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IN$IGHT
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The Butterfly Effect—Covid, China and Shipping Costs

Covid lays bare fragile supply chains.

by Ray Rezab

The current news is full of multiple examples of supply chain interruptions – from high lumber prices to computer chip and electronic goods shortages to shrinking new/used automobile inventories to high energy prices and crippling shipping costs. Some of these disruptions are likely to be relatively short term (lumber prices are already returning to prior levels), but other disruptions are proving to be much longer in duration.

What happened? The ready answer is Covid, but that explanation misses the mark. Covid wasn't the cause of the supply chain interruptions, it was merely the straw that broke the camel's back and exposed the structural and fundamental vulnerabilities of today's complex and often global supply chains. There is nothing "unexpected" about supply chain disruptions – they are inevitable, varying only in the degree or magnitude of the disruption. The vulnerability to disruptions is the real culprit and it is also where business owners and managers should focus their efforts to manage, or at the very least mitigate, the impact of disruptions to their supply chains.

SUPPLY CHAINS AND SHIPPING CONTAINERS

Covid laid bare the structural vulnerabilities of today's complex supply chains, impacting each of the four inputs that firms rely on in the supply chain – labor, raw materials, production and shipping. The Pacific Northwest has two major west coast ports (Seattle and Tacoma) and many companies in the Pacific Northwest rely on goods being transported from Asian sources to Seattle or Tacoma, where those goods are distributed nationally. To illustrate the devastating effect of supply chain disruption we will focus on what has happened to the supply chain for food and non-food consumer goods through shipping container disruptions, customs and port demurrage slowdowns, and ocean freight rates.

Global supply chain management was born out of Just-In-Time ("JIT") inventory management, part of the Toyota Production System implemented in post-World War II Japan. In the 1980s, after seeing the success of the Japanese Production System to the Japanese auto manufacturers, global companies copied or adapted

their manufacturing processes to mirror that of their Japanese competitors, including JIT.

Fast forward to today and the ruthless adherence to JIT combined with aggressive cost cutting and elimination of waste created a production system reliant on predictable and steady inputs, including foreign labor and

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cheap shipping, resulting in complex and often lengthy supply chains. And those lengthy supply chains relied on readily available and abundant shipping containers. As long as these supply chains operated "normally", it was a beautiful system that reduced costs and shrunk balance sheets. As the global economy grew, an increasing supply of shipping containers allowed the global supply chain to continue to operate "normally" while growing increasingly complex and lengthy in search of ever cheaper production and/or labor.

There were warning signs – the Fukushima earthquake of 2011 exposed Toyota's reliance on single-source semiconductors for many of its products. Other geopolitical disruptions caused minor temporary disruptions, but generally, these were negligible to the vast majority of global trade.

When Covid occurred, the perfect storm formed to materially disrupt both the overall supply and location of shipping containers throughout the world. First, shutdowns in China impacted both shipments into and out of China. In addition, China manufactures over 70% of the shipping containers in the world and, without workers, production ceased. Then, as China emerged from Covid earlier than did other countries, demand for Chinese products skyrocketed as online shopping increased, causing China to ship containers all over the world.

But, the ports receiving those containers suffered from more container volume handling needs exactly when fewer workers dealing with increased Covid measures were available to handle that volume – resulting in container ships often waiting weeks to offload. That

