Is This The New Normal?

Seventeenth Annual Freight and Logistics Symposium
Minneapolis, MN
December 6, 2013
Rosalyn Wilson

r.wilson@delcan.com 703-587-6213

8618 Westwood Center Drive, Tysons, VA 22182  www.delcan.com
<table>
<thead>
<tr>
<th>Year</th>
<th>Cost (Trillions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>0.95</td>
</tr>
<tr>
<td>2004</td>
<td>1.03</td>
</tr>
<tr>
<td>2005</td>
<td>1.17</td>
</tr>
<tr>
<td>2006</td>
<td>1.31</td>
</tr>
<tr>
<td>2007</td>
<td>1.39</td>
</tr>
<tr>
<td>2008</td>
<td>1.34</td>
</tr>
<tr>
<td>2009</td>
<td>1.10</td>
</tr>
<tr>
<td>2010</td>
<td>1.20</td>
</tr>
<tr>
<td>2011</td>
<td>1.29</td>
</tr>
<tr>
<td>2012</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Source: CSCMP’s 24th Annual State of Logistics Report©, Rosalyn Wilson
CARRYING COSTS
- Interest
- Taxes, Obsolescence, Depreciation, Insurance
- Warehousing

TRANSPORTATION COSTS
- Motor Carriers
  - Truck – Intercity
  - Truck – Local
- Other Carriers
  - Railroads
  - Water
  - Oil Pipelines
  - Air
  - Forwarders

OTHER COSTS
- Shipper Related Costs
- Logistics Administration

Source: CSCMP’s 24th Annual State of Logistics Report©, Rosalyn Wilson
The U.S. Business Logistics System Cost is the Equivalent of 8.5 Percent of Current GDP in 2012

<table>
<thead>
<tr>
<th>Carrying Costs - $2.269 Trillion All Business Inventory</th>
<th>$ Billions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>3</td>
</tr>
<tr>
<td>Taxes, Obsolescence, Depreciation, Insurance</td>
<td>302</td>
</tr>
<tr>
<td>Warehousing</td>
<td>130</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>434</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transportation Costs</th>
<th>Subtotal</th>
<th>Up 4.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Carriers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck – Intercity</td>
<td>445</td>
<td></td>
</tr>
<tr>
<td>Truck – Local</td>
<td>202</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>647</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Carriers</th>
<th>Subtotal</th>
<th>Up 3.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railroads</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Water (International 27, Domestic 7)</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Oil Pipelines</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Air (International 13, Domestic 20)</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Forwarders</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>189</strong></td>
<td></td>
</tr>
</tbody>
</table>

| Shipper Related Costs | 10 |   |
| Logistics Administration | 51 |   |
| **TOTAL LOGISTICS COST** | **1,331** | May not sum to total due to rounding
Logistics Costs As A Percent of GDP

Source: CSCMP’s 24th Annual State of Logistics Report®, Rosalyn Wilson
Total U.S. Business Inventories

Source: U.S. Department of Commerce, Census Bureau
Inventories Remain High

Source: U.S. Department of Commerce, Census Bureau
Interest Rate at Historic Low

Federal Reserve’s Commercial Paper Rate

Source: Board of Governors of the Federal Reserve System
Capacity, Capacity, Capacity

Ocean & Air

Too MUCH

Just Right
Railroads

Too
Little
Truck
Railroad Recap

- Freight revenue increased 4.3 percent
- Carloadings were down 3.1 percent
- Intermodal volume was the second highest on record
- Ton-miles decreased 1 percent
- $13 billion capital spending on road and equipment was 16.1 percent higher than 2011
Maritime Recap

- Ocean carriers’ positions are slowly improving
- Barge traffic on the inland waterways has been hampered by water levels, especially in the summer – emergency dredging was needed to deepen channels
- Volume down because of drop off in coal and agricultural products affected by drought in the Midwest
- Great Lakes shipping showed signs of recovery in 2012, after several slow years
- Jones Act in active debate again
- Maritime infrastructure, especially inland waterways, is in dire need of investment and Congress is formulating a comprehensive waterways package to address the issue
## Ports Recap

