

The Butterfly Effect

A look at the factors sending seismic waves through global supply chains.

BY QIANYAN CHENG

It seems like only yesterday that the world was discovering a new virus that spread from a remote corner of the world and transformed into a global pandemic. International trade slowed as many countries or regions had to implement lockdowns.

Over time, manufacturers were excited to finally see some normalcy return as vaccinations drastically brought down the new case rates. Nevertheless, new challenges for the supply chain have created an enormous impact for many of us in the door and hardware industry.



The price of copper, a component of brass, has increased more than 60% in the past few years.



Shipping in Troubled Waters

First, here are some numbers:

- In 2019, a full container load (FCL) from Asia to California cost \$1,800 to \$2,200. By April and May 2021, the price had gone up exponentially to \$18,000 to \$22,000 for an FCL, and bookings were not guaranteed. In late November 2021, there was some relief when container rates came down to the \$12,000 to \$14,000 range, although still 500%-600% of pre-COVID-19 rates.
- International ocean freight lead times between Asia and the U.S. West Coast expanded from four weeks to 15 weeks between April and September 2021—a 375% increase. This did not include the three weeks prior to sailing when the booking was either canceled or delayed due to lack of containers.

There are many reports and opinions about the various causes for the international shipping problems. Our import broker stated something that made a lot of sense. When many governments around the world enforced lockdowns, the international trade was cut down drastically. International shipping companies pay high fees to operating vessels and use ports. Before COVID-19, large vessels circulated back and forth between Asia and America an average of 10 to 12 times a year to make a profit. During the pandemic, the trips were reduced to two or three annually, making it impossible to generate

any profit. Early in 2021 there were not as many vessels sailing between the two continents. With rising demand, prices increased drastically.

Was there a shortage of containers? Or was it that containers were stuck on vessels parked along the coast waiting to be unloaded for months before they could finally turn around for the next trip? A lack of dock hands at the port and truck drivers to move the containers also contributed to port congestion.

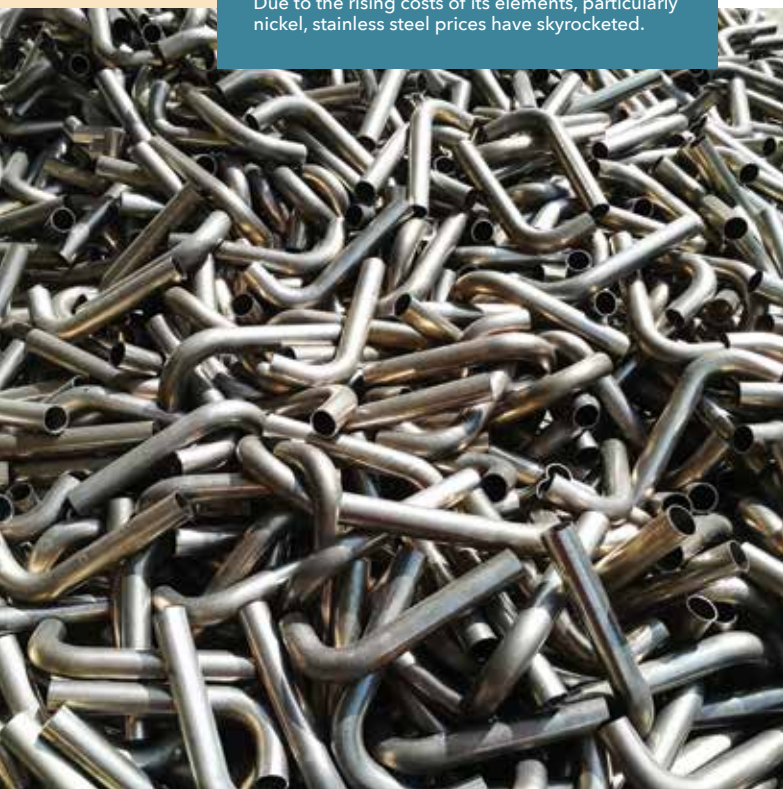
Resolutions?

