

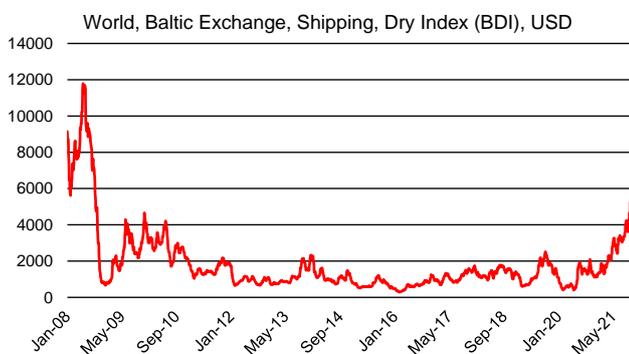
Elevated shipping costs to persist in 2022

by *Edoardo Campanella, Economist (UniCredit Bank, Milan)*
& *Jana Schuler, CFA, Senior Credit Analyst (UniCredit Bank, Munich)*
& *Daniel Vernazza, PhD, Chief International Economist (UniCredit Bank, London)*

- Shipping costs have increased massively in recent months due to a burgeoning demand for goods and constrained supply of container boxes and ships.
- Given the centrality of seaborne trade to the functionality of global value chains, this container crisis is threatening the recovery from the pandemic by impairing production processes and fueling inflationary pressure.
- The inelasticity of shipping supply in the short term means that only a normalization of demand can bring some relief to the industry. But we expect demand to remain elevated at least through 1H22 for several reasons: slow normalization in spending patterns due to COVID-19-related uncertainty, excess household savings, investment plans in the US and Europe, and inventory building.
- As a result, shipping costs are likely to remain elevated well into 2022 while also gradually declining.

Shipping costs have been surging since 2H20, with a sharp acceleration in recent months. The Baltic Dry Index, a benchmark measurement of commodity hauling costs that tracks rates for the three largest classes of ships, increased by more than 950% between June 2020 and early October, before declining somewhat recently (Chart 1). Although it remains comfortably below levels reached at the time of the 2008-09 financial crisis, it points to congestion in an industry that handles over 80% of global trade and is key to the smooth functioning of the global economy.

CHART 1: SURGING SHIPPING COSTS



Source: Baltic Exchange UniCredit Research

Both demand and supply factors are to blame for recent price development. Shifts in spending patterns away from contact-intensive services towards goods during the pandemic, along with unprecedented fiscal support for incomes and a lack of investment in ships (before the pandemic, the expectation was for a structural decline in seaborne trade), caught the shipping industry by surprise. As a result, there were not enough container boxes and ships to accommodate rising orders at a time when COVID-19 created significant supply friction, from a lack of port workers to the implementation of time-consuming health protocols and the shutting of entire harbors. Thus, the shipping industry's problems have had a ripple effect across supply chains and regions, as evident in long delivery times, shortages of key raw materials and high input prices, which have progressively fed through to consumer inflation in advanced economies and endangered recovery more broadly.

In the following, we assess demand and supply conditions to see whether the worst is behind us or whether friction in maritime transport is likely to persist. Only a normalization in demand can bring relief to the industry, as the supply of container ships and boxes, let alone port capacity, is rather rigid in the short term due to the industry's capital-intensive nature. We expect global freight rates to remain elevated in 1H22, as the demand anomalies of the last few months are likely to persist. A more-material decline in freight rates would, however, require a stronger-than-currently-expected demand decline, as little support is likely to come from the supply side in 2022.

How we got here

The main transport mode for global trade is ocean shipping. Some 11 billion tons of goods are transported by ship each year, and in 2020, there were around 270,000 container ships globally, as opposed to about 880,000 bulk carriers and 600,000 oil tankers. Containerized imports include both finished goods and intermediate inputs, some of which are critical to maintaining just-in-time supply chains. Dry cargo accounts to over two-thirds of total maritime trade volumes, while liquid bulk commodities, including crude oil, refined petroleum products, gasses and chemicals, account for the remaining share. Containers allow for standardized handling and shipping practices and integration with rail and truck distribution networks. Those factors give container shipping a cost advantage.

The continuous stop-and-go nature of economic activity in 2020 prevented ship owners from being able to properly plan their own activity. Merchandise trade dropped drastically in the spring of 2020 before it rebounded sharply, returning to its pre-pandemic levels by December and surpassing them in the first half of 2021 (Chart 2). In April 2021, at its peak, global trade was almost 6% higher than it was in late 2019, putting under severe stress not just manufacturers but also carriers. This was largely due to changes in spending patterns away from contact-intensive services in favor of goods as well as to pent-up demand and unprecedented fiscal support for incomes.

