

10-1-2011

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Recommended Citation

Defee, C. Clifford, Hanna, Joe B., & Overstreet, Robert. (2011). LTL pricing: Looking back to the future. *Journal of Transportation Management*, 22(2), 45-58. doi: 10.22237/jotm/1317427440

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LTL PRICING: LOOKING BACK TO THE FUTURE

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ABSTRACT

Numerous LTL carriers struggled during the recent recession as customers demanded lower prices. This study is designed to qualitatively evaluate the data gathered from three industry segments regarding LTL pricing. Researchers used semi-structured interviews to conduct an in-depth investigation with over two dozen industry experts who represented shippers, carriers, and 3PLs. Interview transcripts were analyzed using a grounded theory coding technique. Five major themes emerged from the interview transcripts. These themes are used to describe possible future adjustments to industry pricing structure.

INTRODUCTION

During the late 1970's, legislators and regulators began to reexamine the impact that regulation was having on the motor carrier industry. Many experts felt that the marketplace of the 1970's was far different from the marketplace of the 1930's which initially led to transportation regulation. By the late 1970's, policy and industry experts asserted that regulation was no longer necessary and that the costs of continued regulation dramatically outweighed any benefits that might be obtained from continuing to regulate the motor carrier marketplace (Harper, 1982; Pickett and Kletke, 1984; Pustay, 1985). Additionally, it was determined that some operating inefficiencies and anti-competitive pricing practices were taking place (Chow, 1980).

On July 1, 1980, the Motor Carrier Act of 1980 was enacted, exhibiting a shift in government policy toward a free marketplace, effectively ending forty-five years of federal regulation of the industry. Deregulation altered the landscape of the industry in many ways as carriers attempted to adjust to the new operating environment. One major challenge carriers faced was the pricing of their services. In a regulated environment, individual carriers were not responsible for establishing prices for specific services. Along with deregulation came the freedom and responsibility for carriers to

establish their own price for a specific service. Pricing in a free market environment was critical to carrier survival, but it was also uncharted territory.

U.S. motor carriers traditionally referred to the National Motor Freight Classification (NMFC) system as the basis for classifying freight. This classification system, along with an extensive tariff system developed during the regulated era, were still being used as guides after deregulation to help carriers establish transportation rates. Over time, the "base rates" reflected in the legacy pricing systems began to portray a less accurate depiction of motor carrier pricing reality. As a result, carriers began to *discount* the base rates of the old system to more accurately reflect the actual price of a carrier's services.

Now more than 30 years removed from deregulation many feel the base rates, while still being used extensively by the U.S. motor carrier industry, have become almost meaningless. Experts point to the common practice of deeply discounting base rates as a primary indication of the gross inaccuracy of the base rates currently being used to price motor carrier transportation services. Many of these same individuals have also called for a complete motor carrier pricing system overhaul.

We examine the current state of LTL pricing and draw conclusions on future directions based on a series of expert interviews and a qualitative data analysis. The paper is structured as follows. First, relevant transportation pricing literature is reviewed. Second, we describe the methodology utilized in this research. Next, key findings are summarized and major themes emerging from the analysis are highlighted. We then comment on the future of LTL pricing and suggest options available to those pushing for change in industry pricing structure.

LITERATURE REVIEW

Despite the critical role of transportation, the pricing of transportation services has received little attention (Topaloglu and Powell, 2007; Toptal and Bingöl, 2011). Relatively few articles have focused on the pricing of LTL service (Özkaya et al., 2010). Ying and Keeler (1991) studied the effects of deregulation on motor carrier freight rates and found competitive pressures following deregulation had led to increased productivity and reduced rates subject to extensive discounting. Baker (1991) found that routine discounting, sometimes as high as 85%, had made base rates meaningless and that the only meaningful figure was the effective rate (base rate less discounts). Smith (1993) acknowledged the complexity of setting prices in an industry where the base rate is constantly changing and discounting is so important to a firm's competitive advantage. Carter, Ferrin, and Carter (1995) found evidence that purchase order anomalies were the result of LTL pricing strategies focused exclusively on highly competitive LTL shipments and that this tended to lead to overpricing the less common truckload shipments handled by the LTL carrier.