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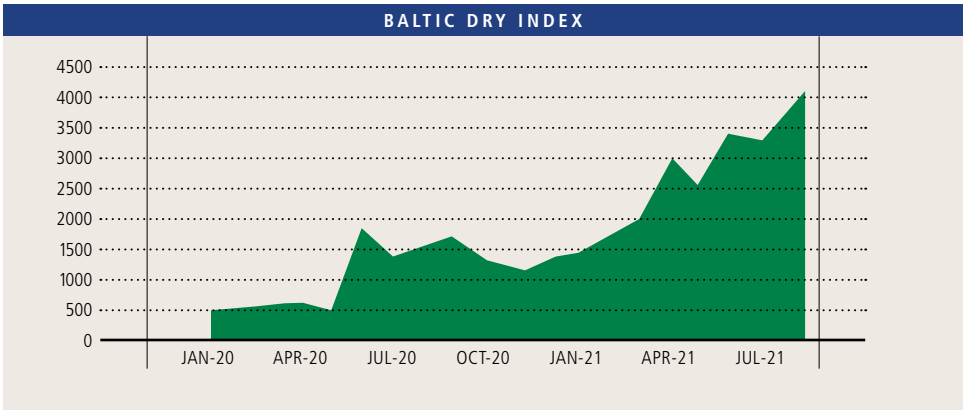
slowdown in container throughput meant more containers were required to handle the volume – but China's manufacturing of containers has been slow to catch up as used containers sat in countries that were locked down or just recovering and not able to economically ship those containers back to China. The bottom line is that the normal manufacturing of new containers to serve growing world trade was interrupted, turnaround of containers slowed as ports tried to process them with fewer workers, and some containers sat idle in locations where they couldn't be used. As one can imagine, when demand greatly exceeds supply, costs increase – dramatically. Evidence of the effect of this increase is the Baltic Dry Index, a measure of the price of moving raw materials globally, which has increased eight times since early 2020.

Some companies that we know well have told us of the effect on their businesses. For example, an importer of consumer goods that are distributed nationally has experienced the cost of a dry goods container between China and Seattle going from $2500 to over $10,000. Our Alaska seafood friends are finding that the cost of shipping a refrigerated container from China to the US East Coast has increased from $4,000 to over $20,000. What this means is that in cases of low margin products, freight costs are almost as much as the product itself



and could mean that an 8-10% EBITDA margin could evaporate unless all the costs can be passed on to consumers.

MANAGING SUPPLY CHAIN DISRUPTIONS

Ocean freight rates are just one example of the disruption to supply chains. A shortage of memory chips has driven the price of used cars up, made it virtually impossible to get a rental car, and created vacant new automobile car lots. There are many other examples where the goods have global processes of inputs and production. As a general rule, the more complex the manufactured good (and implicitly, the more complex the supply chain), the longer and more severe the disruption.

These examples should server as a warning flag to business owners. After the Fukushima earthquake, Toyota realized it needed to secure a second source as well as maintain a larger level of semiconductor inventory (a highly vulnerable supply chain). We think many businesses are going to follow Toyota's example, which will increase product costs, balance sheets, and possibly consumer prices, but protect against the streamlined fragile supply chain. A thorough review of a company's supply chain and its vulnerabilities may not totally protect against the next inevitable supply chain disruption, but it may allow mitigation of the worst impacts and allow businesses to survive the next supply chain disruption. **zs**

ZacharyScott

1200 Fifth Avenue, Suite 1500
Seattle, Washington 98101
ZacharyScott.com

ABOUT ZACHARY SCOTT

Since 1991, Zachary Scott has assisted owners of privately-held businesses in the greater Pacific Northwest to plan and execute major business or ownership transitions by offering sell-side M&A and acquisition and investment advice. For more information on Zachary Scott, go to **ZacharyScott.com.**

Ben Adams
206.838.5526
badams@zacharyscott.com

Brian Bergsagel
206.838.5527
bbergsagel@zacharyscott.com

Frank Buhler
206.224.7383
fbuhler@zacharyscott.com

David Goldstone
206.838.5521
dgoldstone@zacharyscott.com

William Hanneman
206.224.7381
bhanneman@zacharyscott.com

Ray Rezab
206.224.7386
rrezab@zacharyscott.com

Jay Schembs
206.838.5524
jschembs@zacharyscott.com

David Working
206.224.7850
dworking@zacharyscott.com

Mark Working
206.224.7382
mworking@zacharyscott.com