Take charge of *surcharges*

Carriers and shippers can work together to bring about efficiencies in trucking and mitigate the cost of fuel surcharges, says Professor Chris Caplice.

IF THERE'S ANYTHING POSITIVE TO BE SAID about the economy, it's that the recession has provided a respite from the sky-high fuel costs that plagued shippers in the summer of 2007. Smart supply chain managers, however, are not allowing themselves to be lulled into a sense of complacency by lower prices. Instead, they are thinking about what actions they can take now and in the future to mitigate the effects of an inevitable return to high fuel costs.

This concern was evident at CSCMP's 2009 Annual Global Conference in Chicago, where attendees packed the room for Chris Caplice's session on fuel surcharges. In front of this audience, he discussed different approaches to fuel surcharge programs and their relationship to transportation rates.

Caplice, the executive director of the Massachusetts Institute of Technology's Center for Transportation & Logistics, has spent years studying the arcane world of surcharges as part of his broader focus on the impact of business policies on transportation rates. In a recent interview with Editor James Cooke, he discussed his surcharge research and other developments related to fuel price volatility.

What are the most common types of fuel surcharge programs in the United States today?

Fuel surcharge (FSC) programs are most commonly structured with three elements: a peg, or base, rate; an escalator; and a surcharge.

The peg rate is the minimum price for fuel, in dollars per gallon, above which the shipper pays the carrier some sort of fuel surcharge. If the price of fuel falls below this peg rate, the carrier has to subsidize the shipper. The current price of fuel [used for calculating surcharges] is typically taken at the national level, updated weekly, and posted on the U.S. Department of Energy web site. Some shippers use regional or route-specific fuel prices as well.

The escalator is the amount of change in the fuel price that is needed to trigger a surcharge payment. For example, if the escalator is [US] 5 cents per gallon, then every 5-cent increase in the price of fuel will trigger an additional surcharge payment …

Finally, the surcharge itself is the amount paid by the shipper per incremental increase. This is predominately distance-based for truckload and is typically 1 cent per mile. Some shippers use a percentage-based surcharge, where a percentage of the line-haul rate is applied … Some use a tiered fuel surcharge arrangement. In tiered programs, one fuel surcharge applies to low fuel costs and another one (usually paying less to the carriers) kicks in at a higher cost of fuel. The thought behind tiered programs is that as fuel costs increase, the carriers will become more efficient.

The most common values for a fuel surcharge program are a $1.20-per-gallon peg rate with a 55-cent escalator and a 1-cent surcharge per mile. Some shippers are experimenting with reducing the peg rate to 0, thus taking full responsibility over fuel costs.

Can you explain how a zero peg rate would work?

Under a zero peg approach, a shipper would just pay a little more in fuel surcharges and hopefully a little less in line-haul costs. Let's use the example of a shipper with a lane where he is paying, say, $1.40 per mile for the line haul and the price of fuel is, say, $3.00 per gallon. If the shipper has a $1.20 peg rate with a 6-cent escalator and a 1-cent surcharge, he would be paying a fuel surcharge of 30 cents per mile, for a total payment (line haul plus fuel surcharge) of $1.70 per mile.

Now suppose that the shipper switches to a zero peg fuel surcharge program. This would mean that the surcharge, with fuel at $3.00 per gallon, would be equal to $3.00 divided by 6 cents, or 50 cents per mile. Naturally, then, the shipper would expect the carrier to reduce its line-haul rate from $1.40 to $1.20, so that the total payment to the carrier (line haul plus FSC) would be $1.70 per mile. The carrier makes the same amount of money; it is just paid out of different buckets. In the long run, [this approach] provides the shipper a clearer view into fuel costs, which should enable better management and control of those costs.

How do fuel surcharge programs affect rates?

There are two schools of thought concerning the impact of fuel surcharges on line-haul rates. One says that they complement each other—for every 1 cent more the shipper provides the carrier in fuel surcharges, the line-haul rates will decrease by 1 cent. The other school of thought says they are totally independent, and that setting the line-haul price is done without considering the FSC program.

In some work that I have done with the consulting firm Chainalytics over the last several years, we have found that it is somewhere in the middle. Generally … shippers paying more in fuel surcharges tend to have slightly lower line-haul rates.

