



INSIGHTS

BY LARRY LAPIDE

Cheap Oil is Dead—Again

Once again, oil prices are starting to rise. Don't scramble to accommodate later. Plan ahead now. Here's how.

Companies have been focused on surviving the dismal economy with a diminished focus on energy efficiency. Prior to the crash, I devoted two SCMR columns to rising oil prices because I believe energy efficiency is one of the most important issues to continually address.

A year ago in my "Oil Won't Stay Cheap" column, I re-argued that the economics still portend rising oil prices over the long haul. At that time, crude oil was trading as low as \$40 per barrel after having skyrocketed to \$147 per barrel. The precipitous economic decline caused oil prices to drop drastically and mask the long-term trend. Many, however, were breathing a sigh of relief because lower oil prices could help them reduce supply chain costs at the expense of being energy-efficient.

With economies showing improvement and oil prices rising to \$70 to \$80 per barrel—almost twice the price at the time of last year's column and three to four times more than during the Era of Cheap Oil—I feel compelled to write about energy efficiency again.

Supply Chains Are Energy-Inefficient

Exhibit 1 depicts the history of "real" and "nominal" crude oil prices since 1980, an update to what I've shown in prior columns. It shows the Era of Cheap Oil going from January 1986 to the fall of 2003, in which "real" prices largely bounced around from about \$20 to \$30 per barrel. The era overlapped with the Golden Age of Supply Chain Management, during which companies integrated supply chains, and significantly reduced costs and inventories leveraging cheap oil. Supply inventories

were pushed up chains, with suppliers holding or manufacturing inventory as far away as Asia, and chains sped up to get finished goods to consumers in a "Just-in-Time" (JIT) mode. The end of Cheap Oil left us with cost- and inventory-efficient but energy-inefficient supply chains. For the most part goods traveled too far, vehicles and containers were shipped partially full, and energy-inefficient freight modes were deployed to speed up deliveries. The ensuing higher oil prices led many to reconfigure chains to squeeze oil out of them and make them more energy efficient.

Until (as can be noted in Exhibit 1) oil dropped to the \$40/barrel range and they could leverage lower prices to reduce costs during the economic crisis. That drop was brief and oil prices started back on their uphill climb because easy-to-tap oil reserves are depleting and, to quench the thirst of rising economies, oil will be needed from places more expensive to extract it from.

Focus on Transportation

Logisticians should especially focus on energy efficiency in their transportation operations. An EPA report, the 2009 *U.S. Greenhouse Gas Inventory Report: Inventory Of U.S. Greenhouse Gas Emissions And Sinks: 1990-2007*, April 2009, reported that the transportation sector is the second major source of greenhouse emissions (after electricity generation). The following quote from it attributes a significant portion of emissions as caused by freight operations:

"Transportation activities...accounted for 33 percent of CO₂ emissions from fossil fuel

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combustion in 2007. Virtually all of the energy consumed in this end-use sector came from petroleum products. Nearly 60 percent of the emissions resulted from gasoline consumption for personal vehicle use. The remaining emissions came from other transportation activities, including the combustion of diesel fuel in heavy-duty vehicles and jet fuel in aircraft."

Given the current political winds, pollution control will become another reason to start with transportation. Below are some rules-of-thumb for doing so:

- *Customer Service Programs:* Bundling delivery costs into the price of a product hides the true cost of transportation and implications for energy efficiency. Unbundling is a good way to begin to understand and track efficiency. Customer service programs should offer a discount for full container and truckload orders. In addition, customers should pay an additional fee for expedited and emergency deliveries that require the use of less-efficient transport modes, and for JIT shipments that require shipping significantly less than a full container/truckload.

- *Strategic Network Design:* Generally shortening and slowing down supply chains make them more energy-efficient. However, doing so increases finished goods inventories needed to be held close to customers and might increase in-transit inventories. Energy efficiency will require becoming less fixated on reducing inventories via inefficient freight modes, and instead using slower, more efficient modes, such as ocean rather than

air, barge rather than rail, and rail rather than truck for inbound and inter-facility shipments. Additionally, more finished goods will need to be stocked closer to customers and supply lines shortened via sourcing and manufacturing closer to customers.

- *Tactical Planning:* More accurate planning can lead to greater energy efficiency. When a plan is wrong, it often results in having to use energy-inefficient premium freight to expedite customer deliveries or to quickly re-deploy materials, components, and goods among suppliers, plants, and warehouses. Improved supply-demand planning (i.e., via a well-executed Sales and Operations Planning process) leads to more accurate plans requiring

The end of the era of Cheap Oil left us with cost- and inventory-efficient but energy-inefficient supply chains.

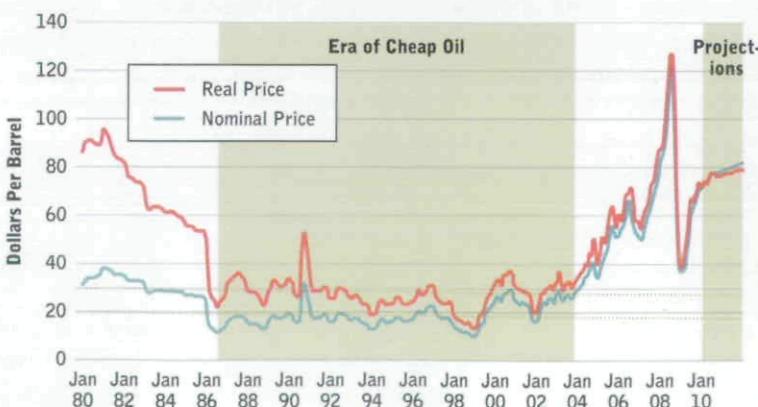
ing less intervention in responding to disruptions and unplanned events.

- *Order Promising and Fulfillment:* Many companies provide a customer order promise date based only on available supply. Extending this to a promise based also on future planned supply can improve planning accuracy (hence energy efficiency) because it helps to make the plan a reality. In addition, service window management, whereby an extended promise date is given (such as adding a certain amount of buffer time to the date), allows a company to have extra time to fulfill orders, reducing expediting as well as allowing it to consolidate orders to improve transport efficiencies.

Following these rules-of-thumb can make your transportation operations more energy-efficient. And now that Cheap Oil is history, it will also help reduce overall supply chain costs. Since the EPA has identified transport operations as a major cause of air pollution it will also make them more environmentally-friendly. However, beware the next big drop in oil prices. Don't get fooled into thinking that Cheap Oil is back. The drops are likely to be short-lived.

EXHIBIT 1

Imported Crude Oil Prices: Nominal and Real



Source: <http://www.eia.doe.gov/emeu/steo/pub/fsheets/>

Fonte: Supply Chain Management Review, v. 14, n. 2, Mar/Apr2010. [Base de Dados]. Disponível em: <<http://web.ebscohost.com>>. Acesso em: 4 ago. 2010.

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