CHART 2: BOOMING TRADE



Source: CPB, UniCredit Research

The increase in demand was stronger than expected and not met with sufficient shipping capacity. Containers to ship goods from China to the rest of the world became unavailable. As a result of the initial disruptions caused by the pandemic when trade collapsed, empty containers were left in places where they were not needed, waiting to be repositioned at a later stage. When economic activity restarted, the logistics of the whole shipping industry were already heavily disrupted by overwhelming and unplanned orders. The obstruction of the Suez Canal by the Ever Given added to disruptions.

In addition, the pandemic increased container dwell times through labor shortages at ports or capacity constraints in truck and other inland transport systems due to, for example, delays related to the necessity to comply with COVID-19 protocols, which caused congestion at ports. Off the coast of North America in February 2021, there were still shipping containers full of Christmas decorations. Vessel waiting time has hence increased drastically. According to Sea-Intelligence, the reliability of the schedules of global container services had declined to a new all-time low of 34% by August 2021 vs. a reliability of 78% on average in 2019. The average delay for late vessel arrivals totaled 7.57 days in August (Chart 3). In turn, containers that could not return on time to where they were needed led to a lengthening in delivery times globally and to rising input and output prices.

CHART 3: GLOBAL AVERAGE DELAYS FOR LATE VESSEL ARRIVALS

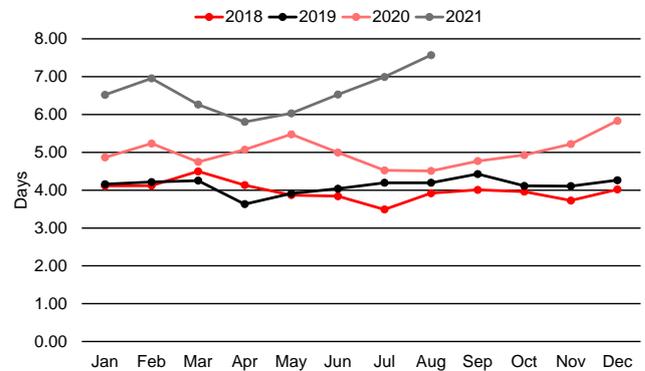
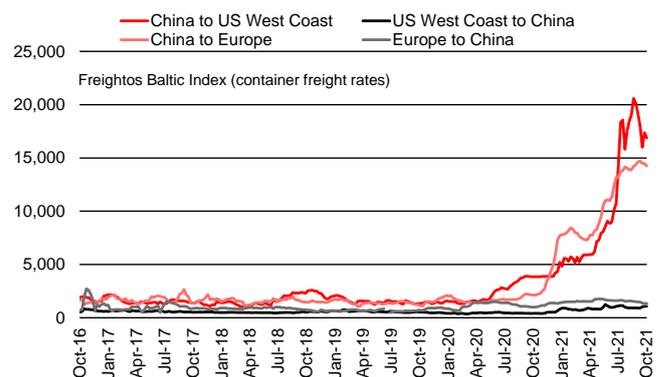


Chart 3 covers 34 different trades and more than 60 carriers.

Source: Sea-Intelligence, GLP report issue 121, UniCredit Research

The most direct consequence of the container crisis has been a steep rise in transport costs on shipping routes from Asia and China to Europe and the Mediterranean, as well as the US (Chart 4). Container freight costs are now almost ten times higher than they were before the pandemic. Interestingly, rates for routes to China have remained roughly flat because most of the global demand during the pandemic was for goods that were either produced or assembled in China, and so the challenge was to find container boxes and ships there – a task that was made even harder by the zero-tolerance approach towards coronavirus contagion adopted by Beijing, and which led to the closure of ports if just one COVID-19 case was discovered.

