The Novel Coronavirus:
China's "Standing 8-Count"

By

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Introduction

In a recent phone interview with an international trade journalist, I was asked if the Coronavirus was a, "Knockout Punch" for China. My response was that no, I wasn't of that opinion, but that it should be considered a, "Standing 8-Count". As boxing fans know, a Standing 8-Count occurs when a fighter hasn't been knocked out, but has taken enough blows for the referee to stop the match and count to eight to determine if the fight should continue.

Not unlike the boxer who regains his/her composure during a Standing 8-Count, supply chain executives in China and abroad must make every move possible to mitigate the fallout of the virus. Essentially an exercise in Risk Management, the first step in the process is to identify the types of risk associated with the spread of COVID-19 and then assign a probability to the likelihood of that risk happening. It is within this framework that I'll try to point out the financial, manufacturing and logistics scenarios that could unfold if the virus continues.

A key point to be made before we begin is that this paper is NOT a doomsday prediction of the future; that's not what Risk Management is about. What I will do is make explicit statements about the correlations that exist between the length of time the virus remains unsolved and the likelihood of certain (unwanted) events taking place. In other words, the longer the virus has to spread, the greater the probability that the below scenarios will become a reality.

Four Key Characteristics of Chinese Supply Chains

In order to identify the potential consequences of the Coronavirus, it is first necessary to analyze the key characteristics and operational techniques that are native to Chinese supply chains. While there are many, the four that are most relevant for this analysis are listed below. Once they are defined and contextualized, I'll then discuss what the results could be as 2020 unfolds.

It should also be noted that although the supply chain consequences of COVID-19 have global implications for myriad industry sectors, this paper identifies different types of risk by focusing on U.S. retailers and e-commerce companies that import finished goods from China.

Finally, and for purposes of clarification, the terms, "manufacturer", "producer", "supplier" and "vendor" are used synonymously throughout this paper. Conversely, "U.S. importer", "buyer" and "customer" are also meant to be used in a synonymous fashion.

The Build-to-Order Supply Chain Model: With the possible exception of mega-firms like Walmart or Apple, most companies that buy goods from Chinese manufacturers do so on a "Build-to-Order" (B2O) basis. As the name implies, a B2O model means that vendors in China do not carry finished goods inventory; they only source raw materials and go into production when they receive a purchase order (and corresponding down payment) from a customer.

Given the tight production and shipping windows that are native to this type of Operating Model, finished goods importers become especially vulnerable when unexpected disruptions take place. More on that in a minute.

Cumulative Lead Time: Because most Chinese producers operate B2O models, the concept of "Cumulative Lead Time" is critically important to U.S. companies. For our purposes, we'll say that "CLT" is the number of days that transpire from the moment an importer places a purchase order (PO) on a supplier, until the goods arrive at a fulfillment center, DC or store in the U.S.

While applicable to any supply chain model, CLT is especially relevant to retailers and e-commerce firms because of the need to synchronize the issuance of PO's with the in-house dates assigned to products. With an eye on the U.S. Retail Calendar, these companies use a technique known as "Lead-Time Offsetting" to determine when a PO has to be placed in order to receive goods just ahead of selling periods like Back-to-School, Black Friday and Christmas.

To illustrate the above point, consider a retailer that sources blue jeans from a Chinese vendor in Guangzhou. If the Cumulative Lead Time for this product is ninety days and the retailer wants the jeans in their DC by July 15th, then the drop-dead date to place a PO will be April 15th. In a B2O environment where reliable Cumulative Lead Times are paramount, one can only imagine what a catastrophic occurrence like COVID-19 can do to the stability of an import supply chain.

Within the above context, ***the primary risk is that if the virus spreads and more Chinese factories go on shut down or operate at limited capacity, U.S. importers will eventually run out of time to get product in-house for key dates on the Retail Calendar.***

Chinese New Year: Unlike the advent of the Coronavirus, Chinese New Year (CNY) is a known event that U.S. importers account for as part of their supply chain planning schedule. Even though the dates of CNY change from year-to-year (late January to early February), U.S. companies know that Chinese factories can shut down for up to two weeks and that any Work In Process inventory has to be completed and shipped out before the celebrations begin.