<table>
<thead>
<tr>
<th>Port</th>
<th>2012 TEUs</th>
<th>2011 TEUs</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>8,077,714</td>
<td>7,940,511</td>
<td>1.7%</td>
</tr>
<tr>
<td>Long Beach</td>
<td>6,045,662</td>
<td>6,061,085</td>
<td>-0.3%</td>
</tr>
<tr>
<td>New York</td>
<td>5,529,908</td>
<td>5,503,485</td>
<td>0.5%</td>
</tr>
<tr>
<td>Savannah</td>
<td>2,982,471</td>
<td>2,927,247</td>
<td>1.9%</td>
</tr>
<tr>
<td>Oakland</td>
<td>2,344,424</td>
<td>2,342,504</td>
<td>0.1%</td>
</tr>
<tr>
<td>Seattle</td>
<td>1,885,680</td>
<td>2,049,733</td>
<td>-8.0%</td>
</tr>
<tr>
<td>Norfolk</td>
<td>2,105,887</td>
<td>1,918,029</td>
<td>9.8%</td>
</tr>
<tr>
<td>Houston</td>
<td>1,922,479</td>
<td>1,866,450</td>
<td>3.0%</td>
</tr>
<tr>
<td>Tacoma</td>
<td>1,711,134</td>
<td>1,476,153</td>
<td>15.9%</td>
</tr>
<tr>
<td>Charleston</td>
<td>1,424,673</td>
<td>1,377,513</td>
<td>3.4%</td>
</tr>
</tbody>
</table>

*Source: Individual port reports*
Air Freight Recap

- Domestic air cargo ton-miles were up 2 percent and international were down 3.9 percent, for a total drop of 3.6 percent.
- Total tonnage declined 2.2 percent – 1.4 percent for international and 0.1 percent for domestic.
- U.S. airlines moved more than 48,000 tons of cargo per day.
- Jet fuel prices were up 2.9 percent.
- The growth of cargo space in passenger jet bellies and their relative cost advantage is putting significant pressure on all cargo jets.
- The cargo jet fleet was reduced by 30 aircraft, yet yield factors deteriorated again 2012.
U.S. Third Party Logistics Market

Source: Armstrong and Associates
U.S. 3PL Market Segments 2012 Net Revenue

- Domestic Transportation Management: $6.3 B, ↑ 5.4%
- International Transportation Management: $17.9 B, ↑ 1.0%
- Dedicated Contract Carriage (DCC): $11.4B, ↑ 4.7%
- Value-Added Warehousing and Distribution (VAWD): $27.6 B, ↑ 3.8%

Total $63.5 B, ↑ 4.1%
Truck Industry Recap

- Rates were flat for much of 2012; tonnage up 2.3 percent
- Truck capacity is tight and utilization rates are at 95 to 97 percent; driver shortage persists with greater problems looming
- Costs continue to climb, but rates have only inched up
- Truck sales gained strength, but have not reached replacement levels; used truck prices soared and the supply has dwindled
- Fuel prices have moderated
- Driver turnover rate has topped 100 percent at times and remains high
- CSA enforces stricter qualifications, new health requirements, and hair follicle drug testing has reduced the pool of eligible drivers
- Prospect of EOBRs
Truck Tonnage Index

Source: American Trucking Associations
New Hours of Service (HOS) Rule

- Went into effect July 1st, 2013
  - Immediate impact has been about a 2 to 3 percent decline in productivity; 7 to 8 percent for long haul
  - Has hurt individual drivers more than fleets – reduction in the number of hours they can drive, not just statutorily, but also operationally
  - Congress is looking into FMCSA research methodology
  - Another pressure point making it difficult to retain and attract drivers
  - Violations of the new HOS 30-minute break requirement now adds points to CSA score
  - Wait time to load and unload now a real cost factor
Truck Driver Shortage

