, to an extent comparable to the one observed during the 2009 crisis. However, this tendency, with less significant rate, was already apparent in 2018 and deepened in 2019, which resulted from the US-China trade war and to some extent, from Brexit. The tendency was presented against the background of changes in the world GDP growth rate in fig. 3.

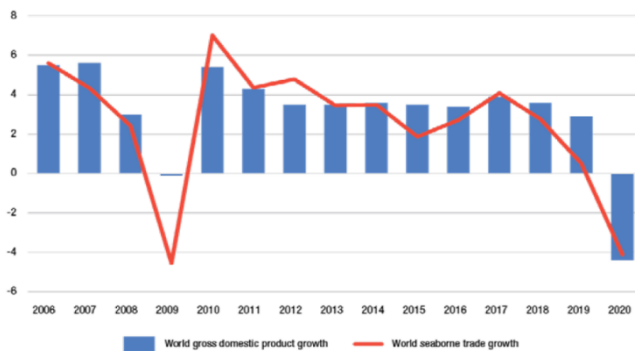


Figure 3 Development of international maritime trade and global output, 2006 – 2020  
Source: [8]

Nevertheless, the decline in maritime transport in 2020 became evident to varying degree within particular main trade lanes and transport routes of the world freight trade (fig. 4). It was most significantly observed within transatlantic and South America trade lanes as well as Middle East, West Africa and South-East Asia. It became apparent and on a large scale (-7.3 %) within all supply chains characterized by significant intensity of transport along the Far East (China) – Europe routes (see fig. 4.)

The substantial decrease in the volume of maritime trade (by more than 4% on average), resulting from downward tendency for the increase in demand for global trade commodities and consequently the decrease in demand for maritime transport, resulted in far-reaching repercussions within particular sectors of the freight market. These effects became apparent, to the greatest extent, on the global maritime container transport, the economic circumstances of which constitute some kind of barometer of the global freight market standing (fig. 5). In 2020, compared to 2019, where serious slowdown was already observed, the container transport decreased by more than 5%.

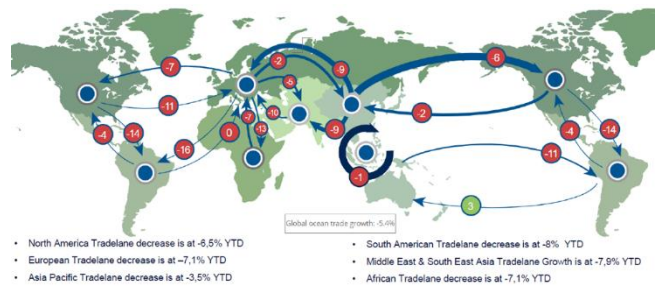


Figure 4. The main routes of the global merchandise trade in 2020.  
Source: [3, 11]

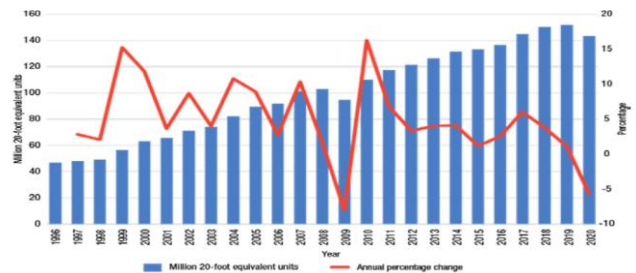


Figure 5. Global containerized trade, 1996 – 2020. Million TEUs and annual percentage change  
Source: [7, 8]

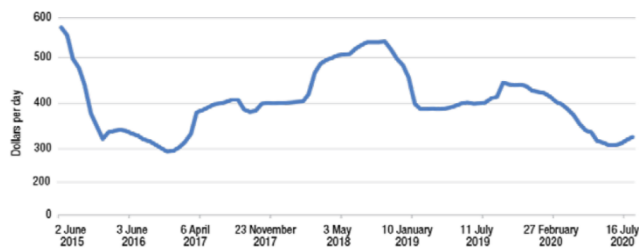
Therefore, in the first three quarters of 2020, this sector of maritime transport recorded the highest losses, in terms of TEU volume and finances (decrease in revenue and profits). In the middle of the year, it was even assumed that maritime container operators may suffer a loss in amount of 10 billion US dollars at the end of 2020 [1, 6]. However, the predictions based on data from January to July proved incorrect since already in the middle of the third quarter of 2020, we could observe sudden and quick acceleration on all maritime freight markets, in particular in the sector of container transport.

