A Different Set of Problems: Trucking & Heavy Equipment Demand Shift Into High Gear

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Federal Reserve Bank of Chicago
Automotive Outlook Symposium
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It’s NOT Different This Time

• Thesis: We have experienced a deep correction, rather than a fundamental shift in the relationship between freight and the trucks needed to haul it.
  
  • As freight and business fundamentals normalize, so too will commercial vehicle demand

There is nothing to replace heavy trucks in the U.S. or global economies
U.S. Logistics Spend
as a Percentage of GDP
1980 - 2009

Transportation Spending
Inventory Carrying Costs
Total Logistics Bill

Council for Supply Chain Management Professionals, ACT Research Co., LLC: Copyright 2010
## Marginal Demand Considerations: Evolution not Revolution

<table>
<thead>
<tr>
<th>Detracting from Demand</th>
<th>Accretive to Demand</th>
<th>Trend Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging evolution</td>
<td>Population Growth</td>
<td>20 year</td>
</tr>
<tr>
<td>Retail Consolidation</td>
<td>Internet Shopping</td>
<td>20+ years</td>
</tr>
<tr>
<td>Electronics Miniaturization</td>
<td>Ubiquitousness of electronics</td>
<td>20+ years</td>
</tr>
<tr>
<td>Intermodal</td>
<td></td>
<td>20 year</td>
</tr>
<tr>
<td>JIT Operations</td>
<td>JIT Operations</td>
<td>20 year</td>
</tr>
<tr>
<td></td>
<td>Mfg. On-shoring (Mex.)</td>
<td>Now/Coming</td>
</tr>
</tbody>
</table>
Changing Freight Patterns I

U.S. Tractor Market:
Sleepers as a Percentage of Total Tractor Sales

[Graph showing share of tractor market from 2004 to 2011 with trend lines for 5 year MA Retail Sales and 12MMA Net Orders]
Changing Freight Patterns II

E-Commerce as a Percentage of Retail Sales (excluding food service)
Q1'2001 - Q4'2010

Source: Federal Reserve Board, ACT Research: Copyright 2011
Economic Summary

• Recovery appears to be self sustaining.
  – Strong tailwinds
    • Consumers are well positioned
      – QE2, December Stimulus
    • Manufacturing continues at robust levels
      – Business investment strong
      – Inventories low relative to sales
  – Rising headwinds
    • External:
      – “Arab Spring”
      – Japan (short term),
      – Eurozone debt
    • Internal: State & local tax receipts, fixing budgets w/o breaking recovery
Consumer Fundamentals Have Firmed

**Real Disposable Personal Income**
- Actual and Y/Y % Change
- Q1'01 - Q4'10

**Personal Savings Rate**
- January 2000 - March 2011
- Percent-SAAR

**Household Financial Obligations**
as % of Disposable Income
- Q1'90 - Q4'10

1ppt = ~$100b

*Source: BEA, ACT Research Co., LLC: Copyright 2011*
Ramp-Up Issues

• Supply-chain constraints
  • Tires
  • Wiring harness connectors
  • Small engines
  • Axles (maybe bearings)
  – Coming
  • “Castings”

• Commodity inflation:
  • Between demand and input inflation, truck & trailer manufacturers are getting pricing/instituting surcharges
This Cycle Looks Familiar

- Supply-demand between freight and trucks has tilted in truckers’ favor
- Trucker profits have rebounded
- Used equipment prices are rising
- Credit availability/worthiness improving
- Two years of deferred capex has created pent-up demand – and a really old fleet
- Rising trucker confidence
- Regulatory/driver shortage issues should negatively effect productivity, positively influencing new vehicle demand
Rhymes with History

– Class 8 Orders

<table>
<thead>
<tr>
<th>Period</th>
<th>August</th>
<th>Following March</th>
<th>% Chg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>’93-’94</td>
<td>17.1k</td>
<td>32.6k</td>
<td>+91%</td>
</tr>
<tr>
<td>‘96-’97</td>
<td>11.1k</td>
<td>23.3k</td>
<td>+110%</td>
</tr>
<tr>
<td>‘01-’02*</td>
<td>9.0k</td>
<td>29.1k</td>
<td>+233%</td>
</tr>
<tr>
<td>‘03-’04</td>
<td>15.1k</td>
<td>33.5k</td>
<td>+122%</td>
</tr>
<tr>
<td>’10-’11</td>
<td>12.4k</td>
<td>29.2k</td>
<td>+135%</td>
</tr>
</tbody>
</table>
### Time to replace some trucks

**U.S. Class 8 Replacement & Trade-In Models**
**1990 - 2016**

<table>
<thead>
<tr>
<th>Date Sold</th>
<th>USC8RS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>146,143</td>
</tr>
<tr>
<td>2004</td>
<td>208,820</td>
</tr>
<tr>
<td>2005</td>
<td>257,847</td>
</tr>
<tr>
<td>2006</td>
<td>289,656</td>
</tr>
<tr>
<td>2007</td>
<td>157,565</td>
</tr>
</tbody>
</table>

**Years of Service**

<table>
<thead>
<tr>
<th>Date Sold</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>2004</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>2005</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>2006</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>2007</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>
Tight Capacity Favors Truckers

U.S. Class 8 Supply & Freight Demand
Overbuy:Underbuy

1997 - 2012

ACT Research Co., LLC: Copyright 2011

ACT Research Co., LLC, Copyright 2011
Not A New Phenomenon

The Traffic World (part of Journal of Commerce)
Dec. 12, 1914

The Truck Driver Problem

• “Practically every truck manufacturer and nearly all employers complain of the great difficulty of securing drivers who are competent and who will work handling freight aside from those who drive horses. They are agreed that the profit or loss from truck transportation is largely dependent upon the drivers, and yet a majority of truck owners will hire the men who will work cheapest, entrusting valuable property in their keeping…”
The Root of the Problem

- When the supply-gap disappears, wages are going to rise rapidly
  - A check at MATS indicated long-haul TLs wages are still ~$35-$40k/year
- At 4:1, drivers would be making ~$75k
- A tight driver supply will accelerate fleets’ moves to replace old units with newer models so as to attract new/retain existing drivers.
Workers to Spare?

