

Research Results



An Analysis of the Operational Costs of Trucking: 2011 Update

The Problem

In late 2008, ATRI published *An Analysis of the Operational Costs of Trucking* in an effort to provide more accurate average cost data for motor carrier operations. Although several previous studies had conducted analyses of the more nebulous “value of travel time,” very few had accurately calculated the direct costs of trucking operations. Consequently, ATRI undertook research to document and quantify motor carriers’ key marginal costs, stratified by fleet size, sector and region of the country. After more than 1,000 requests for the original report, ATRI updated the 2008 publication based on 2009 and first quarter (Q1) 2010 data.



Research Approach

In order to update the findings from the 2008 ATRI *Operational Costs of Trucking* study, this research initiative identified 2009 and Q1 2010 motor carrier costs derived directly from fleet operations. The resulting dataset could then be used by motor carriers as a high-level benchmarking tool and by government agencies for infrastructure improvement analyses.

Methodology

This research utilized an updated version of the survey that was previously administered in 2008. The survey, which was based on common industry metrics, was beta-tested with several motor carriers. Respondents included truckload (TL), less-than-truckload (LTL) and specialized carriers of various sizes that operated in different regions of the country. Survey responses were aggregated and analyzed.

Based on feedback from the 2008 study, ATRI revised its per-truck speed calculation methodology to better reflect the range of speeds at which trucks operate. ATRI also updated its methodology to weight survey responses to reflect the national average for-hire sector breakouts.

To reflect these methodological changes and allow for year-over-year comparisons, 2008, 2009 and Q1 2010 cost per mile (CPM) and cost per hour (CPH) figures included in the report are based on the revised methodology and are not directly comparable to the previous figures presented in the *Operational Costs of Trucking* report published in 2008.

Findings

The average marginal CPM was \$1.45 in 2009 and \$1.49 in Q1 2010 for the for-hire segment of the trucking industry. These figures were lower than the average marginal CPM of \$1.65 found in the revised 2008 operational cost analysis.

Average Marginal Costs per Mile, 2008, 2009, Q1 2010

Motor Carrier Marginal Expenses	2008	2009	Q1 2010
<i>Vehicle-based</i>			
Fuel & Oil Costs	\$0.633	\$0.405	\$0.465
Truck/Trailer Lease or Purchase Payments	\$0.213	\$0.257	\$0.235
Repair & Maintenance	\$0.103	\$0.123	\$0.120
Truck Insurance Premiums	\$0.055	\$0.054	\$0.052
Permits and Licenses	\$0.016	\$0.029	\$0.023
Tires	\$0.030	\$0.029	\$0.026
Tolls	\$0.024	\$0.024	\$0.024
<i>Driver-based</i>			
Driver Wages	\$0.435	\$0.403	\$0.404
Driver Benefits	\$0.144	\$0.128	\$0.142
TOTAL†	\$1.653	\$1.451	\$1.491

These costs can then be translated from per-mile calculations to hourly figures, using an empirically-derived average industry operational speed of 39.98 miles per hour. The total average industry CPH was \$59.61 in Q1 2010, which was higher than the \$58.00 found in 2009, but below the newly revised \$66.07 found in 2008.

Average Marginal Costs per Hour, 2008, 2009, Q1 2010

Motor Carrier Marginal Expenses	2008	2009	Q1 2010
<i>Vehicle-based</i>			
Fuel & Oil Costs	\$25.30	\$16.17	\$18.59
Truck/Trailer Lease or Purchase Payments	\$8.52	\$10.28	\$9.39
Repair & Maintenance	\$4.11	\$4.90	\$4.81
Truck Insurance Premiums	\$2.22	\$2.15	\$2.06
Permits and Licenses	\$0.62	\$1.15	\$0.92
Tires	\$1.20	\$1.14	\$1.06
Tolls	\$0.95	\$0.98	\$0.95
<i>Driver-based</i>			
Driver Wages	\$17.38	\$16.12	\$16.17
Driver Benefits	\$5.77	\$5.11	\$5.67
TOTAL†	\$66.07	\$58.00	\$59.61

Fuel and driver wages (excluding benefits) continued to be the largest cost centers for carriers, constituting 58 percent of the average operating cost in Q1 2010. Lease or purchase payments were the third largest cost center, constituting 16 percent of costs in Q1 2010, followed by driver benefits at 10 percent, repair

† Line items may not sum to total shown due to rounding.

and maintenance at 8 percent, and insurance at 3 percent.

Share of Total Marginal Cost, 2008, 2009, Q1 2010

Motor Carrier Marginal Expenses	2008	2009	Q1 2010
<i>Vehicle-based</i>			
Fuel & Oil Costs	38%	28%	31%
Truck/Trailer Lease or Purchase Payments	13%	18%	16%
Repair & Maintenance	6%	8%	8%
Truck Insurance Premiums	3%	4%	3%
Permits and Licenses	1%	2%	2%
Tires	2%	2%	2%
Tolls	1%	2%	2%
<i>Driver-based</i>			
Driver Wages	26%	28%	27%
Driver Benefits	9%	9%	10%
TOTAL†	100%	100%	100%

The rise in average marginal cost experienced between 2009 and Q1 2010 is expected to continue based on macroeconomic and industry trends. Given the rise in fuel prices that was experienced in 2010 and is forecasted to continue through 2011 and 2012, motor carrier average marginal fuel costs are almost certain to rise. Furthermore, the freight demand increases associated with the economic recovery are expected to create both a driver shortage and a requirement for carriers to upgrade their aging fleets. All of these factors will continue to place upward pressure on motor carrier marginal operating costs in the foreseeable future.

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ATRI's primary mission is to conduct transportation research with an emphasis on the trucking industry's essential role in the U.S. and international marketplace.