Clearly, there is no good time for a tragedy like COVID-19 to strike. With that said, the fact that the virus accelerated right in the middle of CNY translates into the worse possible timing for exports out of China. Specifically, and bearing in mind that under regular conditions factories need time to "ramp back up" after CNY, the government's decision to extend the holiday will prolong that ramp-up period for a length of time equal to when workers start producing.

Discussed below in detail, the unplanned (but necessary) extension of Chinese New Year, as well as provincial, city and company-specific decisions to remain on shut down are likely to create a series of bottlenecks that reverberate across global supply chains well into 2020.

China's Migrant Workforce: What some U.S. importers might not know is that China's manufacturing workforce has historically been made up of (domestic) migrant workers. The fact is that since the first Special Economic Zones were founded in 1980 along China's southern coast (Guangdong and Fujian provinces), export-oriented manufacturers have manned their production lines with folks from other parts of the country.

To be sure, factories in coastal China were experiencing challenges with the migrant workforce long before COVID-19 hit (i.e. people prefer to find jobs where they're from, as opposed to living in far-off factory dormitories). That issue aside, the combination of a longer CNY, locally-mandated stay-home rules and quarantine periods has placed a palpable constraint on production capacity. A worker's independent decision to stay home only worsens the situation.

By now a common theme, any delay in the return of workers to not just factories, but to the myriad logistics jobs that support Chinese exports will create periods of lulls and surges along the entire U.S. inbound supply chain. More worrisome is the possibility that if the virus continues to spread, these lulls and surges will lengthen, and become very expensive to resolve.

The Probability of Supply Chain Bottlenecks, Lulls & Surges

It's been stated that the pre-CNY goal of Chinese producers is to have any outstanding purchase orders completed, with all goods produced and shipped prior to shut down. What was not mentioned is that both during and after CNY, U.S. importers continue to issue new PO's for additional product that will be needed for key dates further down the Retail Calendar. As one can envision, if factories are slow to scale up to full capacity, a PO backlog will form.

What I also failed to mention is that just because an importer places a PO on a Chinese vendor doesn't mean that they'll act upon it. Even in a normalized B2O environment a supplier studies a number of factors before accepting a purchase order, including a review of the quantity and types of products on the PO, the production lead time for those products, the vendor's existing Master Production Schedule, available plant capacity and the ability to procure raw materials.

Based on this analysis, the manufacturer determines if they can comply with PO terms like product quantities and last ship dates, and if everything is OK, they accept the U.S. importer's PO. The imminent problem with this process is that PO's are piling up from buyers around the world and there is limited or, no relief in the form of finished goods being shipped out.

Importers are not only aware of the above phenomenon, they know that their situation becomes riskier with every passing day. First broached during the explanation of Cumulative Lead Times, the risk lies in Chinese production lingering at less-than-full capacity for a period of time that exceeds a product's CLT, thus triggering missed in-house dates on the Retail Calendar. With CLT's for products varying from 90 to 180 days, that day could arrive much sooner, than later.

To avoid missing in-house dates for BTS, Black Friday and Cyber Monday, many importers are already scrambling to get PO's accepted by their vendors *ahead* of normal CLT's. When added to an existing backlog, this rush only serves to overwhelm manufacturers even more. Basically a "Feedback Loop" that exacerbates an existing problem, this behavior is a catalyst that could trigger lulls and surges not only in manufacturing, but all along the U.S. inbound supply chain.

As of the publication of this paper, some of the supply chain effects attributable to COVID-19 are already being felt. Notably, there are many suppliers in China having trouble getting raw materials and a number steamship lines have announced additional "blank" (cancelled) vessel sailings due to a paucity of containerized cargo. While certainly foreboding scenarios, the balance of this work is dedicated to identifying what else might go awry if the virus persists.

A Core Tenet of Supply Chain Risk Management: Identifying Potential Threats

Introduced in the paper's opening paragraphs, a core tenet of Supply Chain Risk Management is the need to identify as many potential threats as possible, as early as feasible. In order for a Risk Assessment of current China-U.S. supply chains to be deemed comprehensive, it is also necessary to summarize the threats that were in place *before* the outbreak.

