

# Worldwide Container Congestion Causing Difficult Supply Chain Questions

This joint research piece by [Windward](#) and [Sea-Intelligence](#) – a leading provider of maritime research and analysis, data services, and advisory services within the global supply chain industry – focuses on overall transit time developments, congestion in Shanghai and what may happen when the port opens fully, plus questions supply chain planners should consider when adapting to this unprecedented situation.

Using Windward's insights from its [Ocean Freight Visibility](#) platform and Sea-Intelligence's extensive database of vessel movements and broader supply chain insights, we review not only the increased transit times that have resulted from the overall global container shipping crisis, but also the implications for the broader supply chain.

Some industry analyses focus solely on the waiting time outside of ports, but this only shows a partial picture of the real impact of congestion. Actionable insights from Windward's Ocean Freight Visibility platform show that measuring the total transit time between a container vessel's last port of call to the next offers a much more accurate picture, in part because carriers decide to slow steam their way to their next ports of call for better fuel efficiency, instead of sailing at regular speeds and waiting outside. Let's go deeper and look at transit times...

## Global Congestion, Particularly in China

In January 2022, the ports of Los Angeles, Long Beach, and Oakland were still dealing with the much-discussed congestion crisis that started towards the end of the previous year. According to Windward's AI-driven insights, the impact of the congestion could be felt by the unusual average length of port calls by container vessels to these ports, which stood at 10.9 days during the first week for 2022, **nearly twice the average for 2021**.

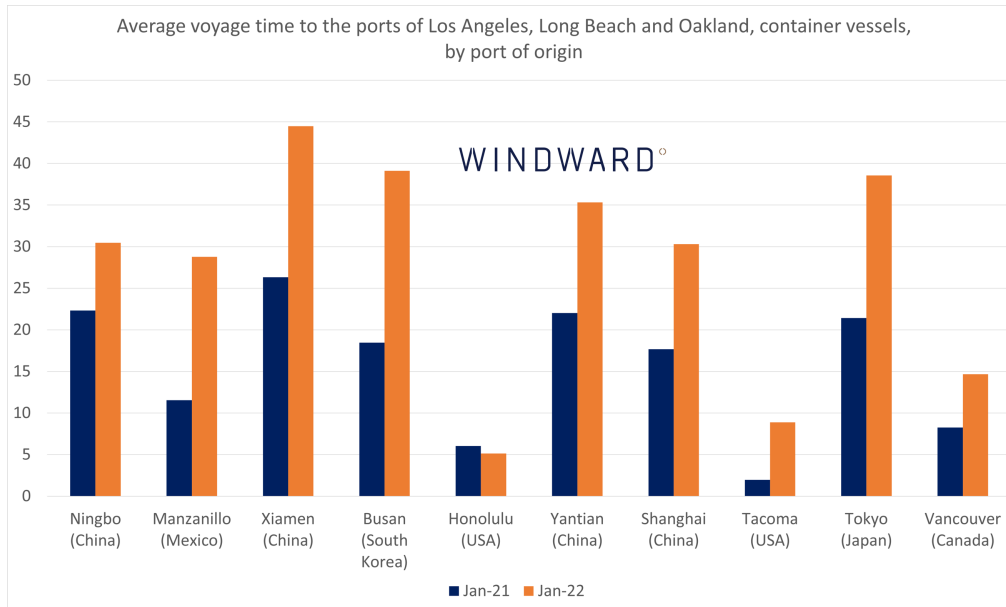


Image 1: average voyage time to the ports of Los Angeles, Long Beach, and Oakland for container vessels, by port origins

The congestion can be seen more clearly when looking at the **transit time** to these ports for container vessels from their previous port of call. January 2022 saw an increase of 99% in transit time compared to January 2021, and some voyages experienced a much higher average increase, such as those originating in Tacoma, U.S. (8.9 days vs. 2 days), Manzanillo, Mexico (28.8 days vs. 11.5 days) or Busan, South Korea (29.9 days vs. 18.5 days).

In recent weeks, all eyes were turned towards the congestion throughout China, due to the strict Covid policy across a country that is home to seven of the world's ten largest container ports. The first significant container port affected in the country was Yantian, when Shenzhen went into lockdown between March 14-20, 2022.

During the week of March 20, immediately after restrictions were lifted in the region, Windward's AI-driven insights show a spike of 51.25% in the average length of port calls by container vessels at Yantian port. **In April, the average transit time from the previous port of call to berthing at Yantian rose by 98%, compared to April 2021**, with container vessels arriving from Taiwan and Vietnam spending an additional 81% and 45%, respectively, on the water, before being able to berth at the port.