Incremental 1.7 million NOT working construction!

Incremental 200k not trucking (for-hire fleets)

Source: BLS, ACT Research: Copyright 2011
Weather, Fuel Bite in Q1

TL Carrier Database:
Net Profit Margin (excl. SWFT)

Q1 '97 - Preliminary Q1 '11
Into the Preferred Quadrant

Truckers' Ability To Buy

Asset Values

TL Carrier Profitability (SA)
AVERAGE AGE:
U.S. Class 8 Active Population
1990 - 2016
Used Class 8: Average Retail Selling Price
January '03 - March ’11

Slipped to $42.3k in April

CLASS 8: U.S. USED TRUCK AVERAGE SALE PRICE
4 to 5 years old, 400-500,000 miles
January '09 - Preliminary March '11
Same Dealer Sales

Jumped to $68.8k in April
Current Demand Environment:
Class 8 & Trailers

• Indicators generally pointing in the right direction

  • Orders: Rise sharply in Q4-Q1
    » Rise to 5-plus year highs in March-April
    » Orders continue to be placed close-in
    » Breadth of demand expanding

  • Backlogs: Rising since September

  • Build: Build rates are following Orders higher
    » Rising BL/BU ratios will support higher build rates

  • Retail Sales: Trending higher
    » Have been close to two-year highs for several months

  • Inventory: Not an impediment to build
    » Likely accretive into 2013
On Fire

TOTAL CLASS 8: N.A. NET ORDERS
January '04 - April '11 (Not SA)

TOTAL CLASS 8: N.A. BACKLOG & BL/BU RATIO
January '04 - April '11 (Not Seasonally Adjusted)
Also On Fire

TOTAL TRAILERS: NET ORDERS
January '04 - March '11

Units (000s)
0 5 10 15 20 25 30 35 40
04 05 06 07 08 09 10 11

NET ORDERS: Actual & Seasonally Adjusted

TOTAL TRAILERS BACKLOG & BACKLOG/BUILD RATIO
January '04 - March '11

Units (000s) BL/BU Ratio (Months)
0 5 10 15 20 25 30 35 40 45 50
04 05 06 07 08 09 10 11

BACKLOG: Actual & SA
BL/BU Ratio (Right Axis)

ACT Research Co., LLC: Copyright 2011
Warming Trend

TOTAL CLASSES 5-7: N.A. NET ORDERS
January '04 - April '11 (Not Seasonally Adjusted)

TOTAL CL. 5-7: N.A. BACKLOG & BL/BU RATIO
January '04 - April '11 (Not Seasonally Adjusted)
# BROAD-BASED
(Data through April 2011, annualized)

<table>
<thead>
<tr>
<th>Class 8 Orders</th>
<th>U.S. (000s)</th>
<th>Canada (000s)</th>
<th>Mexico (000s)</th>
<th>Exports (000s)</th>
<th>Tot NA (000s)</th>
<th>NA SAAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past 12</td>
<td>188.3</td>
<td>21.8</td>
<td>17.6</td>
<td>25.7</td>
<td>259.3</td>
<td></td>
</tr>
<tr>
<td>Past 6</td>
<td>251.8</td>
<td>36.4</td>
<td>21.0</td>
<td>34.4</td>
<td>343.7</td>
<td>328.3</td>
</tr>
<tr>
<td>Past 3</td>
<td>264.6</td>
<td>38.4</td>
<td>22.4</td>
<td>39.8</td>
<td>365.2</td>
<td>345.2</td>
</tr>
<tr>
<td>April</td>
<td>348.2</td>
<td>47.3</td>
<td>19.9</td>
<td>42.1</td>
<td>457.5</td>
<td>444.3</td>
</tr>
</tbody>
</table>
# N.A. Classes 5-7 Order Distribution

(Data through April 2011, annualized)

<table>
<thead>
<tr>
<th>Classes 5-7 Orders</th>
<th>Truck (000s)</th>
<th>Bus (000s)</th>
<th>RV (000s)</th>
<th>Total (000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past 12 Mo.</td>
<td>109.6</td>
<td>23.4</td>
<td>13.8</td>
<td>148.8</td>
</tr>
<tr>
<td>Past 6 (AR)</td>
<td>136.4</td>
<td>23.0</td>
<td>12.9</td>
<td>172.3</td>
</tr>
<tr>
<td>Past 3 (AR)</td>
<td>139.9</td>
<td>26.8</td>
<td>13.7</td>
<td>180.4</td>
</tr>
<tr>
<td>April</td>
<td>151.6</td>
<td>25.2</td>
<td>22.9</td>
<td>199.7</td>
</tr>
<tr>
<td>Apr. (SAAR)</td>
<td></td>
<td></td>
<td></td>
<td>214.9</td>
</tr>
</tbody>
</table>
Housing Starts vs. CI 5-7 Truck Sales

Y/Y % Change of SAAR

Source: ACT Research Co., LLC, US DOC Census Bureau

HOUST  CL 5-7 TRUCK RS  Poly. (HOUST)  Poly. (CL 5-7 TRUCK RS)
Add 25k to 2011-2013 Forecasts - Probably

N.A. Classes 5-7 Production

2004 - 2016

Units (Thousands)