CHART 4: GOING UP, ONE WAY ONLY

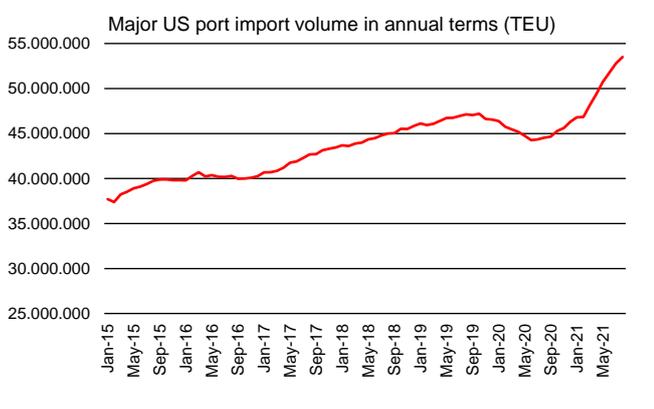


Source: Freightos, UniCredit Research

Strong demand to persist

There have been some initial signs of slow normalization on the demand front. With the reopening of national economies, households are gradually starting to return to old spending patterns, regaining access to in-person services that were restricted during the height of the pandemic. At the same time, a partial return by workers to offices and the lifting of most restrictions mean that demand for equipment that enables smart working and for health equipment is fading. However, demand for goods remains unusually strong as shown by Chart 5 that shows how strong containerized imports are at the US's main ports. Last August, they were 13% higher than they were in the same month in 2019.

CHART 5: CONTAINERIZED IMPORTS IN THE US ARE AT A HISTORIC HIGH



Source: US port authorities, UniCredit Research

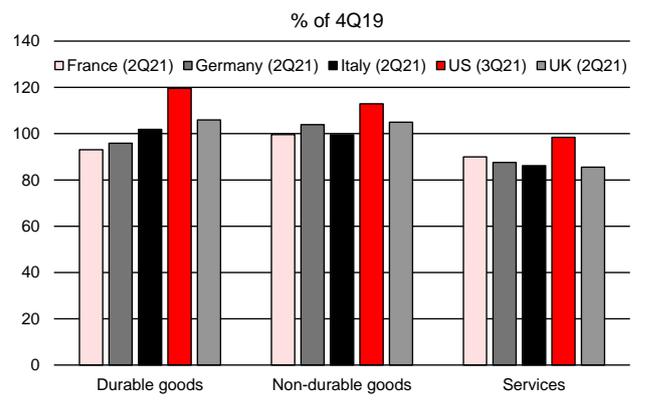
Even assuming a benign health outlook, which excludes the emergence of new disruptive virus variants, we expect anomalies in demand to persist at least in 1H22 for several reasons: slow normalization in spending patterns due to COVID-19-related uncertainty, excess household savings, inventory building, and investment plans in the US and Europe. In what follows, we briefly look at each of these factors:

- **Spending patterns:** The pandemic and the associated mandated and voluntary social distancing caused spending on social consumption, such as leisure and hospitality, to be cut sharply. To maintain their welfare/happiness (or utility, in economics jargon), households increased their purchases of goods to compensate, particularly durable goods, which were much less exposed to social contact than services. For example, reduced public transport use boosted the demand for cars, increased working from home boosted the demand for computer equipment, and there was a shift from restaurants to food at home.

Chart 6 displays a breakdown of private consumption by type-of-purchase across selected advanced economies. In all these countries, spending on goods has outperformed

that of services, compared to pre-pandemic levels. As the direct effects of the pandemic fade, it is reasonable to assume that the shift in consumption away from goods and towards services will at least partially unwind, thus reducing pressure on maritime trade. However, the pace of the shift is uncertain. New waves of COVID-contagion would likely delay a return to normal spending patterns. And winter is approaching, which might induce consumers to adopt more cautious behaviors for fear of being infected.

CHART 6: SPENDING PATTERNS HAVE NOT FULLY NORMALIZED



Source: Eurostat, BEA, UniCredit Research

- **Pent-up demand:** During the pandemic, there were restrictions on what people could buy, a large part of the economy (mostly high-contact services) was closed down and, more recently, as economies reopened, supply bottlenecks have led to shortages of some products, particularly cars. This dearth of spending opportunities in affected sectors has generated so-called "pent-up" demand.