It should be noted that for 96% of container vessels that berthed at Yantian in April 2022, the port was a short distance away from their previous port of call, so in many cases a two-digit increase in voyage time represents an addition of one-two days compared to the transit times of April 2021. But when aggregated over what used to be multiple short and quick voyages, it escalates quickly into a serious challenge.



Image 2: container vessels that called the port of Yantian in April 2022

On April 5, 2022, Shanghai extended what was a partial lockdown to a full, city-wide lockdown, and has remained tightly restricted since. Interestingly, the picture seems to be quite different in Shanghai, as some voyages required less transit times than in April 2021, such as container vessels arriving from Australia (-41%), Canada (-26%), and from other ports in China (-12% on average for 602 vessels). But there were still hundreds of container vessels that required a considerable amount of additional transit time to berth at Shanghai during April 2022, including over 300 arriving from Taiwan (+34%), South Korea (+25%), Philippines (+25%), and Japan (+17%).

## Unprecedented Lows

Data from Sea-Intelligence's latest Global Liner Performance report show that **vessel schedule accuracy**, while improving slightly in March 2022, **has been declining to unprecedented lows during the period from 2020 to now.**

Additionally, carriers have been forced to blank a number of sailings from Asia, often due to congestion in Europe and the U.S. tying up vessels for far longer than planned, resulting in ships being physically unavailable to maintain normal sailings.

This data is from before the Shanghai lockdown!

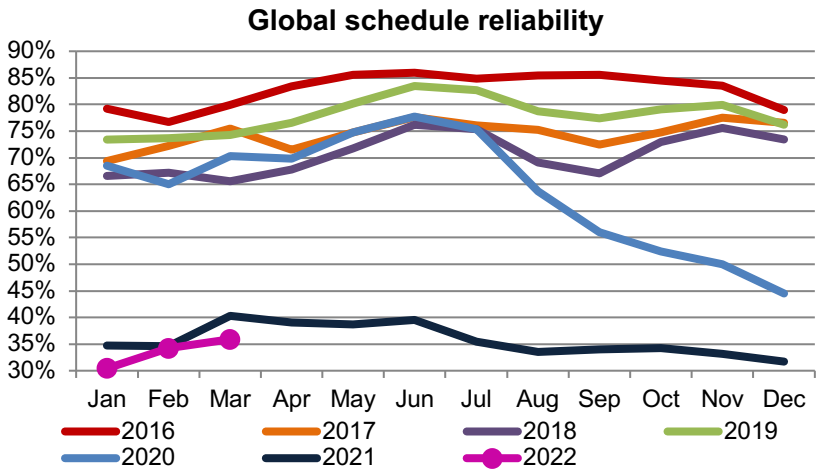


Image 3: Sea-Intelligence Global Liner Performance Report, April 2022

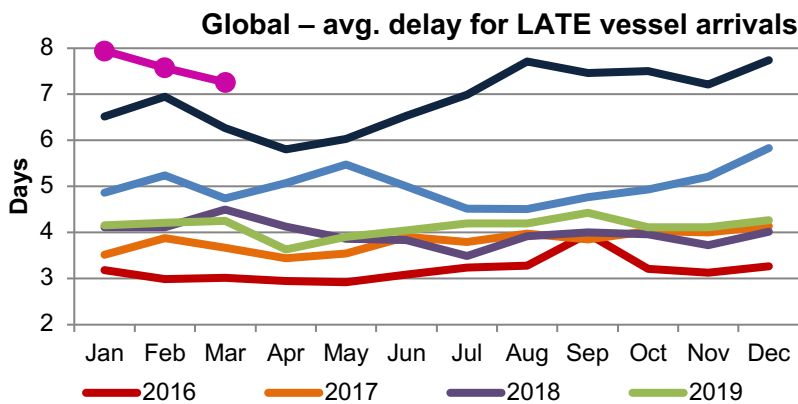


Image 4: Sea-Intelligence Global Liner Performance Report, April 2022

Looking at Windward data from April 2022, container vessels sailing towards the Port of Ningbo, the world’s third largest container port and a close neighbor to the Port of Shanghai, experienced a rise of 27% in transit time from their previous port of call to a container terminal in Ningbo, compared to the same month in 2021. Container vessels originating from Taiwan had it the worst, with the average length of voyage increasing by 48% that month, followed by those originating from South Korea with a 38% increase, and Japan with a 32% increase.

