This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers visit https://www.djreprints.com.

https://www.wsj.com/articles/why-arent-there-enough-paper-towels-11598020793

THE COVID STORM

Why Are There Still Not Enough Paper Towels?

Blame lean manufacturing. A decadeslong effort to eke out more profit by keeping inventory low left many manufacturers unprepared when Covid-19 struck. And production is unlikely to ramp up significantly any time soon.

By Sharon Terlep and Annie Gasparro
Updated Aug. 21, 2020 9:25 pm ET

Listen to this article
15 Minutes

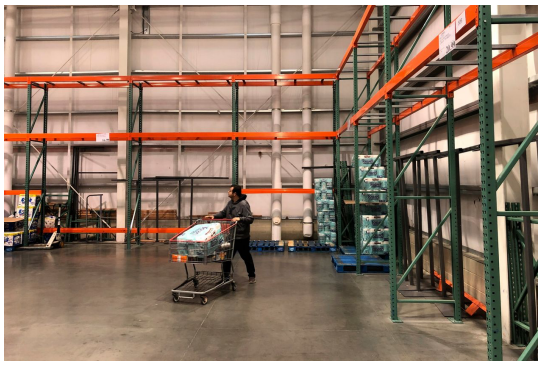
The United States of America, heralded as the land of plenty, still doesn't have enough paper towels.

Long after the coronavirus sparked a run on them, retailers can't keep their shelves full. Target.com had no Bounty paper towels for delivery this week, though it had some at certain stores. At Amazon.com, a seller was charging $44.95 for a pack that normally goes for $15.

An average of 21% of household paper products were out of stock at U.S. stores as of Aug. 9, according to research firm IRI.

The situation isn't likely to abate soon, because producers have no plans to build new manufacturing capacity. The central piece of the machinery needed to make paper towels takes years to assemble.

Americans have faced many stresses in the pandemic, of which paper-towel scarcity is hardly among the worst. Yet the forces behind the shortage nearly six months into the crisis help explain the broad lack of U.S. preparedness that has made the pandemic worse than it might have been.



A shopper found paper-products shelves mostly bare at a Costco in Teterboro, N.J., on March 2.
PHOTO: SETH WENIG/ASSOCIATED PRESS

The scarcity is rooted in a decadeslong quest by businesses at all levels, handling many different products, to eke out more profit by operating with almost no slack. Make only what you can sell quickly. Order only enough materials to keep production lines going. Have only enough railcars for a day's worth of output. Stock only enough items on a shelf to last till the next batch arrives.

The concept, known as lean manufacturing or just-in-time inventory, was born in the hyperefficient Japanese automotive industry in the 1970s and became a religion for many American CEOs. It spread first to Detroit, then to other U.S. manufacturers and finally to other industries, from distribution to retailing.

THE COVID STORM

Read the rest of the series

NEWSLETTER SIGN-UP
The Wall Street Journal is examining the causes of the Covid-19 catastrophe and the bungled response that followed. Get alerts for each new installment, along with our daily coronavirus briefing.

SIGN UP

As it did, the risk of shortages in an emergency bothered experts in disaster preparedness. Cautions voiced by the worriers had little effect as investors rewarded corporations that held costs low through lean operations.

Patti Austin, in a fishing village near North Carolina's Outer Banks, wasn't thinking inventory systems when she saw supplies dwindle in early March. "As you'd walk through the stores, and the shelves would become even more bare as the days progressed, we had noticed that a lot of stuff just wasn't coming in at all for a long while," said Ms. Austin, 55. "Paper towels, toilet paper, cleaners all went quick," she said.

Deb Coduto runs plants that make paper towels. The town of Naheola, Ala., where she spends much of her time overseeing a Georgia-Pacific LLC paper-products factory, hadn't yet felt the coronavirus when orders from retailers started rising in late February.

Retailers ordered five times their normal amount of paper towels one week, and the next week 10 times more, Ms. Coduto recalls. She felt a sense of foreboding.

"I read about other countries getting hit by the virus, and some of the panic and fear," she said.