Sources: Bureau of Labor Statistics and FHWA Highway Statistics
Driver Shortage

- There are a number of factors affecting driver supply:
  - stricter qualifications and the high cost of training
  - expanded unemployment benefits, coupled with what some call the underground economy and abundance of part-time jobs
  - private fleet owners also have an aging population and they have been attracting some of the most desirable drivers with better pay and working conditions
  - more drayage work is available because of the growth of intermodal, pulling drivers out of mainstream driver jobs because of the better hours

- Solutions:
  - Lower the age to 18 for a CDL, apprentice program
  - Sponsored driver training
  - Change the way drivers are paid – by the mile/by the hour/fixed wage
Freight Sector Employee Growth Slowing

Freight Sector Employment

Source: Bureau of Labor Statistics

October 2013
Truck Driver Employment Rising

Truck Employment

Thousands

Source: Bureau of Labor Statistics
204,000 Jobs created in October

Employment Situation in the U.S.
Truck and Rail Volume in 2013 has Been Mixed

Sources: American Trucking Associations and Association of American Railroads
Cass Monthly Freight Index

Index of Dollars Spent for Freight

Index of Freight Shipments

Source: Cass Information Systems
Estimates of Annual Manufacturing Growth

<table>
<thead>
<tr>
<th>Region</th>
<th>Percent Change Year Over Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2012</td>
</tr>
<tr>
<td>World</td>
<td>2.9</td>
</tr>
<tr>
<td>Industrialized countries</td>
<td>0.4</td>
</tr>
<tr>
<td>North America</td>
<td>0.4</td>
</tr>
<tr>
<td>East Asia</td>
<td>-1.6</td>
</tr>
<tr>
<td>Europe</td>
<td>1.8</td>
</tr>
<tr>
<td>Developing countries</td>
<td>5.4</td>
</tr>
<tr>
<td>China</td>
<td>10.6</td>
</tr>
<tr>
<td>Newly industrialized countries</td>
<td>5.7</td>
</tr>
<tr>
<td>Other developing countries</td>
<td>3.7</td>
</tr>
</tbody>
</table>

*Source: United Nations Industrial Development Agency*
Summing Up

- **Freight**
  - Freight volumes have been increasing slowly and unevenly
  - Trucking industry capacity problem is a serious issue and could hit the tipping point next year

- **Economy**
  - Expect continued slow growth – GDP around 3 percent
  - Higher inventories could become a drag on the economy
  - While hiring is growing and the unemployment rate is slowly dropping; jobs are not keeping up with population growth and the biggest growth sector is part-time jobs
  - Consumer sentiment had been rebounding, but took a hit during the government shutdown
  - Budget and debt ceiling resolutions put off again
Private sector plans do not have the same time horizons at traditional planners – they make decisions based on past, current and forecasted trends that amount to no more than 10 years

Look what has occurred in the supply chain industry in the last thirty years - a typical planning horizon

- We got the hang of a deregulated freight environment
- Globalization with a strong shift to offshore manufacturing
- Containerization and huge containerships – new infrastructure
- Intermodal – new equipment, new transfer facilities, cooperation among traditionally competitive modes
- Wal-Mart – transparent supply chains with more cooperation all the way down the supply chain; shippers dictate logistics
- Amazon – instant gratification supply chain
- 3PLs and 4PLs – Shippers become mode agnostic
Most carriers and shippers know:
- **What** is being moved
- **Where** it is now
- **Where** it is going
- **How** it is being moved
- **When** it needs to be delivered
- **How Much** it costs and
- **How Well** they are doing
  - Speeds, fuel use, routes…
  - Safety records – carrier, vehicle and driver

What if public agencies had access to these data?
- Most public freight data are out of date and miss current trends; have limited data for sub-state regions; and have little to say about prices