Although we won't do a deep dive on the factors that were impacting China-U.S. trade prior to the Coronavirus, it is appropriate to acknowledge that issues like increased labor costs, coastal China's expensive industrial real estate, the additional cost associated with the IMO's Low Sulfur regulation for marine diesel fuel, and the Trump tariffs had already set the stage for soft imports by U.S. retailers and e-commerce merchants.

In lieu of a deep dive on what are now well-chronicled problems, let's summarize these extant threats by returning to the analogy of the Coronavirus as a Standing 8-Count for Chinese supply chains. In that vein, the above factors are the "body shots" that weakened our fabled boxer, and COVID-19 is the "overhand right" to the jaw that wobbled her knees. While still early in the count, how China and its trading partners handle more imminent risks will tell the tale in 2020.

In an effort to heighten the awareness of potential financial, manufacturing and logistics risks born of COVID-19, the below list is presented. Fueled by a "Cascade Effect" that begins with purchase order and manufacturing backlogs, the reader is reminded that while low right now, the probability of these threats actually coming to fruition increases as the virus persists.

In other words, when described as a, "V-Shaped Recovery," where a sharp dive in export volumes from China is followed by a spike upwards as factories come back on-line, there is a possibility that the entire China-U.S. supply chain will be overrun with cargo.

Due to the manufacturing and PO backlogs alluded to a moment ago, when Chinese manufacturers are able to produce at full capacity, the ensuing bottleneck is likely to cause some, if not all of the following scenarios to surface:

-With Master Production Schedules that are beyond a plant's capacity, it is possible that Chinese vendors will prioritize manufacturing runs based on who will pay the most to get their stuff made first. Considering that many suppliers cut prices in 2018 to cover the cost of the Trump Tariffs, this might be viewed as an unexpected claw-back opportunity.

-As short term demand for production capacity begins to outweigh supply, another option for suppliers is to ask for a higher down payment in order for PO's to be accepted. Because down payments are already part of a B2O model, the likelihood of this happening increases if the manufacturer's raw materials suppliers start making similar demands.

-If production constraints are just too much and no amount of money will solve the problem, manufacturers also have the option to accept partial quantities on a purchase order, or reject a PO outright. Unless the U.S. buyer has an alternative vendor in China or elsewhere (and it's unlikely that this late in the game they would), they'll be forced to take what they can get.

-Another threat to the U.S. importer's supply chain surfaces when their suppliers sub-contract manufacturing without telling them. Needless to say, this opens up a whole other can of worms with regards to ethical sourcing, product quality, testing standards, proper packaging, etc.

-Assuming that a Chinese supplier does all manufacturing themselves, production pressures inherent to a 24/7, three-shift environment can cause product quality to suffer, with attention to detail on things like working conditions and employee safety going out the window.

Downstream Supply Chain Ramifications…

The goal of a manufacturer is to achieve a level production schedule where goods are produced and shipped in an even flow. In what's been portrayed as a V-Shaped Recovery, a lull in production followed by a spike in output can quickly overwhelm the supporting logistics network. Starting in China, below are threats to the downstream supply chain that are likely to surface:

-Should the V-Shaped Recovery continue downward, steamship lines could blank more sailings, or even lay-up vessels. This not only limits the number of ships sailing in the China-U.S. trade lane, an imbalance in container positioning could also ensue (i.e. a lack of ocean containers in locations where they're needed).

-As production comes back on-line, manufacturers will start to make bookings for export ocean containers before they need them, and in excess of the actual quantities required. Yet another Feedback Loop, steamship lines will experience "No-Show Bookings" that sub-optimize the available space on outbound vessels.

-If the need for ocean containers surges too quickly, drayage service providers in China could find themselves unable to meet the demand for both equipment and drivers to get containers to the ocean ports.

-When the recovery starts to trend upwards, origin facilities like Container Freight Stations, container yards and port operations could also be overwhelmed.

-Given that importers engage in ocean transportation negotiations with carriers and NVOCC's in the March-April time frame for the 2020/21 contract period, the carrier community could attempt to exploit uncertainty in the marketplace and increase their rates. This happened when uncertainty arose due to the Trump Tariffs and it's likely to happen again, especially since those same carriers are losing millions during the post-CNY lull.