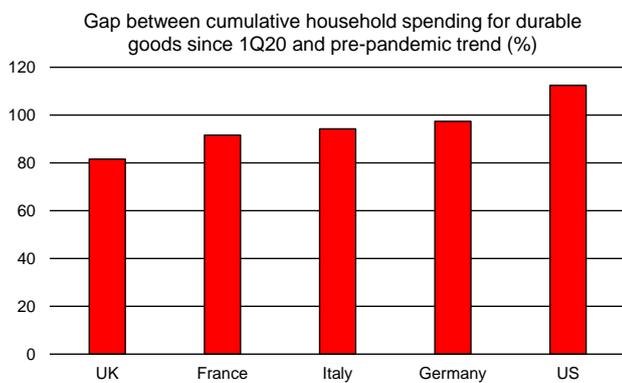
While there is likely to be significant pent-up demand for services, there are a couple of reasons to think that it won't lead to a surge in demand. First, it typically takes time to consume services, such as holidays and dining out, although consumers might use their savings to purchase higher-value services, like a meal at an expensive restaurant or travel to an exotic destination. Second, some of the missed services consumption during the pandemic is unlikely to be "made up", since missing a haircut or a train journey to work is unlikely to mean one will do so twice to compensate.

There is likely to be some pent-up demand remaining for goods. Chart 7 shows that, for most countries, cumulative household spending on durable goods since 1Q21 remains significantly lower than if spending had continued at its 4Q19 level. In all these countries, consumption of durable goods increased substantially immediately after initial lockdowns were eased, when restrictions were still partly in place and savings had risen substantially, putting pressure on the shipping industry, but then such pressure declined.

It is uncertain whether this drop reflected waning pent-up demand, or if it was driven by supply bottlenecks (e.g. those affecting the car industry) that prevented producers from adequately accommodating demand for their products. In the latter case, demand for durable goods, which tend also to involve more-sophisticated global value chains and thus more-complex shipping networks, might still remain elevated well into 1H22 until its strength is exhausted, thus continuing to exert pressure on the shipping industry.

Importantly, the amount of pent-up demand depends not only on past restrictions and, hence, opportunities to purchase goods and services, but also on the savings and income that households can unleash to finance this spending.

CHART 7: UNCERTAIN PATH FOR DURABLE GOODS



Source: Eurostat, BEA, UniCredit Research

■ **Excess savings and wealth:** Households have accumulated a large amount of ‘excess savings’ during the pandemic (Chart 8). Measured as the cumulative sum of savings over and above the 2018-19 average, this ranges from 12% of GDP in the US and 10% of GDP in the UK, to 6% of GDP in the eurozone. A normal level of savings (according to the 2018-19 average) in a year is equivalent to around 8-9% of GDP in the US and eurozone aggregate, and the “excess savings” are on top of this normal level.

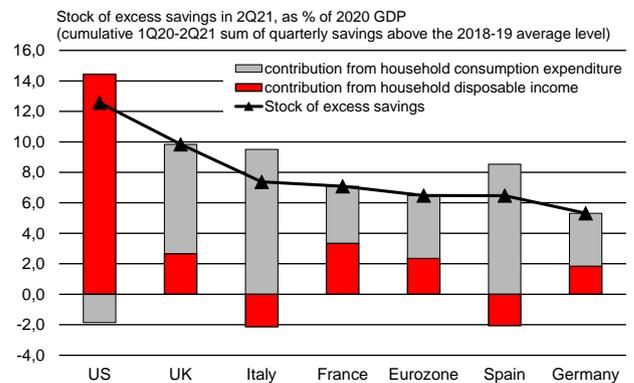
Importantly, however, the rise in savings balances has occurred for very different reasons across countries. In the US, 90% of the rise in savings has been due to a strong rise in household disposable income, reflecting unprecedented government transfers, which have been skewed towards households via stimulus checks and enhanced unemployment benefits. At the other extreme, in Italy and Spain, the rise in savings has been due entirely to a sharp fall in spending, particularly on services that involve a high degree of social interaction. The latter was partially

brought about by mandatory restrictions and partially a result of precautionary behavior due to concerns over health and income/jobs.

It is hard to predict whether and how quickly households will run down these “excess savings”. It depends in part on the degree of pent-up demand for goods and services as economies fully reopen and supply bottlenecks ease. It also depends on the distribution of these savings. The evidence is that they are concentrated among higher-income households (who tend to have a lower marginal propensity to consume). Our view is that once pent-up demand has been met, “excess savings” will essentially be treated as no different from existing financial wealth. During the pandemic, the net worth of households has increased more as a result of the higher value of stocks and, particularly, real estate, than due to accumulated “excess savings”.

The willingness of households to spend out of increases in their wealth is called the wealth effect. There is a large literature estimating wealth effects. For example, for the US and using aggregate data, Carroll et al. (2011) find a marginal propensity to consume out of financial wealth of 6 cents and out of housing wealth 9 cents for every additional dollar of household net worth.¹ In other words, one can assume a wealth effect of around 5-10% over several years.