Problem: information is proprietary to individual firms
RTFI = Real-Time Freight Intelligence
- Combines exclusive and publicly available datasets with expert transportation consultant skills
- Draws upon *detailed* freight waybill data from approx. 25 million shipments annually
- Utilizes more than 45 data sources to identify and track trends in freight movement
- Is tailored specifically to examine *impacts of changes in prices* (new tolls, for example) *and service* (greater reliability) on freight industry, including relative attractiveness of specific locations
- Check out [www.freightmatters.us](http://www.freightmatters.us)
RTFI is a comprehensive source of international flow data, PIERS data, CFS data, FAF3 data, historical volume and value data, domestic volume and speed data, current detailed cost data, tolling data, B/C data, local freight data, and others.

It draws from more than 45 separate data sources, including the key freight datasets.

It will complement data already collected for the MRTPO for its regional freight analysis work.
**What We Can Do with RTFI**

We can identify, isolate and compare cost factors at a detailed level

<table>
<thead>
<tr>
<th>NAICS</th>
<th>NAICS Description</th>
<th>From Port of Virginia</th>
<th>From Port of Savannah</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Median cost per ton-mile</td>
<td>Median cost per ton</td>
</tr>
<tr>
<td>327</td>
<td>Nonmetallic Mineral Product Manufacturing</td>
<td>$0.18</td>
<td>$32.69</td>
</tr>
<tr>
<td>333</td>
<td>Machinery Manufacturing</td>
<td>$5.53</td>
<td>$248.68</td>
</tr>
<tr>
<td>441</td>
<td>Motor Vehicle and Parts Dealers</td>
<td>$2.10</td>
<td>$367.32</td>
</tr>
<tr>
<td>424</td>
<td>Merchant Wholesalers, Nondurable Goods</td>
<td>$0.15</td>
<td>$90.23</td>
</tr>
<tr>
<td>339</td>
<td>Miscellaneous Manufacturing</td>
<td>$0.26</td>
<td>$84.32</td>
</tr>
<tr>
<td>336</td>
<td>Transportation Equipment Manufacturing</td>
<td>$0.50</td>
<td>$372.45</td>
</tr>
</tbody>
</table>
What We Can Do with RTFI

We can provide graphic depictions of comparative statistics

These charts compare average cost per ton-mile for truck trips originating at Hampton Roads and Savannah.
What RTFI Offers

We can provide detailed analysis of comparative statistics

<table>
<thead>
<tr>
<th>Mileage band</th>
<th>From Port of Virginia</th>
<th>From Port of Savannah</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median cost per ton-mile</td>
<td>Median cost per ton</td>
</tr>
<tr>
<td>&lt;50</td>
<td>$13.74</td>
<td>$248.64</td>
</tr>
<tr>
<td>50-100</td>
<td>$3.60</td>
<td>$227.47</td>
</tr>
<tr>
<td>100-200</td>
<td>$1.96</td>
<td>$296.23</td>
</tr>
<tr>
<td>200-300</td>
<td>$1.04</td>
<td>$232.20</td>
</tr>
<tr>
<td>300-400</td>
<td>$0.70</td>
<td>$237.91</td>
</tr>
<tr>
<td>400-500</td>
<td>$1.16</td>
<td>$540.60</td>
</tr>
<tr>
<td>&gt;500</td>
<td>$0.35</td>
<td>$258.95</td>
</tr>
</tbody>
</table>

This illustrates a direct comparison of cost per ton-mile for truck trips of machinery manufacturing commodities originating at Hampton Roads and Savannah.
River transportation delivers Minnesota's bounty and helps link this landlocked state to the world.

Minnesota’s water highway, like the concrete highway, is important.

Both Minnesota senators are co-sponsors of The River Act which updates Water Resources Development Act, which authorizes waterway projects of many kinds administered by U.S. Army Corps of Engineers.

RTFI data can be used to demonstrate the importance of Minnesota’s waterways to the entire economy positioning it better for funding.
Questions?
Contact me at
r.wilson@delcan.com
703-587-6213