-When carriers and Non-Vessel Operating Common Carriers negotiate their contracts with U.S. importers, they are also likely to insist on clauses for General Rate Increases and Peak Season Surcharges that can be invoked at their discretion.

-As production output in China increases and demand for space on ships surges, carriers will start to role containers, contributing to an ongoing backlog of containers at origin port terminals.

-Rarely seen in past decades, if ocean carriers face congestion at large U.S. ports, they could invoke a little known provision in their Terms & Conditions that allows them to off-load containers at other (less congested) ports. As such, importers accustomed to using ports like New York or L.A., could find their containers off-loaded in places like Boston or Portland.

-Regardless of the destination port and not unlike what's likely to transpire at origin ports, U.S. container terminals, container yards and Container Freight Stations will also be swamped with cargo. Bearing in mind that the lull has caused the firms that run these operations to reduce hours or lay people off, the upswing will trigger a scramble to get employees back on board.

-When U.S. importers need goods fast, they convert from ocean to air transport. This is going on now and because many passenger airlines have cancelled China-U.S. flights, air freight rates are three times higher than they were under pre-virus conditions. In spite of passenger and cargo flights returning to operations, air freight rates will be even higher later in 2020.

-All of the above delays will extend a product's Cumulative Lead Time. When goods do enter the U.S. distribution network, importers will have to make up for lost time by converting rail transportation to trucking, as well as use team drivers on Full Truckload shipments and expedite Less Than Truckload moves. If things really get bad, they'll upgrade to domestic air freight to get goods where they need to go in order to make the Retail Calendar.

What's an Importer to Do?

Upon identifying and estimating the occurrence probability of supply chain threats, executives then have to come up with a plan to mitigate those risks. In the case of supply chain risks tied to COVID-19, the unfortunate reality is that the only option for some U.S. importers will be to buy their way out of the problem, or suffer the financial consequences of not having products available for Back-to-School, Black Friday, Cyber Monday or Christmas.

Similar to a *FastPass* that entrants to Disney World can buy to cut everyone in line at Space Mountain, U.S. importers might find themselves compelled to pay extra to manufacturers, carriers and logistics service providers to get their goods made and moved.

Fortunately, apart from this "carte blanche" approach to Risk Management, there are other steps that companies can take to at least try and mitigate the supply chain consequences of the Coronavirus. While likely to be an incomplete list of ideas, below are some suggestions that might help U.S. importers through what is shaping up to be a trying 2020:

-An obvious response to ongoing issues with sourcing goods in China is to move those sourcing activities to other countries. Way easier said than done, the reality is that if an importer doesn't already have supplier options set up in places like Vietnam or Mexico, it's too late to make a change.

-Already in play due to the Trump Tariffs, many companies started seeking other countries to source from a long time ago. As such, much of the capacity in markets like Vietnam has been sucked up and they're facing their own constraints. Also, because non-Chinese producers still have to get their raw materials from Chinese suppliers, the outcome might actually be worse.

-In lieu of bailing on China (which is not advisable at this time), the first thing that U.S. importers need to do is to treat their response to COVID-19 as a full-blown Risk Management & Mitigation project. As part of that process, there has to be C-level recognition of imminent supply chain threats and an organization-wide focus on addressing those threats.

-Next, U.S. importers should form a Supply Chain Risk Mitigation team that is made up of (at a minimum) professionals from sourcing, purchasing, sales, logistics, finance and I.T.

-If a U.S. importer already engages in the ongoing supply chain practice known as, “Sales & Operations Planning”, the Risk Mitigation team should incorporate Best Practices from S&OP into their project methodology. Because S&OP is about comparing forecasted/budgeted supply chain outcomes with actual results and then making operational adjustments, importers will have a leg-up on how best to mitigate supply chain risks born of the outbreak.

-As a first step in developing a Response Plan, conduct a Current State Analysis of all outstanding PO’s placed on Chinese vendors. Admittedly a cumbersome and manual exercise, it will be very difficult to craft a plan without understanding where one stands today.

