

INFORMATION BULLETIN

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When Tesla Motors, a pioneer in electric-powered cars, set out to make a luxury roadster for the American market, it had the global supply chain in mind. Tesla planned to manufacture 1,000-pound battery packs in Thailand, ship them to Britain for installation, then bring the mostly assembled cars back to the United States.

But when it began production this spring, the company decided to make the batteries and assemble the cars near its home base in California, cutting more than 5,000 miles from the shipping bill for each vehicle.

“It was kind of a no-brain decision for us,” said Darryl Siry, the company’s senior vice president of global sales, marketing and service. “A major reason was to avoid the transportation costs, which are terrible.”

The world economy has become so integrated that shoppers find relatively few T-shirts and sneakers in [Wal-Mart](#) and [Target](#) carrying a “Made in the U.S.A.” label. But globalization may be losing some of the inexorable economic power it had for much of the past quarter-century, even as it faces fresh challenges as a political ideology.

Cheap oil, the lubricant of quick, inexpensive transportation links across the world, may not return anytime soon, upsetting the logic of diffuse

global supply chains that treat geography as a footnote in the pursuit of lower wages. Rising concern about [global warming](#), the reaction against lost jobs in rich countries, worries about food safety and security, and the collapse of world trade talks in Geneva last week also signal that political and environmental concerns may make the calculus of globalization far more complex.

“If we think about the Wal-Mart model, it is incredibly fuel-intensive at every stage, and at every one of those stages we are now seeing an inflation of the costs for boats, trucks, cars,” said [Naomi Klein](#), the author of “The Shock Doctrine: The Rise of Disaster Capitalism.”

“That is necessarily leading to a rethinking of this emissions-intensive model, whether the increased interest in growing foods locally, producing locally or shopping locally, and I think that’s great.”

Many economists argue that globalization will not shift into reverse even if oil prices continue their rising trend. But many see evidence that companies looking to keep prices low will have to move some production closer to consumers. Globe-spanning supply chains — Brazilian iron ore turned into Chinese steel used to make washing machines shipped to Long Beach, Calif., and then trucked to appliance stores in Chicago — make less sense today than they did a few years ago.

To avoid having to ship all its products from abroad, the Swedish furniture manufacturer Ikea opened its first factory in the United States in May. Some electronics companies that left Mexico in recent years for the lower wages in China are now returning to Mexico, because they can lower costs by trucking their output overland to American consumers.

Neighborhood Effect

Decisions like those suggest that what some economists call a neighbourhood effect — putting factories closer to components suppliers and to consumers, to reduce transportation costs — could grow in importance if oil remains expensive. A barrel sold for \$125 on Friday, compared with lows of \$10 a decade ago.

“If prices stay at these levels, that could lead to some significant rearrangement of production, among sectors and countries,” said C. Fred Bergsten, author of “The United States and the World Economy” and director of the [Peter G. Peterson](#) Institute for International Economics, in Washington. “You could have a very significant shock to traditional consumption patterns and also some important growth effects.”

The cost of shipping a 40-foot container from Shanghai to the United States has risen to \$8,000, compared with \$3,000 early in the decade, according to a recent study of transportation costs. Big container ships, the pack mules of the 21st-century economy, have shaved their top speed by nearly 20 percent to save on fuel costs, substantially slowing shipping times.

The study, published in May by the Canadian investment bank CIBC World Markets, calculates that the recent surge in shipping costs is on average the equivalent of a 9 percent tariff on trade. “The cost of moving goods, not the cost of tariffs, is the largest barrier to global trade today,” the report concluded, and as a result “has effectively offset all the trade liberalization efforts of the last three decades.”

The spike in shipping costs comes at a moment when concern about the environmental impact of globalization is also growing. Many companies have in recent years shifted production from countries with greater energy efficiency and more rigorous standards on carbon emissions, especially in Europe, to those that are more lax, like China and India.

But if the international community fulfills its pledge to negotiate a successor to the Kyoto Protocol to combat climate change, even China and India would have to reduce the growth of their emissions, and the relative costs of production in countries that use energy inefficiently could grow.

The political landscape may also be changing. Dissatisfaction with globalization has led to the election of governments in Latin America hostile to the process. A somewhat similar reaction can be seen in the United States, where both Senators [Barack Obama](#) and [Hillary Rodham Clinton](#) promised during the Democratic primary season to “re-evaluate” the nation’s existing free trade agreements.

Last week, efforts to complete what is known as the Doha round of trade talks collapsed in acrimony, dealing a serious blow to tariff reduction. The negotiations, begun in 2001, failed after China and India battled the United States over agricultural tariffs, with the two developing countries insisting on broad rights to protect themselves against surges of food imports that could hurt their farmers.

Some critics of globalization are encouraged by those developments, which they see as a welcome check on the process. On environmentalist blogs, some are even gleefully promoting a “globalization death watch.”

Many leading economists say such predictions are probably overblown. “It would be a mistake, a misinterpretation, to think that a huge rollback or reversal of fundamental trends is under way,” said [Jeffrey D. Sachs](#), director of the Earth Institute at Columbia University. “Distance and trade costs do matter, but we are still in a globalized era.”