### 3 MARITIME FREIGHT MARKETS IN THE ERA OF THE PANDEMIC

Maritime freight markets and in particular their demand side, are under intense pressure from the dynamic changes observed on the freight markets. In 2020, a significant issue for the transport sector, including maritime transport, involved the accumulation of goods in warehouses, on yards, and in the logistics and distribution centres, caused by the COVID-19 pandemic. Consequently, in the second half of 2020, we could observe substantial disturbances in the functioning of supply chains – in all their sections, mainly in seaports [10, 11]. In such situation, it was not possible to maintain the existing transport schedules and it became necessary to introduce significant changes in the freight collection schedules. Most major seaports suffered unprecedented problems with the collection of goods by land operators. This peculiar, unusual type of port congestion, which was observed, led to higher probability of increased cargo damage, mainly in the group of sensitive cargo, including the refrigerated and frozen cargo. The costs resulting from freezing the capital stuck in these goods were rising, too.

In these circumstances, there was a major decline in port turnover and reductions in freight and charter rates in all sectors of global shipping. The changes that occurred at that time on the global maritime transport markets are reflected by the basic freight indices, defining the fluctuation rate of demands, freight rates and ship owners' earnings.

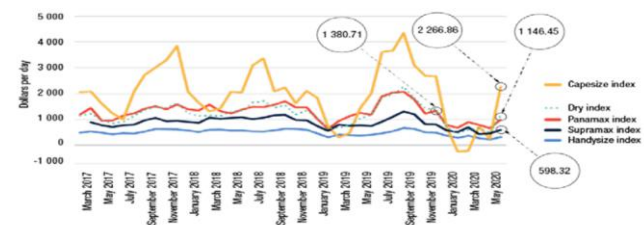
Fig. 6 presents fluctuations in charter rates (time charter) in the sector of container transport, based on the New ConTex Index, from June 2016 to July 2020. In mid-2020, it reached the lowest level, and from July that year, it has revealed the increasing tendency in time charter rates.



Source: UNCTAD calculations, based on data from the New ConTex index produced by the Hamburg Shipbrokers Association www.vhss.dej.

Figure 6. New ConTex index, 2015 – 2020. Index base: October 2007 = 1.000 points  
Source: [8, 9]

A similar tendency, although not related to all types of bulk ships, was observed on the maritime dry cargo transport market. It is reflected by the fluctuations of BDI indices (Baltic Dry Index) – fig. 7. The BDI is an index of average prices paid for the transport of dry bulk materials across more than 20 routes. The BDI is often viewed as a leading indicator of economic activity because changes in this index reflect the supply and demand for important materials used in manufacturing. However, here, the situation considerably improved already in the second half of 2020 [1, 6, 8]. The substantial production growth, first in China and later in other countries in the world, striving to replenish the stocks which declined during lockdowns, increasing the purchase, resulted in rapid surge in demand for any bulk cargo. Therefore, in 2021, we can observe an increase in the sea-borne transport prices of this raw material, by more than 50% [6, 8].



Source: Baltic Exchange; data derived from Clarksons Research, Shipping Intelligence Network Time Series.  
Notes: Panamax index: basis = 82,500-dwt vessel from start 2020, 74,000-dwt vessel prior. Handysize index: basis = 38,200-dwt vessel from start 2020, 28,000-dwt vessel prior.

Figure 7. Baltic Exchange dry index, 2017 – 2020.  
Source: [1, 8]

The BDI index, taking into account the average, daily earnings of four types of bulk carriers, increased only between March and April of 2021 by 38 points to 2.178 points [1, 7]. This, in turn, made these ship owners' daily earnings increase on average by some hundred dollars per day.