In addition, Windward data shows that in April 2022, the average length of a port call for container vessels was six hours longer than in April 2021, a 26% increase. Considering there were 828 port calls made to Ningbo by container vessels in April 2022, this represents an additional 4,968 hours that container vessels spent berthing at the port.

## The Day After in Shanghai

The interesting question is the question everybody asks, but nobody has the answer to: what will happen when Shanghai fully opens up?

To answer this question, one must look to the effect on the broader supply chain, which, as we know, consists of an awful lot of interlocking and interdependent activities; many, but not all of which are only indirectly related to ocean transit times.

The shipping-related bubble on the internet has been drowned in pictures of what looks like the world's supply of ships waiting off Shanghai, but those pictures are often highly misleading, as they show practically anything and everything that can float, including navigation markers!

Filtered for containerships only, the picture is still disturbing, but not quite as dramatic. The fear is massive, prolonged congestion, of course, and various analysis firms have taken stabs at calculating the impact, with estimates ranging from 1 to 2.5 months to clear the port.

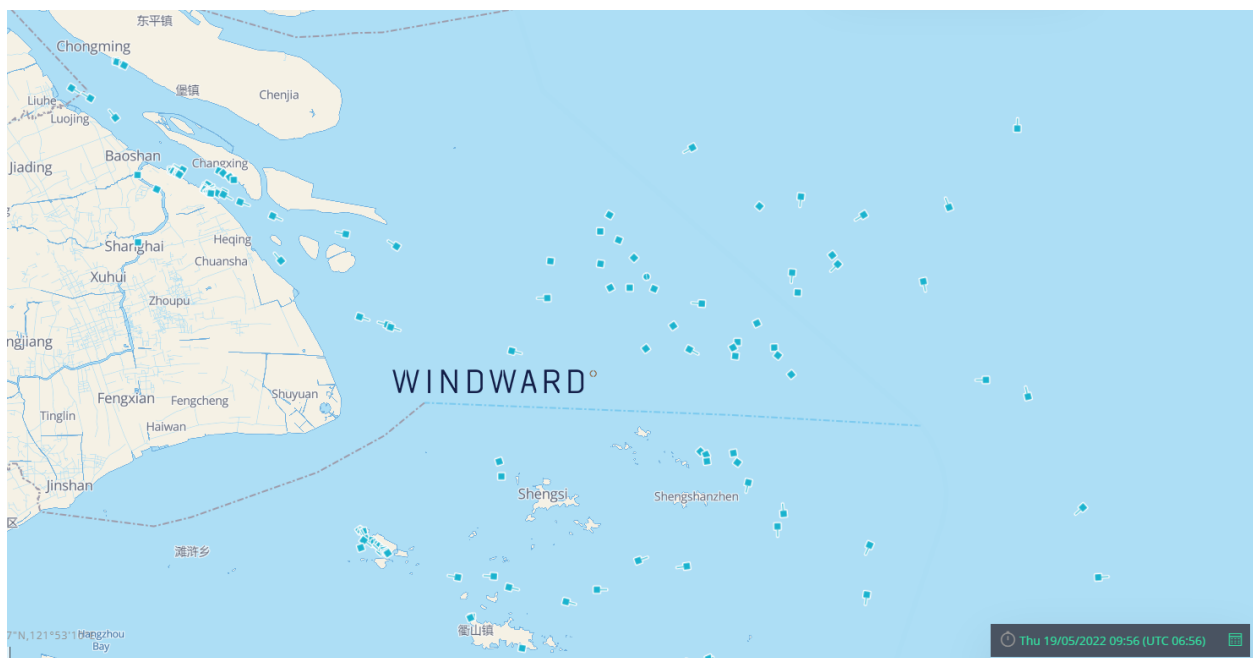
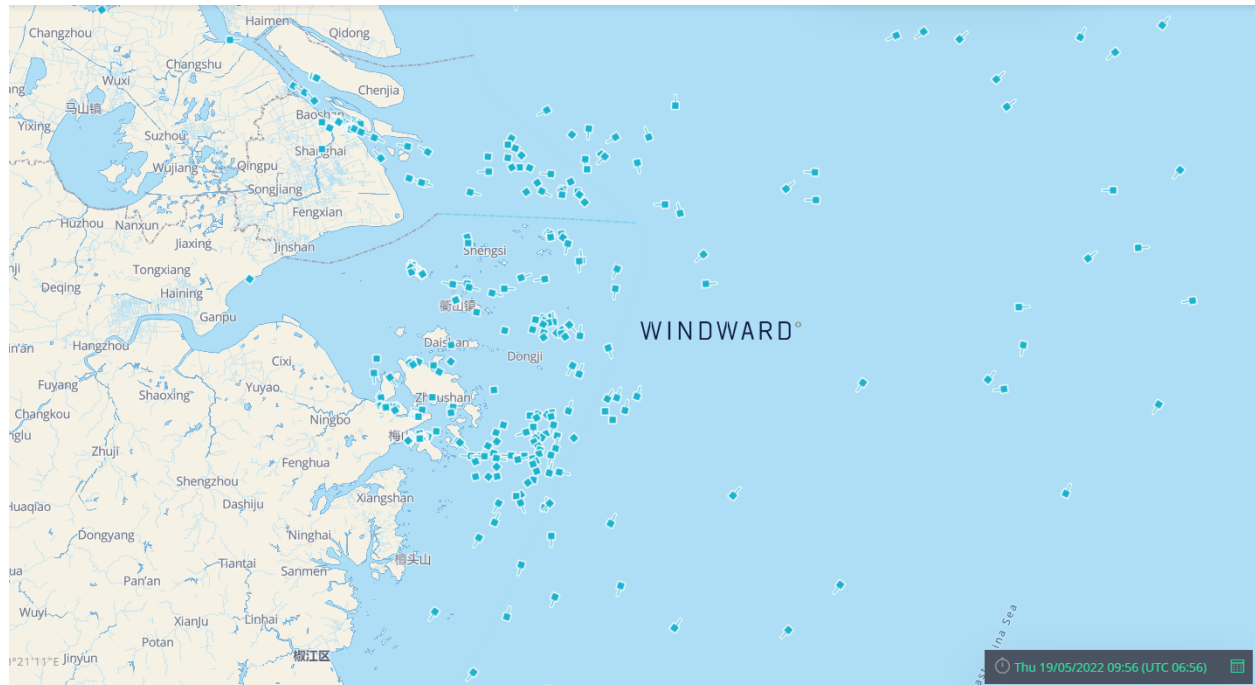