A technician evaluating Bounty packaging at Procter & Gamble's Albany, Ga., plant.
PHOTO: P&G

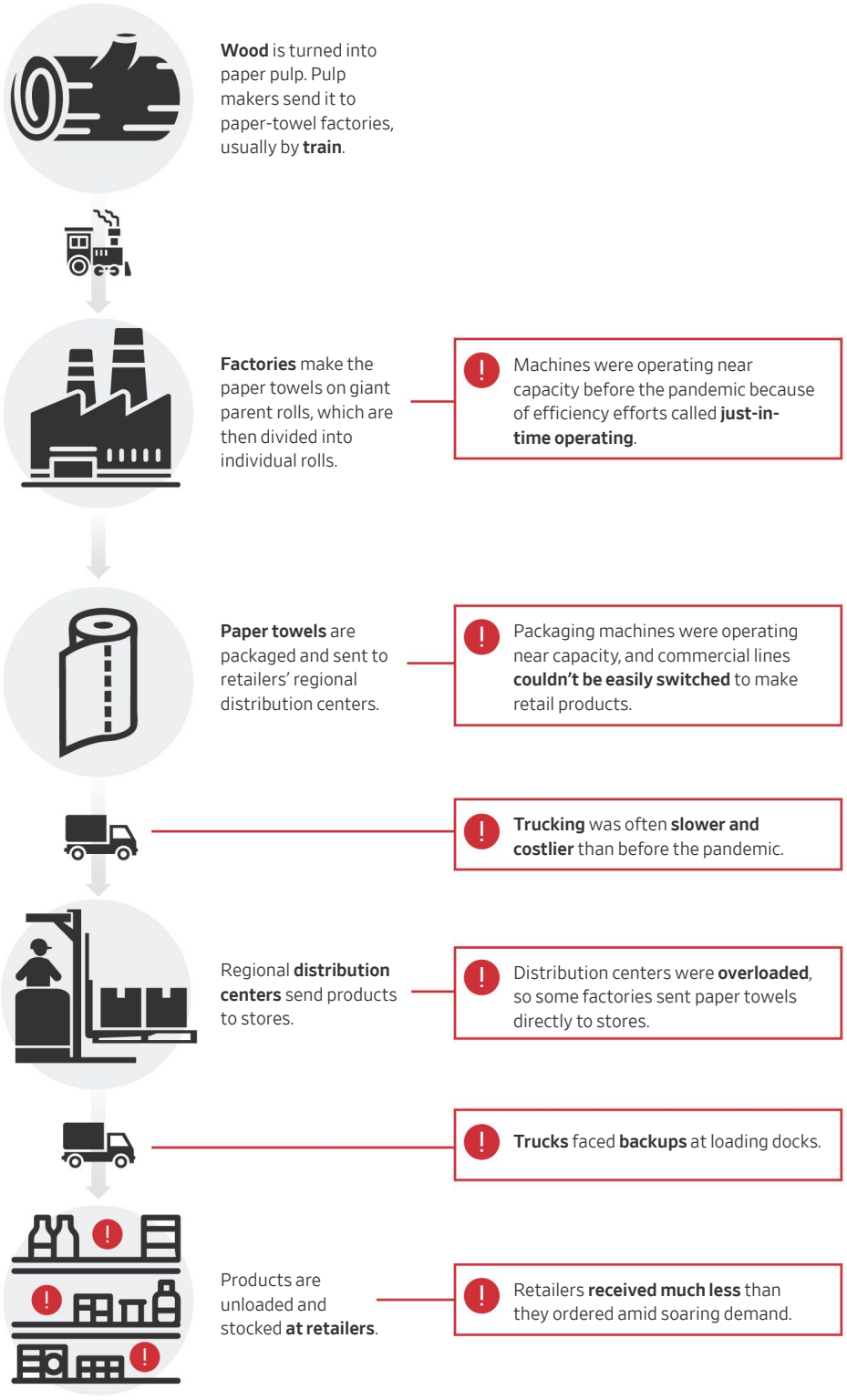
She and the nearly 1,000 workers at the Georgia-Pacific plant, which makes Sparkle paper towels and was already running 24/7, began hunting for ways to increase output. With tactics such as cutting varieties to reduce line changeover time, they eventually managed to raise its production about 25%, still not enough to meet all the orders. Ms. Coduto was often at the plant from 5 a.m. to late evening.

The coronavirus reached her region in April. "If there's anything that keeps me up at night, it's how to keep everyone safe," she said. "You're questioning everything you're doing, trying to keep the virus out of the workplace." The plant has had a few workers test positive and quarantine but has stayed open.

As Americans stocked up, bricks-and-mortar stores' sales of paper towels soared 150% in mid-March. Demand remains 25% higher than before the pandemic, says Procter & Gamble Co., which makes Bounty.