There are no real resolutions because when it comes to comparable costs, there is no alternative to ocean freight. Early in the year, we sent substantial amounts of material by airfreight to meet a project deadline. Airfreight prices and lead times have also increased week by week. Shortages in domestic labor adds more delays in assembly and coating lines. Many of our domestic vendors have suffered directly and indirectly from supply chain issues regardless of the source of origin.

When large buyers like Walmart and Target began acquiring their own containers and entire vessels, it was possible to book less than container load (LCL) shipments faster than full container load (FCL) shipments. Some smaller vessels would skip the ports of Long Beach and Los Angeles because of the congestion, docking instead at the ports of Oakland or Seattle directly, which reduced ocean time from 110 days to 75 days.



One of the great unknown factors in budgeting is when pre-COVID-19 production capacity will return.



Due to the rising costs of its elements, particularly nickel, stainless steel prices have skyrocketed.

Material Prices Skyrocketed

Here are the brutal facts:

- Steel prices averaged \$600 per metric ton (MT) between 2015 and 2019; it has since gone up to more than \$1,800 as of October 2021—a 300% increase.
- The price of stainless steel continues its upward trajectory. The key driving force is the related price of nickel. In August 2021, the price of one metric ton of nickel was \$19,000, contributing to a 60% increase compared to the average price of \$11,700 in the five years prior to the pandemic.
- Related metal costs have also skyrocketed.
 - » Brass is comprised of copper and zinc. Copper prices went from an average price of \$6,000 per metric ton in the pre-COVID-19 years to over \$10,000 per metric ton in October 2021.
 - » Zinc, which constitutes 96% of ZAMAK alloy, fell to below \$2,000 per metric ton in early 2020, but soon recovered and went as high as \$3,800 per metric ton in October 2021.
 - » Increasing from \$1,500 in April/May 2020 to \$3,000 in October 2021, the price of aluminum doubled.

The door and hardware industry relies on these metals for manufacturing and distribution as nearly all door hardware products are made of some combination of them. Cylindrical locks, for example, are made of zinc and steel. Mortise locks consist of steel and stainless steel. Door closers are made of aluminum and steel. High-end decorative knobs and levers consist of stainless steel, brass or bronze (98% copper). Lower-end residential lever sets sold in big-box stores are made of zinc-alloy material. Hinges are made of steel, stainless steel, or brass. Dare I mention hollow metal doors? Prices have doubled according to door manufacturers.

How Much Longer?

Metal prices skyrocketed a couple of times in the last two decades. Economics teaches us that the relationship between supply and demand

A variety of metals and alloys are required in the manufacture of attractive hardware for homes and commercial properties.



will eventually balance the pricing. The question is, will demand go down in the next six to 12 months? When is the supply going to catch up with the demand that was paused for over a year, and when can we truly get back to pre-pandemic production capacity? One to two years? I do not think anyone has the answer. What I know for sure is the communication on project planning, budgeting and lead-time expectations has become more critical than ever.

Chinese Supply Crisis

Factories in China reopened quickly in early 2021. However, an electrical power supply crisis has affected productivity and severely delayed deliveries. In some areas, factories were allowed only two days of grid power, and drones flew over industry premises at night to seek out offenders. Many factories have been relying on generators to power their facilities.

China earlier reduced coal production to meet carbon emission reduction targets. Experts believe this created an artificial shortage of coal, which in turn resulted in an electrical power crisis and lowered industrial activity. This has now led to an extraordinarily long lead time for products. For example, production orders for commercial hinges placed in November 2021 will not be completed until May 2022—if the power situation does not worsen by then.

Global supply chain problems are caused, and exacerbated, by multifaceted and intertwined issues with impact far beyond borders or industries. Supply chain disruptions affect businesses and everyday lives. It is like the old saying that “a butterfly flapping its wings in the Amazon might cause a hurricane in Texas.” Except this time it is not a butterfly but a microscopic virus. +



QIANYAN CHENG is Co-founder and Vice President of Product Development at INOX. Email: qcheng@unisonhardware.com.

The price of some hollow metal doors has doubled, and stainless steel pulls, while beautiful, are costlier as well.