Even more significant recovery was observed on the global maritime container transport market. Container ocean operators recorded during the last 8 months (Sept. 2020 - April 2021) the best period in the history of container shipping and this boom arising from a large increase in demand is being continued [6]. The tendency is reflected in fig. 8, illustrating the changes in charter rates between 2012 and 2021 for various types of container ships.

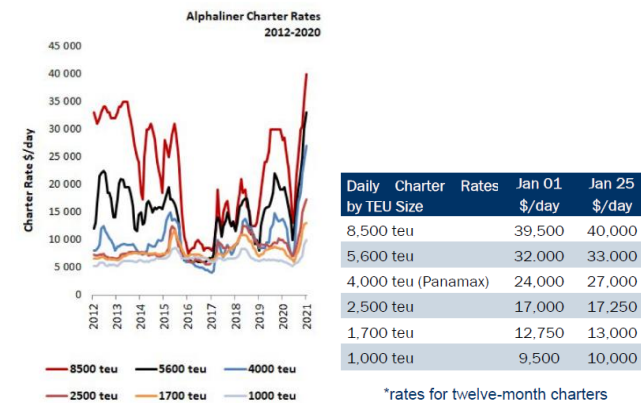


Figure 8. Alphaliner charter rates, 2012 – 2020,  
Source: [1]

With reference to S&P Global Platts, from March to April 2021, on the Asia – South America transport route the contracted transport rates per 1 TEU varied from 2500 to 3000 USD, which means that they were higher by 25% - 50% than in the previous year [6, 7, 9]. The rates, in particular spot rates on the China – US as well as China- Europe trade lanes fluctuated near the record-breaking amount of the fourth quarter of 2020. The Ningbo Container Freight Index (NCFI), calculated as an average of 21 individual indices for 21 main trade lanes from the port of Ningbo, which was valued USD 2040,16 per FEU at the end of March 2021, increased a week later by 4.8% to USD 2138,21/FEU. Nevertheless, it was still lower than the amount reached on 8 January 2021, namely USD 2498,46/FEU. A similar trend can be observed by analysing the rate of changes in the Shanghai Container Freight Index (SCFI), which reflects even more clearly the changes occurring on the container transport market [1, 6]. However, the changes in the level of SCFI were not as dynamic as in the case of the NCFI index; its increase totalled, from March to April 2021, ca. 0.6% on a weekly basis.

The analysis of the existing market conditions clearly indicates that the tendency of freight rate growth as well as the revenue of container operators will still persist. The new contracts concluded by the largest importers in the USA and the EU with the leading ship owners reveal the continuous upward trend [1]. It arises from numerous factors; though, mainly the market related ones. Higher costs of freight shipment in containers result from numerous factors, adverse for the shippers, overlapping one another at a particular time. The basic of them include: the increasing demand for goods and transport together with the shortage of transport capacity on a large scale, congestion in seaports caused not only by delays in supplies but also increased by the insufficient number of dockers and truck drivers, as well as currently chronic even lack of



containers for freight transport. All this slows the global transport down, causing major disruptions in the functioning of global supply chains and consequently, a major increase in transport costs.

Yet, the increasing freight rates and their acceptance by the shippers fail to guarantee the confirmed stowage aboard the ship [6, 9]. The issues with available space on ships, observed since the end of March 2020, persisted also in April [1]. Although by analysing this issue we can observe that on a global scale the so-called „blank sailings“ dropped in April to 42 from 49 recorded in March, but it fails to refer to all main transport routes covered in the analysis. Along the Far East – Europe/Mediterranean trade lane, the number of „blank sailings“ is likely to increase by as much as 38% compared to March this year [6]. This persistent situation, resulting from considerable growth rate of effective demand relative to impossible to obtain in a short time increase in potential supply, i.e., the container fleet transport capacity will still generate the increase in freight rates – mainly spot, as well as charter rates in this sector of global shipping.

Therefore, the maritime freight upward trend will persist. It was impossible to change it before, and it has been impossible to do it now through actions taken by the leading shippers, international freight forwarders and logistics companies, as well as large retailers and producers who conclude contracts with ocean operators every year to block the frequent increases or changes in the maritime freight rates, negotiating medium-term, usually annual contract rates. To some extent, this trend may be slowed down only by the reconfiguration of services re-scheduled in terms of more flexible adjustment of tonnage to the changes in demand related to particular transport routes.