Slow Your Roll

The U.S. paper-towel supply chain had problems that have led to shortages since the pandemic began. Here's how it works and some of the issues.



Sources: paper-towel manufacturers and retailers
Kara Dapena/THE WALL STREET JOURNAL

The supply chain sputtered for many other things Americans clamored for when the virus struck, including some food products, disinfectant wipes and—especially alarming for

health-care workers—face masks.

While each had its specific issues, all involved lean operations by manufacturers or raw-material suppliers, plus disciplined distribution and retailing channels geared to a normal level of demand. The lean system went largely unquestioned, until one day just-in-time meant not-enough.

Credit for developing it goes to Taiichi Ohno, an engineer at Toyota Motor. He has said he drew inspiration from a 1950s visit to a U.S. supermarket, where he saw how the grocer restocked in real time as shoppers bought goods, avoiding either bare shelves or excess products.



Shoppers in Spring, Texas, waited for an H-E-B grocery to open on March 17. Store executives assured people plenty of food was available and urged them not to stockpile.
PHOTO: DAVID J. PHILLIP/ASSOCIATED PRESS

At the time, it was common for manufacturers to keep warehouses filled with months' supplies of raw materials and parts. All that inventory had to be paid for or financed, and storing it cost money as well.

When Japanese auto makers challenged Detroit in the 1970s, Japan's low-price cars could be profitable in part because of rigorous manufacturing efficiency, in which parts weren't stored in bulk at the assembly plant, tying up capital, but arrived only as needed.

U.S. auto makers stung by the competition rushed to replicate "the Toyota way." Soon, academics and business leaders were extolling it, publishing voluminous amounts on how to master and execute just-in-time systems for different industries. In a gauge of how thoroughly the model was accepted, the speakers on earnings calls of S&P 500 companies last year invoked the terms "inventory reduction" and "lean" more than 550 times, a search through call transcripts shows.

At the retail level, one spur was a decision by Walmart Inc. in 2006 to thin out the inventory it held by $6.5 billion. Executives said the move would free up capital to help the company manage rising expenses such as a store makeover plan and fuel costs.

Walmart imposed its discipline on suppliers, penalizing them for delivering either too soon or too late. Suppliers that shipped full trucks of products to Walmart had to deliver within a specified two-day window around 80% of the time or be fined 3% of the cost of the goods. Competing retailers also demanded deliveries on precise schedules to lessen their need for bulging warehouses.

Pushed hardest were makers of bulky paper products, because they take up so much space and are costlier to store, said Mike Hsu, the chief executive of Kimberly-Clark Corp., which makes Scott paper towels. P&G launched a downsizing in the early 2000s. Colgate-

Palmolive Co. and Kimberly-Clark followed suit, closing dozens of factories that make various consumer products.

Michael Leavitt, who was U.S. Secretary of Health and Human Services in 2006, faced dual crises that year, an avian flu and public fears that tainted food and consumer products were being imported. He spoke at the time of what he called the Albertsons syndrome, where shoppers strip supermarket shelves of key products at the first sign of a threat.

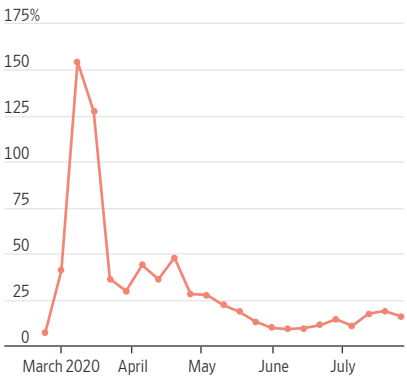
Mr. Leavitt began urging the government, businesses and individuals to build up a cushion of essential items. Jay Leno on "The Tonight Show" poked fun at him for saying, in reply to a reporter's question, that even people on a tight budget could prepare, by slowly amassing powdered milk and extra tuna fish.

"It's very easy to put off a priority if you think it's never going to happen," Mr. Leavitt said in a recent interview. "Pandemics happen routinely—they just happen far enough apart that each generation of leadership figures it won't happen on their watch."

Paper Trail

The paper industry is still scrambling to catch up after demand for paper towels skyrocketed over 150% in mid-March when inventories were at historic lows.

U.S. paper towel sales growth, one-week period vs. same week a year earlier



Note: Does not include e-commerce sales.
Source: Nielsen

Companies that adopted the lean-inventory approach largely omitted tenets of the system as it had been devised. Originally, it called for having extensive backup plans in case of an event that interrupted plant operations or caused a sudden demand surge. Prescribed strategies included developing relationships with backup suppliers so that factories could always have enough materials.