-Based on the outcome of the Current State Analysis, execute a rolling review on the status of all outstanding, as well as planned releases of purchase orders. Done on a product category and item-specific level, this gives the importer a detailed view into both immediate, as well as medium-term actions that can be taken.

-Have (at a minimum) twice-weekly calls with Chinese vendors to understand where in the supplier’s Master Production Schedule the importer’s PO’s are accounted for. This means a lot of after-hours work with Chinese manufacturers, but is essential to understanding updated Cumulative Lead Times.

-After the previous night’s review with vendors, have a daily (morning) huddle with the Supply Chain Risk Mitigation team to formulate PO-specific Risk Mitigation activities.

-With PO-specific updates in hand, make changes to ERP or Material Requirements Planning software. Unless CLT updates find their way into supply chain planning software tools, the system will continue thinking that in-house dates are accurate when they’re really not.

-Instruct vendors to make ocean container bookings three weeks in advance of the desired sailing date. Whereas normal trade practices call for a two-week window for container bookings, an extra week may help secure space on ships. Also, anything longer than three weeks may result in steamship lines rejecting a booking, so it’s best not extend things too long.

-Make sure vendors aren’t exaggerating booking needs in an effort to secure space. If a vendor books for five containers when they only need two, steamship lines will soon pick up on No-Show Bookings and label the vendor, “The Boy Who Cried Wolf”, and potentially refuse bookings in the future.

-Be sure to engage with freight forwarders, Customs Brokers and other Logistics Service Providers (LSP’s) as part of daily communications. In addition to providing vital transportation services, LSP’s can offer up-to-date market intelligence on issues ranging from congestion at origin ports to blanked sailings and destination drayage bottlenecks.

-Insist that Chinese vendors and LSP's are in daily contact with one another regarding shipping needs, and that they convey the results of those daily huddles back to the U.S. importer. The transition from manufacturing to shipping is vital to CLT's and a lack of communication between supply chain players can cause unneeded delays.

-Because importers negotiate ocean freight rates with carriers and NVOCC's in the March-April time frame, it is essential to formulate a strategy that addresses the possible continuation of the virus beyond the end of the first quarter. As part of that negotiation, clauses should be hammered out on ocean freight rates, as well as matters like no-role clauses, arbitrary charges and the acceptance of General Rate Increases and/or Peak Season Surcharges.

-As part of the ocean freight negotiation process, consider alternative Ports of Lading and/or Ports of Discharge. Because some ports in China and the U.S. run the risk of bottlenecks when production ticks upward, it may be prudent to consider other ports. This will require a change in Cumulative Lead Times, but the net result may actually be better.

-While expensive, any Risk Mitigation Plan has to include the use of air freight to move goods quickly. Mentioned previously, air freight rates from China are already through the roof, so it's best to engage now with freight forwarders for updates to both rates and air cargo capacity.

-If extended CLT's compromise product in-house dates, the last resort might be the "*FastPass* Approach" spoken of earlier. Just like the people who pay extra at Disney parks to avoid standing in line to see Nemo, U.S. importers might have to belly up to make sure products get made, container bookings are honored and goods get to their final destination on time. As such, it's best to accrue for these costs now and if they don't materialize, reverse the accruals later.

Summary

I'll finish by reiterating that while I don't believe the Coronavirus is a knock-out punch for Chinese supply chains, it is definitely a Standing 8-Count. Over the course of the last one hundred years China has survived invasion, civil war, droughts and famine, and it is my opinion that while tragic, it will overcome COVID-19. With that said, it's still "early in the count" and as such, U.S. importers have to create a Mitigation Plan that addresses all possible risks.

While likely to be rife with omissions and imperfections, it is my hope that the thoughts, observations and suggestions found in this White Paper help in that endeavor.

About The Author

Dan Gardner is an international business executive, multi-award winning professor of global trade and an author of five books. With over twenty years of experience working directly with Chinese manufacturers and the supporting logistics eco-system, Mr. Gardner is a recognized authority on supply chain management, logistics and trade compliance. To engage Dan directly, please write to him at dgardner@tradefacil.com.

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