Richardson (1998) reported on the complexity of the LTL pricing system and the call by many industry leaders to move out of the quagmire of regulated thinking. The need for a change to be accepted across the board was highlighted by the problem of shippers cherry picking rates. Harrington (1998) provided shippers with a

primer for understanding many of the factors of a carrier's rate structure and recommended that shippers take those factors into account in order to negotiate the best price for services. The active process of negotiating LTL prices was also described by other researchers (e.g., Vilain and Wolfrom, 2000; Caplice and Sheffi, 2003; Clair and Fox, 2004; L. D. Smith, Campbell, and Mundy, 2007).

More recent LTL studies have tried to examine potential alternate pricing methods. Lin, Lin, and Young (2009) developed a mathematical model to determine the optimal price for time-definite LTL freight services in Taiwan using data from one of the largest LTL carriers in Taiwan. Özkaya et al. (2010) used regression-based methodology to estimate LTL rates based on three months of data from 2005. Several articles have offered analytical models to describe motor carrier pricing (e.g., Figliozzi, Mahmassani, and Jaillet, 2007; Topaloglu and Powell, 2007; Zhou and Lee, 2009; Toptal and Bingöl, 2011).

This study follows up two, somewhat dated research reports that previously examined LTL motor carrier pricing practices. The first study titled "Pricing for the Nineties: An Examination of LTL Motor Carrier Pricing Practices and Suggestions for Improvement by Shipper Customers" was conducted in 1993 by the University of Tennessee's Center for Logistics Research. A subsequent study examining LTL motor carrier pricing was conducted in 2002 by Norbridge, Incorporated; a management consulting company headquartered in Deerfield, Illinois. The current study is designed to provide the industry with up to date insights into the current state and future directions of LTL motor carrier pricing.

METHODOLOGY

Qualitative methods are being used more frequently in contemporary supply chain management research (Mello and Flint, 2009).

Qualitative methods are quite useful when gaining understanding of the phenomenon of interest is a primary research goal, or the phenomenon is relatively unstudied as is the case with our investigation of LTL industry pricing practices (Halldorsson and Aastrup, 2003; Suddaby, 2006). We combine semi-structured interviewing and the constant comparison process of grounded theory data analysis, similar to the approach outlined by Randall, Defee and Brady (2010).

Sample and Unit of Analysis

The sample was developed from three distinct groupings of firms that participate in the LTL pricing process: LTL carriers, shippers (individual customers), and 3PLs (aggregators of multiple customers under a single freight contract). Approximately 30 companies were contacted and 25 companies agreed to participate. The sample provided good coverage from each of the three groups. Participating companies are listed in Table 1.

We used a judgmental sampling method (Fetterman, 1989) by seeking out the individual within each organization best equipped to address the topic of LTL pricing. Individual participants were identified within each organization by requesting an interview with one manager or executive responsible for making

decisions associated with LTL pricing. In carrier organizations this was often a Vice President of Marketing, Pricing, or Revenue Management. In shipper and 3PL organizations the interviewee was typically a Director of Transportation or Procurement. In each case participants demonstrated intimate and exacting knowledge of LTL industry practices and specifically the pricing/rating process.

A total of 25 interviews were completed with an average duration of 28 minutes and a standard deviation of 12 minutes. All interviews were recorded and transcribed for later analysis. In all, the single-spaced transcripts totaled approximately 200 pages. The unit of analysis for this study were the discrete statements regarding LTL pricing (Sherif, Zmud, and Browne, 2006).

Analytical Process

Each transcribed interview was initially reviewed for quality prior to initiating qualitative analysis. Grounded theorists argue that sampling is complete when saturation of the identified categories (i.e., the point of diminishing returns) has taken place, which as explained by Charmaz (2006), supersedes sample size. Premkumar (2003) points out that despite the cost and time involved, the interactive aspect of telephone interviews makes

**TABLE 1
PARTICIPATING COMPANIES BY GROUP**

Carriers	3PLs	Shippers
AAA Cooper Transport	Cerasis	Central Steel and Wire
Averitt Express	CH Robinson	Deere & Company
Central Freight Lines	England Logistics	Mettler-Toledo
Estes Express	Menlo Worldwide Logistics	PACCAR Manufacturing
FedEx Services	TransPlace	Peerless Pump
New Penn Motor Express	Unyson Logistics	Pepp Boys
Southeastern Freight Lines	USTC Live Logistics	Saint-Gobain Abrasives
UPS Freight	YRC Logistics	Toro Company
		Wix Filtration

them very effective in attaining reliable data. In this case the final 1-2 interviews in each category provided limited or no new information suggesting saturation had been achieved (Cho and Trent, 2006).