"In a lot of the lean literature, that's just stripped out," said Wally Hopp of the University of Michigan Ross School of Business. "So we have these systems that are lean but also brittle."

Analysts who follow the consumer-goods industry say they don't recall substantive conversations with either executives or investors about the risk of shortages from lean-manufacturing and lean-inventory operations. Instead, they say, Wall Street seemed to reward companies for each emptied warehouse or closed factory.

In the case of paper towels, shortage risks didn't involve reliance on overseas makers, as with face masks this spring, nor was tight raw-material supply an issue. Pulp was plentiful, in part because demand for newsprint declined. The main problem was producers' lack of spare manufacturing capacity.

Paper towels are made in a process that dates back more than a century. Companies feed wood pulp into machines several stories high that press it, roll it and dry it using Yankee dryers, which also have blades to scrape each layer down to the right thickness in a method called creping.



Sparkle paper towels come off the line at Georgia-Pacific's plant in Naheola, Ala.
PHOTO: GEORGIA-PACIFIC LLC

The machine produces parent rolls weighing 6,000 pounds, which are transferred by automated vehicles called elephants to converters. There the paper is perforated and embossed, making it stronger and more absorbent. Finally, it is wound around cardboard tubes in long logs and then chopped into individual rolls.

The main piece of machinery breaks down if idled for long periods, such as if not needed when demand returns to normal, said Rick McLeod, an executive in P&G's family care unit. The industry couldn't shift production from commercial paper towels to at-home varieties because companies either don't make both types or couldn't switch fast enough.

"The capacity to make paper towels is both very expensive and requires a very long lead time" to build, P&G Chief Executive David Taylor said. "You wouldn't run a business at 30% or 40% extra capacity. The cost of that would not allow you to price in a way that meets customer needs."

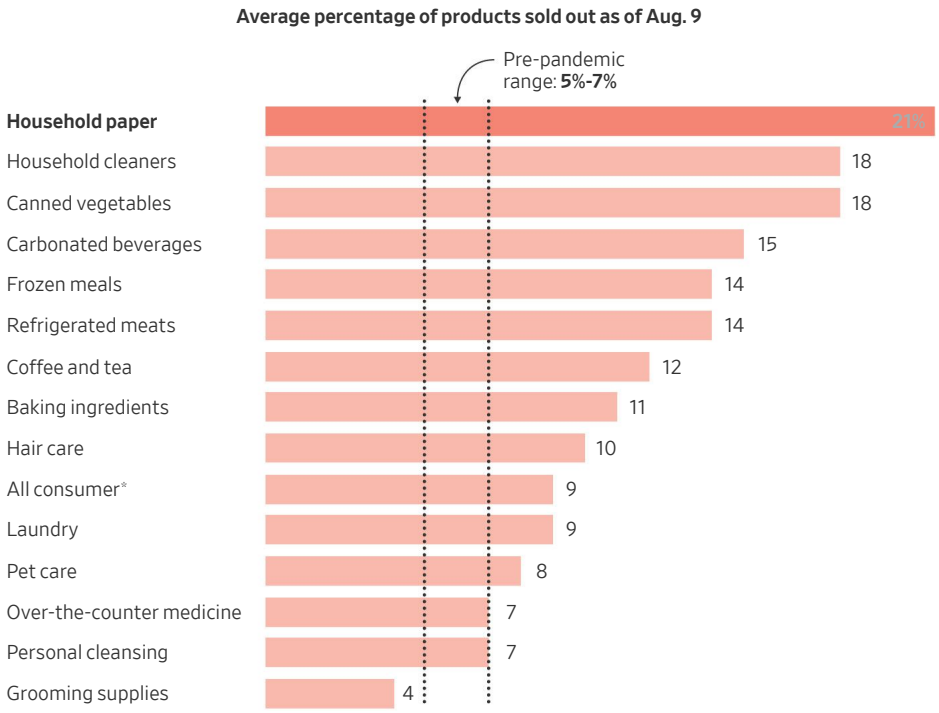
Though P&G has no plans to build a new plant, it restarted an idled piece of equipment at a facility in Albany, Ga. in March. P&G said it carried out what is normally a monthslong restarting process in two weeks by sending in engineers from around the country. By the time the machinery was up and running, air travel was shutting down. P&G sent a corporate jet to get the engineers home.

