

Supply Chain Woes

Possibly the most surprising event coinciding with the COVID-19 pandemic is the serious weakening of the global supply chain. Perhaps the only similar circumstances in your blogger's economic life related to the gasoline shortages of the late 1970s, in which there were lines of cars waiting at empty pumps. Economists had an explanation. There were numerous piece-meal restrictions on gasoline prices around the nation and the world. If Maryland, for example, regulated gasoline prices, gasoline suppliers sent their wares elsewhere. With the deregulation of gasoline prices, these lines disappeared. Even in the Great Recession of 2007 – 2009, where central banks had to bail out bad loans, the goods suppliers were able to keep their supply chains connected. Careful "just-in-time" inventory processes, and sophisticated supply algorithms provided consumers with the goods they wanted, on time.

With the March 2020 COVID-19 shock, the first casualties seemed to be toilet paper, yeast, and chicken. Toilet paper is not surprising. When YB and his partner lived in Maryland, every imminent snow storm led to a run on toilet paper at the local Giant market. If stranded, consumers wanted to remain comfortable. COVID-19 certainly qualified as a "snow storm", snarling commerce. Toilet paper could be explained.

Why yeast? Apparently, households under lockdown decided to bake a lot of bread. One needed flour and yeast, and the yeast disappeared from the stores. YB and his partner found themselves trying to find yeast at various stores, and for a while could only buy one packet at a time. Yeast could be explained, and eventually the shortages disappeared.

In early May 2020, YB was at the local market in Florida, and went to buy chicken, but there was no chicken. No chicken? YB asked the store employee, and was told they weren't sure when the next shipment would be in, and that the last two truckloads had consisted of backs and necks. News coming out of the middle of the country indicated that there had been major COVID-19 outbreaks in the meat-packing and poultry industries. Prices of beef went up, and chicken consumers made do with backs and necks.

The economy is now over a year past the "toilet paper, yeast, chicken" phase, and yet there are stories about tens of thousands of new vehicles awaiting computer chips for completion. Orders are backed up for months, and the prices of used cars have rocketed up, because the supply of used cars (when someone buys a new car, the trade-in enters the used car market) has fallen dramatically relative to the demand (many people buy used cars from dealers). Supply of used cars also falls if would-be sellers hold on to their clunkers because they can't trade them in for new ones.

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In the late 1940s, economist Wassily Leontief pioneered *input-output analysis*, in which output from one industrial sector becomes an input to another industrial sector. Written in matrix form, this analysis shows how each sector is dependent on every other sector, both as a customer of outputs from other sectors and as a supplier of inputs. So, if there are problems in the computer chip sector, they feed into the automobile sector. Shortages of chips lead to shortages of cars. The results can be quantified, and impacts of economic shocks can be predicted.

Input-output analysis does not say why supply chains should be strained, and shortages occur. Your blogger traces the problems to breakdowns in the international supply chain during COVID-19. Although the current trade frictions with China predate the COVID-19 shock, they certainly exacerbated the shock. Moreover, the general reaction to COVID-19 was country-specific, protecting one's borders from interlopers that might bring COVID-19 with them. These policies effectively placed massive constraints on trade, effectively increasing transportation costs, and limiting shipments. Trade occurs with other economies because it lowers costs. Reducing trade limits production and raises costs, and therefore raises prices.

COVID-19 has not destroyed factories and machinery, but through worker illness, and appropriate distancing procedures, COVID has gummed up the production lines and the transportation lanes. As of mid-October 2021, it has reduced the labor force both in the United States and elsewhere, it has reduced trade, and it has led to port and transportation bottlenecks, and to shortages. These shortages are predicted to last well into 2022. Garth Friesen, in [Forbes \(September 3, 2021\)](#) views “no end in sight” relating the problems to high consumer demand, COVID outbreaks’ continuing “to shut shipping hubs around the world, and extreme weather [battering] individual links in the chain”, leading to expectations of continued disruption.

Was COVID-19 alone in creating this mess? It is likely that the strained China relations and the trade problems relating to Brexit and the European Union had important roles. To mix metaphors, one might term the COVID-19 the “yeast” in the rising of the supply chain woes. It is still killing several thousand people around the world each day (including close to 2,000 per day in the United States alone), and the supply chain woes persist.

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