CHART 8: SUBSTANTIAL EXCESS SAVINGS



Source: National statistical institutes, UniCredit Research

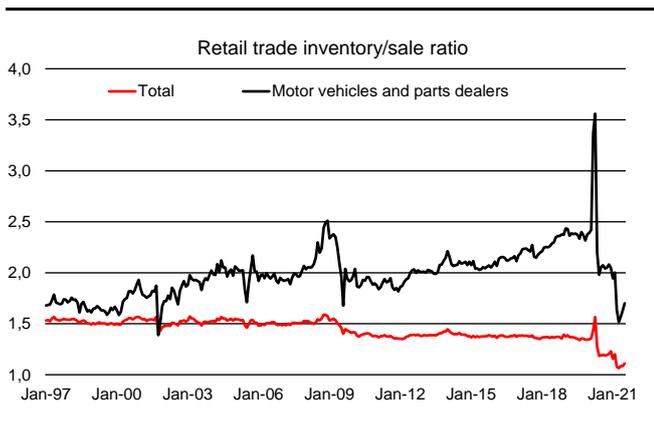
■ **Income and expected future income.** Chart 8 also shows that while household disposable income has risen sharply in the US, thanks to huge fiscal transfers, household disposable income has fallen in Italy and Spain compared to pre-pandemic levels. It is possible, and indeed likely, that part of the accumulated “excess savings” in countries where income has fallen was driven by precautionary motives, given uncertainty about their jobs and future incomes.

¹Carroll, C.D., Slacalek, J. and Otsuka, M. (2011), “How large are housing and financial wealth effects? A new approach”, *Journal of Money, Credit, and Banking*, 43(1), pp. 55-79.

Ahead, the fillip from fiscal stimulus will fade, and rising labor income is likely to only partly offset the drag from the end of pandemic-related government support schemes. This should support a gradual easing of demand for goods.

- Inventory building:** Firms need to replenish stocks after months of inactivity and delays in the delivery of goods purchased. Chart 9 shows the low inventory/sales ratio for US retailers. The adverse effects of sudden stops to economic activity are especially visible among dealers of motor vehicles, whose ratio massively increased during lockdowns due to a sharp fall in sales and then dropped dramatically afterwards, as the auto industry struggled to adjust production in time to meet a burgeoning demand. It will likely take a few quarters for firms to replenish inventory levels from the current historically-low levels, and this will support demand for goods through the first half of next year.

CHART 9: MISSING STOCKS



Source: Census Bureau, UniCredit Research

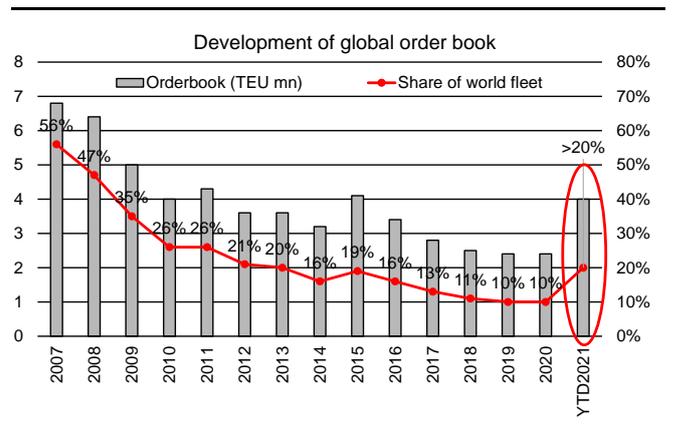
- Investment plans:** Another factor that might keep demand elevated is the investment plans that governments, particularly in Europe and to a lesser extent in the United States given the difficult negotiations between the Biden administration and Congress, are sponsoring – many of these rely on durable or semi-durable goods that need to be transported via sea. While income support and employment-protection schemes either have expired or are about to expire, this new source of government demand might contribute to imbalances in the shipping industry and since they will not be concentrated in 2022 only, they might have a more lasting impact on the industry than the others. In addition, also companies are likely to intensify their investment to expedite the green transition of their business at a time when environmental goals are becoming increasingly more ambitious and binding.