The constant comparison technique (Glaser and Strauss, 1967; Glaser, 1978; Charmaz, 2006) was used to code, memo, categorize, and recode the data. Coding is the method by which the data are fractured, analyzed, and grouped into categories and ultimately into themes (Scholten, 2009). MAXQDA, a commercially available software program, was used to streamline and organize analysis of the transcripts. This software uses data management techniques such as multi-color coding, memo creating, and code segment retrieval (Humble, 2009). Counts provided by the software represent the frequency for each of the themes and sub-categories (Sherif et al., 2006).

The first one-third of transcripts were divided among two of the researchers and each researcher independently coded their portion of the transcripts. Once this task was completed, the research team met to review and discuss the individual coding results. Common terminology was agreed upon in cases where it was discovered that slightly different codes had been used to identify similar concepts. The research team then completed coding the remaining transcripts, frequently discussing new codes and recoding as necessary.

Throughout this process, codes were assigned to categories based on similarity of intent. Ultimately these categories were assigned to higher-level categories which represent the major themes emerging from the interview data (Lincoln and Guba, 1985). This category assignment process was performed individually, but routinely evaluated, adjusted, and confirmed through frequent meetings among the research team.

The trustworthiness of the research was assessed using the technique described by Flint and

colleagues (2002). Internal (e.g., confirmation of results by multiple research team members) and external (e.g., member checks conducted with a sub-set of interviewees and non-sample business professionals) constituents were utilized to assess the dimensions of credibility, transferability, dependability, confirmability, integrity, and fit (see Table 2). The member checking activity was conducted with three carrier representatives, three executives of an LTL industry rating agency, and through feedback from two presentations of preliminary results at two national LTL conferences. The feedback provided was extremely helpful in shaping the initial interpretive analysis and later in validating our conclusions.

SUMMARY OF FINDINGS

The interpretive analysis of interviews with carriers, shippers, and 3PLs resulted in five emergent themes. Each of these themes is outlined in this section. As Table 3 shows the themes developed cut across all industry participants. The categories listed in the table demonstrate a breadth of topics that coalesce to form each theme. In some cases the categories represent essentially opposite views (e.g., re-indexing is needed; re-indexing is not needed). This demonstrates one of the inherent issues in the industry summarized in the last theme – although there is wide support that change is needed, there is little agreement on the best approach for achieving that change. We offer testable propositions for each theme.

Theme 1: Base Rates Should be Re-Indexed

A base rate is simply the standard rate offered for a carrier to move a given shipment from an origin to a destination. For example, the base rate for a carrier to move a 750 lb. pallet of auto parts from Macon, GA to Orlando, FL may be \$250. However, the rating basis used throughout the LTL industry has very little relation to current carrier operating costs and service options available through existing networks.

TABLE 2
EVALUATION OF TRUSTWORTHINESS

Criteria	Method used to address
Credibility Extent to which the results appear to be acceptable representations of the data	Three research team members provided input during data analysis and interpretation
Transferability Extent to which the findings from one study in one context will apply to other contexts	Triangulation across methods found common categories in content analysis and interviews
Dependability Extent to which the findings are unique to time and place; the stability or consistency of explanations	Member checking confirmed category theme development
Confirmability Extent to which interpretations are the result of the participants and the phenomenon as opposed to researcher biases	Saturation achieved within each of the three groups present in the sample
Integrity Extent to which interpretations are influenced by misinformation or evasions by participants	Member checking confirmed category theme development
Fit Extent to which findings fit with substantive area under investigation	Member checking interviewees were not provided an explanation of findings prior to interview

Notes: Trustworthiness definitions adapted from Flint et al. (2002).

Most rates used today were actually developed 20-30 years ago or longer, oftentimes during the regulated period, and have been only moderately adjusted over the years. The rates are frequently discounted 80% or more to establish the actual prices charged to shippers.

Concern that the rating basis is meaningless is widespread as the bulk of comments tended to support the need for re-indexing. Participant comments from each of the groups demonstrate this is a generally held belief.

- *"We know we're going to have to update [the base rates] shortly, because it's getting out of whack"* (Shipper).

