

Global Supply Shortages Deepen, Threatening Jobs and Growth

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At the onset of the war in the Middle East, industry officials and experts warned that the closure of one of the world's most vital maritime waterways would trigger acute shortages of oil, gas and other critical commodities. Three months into the blockade of the Strait of Hormuz, those warnings are materializing across the globe.

Before the war, roughly a quarter of the world's seaborne crude oil and a fifth of the world's liquefied natural gas passed through the strait. The region is also among the world's largest suppliers of products derived from oil and gas, including fertilizer and [naphtha](#), a liquid used in everything from plastic wrap to industrial inks.

Much of the world has largely experienced the crisis through price shocks. [Physical supply shortages](#) have afflicted economies across Asia. Developing countries everywhere, especially in Asia, have been hit the hardest, as shortfalls of oil, gas and their derivatives have strained everything from farming and cooking to medical imaging. Governments across the region have rationed power, drawn down emergency stockpiles and scrambled for [alternative supplies](#).

“It's not just a price shock, it's explicit shortages,” said Krishna Srinivasan, a director at the International Monetary Fund. “In the context of shortages, industry scales back, people lose their jobs, and this has a secondary impact on growth,” Mr. Srinivasan said.

Here is the state of play in the major energy and commodity supply crunches gripping Asia and the rest of the world.

Oil and Liquefied Natural Gas

Countries are tapping reserves and forcing blackouts.

The most visible early supply shocks struck crude oil and liquefied natural gas. Both fuels depend on passage through the Strait of Hormuz from major producers like Kuwait and [Qatar](#), with most shipments bound for buyers in Asia.

Japan, which typically sources more than 90 percent of its oil from the region, saw crude imports plummet 67 percent in April. Singapore, which generates 95 percent of its electricity from natural gas and relies on Qatar for roughly a quarter of its liquefied natural gas imports, has issued sweeping energy-conservation guidelines across commercial districts.

While wealthier nations like [Japan](#), Singapore and [China](#) can tap strategic reserves and outbid rivals for alternative gas supplies, developing economies have suffered the deepest disruptions. Shortfalls of gas for power generation and oil refined into diesel and gasoline have forced governments to reduce demand.

In [Bangladesh](#), starved of affordable natural gas, the government has imposed widespread rolling blackouts. Vietnam has rolled out mandatory energy rationing in industrial hubs. The [Philippines](#) declared a state of emergency in late March, shifting government operations to a shortened workweek and limiting air-conditioning in public buildings.

Helium

Tech companies are paying top dollar.

The war has also upended markets for products extracted from natural gas. Among the most critical is [helium](#), an odorless element produced as a byproduct of natural gas extraction. Before the war, Qatar supplied roughly one-third of the world's helium.

Chip manufacturers use it to cool machines that etch circuits onto silicon wafers. Pharmaceutical companies rely on it for quality checks of their products. In magnetic resonance imaging machines, helium cools superconducting magnets.

Richard Brook, chief executive of Garrison Ventures, a helium industry consultancy, said that with Qatari supplies curtailed and Russian shipments faltering, available

helium was likely to be prioritized for manufacturers willing to pay top dollar — particularly semiconductor giants in South Korea and Taiwan, as well as American health care companies.

That leaves less wealthy buyers grappling with shortages. In India, helium prices have already doubled, said Pavan Choudary, chairman of the Medical Technology Association of India. Mr. Choudary said the shortage posed an acute threat to smaller, rural hospital networks just as the country was “extending quality imaging to districts that have never had it.”

Fertilizer

Planting crops in depleted soil as prices soar.

The Persian Gulf is also a vital source of fertilizer, making the war a threat to global food supply. Five major exporters — Iran, Saudi Arabia, Qatar, the United Arab Emirates and Bahrain — collectively supply more than one-third of the world’s stocks of urea, the dominant form of nitrogen fertilizer.

In the war’s first weeks, the strait’s closure stranded fertilizer raw materials in the Persian Gulf. Since then, damaged and idle production facilities have caused shortages of key components, driving up prices and slowing fertilizer production.

Urea prices have climbed 80 percent since February, according to World Bank [data](#). The Mosaic Company, an American agricultural giant, recently cited the soaring sulfur costs as a factor in its decision to reduce phosphate fertilizer production at plants in the United States and Brazil.

The Food and Agriculture Organization has flagged South Asia as a region facing “extreme risk.” Farmers in countries such as Pakistan and Bangladesh — unable to outbid wealthier nations for alternative cargoes — have been forced to plant crops in depleted soil. Also in danger are Africa’s smallholder farmers, who grow 70 percent of the food for sub-Saharan Africa, according to the African Development Bank.

Naphtha

Nearing the ‘red zone’ of shortages.

Oil shortages have rippled through refined products such as naphtha, a petroleum derivative used so widely in manufacturing that it is often referred to as the “flour” of industry.

Shortages have been especially pronounced in East Asia. Japan and South Korea rely heavily on imports from Qatar and Kuwait, which have been unable to export because of the closure of the Strait of Hormuz. Even naphtha processed by Asian refineries often comes from crude shipped through the strait.

In Japan, shortages have hit the printing industry, prompting major consumer brands like the snack giant Calbee to strip the color from [packaging](#) to conserve naphtha-based inks. In South Korea, major producers have cut output of naphtha-based chemicals used in plastics.

Experts, including Haruhiko Sakaino, a former oil-refining official and adviser to Japan’s Agency for Natural Resources and Energy, said the number of Japanese companies entering the “red zone” of production disruptions was likely to spike by June.

Liquefied petroleum gas

Rationing gas at restaurants so families can cook.

The Middle East is one of the world’s main exporters of [liquefied petroleum gas](#), or L.P.G., a mixture of propane and butane widely used for cooking and heating in developing countries. The fuel is produced either by refining crude oil or from natural gas streams.

Since the outbreak of the war, India has emerged as the epicenter of the resulting fuel crisis. The world’s second-largest L.P.G. importer behind China, India depends on foreign sources for more than half of the 31 million metric tons it consumes annually. Historically, most of those shipments transited the strait.

The resulting supply crunch has reverberated through India’s economy, forcing widespread closure of small businesses, restaurants and hotels. In an effort to shield households, officials have aggressively rationed commercial supply allocations to preserve enough cooking fuel for residential kitchens.

Even as the government scrambles for alternative sources outside the Middle East, commercial allocations have fallen to roughly 70 percent of prewar levels, India's Ministry of Petroleum & Natural Gas said on Monday.

Jet fuel

Higher prices attract new suppliers.

Europe has been at the forefront of concerns about a looming kerosene shortage. That's because it is the largest buyer of jet fuel shipped through the strait.

The region has so far not run out of jet fuel, because surging prices have given the United States and other major suppliers an incentive to reroute shipments to European buyers. Elevated prices have also prompted European refineries to boost jet fuel production.

Still, those same high costs have forced major carriers, including Lufthansa and KLM, to [cut flights](#). And higher fares have deterred some travelers. As a result, European air traffic is about 5 percent lower than it otherwise would have been, the International Energy Agency estimates.

Concerns about supply bottlenecks persist. The recent dip in prices reflects "demand curtailment through flight cancellations and tourists delaying bookings, rather than any fundamental improvement in supply," said James Simpson, director of aviation research at S&P Global Energy, a market intelligence firm.

Consumer anxiety over rising ticket prices has also left airlines with limited insight into customer demand in the coming months, according to Olivier Jankovec, director general of ACI Europe, an airport trade group. "It all hinges on geopolitics and the fallout of the oil crisis," Mr. Jankovec said, "with the prospect of a cost-of-living shock testing demand resilience."