Toilet paper shortages subsided over the summer as consumers' stockpiles were more than enough to cover their increased use of bathroom tissue at home. Paper towels remain in higher demand as people clean more amid the pandemic, exacerbated by an even more severe shortage of sanitizing wipes.

Georgia-Pacific, which makes Brawny paper towels in addition to Sparkle, said it is considering converting some toilet paper lines to paper towels, based on its view of long-term demand. But it, like other producers, has no plans to build a new paper towel plant. Investing in additional manufacturing capacity would require a projection of a major population increase. Paper towels aren't typically exported because of the shipping cost.

Shelf Space

The share of items out of stock in U.S. stores and e-commerce has soared in the pandemic.



Broadly speaking, producers of household staples have recorded higher revenue and improved margins during the pandemic as consumers have rushed to stock up.

Paper-towel factories generally ship their output by truck. Trucking routes, too, are crafted for maximum efficiency and little slack.

When volumes of staples sent to stores surged beyond the norm this spring—at times leaving delivery trucks with no return cargo, called dead heads—some trucking companies didn't honor commitments and instead chased the higher rates available on trucking's spot market, said Bob Biesterfeld, CEO of freight brokerage firm C.H. Robinson Worldwide Inc. He said the brokerage company picked up business from shippers whose contracted trucking carriers had left them in the lurch.

The final trucking miles, from regional distribution centers to stores, proved especially troublesome. The centers and stores have limited loading docks. So even when manufacturers had sufficient paper towels or other high-demand items to deliver, their truckers had to struggle with long lines to unload.

Erik Hysong, who owns Buckboard Freight Co., delivered produce to a Costco distribution center in Salt Lake City in March. "It has been a madhouse," he said at the time. "Usually 350 trucks a day, now almost double that. Crazy."

While some aspects of the supply chain have eased in recent months, trucking capacity has grown tighter because more of the U.S. economy is back online and creating demand to transport industrial products.

Executives at some makers of food and household staples say they recognize how the drive for efficiency hindered their ability to respond to the coronavirus crisis demand, and they are becoming a little less lean.

SHARE YOUR THOUGHTS

How could supply chains be improved to prevent shortages in crises such as the pandemic? Join the conversation below.

Kellogg Co., which had shortages in its production of cereal and snacks such as Pringles, said it is investing in more access to transportation. Georgia-Pacific has built additional loading-dock doors so more trucks can be filled at once.

"There is appetite for more safety stock going forward," said Kellogg CEO Steve Cahillane. "That is something that everybody is talking about."



Patricia Austin and her husband, Wilbur Austin

PHOTO: PATRICIA AUSTIN

Weis Markets Inc., a mid-Atlantic grocery chain, has tapped additional suppliers of paper towels, including some that normally sell to businesses, said its chief operating officer, Kurt Schertle. Weis is trying to be better prepared, carrying 40% more inventory in its distribution center.

"We are much better off having canned veggies, bottled water and paper towels in our [distribution center] than to have cash on hand trying to save a couple percent somewhere," Mr. Schertle said.

A spokesman for Walmart said it is focusing on securing better availability of essential products. He said the retailer hasn't made plans to change future inventory levels. The spokesman declined to comment on whether Walmart's longtime push to reduce inventory factored into shortages Americans have faced during the pandemic.

In late July, Ms. Austin in North Carolina was down to her last few sheets of paper towels after finding none at the local grocery.

"We are a community used to pulling together and keeping things on hand for those surprise nor'easters and flooding times, but this was an entirely new feeling," Ms. Austin said. "And it still is. It's disheartening to walk up to those shelves and still see them bare."



A truck entered a Walmart distribution center in Washington, Utah, in June 2019.

PHOTO: GEORGE FREY/GETTY IMAGES

—Jennifer Smith contributed to this article.

—Illustration at top by Jessica Kuronen/WSJ

Write to Sharon Terlep at sharon.terlep@wsj.com and Annie Gasparro at

annie.gasparro@wsj.com

Corrections & Amplifications

A photo caption in an earlier version of this article misspelled the first word of the name Procter & Gamble as Proctor. (Corrected on Aug. 21) Also, an earlier version erroneously labeled a different photo as a Toyota plant in Japan. That photo has been removed. (Corrected on Aug. 23)

Copyright © 2020 Dow Jones & Company, Inc. All Rights Reserved

This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers visit https://www.djreprints.com.