- *"Is the base rate completely arbitrary? Yeah, it's ridiculous"* (3PL).
- *"If the discounts are ridiculous, they're only slightly less ridiculous than the base rates they're off of"* (Carrier).

This belief is not new to the industry. A study from 20 years ago (Baker, 1991), identified similar unease with the rating-pricing process. Thus, not much has changed in the industry in recent years. Although a number of participants suggested the market is ready for the re-indexing of base rates, many comments highlighted the complexity of making such a change.

- *"I don't think the marketplace is ready. I think it would take years to get there"* (3PL).

**TABLE 3
SUMMARY OF THEME DEVELOPMENT**

Theme	Category	Shipper	3PL	Carrier
Base rates should be re-indexed	Re-indexing is needed	X	X	
	Re-indexing is not needed	X		X
	Re-indexing will be difficult to accomplish		X	
	The market is ready for re-indexing	X	X	
	The market is not ready for re-indexing		X	X
Wide use of benchmark pricing	Used for base rates	X	X	X
	Industry standard	X	X	X
	Compare across carriers	X	X	X
	Used to set freight rates charged to customers	X	X	
Freight rates are based on classification rules	NMFC classification is entrenched		X	X
	NMFC classification is complex confusing	X		
	NMFC classification is manipulated		X	
	NMFC classification is moving to FAK			X
	FAK simplifies freight rating	X	X	
	FAK provides deeper discounts	X		
Density / cube-based pricing	Future direction (near term)	X	X	
	Will add cost for shippers	X	X	X
	Will add cost for carriers		X	X
	Carriers have already created this rate structure		X	X
	Surprised requests have not occurred			X
Industry change leadership	Carriers should lead		X	X
	Shippers should lead		X	X
	"Neutral" party should lead (i.e., SMC ³)		X	X
	Shippers and carriers in concert		X	
	Shippers are the barrier to change			X

- *"I think the carriers are definitely ready for it. I don't think that the shippers are [ready]" (3PL).*
- *"It may be cost prohibitive given the ROI of most motor carriers today and how the industry is structured around it" (Shipper).*
- *"If the heavy discounting activity disappeared, obviously we wouldn't be able to negotiate better pricing" (Shipper).*

The last comment points out a basic fear shared by each of the groups. LTL service is viewed as a commodity by both carriers and shippers. Although service levels and damage vary across carriers, shippers are extremely price conscious in making the LTL freight purchase decision. If re-indexing were to occur on a piecemeal basis, many individual carriers believe they may be seen as not being price competitive, at least until customers became educated on how their revised rate-price structure compares to the established structure. Alternatively, if re-indexing were to be rolled out simultaneously by all carriers, the carriers

that perceive themselves as weaker believe they would be at a disadvantage. Quite simply the motivation to change base rates has not been great enough to overcome the perceived risk of making such a change.

The entrenched nature of the base rate-pricing structure and lack of movement toward establishing new base rates over the past 20 years suggests the industry is at an impasse on this issue. The interview comments and our review of other studies touching upon the topic lead us to believe the industry will not find a way to re-set base rates in the near future despite the broadly held belief this is desirable.

Theme 2: Benchmark Pricing

The concept of benchmarking to help manage a business by assessing your position relative to others in the marketplace is relatively common. Benchmark pricing tools – typically software containing base rates for all origin-destination combinations – are widely used by both buyers and sellers attempting to enhance their understanding of LTL motor carrier pricing practices. Several commercially available benchmarking tools are available to aid current and prospective customers faced with assessing LTL prices.

The use of benchmarking is valuable to many in the LTL market because of the unique pricing practices currently used in the industry. With many different sources available to establish a base LTL rate and many different discounts off of the various base rates, it is extremely difficult to accurately compare the actual price for a particular origin to destination combination. Use of a benchmarking process helps to standardize the pricing process.

Shippers frequently request that new LTL transportation bids be based off of a specified tariff or commercially available LTL base rate benchmark tool such as SMC3's CzarLite. This allows for some standardization of the pricing process, ultimately enhancing the ability of the

shipper to effectively evaluate carrier responses to their request for proposal (RFP).