Image 5: a snapshot of container vessels waiting outside of Shanghai



*Image 6: a snapshot of container vessels waiting outside of Ningbo*

The above estimates presuppose, however, that everything else in the Shanghai hinterland functions as smoothly as it did prior to the lockdown, and that's a big assumption.

The port has technically remained open and functional, although it has largely handled repositioning of empty containers in anticipation of the opening, as well as reefer and a few dry imports. Export containers through the port, on the other hand, have been few indeed, as the rules imposed on truckers bringing those boxes to the port have rendered their operations practically impossible.

It must therefore be assumed that when the port does reopen, it will be mainly for imports of full containers, many of which contain raw materials required for the starved factories in the hinterland to function. Export containers will consist of goods produced before or during the lockdown, but held up in export facilities at the factories, or elsewhere. There is no way of knowing how many containers are, or can already be, stuffed and ready to move, but it is safe to say that the amount is substantial.

But for those export operations to run efficiently, the port must first be drained of a substantial amount of the prepositioned empties, which will take time. Shanghai is now bursting with such containers, and if not cleared or substantially reduced, there may be little room for export loading movements to occur as smoothly as they normally do.

## Difficult Questions

And this is where we leave the port for a moment and look at the import and export chain outside the gates. From a supply chain perspective, the question is not just centered on the ports and the transit time. There will eventually be a highly visible crisis when the “[ketchup effect](#)” hits, given that both the U.S. and Europe ports are suffering from very high congestion levels – and in the case of the U.S., far lower productivity – and the question on a supply chain planner’s mind is total lead time, of which ocean transport is only one component.

If you are a supply chain planner, you are currently asking yourself a lot of questions, and many of them will be difficult to answer:

Will there be enough trucks and chassis to handle this flood? Will there be enough labor to stuff boxes? Will there be sufficient raw materials and labor to restart production? Will the containers be stuck in long lines at the port because of the mad dash to get boxes gated in from all over the Shanghai catchment area, combined with insufficient export operations space? Will there be congestion surcharges imposed on shipments? Will there be import demurrage and port storage charges, because of the vast demand on trucking capacity?

And what will happen at the destination gateway ports, where both trucking capacity and importers’ ability to turn the boxes quickly are also highly questionable, first in the U.S. and now also in Europe?

Port congestion and global supply chain issues are complex and require a much closer look than simply counting the number of vessels outside ports. Also, the impact of congestion seems to widely differ based on the origin of vessels. To remain resilient during such chaotic times, it is critical to rely on the best possible source of truth that will provide you with the most complete picture, in real-time. Trusted advisors and Maritime AI technology can help.