In the current crisis the dominant partners within the maritime global containers markets include only those carriers who belong to a small group of beneficiaries who profit significantly from the persistent market instability. In the fourth quarter of 2020, only 11 of them generated the total net profit amounting to 5.8 billion USD. Assuming that those who failed to disclose their data (EBITDA), such as e.g., MSC, generated similar profit, it can be estimated that their accumulated net profit for that period totalled as much as 9 billion USD. It means that they generated 2 billion USD higher profits than the profit generated within the last five years, which amounted to 7 billion USD.

Only a few container operators recorded losses in the analysed period. They did not include the three largest Taiwan operators, i.e., Evergreen, Yang Ming and Wan Hai, who generated significant operating profit during the dynamic increase in rates and the related shortage of containers [1]. Evergreen recorded net profit in amount of 853 million USD per 2020, whereas Yang Ming and Wan Hai recorded profits in amount of 420 million and 396 million, respectively.

The profits are used in part to pay off old debts and repay the loans as well as, to a larger extent, to invest in the tonnage and purchase the equipment, including the containers. Such activities are exemplified by Hapag-Lloyd, which already in 2020

placed an order in China for 150,000 20-foot containers worth 550 million USD [1, 6]. The order also comprises 8 000 TEU of special containers for the transportation of oversized and dangerous goods. The contract will be completely fulfilled in 2021, which will contribute to alleviate the existing shortage of containers and facilitate the functioning of the supply chains.

Moreover, facing the shortage of transport capacity in the sector of container market, in relation to the increased financial liquidity of ship owners operating on this market, only in March this year, they placed orders for 45 large ULCV containers of total capacity of 866,060 TEU [7, 8]. Therefore, their gradual entry into operation, together with 27 smaller vessels contracted at the same time may, within the next 2-3 years, lead to the alleviation of the existing shortage of transport capacity in the global container transport market and its sustainability. The process may occur much faster since in the first quarter of 2021 in total, the shipyards received orders for vessels of carrying capacity above 1.39 million TEU. This is the best result in six years. Consequently, the tendency to renew and develop the tonnage, observed already in the last quarter of 2020, when only vessels of max. carrying capacity of 23 000-24 000 TEU were ordered, is accelerating in 2021, indicating the struggle of ship owners, as participants in the global supply chains, to improve the efficiency of their operations in the logistics context, and increase in the effectiveness of freight movement on a global scale, in the economic context.

#### 4 IMPACT OF CRISIS ON GLOBAL SUPPLY CHAINS – TRENDS IN THEIR EVOLUTION

The pandemic crisis, which has significantly exacerbated the already existing disruptions in the global economy, resulting from the increasing trade protectionism, affected the functioning of global supply chains. Major disruptions were observed in this area, leading to the far-reaching destabilisation and disorganization. Most of them lost their agility and flexibility, and consequently the ability to respond to rapid changes in the global environment. This had a significant impact on the global transport, mainly maritime transport handling over  $\frac{3}{4}$  of the world trade freight volume. In this situation, actions were taken to redevelop and improve it, looking for a new business model adjusted to the current situation, as well as new configuration. Since it turned out that many configurations of the global supply chain are very sensitive and are characterised by poor response to the emerging threats and require replacing them with different structures other than the typical ones from the beginning of 2020 [4, 9, 13].

In addition to the obvious need for change, forced by the existing situation, at the heart of currently taken large-scale actions aimed to reconstruct the supply chains, there is a conviction that the current crisis, like any such meltdown, always creates numerous new possibilities and opportunities for innovative entities. The principle “Never waste a good crisis” also refers to the supply chains in the era of COVID-19, stimulating the need to reconstruct

them, often in a difficult and time-consuming way. Therefore, following the assumption that the current supply chain has been significantly damaged and, in many cases, seriously destroyed, it is believed that its structural reconstruction is indispensable. The key thereto involves meeting not only the requirement of different approach to reconstructing the formula and the supply strategy and often the distribution channels, but also the requirement of reshoring, namely stronger orientation to the closest environment (regionalization). There is also the need to develop a new cost-related model of the supply chain and the formula of its effective functioning [11, 12]. In this respect, it is essential to:

1. depart from the formula of one source of supply in favour of multiple sources (multi-sourcing), namely diversification and development of multi-sourcing strategy,
2. cooperate, i.e., build cooperation-based relations between entities,
3. ensure flexibility and resistance of the supply chain to random events,
4. optimize the area of production, network location and risks,
5. accept the fact that the markets and supply chains were, will be and must be different,
6. include, in a flexible way, the supply chain into the existing ecosystem,
7. develop scenarios for various groups of products and continuously map their impact on the level and costs of customer service.

At present, in the era of industry 4.0 and widespread digitalisation, the digital solutions within the newly constructed supply chains are crucial. However, the digital supply network must be adjusted to the company business strategy, constituting its integral part at the same time.

Moreover, risk management must be a coherent component of such project since risk management and business continuity also constitute an integral element of the overall business strategy. From the perspective of adopted risk management model, the key to success also involves developing a „resilient“ supply chain. This chain not only seeks to reduce the risk on its own, but also has the ability to quickly adapt to unpredictable disturbances and restore the state of balance within the global supply chain. Fig. 9 presents the structure of linear and digital supply chain.

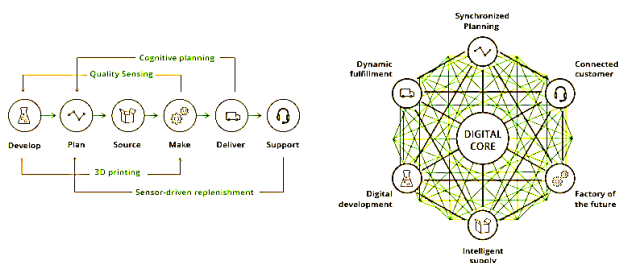


Figure 9. Linear and digital supply chains  
Source:[4]

These days, the supply chain digitalization is perceived as an effective way to develop the strategy and achieve the required resistance and business effectiveness in an organization, based on the emerging disruptions in the supply chain. In such

circumstances the analysis of large sets of data may help companies – including the global sector of maritime transport, to facilitate the process of selecting suppliers and processing in a cloud which is more frequently used to help build relations with the suppliers and manage these entities. As a result, thanks to the automation and the Internet of Things we can significantly facilitate the logistics and forwarding, as well as transport processes.

To achieve the level required for the implementation of digital supply chain, all elements must be efficient, effective, flexible and ready to manage the operational, employment and demand/supply fluctuations. The entities operating therein should also possibly quickly return to introducing the strategic and financial planning rules and start developing the structure of business models for the post-COVID-19 era. [3, 6 ] The implementation of these activities will help reconstruct and organize the supply chains developed under the new formula and accelerate the digital transformation, which apart from obvious benefits may also lead to effective integration into the area of international division of labour and acquisition of the effects resulting from globalisation.

## 5 CONCLUSION AND FINAL COMMENTS

The conducted analysis of the effects of crisis caused by the COVID-19 pandemic for the world economy, as well as the global sector of maritime transport – mainly the container transport, as well as the global logistic supply chains between 2020 and 2021 (first quarter) indicates that they were deep and severe in their economic and financial as well as social context for the economies of particular countries and for every area of business activity subject to the analysis. However, these effects are distributed asymmetrically in the regional and sector-based global economic systems, becoming apparent with varying intensity within the analysed period. Nevertheless, in general, the sector of freight exchange, commercial services and maritime transport were relatively the least affected by the crisis in 2020 and quickly entered the development path. The World Bank (WB) in its latest forecast of 2021 predicts that the world GDP increases at a rate higher than 4% and global trade at a rate of 6 %. [ 14 ]

During the first months of 2020, the sector of global maritime shipping, and in particular the container transport was particularly affected by the effects of crisis due to the congestion in port terminals (lockdown) and the continuous disorganization of global supply chains. Due to the inability to collect cargo in seaports and the resulting pressure from the shippers to slow down the supplies carried by sea, the ships became the floating warehouses, and it was necessary to suspend some services. Though, in the middle of the third quarter of 2020 the situation is gradually stabilizing. The supply chains are cleared, the demand increases and consequently the spot freight and charter rates go up. The carrier revenues are also increasing at a significant rate. It is particularly apparent in container shipping at the Far East– USA trade lane, as well as the routes towards