- *“Use of a benchmarking tool allows for an ‘apples to apples’ comparison when we are evaluating different bids from potential providers of LTL transportation services” (Shipper).*
- *“Some shippers accept quotes based on our internal tariff base rates while others require quotes based on a different rate base source like CzarLite. We know our costs of providing specific services so we can quote based off of any base rate requested” (Carrier).*

Many participants conceded that benchmarking is a valuable tool, especially in an industry with a unique pricing system. However, others indicated they use caution when examining and interpreting LTL pricing data obtained through a benchmarking process due to potentially significant limitations. For example, several interviewees indicated that any current LTL pricing benchmark must be viewed cautiously due to the complexity of current LTL pricing practices.

- *“There are a number of base rate sources that can be used to help benchmark LTL motor carrier prices. Some of the benchmark sources can vary substantially, creating ambiguity in the results of the benchmarking process” (3PL).*
- *Benchmarking can be a valuable tool when trying to establish LTL rates and we use it regularly as part of our pricing process. However, like any other method, you have to be cognizant that benchmarking has its limitations” (Shipper).*

Benchmark pricing tools are widely used and generally understood by the three key groups of market participants addressed in this study. The majority of representatives from each of the

three groups generally agreed that undertaking some form of benchmarking provides a value to their business and enhances the overall industry. While all three groups indicated benchmarking was a common practice, shippers and 3PLs tended to use benchmark pricing practices primarily for establishing standard base rates and for comparison purposes. Alternatively, carriers appear to be adaptable to quoting services using a specific requested base rate but they appear to use benchmark pricing primarily to monitor industry pricing practices and processes.

Theme 3: Classification Rules

Today's LTL motor carrier pricing practices are unique from many other industries as a result of the practices established during the regulated period. Prior to deregulation in 1980, LTL motor carrier freight rates were determined by use of a freight classification system such as the NMFC. The NMFC system attempted to identify relatively homogeneous types of freight and group them into specific freight classifications. Once freight was categorized into the appropriate classification, an appropriate base rate could be assigned to each class of freight.

Once the industry was deregulated, companies were free to exercise business judgment and began to adjust the prices charged for their services. While prices began to change, carriers continued to use the NMFC system as the source for commodity classification because it was so deeply entrenched in the industry. Then, in order to adjust prices in the new era of competition, carriers began to issue discounts off of the published base rates for the various classifications of freight. As carriers expanded their knowledge and understanding of the costs of providing services, they continued to adjust their prices by issuing deep discounts off of the base rates. Over time, the base rates associated with various commodity classifications became less accurate and therefore less meaningful to industry participants. Despite the erosion of its

usefulness, use of the NMFC system remains a key part of LTL motor carrier pricing to this day.

- *"Today the base rates that stem from the NMFC's commodity classification process are almost totally meaningless because they do not accurately reflect the price you will pay for LTL motor carriage"* (Shipper).
- *"Over time, the NMFC system's impact on freight categorization has contributed to an erosion in the accuracy of base rates to the point where the rates are no longer at all reflective of the costs associated with providing the transportation service"* (Carrier).
- *"Today's LTL pricing system is unnecessarily confusing and overly complex. Our NMFC based system is not congruent with the density based pricing systems used throughout most of the rest of the world"* (3PL).

While deeply entrenched, the NMFC system is not always extremely useful for determining LTL motor carrier prices. Disagreements over identifying the appropriate classification for a particular type of freight are frequent while the practice and severity of discounts off of rates based on the NMFC freight categorization system has continued to grow. As the NMFC has become less reliable as a viable predictor of commodity categories and, ultimately the costs of transporting a particular type of freight or servicing a particular origin-destination combination, carriers have begun to look for ways to simplify the pricing process. Many carriers responded by starting to use a Freight-All-Kinds (FAK) rate which reduced or eliminated the importance of classifying different types of freight and reduced the need to use the NMFC system.

- *"Continued use of an antiquated and outdated classification system (NMFC) only serves to create*

confusion in the marketplace. While FAK rates have reduced the confusion associated with freight classifications, FAK's are really just another way to offer a discount off of the NMFC's largely meaningless rates" (Carrier).

- *"After 30 years in a deregulated environment, we have adapted to the continued use of the NMFC system and have adapted by using deep discounts off of base rates. The system can be confusing and burdensome to those not familiar with the system, and many feel it is time for change."* (Shipper).
- *"Because the NMFC is somewhat complicated, most customers prefer to pursue an FAK based rate."* (3PL).