As economists and business executives well know, shipping costs are only one factor in determining the flow of international trade. When companies decide where to invest in a new factory or from whom to buy a product, they also take into account exchange rates, consumer confidence, labor costs, government regulations and the availability of skilled managers.

‘People Were Profligate’

What may be coming to an end are price-driven oddities like chicken and fish crossing the ocean from the Western Hemisphere to be filleted and packaged in Asia not to be consumed there, but to be shipped back across the Pacific again. “Because of low costs, people were profligate,” said Nayan Chanda, author of “Bound Together,” a history of globalization.

The industries most likely to be affected by the sharp rise in transportation costs are those producing heavy or bulky goods that are particularly expensive to ship relative to their sale price. Steel is an example. China’s steel exports to the United States are now tumbling by more than 20 percent on a year-over-year basis, their worst performance in a decade, while American steel production has been rising after years of decline.

Motors and machinery of all types, car parts, industrial presses, refrigerators, television sets and other home appliances could also be affected.

Plants in industries that require relatively less investment in infrastructure, like furniture, footwear and toys, are already showing signs of mobility as shipping costs rise.

Until recently, standard practice in the furniture industry was to ship American timber from ports like Norfolk, Baltimore and Charleston to China, where oak and cherry would be milled into sofas, beds, tables, cabinets and chairs, which were then shipped back to the United States.

But with transportation costs rising, more wood is now going to traditional domestic furniture-making centers in North Carolina and Virginia, where the industry had all but been wiped out. While the opening of the American Ikea plant, in Danville, Va., a traditional furniture-producing center hit hard by the outsourcing of production to Asia, is perhaps most emblematic of such changes, other manufacturers are also shifting some production back to the United States.

Among them is Craftmaster Furniture, a company founded in North Carolina but now Chinese-owned. And at an industry fair in April, [La-Z-Boy](#) announced a new line that will begin production in North Carolina this month.

“There’s just a handful of us left, but it has become easier for us domestic folks to compete,” said Steven Kincaid of Kincaid Furniture in Hudson, N.C., a division of La-Z-Boy.

Avocado Salad in January

Soaring transportation costs also have an impact on food, from bananas to salmon. Higher shipping rates could eventually transform some items now found in the typical middle-class pantry into luxuries and further promote the so-called local food movement popular in many American and European cities.

“This is not just about steel, but also maple syrup and avocados and blueberries at the grocery store,” shipped from places like Chile and South Africa, said Jeff Rubin, chief economist at CIBC World Markets and co-author of its recent study on transport costs and globalization. “Avocado salad in Minneapolis in January is just not going to work in this new world, because flying it in is going to make it cost as much as a rib eye.”

Global companies like [General Electric](#), [DuPont](#), [Alcoa](#) and [Procter & Gamble](#) are beginning to respond to the simultaneous increases in shipping and environmental costs with green policies meant to reduce both fuel consumption and carbon emissions. That pressure is likely to increase as both manufacturers and retailers seek ways to tighten the global supply chain.

“Being green is in their best interests not so much in making money as saving money,” said Gary Yohe, an environmental economist at [Wesleyan University](#). “Green companies are likely to be a permanent trend, as these vulnerabilities continue, but it’s going to take a long time for all this to settle down.”

In addition, the sharp increase in transportation costs has implications for the “just-in-time” system pioneered in Japan and later adopted the world over. It is a highly profitable business strategy aimed at reducing warehousing and inventory costs by arranging for raw materials and other supplies to arrive only when needed, and not before.

[Jeffrey E. Garten](#), the author of “World View: Global Strategies for the New Economy” and a former dean of the Yale School of Management, said that companies “cannot take a risk that the just-in-time system won’t function, because the whole global trading system is based on that notion.” As a result, he said, “they are going to have to have redundancies in the supply chain, like more warehousing and multiple sources of supply and even production.”

One likely outcome if transportation rates stay high, economists said, would be a strengthening of the neighborhood effect. Instead of seeking supplies wherever they can be bought most cheaply, regardless of location, and

outsourcing the assembly of products all over the world, manufacturers would instead concentrate on performing those activities as close to home as possible.

In a more regionalized trading world, economists say, China would probably end up buying more of the iron ore it needs from Australia and less from Brazil, and farming out an even greater proportion of its manufacturing work to places like Vietnam and Thailand. Similarly, Mexico's maquiladora sector, the assembly plants concentrated near its border with the United States, would become more attractive to manufacturers with an eye on the American market.

But a trend toward regionalization would not necessarily benefit the United States, economists caution. Not only has it lost some of its manufacturing base and skills over the past quarter-century, and experienced a decline in consumer confidence as part of the current slowdown, but it is also far from the economies that have become the most dynamic in the world, those of Asia.

“Despite everything, the American economy is still the biggest Rottweiler on the block,” said Jagdish N. Bhagwati, the author of “In Defense of Globalization” and a professor of economics at Columbia. “But if it’s expensive to get products from there to here, it’s also expensive to get them from here to there.”