However, this is not uniformly true across all companies or lanes within a firm's network. The fuel surcharge program affects lanes differently, mainly based on the origin and destination characteristics. FSC programs only pay for loaded miles, so the empty miles needed to get [a truck] to the origin from the previous load and from the destination to the next load are not covered … The carriers, then, need to build not only the expected empty miles into the line-haul price but also an estimate of what the fuel costs will be. My sense is that shippers cover about 80 percent of the fuel costs that carriers spend.

NAME: Chris Caplice
TITLE: Executive Director, Center for Transportation & Logistics
ORGANIZATION: Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts, USA

- BS in Civil Engineering, Virginia Military Institute
- MS in Civil Engineering, University of Texas at Austin
- Ph.D. in Transportation and Logistics Systems, Massachusetts Institute of Technology
- Dissertation, "An Optimization Based Bidding Process: A New Framework for Shipper-Carrier Relationships," won CSCMP (then Council of Logistics Management) 1997 Doctoral Dissertation Award
- Publications: *Journal of Business Logistics, International Journal of Logistics Management,* and *Transportation Research*
- Industry experience: senior management positions in supply chain consulting, product development, and professional services at several companies, including Chainalytics LLC, Logistics.com, and SABRE
- Five years in the U.S. Army Corps of Engineers, achieving rank of Captain

Should shippers form risk-sharing agreements with their carriers as another way to deal with volatile fuel prices?

Technically, fuel surcharge programs *are* risk-sharing contracts. When most companies established them in the mid- to late-1990s, the price of fuel would actually fluctuate around the peg rate. This explains why most shippers have a peg rate in the range of $1.10 to $1.30 per gallon—it is the rough range of fuel costs during that time period. Now that fuel is in the range of $2.70 to over $3.00 a gallon, the probability of [the price] dropping to below $1.20 a gallon is very, very slight.

I think that FSC programs are absolutely critical for shippers and carriers. Ever since deregulation, shippers have enjoyed a very competitive truckload market, which produced "cost-plus" pricing. Because shippers also like stability in their costs, they have demanded—and gotten—long-term line-haul rate guarantees, usually for one to two years. There is simply no way a highly competitive market with cost-plus pricing can set long-term rates that are independent of fuel when that can be your major cost. Carriers have to pass on at least a portion of their fuel costs to shippers, if only to have some stability in their line-haul rates.

You've suggested that shippers leverage sustainability programs as another way to tame fuel sur-

charges. How would that work?
It is a lucky coincidence that efficiency and environmental sustainability are very tightly correlated. Decreasing empty miles, reducing the number of total truckloads, and increasing trailer loading utilization all lead to lower costs, less fuel used, and lower overall environmental impact.

Most shippers try to use carriers that are SmartWay certified; this is a trend that will only increase. Some shippers *only* use SmartWay carriers. I think the objective for all of this is to reduce the amount of fuel used, and not necessarily to reduce the amount of fuel surcharge paid.

[Editor's note: The SmartWay program is a U.S. government initiative, overseen by the Environmental Protection Agency, in which trucking companies take steps to improve fuel efficiency and decrease pollution.]

What other ways can carriers and shippers work together to contain fuel surcharges?
The real issue is to work to improve efficiency. This can be improved in a number of different ways. Better scheduling will reduce dwell time at the loading dock. More information on pending loads could lead to better trip chaining, which will reduce empty miles driven. There are also some firms that are helping carriers invest in certain technologies that improve fuel efficiency.

I am a proponent of the zero peg rate FSC programs that some shippers are implementing. This means that the shipper has pulled virtually all of the fuel costs out of their linehaul rates. They couple the zero peg rate to a planned-out, scheduled increase in the escalator. This provides an incentive for carriers to increase their fuel efficiency … The escalator is essentially a proxy for the fuel efficiency of the carrier's fleet: an escalator of 5 cents per gallon implies 5-miles-per-gallon fuel efficiency, and a 6-cents-per-gallon escalator implies 6 miles per gallon, and so on.

Any idea where fuel prices are headed this year?
I am absolutely positive that fuel prices will go up—and then down. While the overall direction will most likely trend up over the next several years, the only sure thing is that price volatility will increase.

In the ten years from 1994 to 2004, the weekly average change in Number 2 Diesel was about plus or minus 1 cent. Over the last five years, from 2004 to the end of 2009, this increased to almost plus or minus 5 cents per week! I see [fuel price volatility] only growing. △