The NMFC system is an artifact from the regulated era of motor carriers. While deregulation occurred over 30 years ago, the NMFC system remains in place and continues to play a key role in LTL motor carrier freight categorization and pricing. While significant challenges exist with the use of this system for LTL pricing, the NMFC is so deeply entrenched in the industry that it is likely to continue to play a significant role in LTL motor carrier categorization and pricing processes for the foreseeable future.

Theme 4: Density-based Pricing

Pricing freight on the basis of density, also called cube-based pricing, develops from the idea that the price for transportation services is determined by the weight and space used by the freight being shipped. Density-based pricing is essentially the method major package carriers like FedEx and UPS use to rate package shipments in the U.S. and elsewhere. This form of pricing is widely used with LTL freight outside the U.S., such as in Canada, but has not gained acceptance in the U.S.

Many of the shippers and 3PL study participants believe future LTL pricing will move to a density model. The timing of this transition is unclear with most participants describing the shift to density pricing taking place "in the future", although the majority of statements refereeing to timeframe anticipate a change may occur in the relatively near future (5 years or less). Although customers believe density pricing is on the horizon, carriers consistently downplayed the option. Summing up the broadly-held attitude of carriers, one carrier executive said, "Right now the industry is not ready for cube-based pricing." Nonetheless, customer opinion reflects their interest in this alternative pricing model.

- *"There's got to be a better way to identify the freight and cube pricing is to me a good way. It's a better way than the NMFC pricing we currently have to follow"* (Shipper).
- *"A density tariff definitely will be part of what everybody uses here in the near future"* (3PL).
- *"It's going to take a while, but I think cube is going to take over"* (Shipper).
- *"Everything is moving to density-based items. I know that there are several carriers that already have density-based tariffs waiting in the wings"* (3PL).

Despite customer enthusiasm for a density-based model, respondents pointed to many obstacles that must be overcome before a density model could be implemented. Chief among these issues are concerns over the cost of implementing and operating a density pricing solution for both shippers and carriers. The cost issue consists primarily of concern over the additional time required to capture freight dimensions on the dock and the cost of acquiring the technology needed to determine load proportions.

- *"You'd have to measure each piece of freight...you really don't have the time in a cross-dock environment to stop and measure each shipment"* (Carrier).
- *"The cost involved is significant to change the way that [carriers] operate, change the way that they rate, and to change their internal structures"* (3PL).
- *"The [pallet scanning] technology is expensive and it's still too slow for us to maintain the operational service levels we need"* (Carrier).

Although all three groups raised cost concerns, many shippers may be in a position to accommodate a shift to density driven pricing:

- *"We don't ship anything that we don't measure and weigh. Nothing leaves this facility without a weight and dimensions"* (Shipper).
- *"There's not going to be a cost for me [to switch to a density-based rating system]. We're doing that already"* (Shipper).

Density pricing is generally understood by all three groups and there appears to be support for this method of pricing from many shippers and 3PLs at least. However, the industry does not currently have an organization or a group committed to leading the change effort. As technology improves in the next few years, we believe the cost of capturing dimensional data will drop to a point where that particular barrier will be greatly reduced.

Theme 5: Industry Change Leadership

Many agree that the current LTL pricing system is confusing, inaccurate, outdated, antiquated, and in need of revision or replacement. But what do we change to and who leads the charge to the pricing promised land? It is clear any significant change to current LTL motor carrier

pricing practices will require leadership. What is less clear is who should lead the change process.

- *"Carriers must lead the change process since they are the entities charging the price for their services." Those who sell transportation services are in the best position to change the pricing mechanisms and buyers will respond accordingly"* (Shipper).
- *"It's going to take some large shippers to take that lead, because from a carrier standpoint, we're not ready to lead that and put in the cost of implementing something of that nature until it's being asked for."* (Carrier).
- *"We are in the best position to change the pricing process and will need to drive any reengineering to the current pricing process"* (Carrier).
- *"I think you could look at FedEx Freight and UPS Freight as taking the lead and for a couple reasons. One, they've got deeper pockets than anyone else does to invest in that research, and then secondly, they already have the knowledge of how they price that through the small package environment."* (Carrier).
- *"An industry consortium made up of all the major players and led by an independent entity like a professional organization would allow everyone to design a system that would be superior to the current system and hopefully mutually beneficial to all of the players"* (3PL).