South America or West Africa and the Middle East – Western Europe trade lanes. The tendency continues in 2021; however, at a lower rate of growth of freight rates. The maritime container transport is expected to increase in 2021 by 5% compared to 2020, and the analogous boom can be observed in the tramp shipping sector. [ 10 ] The main BDI index of the Baltic Exchange, tracking the bulk carrier rates, increased in April 2021 to the highest level in 18 months. We can observe significant increase in demand in all sectors of bulk carrier shipping.

As the economic recovery advances, the global supply chains are gradually revived, and in most cases, against primary expectations in their previous structure. At this stage of the ongoing crisis no radical actions are taken to reorganize them in a fundamental form. However, they are reconstructed but under different principles, e.g., with greater participation of all partners within the division of responsibility, risk, costs and effects. In fact, global operators of these supply chains seek to reconstruct the situation from before the pandemic. Similar approach can be observed among the leading transport operators, in particular the container ones.

Since that system was very convenient for them. The majority had a dominant or close to dominant position on the partial global markets. The scale of benefits they obtained was significant. Nevertheless, they also try to draw conclusions from the crisis, taking actions which result from the assessment of the situation and experience gained within the last six months. These, in turn, clearly reveal that the most sensitive and unreliable element was the human factor. In this context, robotization, automation and digitalisation are strongly forced through, taking quick actions to implement new technologies in transport, forwarding and logistics. It is, therefore, an attempt to eliminate the existing strong impact of the human factor on the functioning of supply chains. The employee's role will be reduced only to the remote control of processes in the area of transport and logistics. Thus, we can see the increasingly intensive efforts to develop autonomous units in shipping and other transport sectors, e.g., promoting automated transport and developing global electronic exchanges.

These trends can be observed in all modes of transport and forms of transport market organisation. The TSL sector global operators also plan to implement 5G technology as quickly as possible, i.e., the new generation of mobile telecommunication networks. It promotes numerous activities within the development of 5G services in the global logistics sector.

Numerous actions are taken to develop digital technologies to establish a new market organization. It is best exemplified by TradeLens – digital blockchain platform developed by companies Maersk and IBM. It was joined not only by CMA CGM and MSC, but also during the pandemic by the Canadian GCT (Global Container Terminals), the Indian digital forwarder Shipwaves, the Russian port of Vladivostok, the Turkish port operator Yilport and the container terminal in Sri Lanka, SAGT. The TradeLens platform has the potential to encourage the global TSL sector to digitalize the supply chains and cooperate within

common standards. With more than 100 members today, the key platform in this sector, based on the digital collaboration, has already processed more than ten million separate shipping events and thousands of documents each week, providing freight forwarders, carriers, customs officials, port authorities, inland waterway suppliers and other entities common access to information on transactions. Therefore, these days TradeLens already offers data on nearly half of the global transport.

Such formula of data integration allows to introduce digital transportation into the container supply chains much quicker. As a result, this will stimulate innovation, leading to the evolution of the container transport sector towards not only its full digitisation, but also its integration into the digital global ocean logistics area. Its further development as well as the development of other similar trade platforms will change the existing business cooperation model within the global supply chains. It may lead to significant consequences for the global TSL sector, in particular for smaller regional forwarding and logistics companies, pushing them to niche segments of the market.

These solutions become part of the previous efforts aimed to simplify the supply chain and to eliminate intermediaries. In addition, the implementation of new technologies is quite costly and can be afforded only by the largest, entities with significant capital in this market sector. Thanks to such solutions, they have the opportunity to gain new market shares. This will result in further concentration in the sector of capital-intensive types of shipping, as well as the entire transport, including mainly intermodal transport. This, in turn, will lead to changing the global modal shift in transport and intensifying competition between the rail and maritime transport, mainly within the continental routes but also to some extent, intercontinental ones (e.g., Europe – Far East).

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