Supply is adjusting but not fast enough

Historically, freight rates have suffered greatly when demand collapsed, as it did in 2Q20, with shipping companies fighting for the volume at the expense of prices. However, freight rates held up well during the slump in demand (-11% in 2Q20 yoy) that occurred following the outbreak of the pandemic, as container shipping companies reacted by implementing strict capacity-adjustment measures, including blank sailing (i.e. sailing cancelled by the carrier). In addition, historically low orders for new ships – with the order-book-to-fleet ratio below 10% in 2020, and hence low pressure from the supply side – supported freight rates. Long-awaited industry discipline had finally arrived in the sector, laying the groundwork for the surge in freight rates. This was the result of strong consolidation in the industry over the last decade. The ten largest container shipping companies now account for around 80% of the total capacity of the global container-ship fleet, up from around 60% in 2013². In addition, the accelerated pooling of operations and equipment in alliances, which allows operators to share vessel capacity with other members, has benefitted industry discipline.

The supply response to the sharp rebound in demand in 3Q20 was fast, with carriers increasing capacity of containers and ships, and there was a surge in orders for new ships. Carriers have increased container-ship capacity, e.g. by removing them from smaller trade routes, to maintain scheduled trips. Alphaliner estimates that the number of ships on the two main east-west trade routes (Far East to Europe and Far East to North America) rose by more than 30% yoy in July 2021. In addition, there has been a strong increase in new orders for ships, with the order-book-to-fleet ratio increasing to more than 20% (Chart 10).

CHART 10: INCREASE IN NEW ORDERS FOR SHIPS

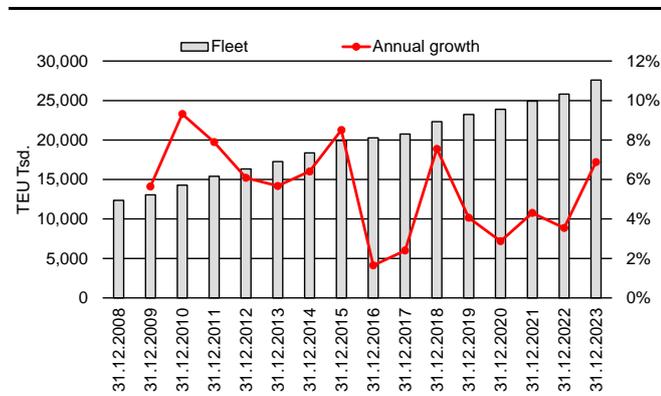


Source: MDS Transmodal, Clarksons, Alphaliner, Drewry (2Q Forecaster), Hapag-Lloyd 2Q21 earnings presentation, UniCredit Research

²as of 31 December 2020 (source: MDS Transmodal January 2013 and January 2021, Hapag OM)

With lead times of between two and three years, new vessels will only be delivered from 2023 and, hence, provide not support the supply-demand balance before. After fleet growth is expected to amount to 4.3% for 2021 (Chart 11), Alphaliner expects fleet growth to slow in 2022 (3.5%), before newly ordered ships are delivered in 2023 (+6.9%). We note that scrapping and postponements can alter the effective supply number. Still, supply is unlikely to outpace demand before 2023. That said, following years of low profits, and with shipping companies not earning their cost of capital, we expect industry participants to continue to actively manage supply in the industry, e.g. via the postponement of orders or by slow-steaming initiatives in order to keep freight rates high.

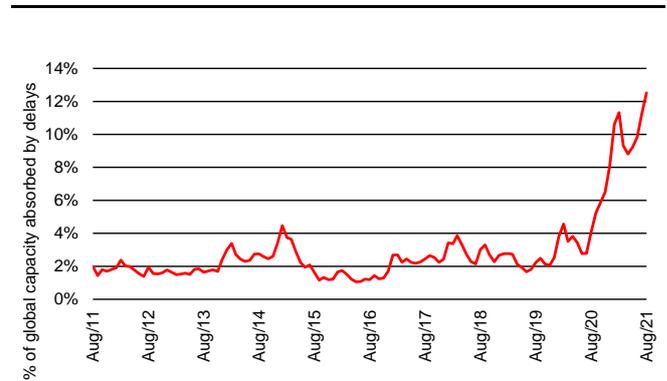
CHART 11: STRONG FLEET GROWTH ONLY IN 2023