While general agreement seems to exist that some type of change to the current LTL pricing system is necessary, no consensus was evident

regarding the leadership needed to push such a sweeping initiative forward. Many participants expressed an opinion on the leadership question, and while no clear support for a specific leader is found in the data, carriers as a group were the most frequently mentioned. However, the potential leader's suggestions covered many options.

CONCLUSION

The nature of pricing in the LTL industry is unusual in that it hasn't evolved in any meaningful way during the three decades since deregulation occurred. The situation is highly unusual given the problems most study participants described with the current system, the overwhelming support for change to a different system, and the fact that studies from more than 20 years ago reported a similar dislike of the status quo at that time (e.g., Baker, 1991; Ying and Keeler, 1991). Clearly the lack of strong leadership needed to drive major change forward is lacking in the industry.

Challenges to any change initiative exist for the industry. Re-indexing, elimination of NMFC codes and density-based pricing are each alternatives that could be pursued independently or in combination. We believe the density option may present the best option for moving forward as most countries outside the U.S. already use some form of density pricing for LTL transportation. Further, the package transportation business is already based on a density pricing structure worldwide and two of the major players (FedEx and UPS) are based in the U.S.

Why hasn't the industry moved beyond a pricing model rooted in the regulated era? One reason is fear of renewed government intervention. Many of the industry insiders we interviewed expressed concern that any type of collaborative industry consortium aimed at bringing participants together to examine possible alternatives to the current pricing mechanism would be improperly perceived as collusion.

Given that the history of motor carriage has a strong regulated component and carriers are now enjoying the benefits of operating in a deregulated environment, many industry insiders are hesitant to do anything that would be perceived as a violation of anti-trust laws or any type of behavior considered to be anti-competitive in nature. Overcoming this fear may have to wait on the retirement of this generation of LTL leaders that retain memories of the deregulation experience. Another risk constraining the industry is concern that being an early adopter of any new pricing strategy could backfire. Many leaders see such a change as a "bet the company" strategy, and as such, a risk not worth taking.

We believe the industry will begin to move toward a density-based pricing model by the end of this decade. But, a change agent is needed to lead the way. We anticipate this change agent may emerge in one or a combination of the following three forms.

- Government policy. A major pricing revolution in the motor carrier industry may require government intervention. This would most likely come in a couple of ways. First, it could come in the form of a government assurance and accompanied by guidelines that an industry collaboration dealing with the pricing topic, if handled properly, would not cause concerns about anti-competitive behavior. Government involvement could also come in the form of support and direction from an already existing transportation regulatory body since carriers regularly have to deal with various government entities focused on motor carriers.
- Industry consortium. Many interviewees we spoke with indicated a desire to have an industry consortium of some type lead the

pricing revolution. Many felt that a variety of industry constituent groups (e.g., carriers, shippers, 3PLs and others) should have input into the evolutionary process for motor carrier pricing. It was suggested by several study participants that professional organizations serving the motor carrier and shipper industries could play a vital role in developing and managing a broad consortium of industry participants from various constituent groups.

- A powerful transportation firm. Other participants indicated a large organization perceived to be a leader in the industry could drive pricing change efforts. Several individuals who indicated a large industry leader must serve as a change agent felt it would require new pricing behavior from a large transportation provider to alter the pricing landscape. The general belief is that a large transportation provider would have the clout to change the pricing mechanism for the industry and have other industry participants follow.

While ten years may appear to be a long time to wait in a business context, the basics of LTL pricing have not changed in the three decades following deregulation. This is due in part to fear of government intervention – although few of the “old timers” that worked in the industry when it was regulated remain, the industry has a long memory and many of the participants mentioned a concern that government action could result if any changes were deemed to be anti-competitive or monopolistic. Beyond the fear of government involvement, we believe it will still take several years to work out the leadership challenge.

Qualitative research can provide deeper understanding of a subject and establish a direction for future investigations into an area of

interest. We believe the qualitative approach used in this study has shed new light on the under-explored topic of LTL pricing. All study findings are preliminary, and certainly our conclusions are tentative and require follow-up using other methods and larger samples before they should be generalized to any extent. We hope the analysis offered, while perhaps not immediately testable, can serve to drive further research in this area and lead to research that revisits these topics in a few years.

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