Source: Alphaliner, UniCredit Research

However, even with more ships, port capacity remains the main constraint. While disruptions like the blockage of the Suez Canal are rare, the risk remains that further COVID-19 outbreaks will lead to congestion in Asia (in particular, in China, given the country's zero-tolerance COVID-19 policy), Latin America or in countries where COVID-19 is still less under control. In view of already stretched supply chains, every disruption currently has the potential to exaggerate what is an already-tight situation. Typhoon Kompasu resulted in a new record queue of ships at two of the main ports in Asia, and port congestion remains elevated at America's largest container port, in Los Angeles. US President Joe Biden has announced that the US's West Coast ports will now operate around the clock to speed up the movement of materials and goods through supply chains. According to Sea-Intelligence (Chart 12), more than 12% of global fleet capacity, or 3.1mn TEUs (Twenty-foot Equivalent Unit) of nominal vessel capacity, which is as big as the fleet capacity of the third largest container line worldwide, was unavailable in August (according to the latest available data) due to delays. This compares to a pre-COVID-19 average across 2017-19 of 3%.

CHART 12: PORT CONGESTION REMAINS HIGH



Source: Sea-Intelligence, UniCredit Research

Even if disruptions caused by COVID-19 are likely to subside at some point, port capacity could continue to act as a bottleneck. Shipping consultant Drewry expects average annual demand growth in global port capacity to amount to 5% throughout 2025 and to outpace the expected 2.5% increase over this period. Average utilization rates will hence go up and make ports more prone to disruption. In addition, the expected new supply of ships could add to bottleneck problems at ports.

As long as demand remains (seasonally) strong, congestion is likely to keep freight rates elevated. Market participants do not expect the currently tense market conditions to ease before the Lunar New Year (1 February 2022), when exports out of China are typically lower due to the country-wide holiday season. Carriers are likely to use this seasonally slower period to catch up and to clear the container backlog by doing less blank sailing than usual. However, given the ongoing-high amount of disruptions, this break might not be long enough for current port-capacity problems to be eased. In addition, customers might also want to use this traditionally slower period to bring forward seasonal ordering to restock inventories to avoid shortages and outages experienced in 2021. Hence, we expect current freight rates to remain elevated well into 2022. We note that shipping companies CMA CGM and Hapag-Lloyd, No. 4 and 5 in the worldwide market, announced a halt in spot-rate increases in September. CMA said that it will not increase freight rates until 1 February 2022, while Hapag, which will also limit any sharp increases in premiums and in other surcharges, stated that this will be the case for the time being. With these moves, shipping companies claim that they are focusing on strengthening customer relationships in these difficult times (given currently strong profit and cash generation, at no harm to their own balance sheets).

Conclusion

All in all, demand for container boxes and ships is likely to remain strong well into 1H22 as a result of a number of factors:

1. Firms have to replenish inventories after they hit historical lows. **2.** Pent-up demand for goods, particularly durable ones, is likely to remain solid for a few more quarters. **3.** The fillip from fiscal policy is fading but household savings remain elevated. **4.** Investment plans across the Atlantic, both at the government and corporate level, which are meant to accelerate the green transition, are likely to support demand for durable goods, particularly for those related to infrastructure – and this is something that will persist beyond next spring. And the price increases that are creating some (likely temporary) inflationary pressures are unlikely to weigh on demand substantially, in part because the price rises are mostly demand-driven. At the same time, supply is unlikely to adjust fast enough or in time, given the time-lag associated with the building of new ships. With lead times of two to three years, new vessels will only be delivered from 2023. Hence, there will be little support for the supply-demand balance before 2023. Even with more ships, port capacity remains the main constraining factor. If demand remains strong, port congestion is likely to keep freight rates elevated at least for the first half of next year. Although we have seen some weakness in freight rates recently, most likely due to some temporary easing on the demand side, a more-material decline in freight rates would require a stronger-than-currently-expected demand decline, in our view.

Authors

Edoardo Campanella, Economist
(UniCredit Bank, Milan)
+39 02 8862-0522
edoardo.campanella@unicredit.eu

Jana Schuler, CFA, Senior Credit Analyst Industrials
(UniCredit Bank, Munich)
+49 89 378-13211
jana.schuler@unicredit.de

Daniel Vernazza, PhD, Chief International Economist
(UniCredit Bank, London)
+44 207 826-7805
daniel.vernazza@unicredit.eu

Editor

Marco Valli, Head of Macro Research, Chief European Economist
(UniCredit Bank, Milan)
+39 02 8862-0537
marco.valli@unicredit.eu

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g) Zagrebačka banka d.d., Trg bana Josipa Jelačića 10, HR-10000 Zagreb, Croatia. Regulatory authority: Croatian Agency for Supervision of Financial Services, Franje Račkoga 6, 10000 Zagreb, Croatia

h) UniCredit Bank Czech Republic and Slovakia, Želetavská 1525/1, 140 92 Praha 4, Czech Republic. Regulatory authority: CNB Czech National Bank, Na Příkopě 28, 115 03 Praha 1, Czech Republic

i) ZAO UniCredit Bank Russia (UniCredit Russia), Prechistsenskaya nab. 9, RF-119034 Moscow, Russia. Regulatory authority: Federal Service on Financial Markets, 9 Leninsky prospekt, Moscow 119991, Russia

j) UniCredit Bank Czech Republic and Slovakia, Slovakia Branch, Šancova 1/A, SK-813 33 Bratislava, Slovakia. Regulatory authority: CNB Czech National Bank, Na Příkopě 28, 115 03 Praha 1, Czech Republic and subject to limited regulation by the National Bank of Slovakia, Imricha Karvaša 1, 813 25 Bratislava, Slovakia. Regulatory authority: National Bank of Slovakia, Imricha Karvaša 1, 813 25 Bratislava, Slovakia

k) UniCredit Bank Romania, Bucharest 1F Expozitiei Boulevard, 012101 Bucharest 1, Romania. Regulatory authority: National Bank of Romania, 25 Lipsicani Street, 030031, 3rd District, Bucharest, Romania

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UniCredit Research*

Macro Research



Erik F. Nielsen
Group Chief Economist
Global Head of CIB Research
+44 207 826-1765
erik.nielsen@unicredit.eu



Dr. Ingo Heimig
Head of Research Operations
& Regulatory Controls
+49 89 378-13952
ingo.heimig@unicredit.de

Head of Macro Research



Marco Valli
Head of Macro Research
Chief European Economist
+39 02 8862-0537
marco.valli@unicredit.eu

European Economics Research



Dr. Andreas Rees
Chief German Economist
+49 69 2717-2074
andreas.rees@unicredit.de



Dr. Loredana Federico
Chief Italian Economist
+39 02 8862-0534
loredanamaría.federico@unicredit.eu



Stefan Bruckbauer
Chief Austrian Economist
+43 50505-41951
stefan.bruckbauer@unicreditgroup.at



Tullia Bucco
Economist
+39 02 8862-0532
tullia.bucco@unicredit.eu



Edoardo Campanella
Economist
+39 02 8862-0522
edoardo.campanella@unicredit.eu



Walter Pudschedl
Economist
+43 50505-41957
walter.pudschedl@unicreditgroup.at



Chiara Silvestre
Economist
chiara.silvestre@unicredit.eu

International Economics Research



Daniel Vernazza, Ph.D.
Chief International Economist
+44 207 826-7805
daniel.vernazza@unicredit.eu



Jana Schuler, CFA
Industrials
+49 89 378-13211
jana.schuler@unicredit.de

Corporate Credit Research

EEMEA Economics Research



Dan Bucsa
Chief CEE Economist
+44 207 826-7954
dan.bucsa@unicredit.eu



Gökçe Çelik
Senior CEE Economist
+44 207 826-6077
gokce.celik@unicredit.eu



Mauro Giorgio Marrano
Senior CEE Economist
+43 50505-82712
mauro.giorgiomarrano@unicredit.de



Artem Arkhipov
Head, Macroeconomic Analysis
and Research, Russia
+7 495 258-7258
artem.arkhipov@unicredit.ru



Hrvoje Dolenc
Chief Economist, Croatia
+385 1 6006-678
hrvoje.dolenc@unicreditgroup.zaba.hr



Dr. Ágnes Halász
Chief Economist, Head, Economics and
Strategic Analysis, Hungary
+36 1 301-1907
agnes.halasz@unicreditgroup.hu



Ľubomír Koršňák
Chief Economist, Slovakia
+421 2 4950 2427
lubomir.korsnak@unicreditgroup.sk



Anca Maria Negrescu
Senior Economist, Romania
+40 21 200-1377
anca.negrescu@unicredit.ro



Kristofor Pavlov
Chief Economist, Bulgaria
+359 2 923-2192
kristofor.pavlov@unicreditgroup.bg



Pavel Sobíšek
Chief Economist, Czech Republic
+420 955 960-716
pavel.sobisek@unicreditgroup.cz

UniCredit Research, Corporate & Investment Banking, UniCredit Bank AG, Am Eisbach 4, D-80538 Munich, globalresearch@unicredit.de
Bloomberg: UCCR, Internet: www.unicreditresearch.eu

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