Commercial Vehicle Demand
Review: 2007-2008

Kenny Vieth
Partner
A.C.T. RESEARCH Co., LLC

Chicago Federal Reserve Bank
Automotive Outlook Symposium
June 1, 2007
CV Demand Modeling

• The economy generates the freight hauled by Class 8 tractors and trailers
  • Class 8: 1% GDP growth ~20,000 more U.S. population,
  • ~30,000 NA population

• Scrappage accounts for ~75% of vehicles purchased
  • Class 8: U.S. replacement at ~160k units/yr.,
  • N.A. replacement at ~200k units/yr.

• While the economy ultimately determines how many trucks/trailers are needed, other factors play a large part in determining when equipment is purchased
U.S. Economy: Mixed Signals

• Outlook opaque

  – Will nascent manufacturing upturn be nipped in the bud by higher gasoline prices?

  – Some classic recession predictors are predicting recession

  – Otherwise, it looks pretty good
Famous Last Words?

YIELD SPREAD
1-Year and 10-Year Treasuries
January 1989 - MTD May 2007

Rate Spread (PP)

May 16:
1YTB: 4.82%
10YTB: 4.67%

Source: Federal Reserve Board, ACT Research: Copyright 2007
Short-Term Issue?

Gasoline, Diesel & Spot Crude Oil (WTIC) Prices
2000-2007 (Week 21)
Truckers & Freight

• Too many trucks chasing too little freight
  • Economic softening hits just as truckers finish overbuying equipment to avoid post-EPA 2007 engines
  • Freight recession thanks to softness in key freight sectors
    » Bad year for flatbed trailer demand

• Carrier profits under pressure
  • Too many trucks and falling freight put shippers in the driver’s seat for the first time since 2002
Fortunately, this cycle drivers, not equipment, are the primary measure of capacity

Cumulative Over/Underbuy:
U.S. Class 8 Population Relative to U.S. GDP Growth
1992 - 2011e
Why Trucker Profits Matter

TL Carrier Database:
Carrier Net Income & New US Trailer Orders
Year over Year Percent Change
Q1'95 - Q1'07
Gasoline Prices Matter Too

Gasoline Prices & U.S. Trailer Orders SA
Month/Month % Change

Source: EIA, ACT Research: Copyright 2007
FTR Trailer Loads Index &
Class 8 Population Change
2000 - 2007
## 2007: The Math at 400k Miles

<table>
<thead>
<tr>
<th>2007</th>
<th>MPG Degradation</th>
<th>Fuel &amp; Maintenance</th>
<th>Added Costs</th>
<th>Cost Per Mile Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW COST</td>
<td></td>
<td></td>
<td>$10,000</td>
<td>2.5 cpm</td>
</tr>
<tr>
<td>FUEL ECONOMY</td>
<td>-1%</td>
<td>$2.50</td>
<td>$1,700</td>
<td>0.4 cpm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>675 gal. @</td>
<td></td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td></td>
<td></td>
<td>$4,000</td>
<td>1.0 cpm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$1,000/yr avg.</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>$15,700</td>
<td>3.9 cpm</td>
</tr>
</tbody>
</table>

- Fleets that prebuy won’t have to worry about fuel quality
- Each 1pp degradation in fuel economy adds ~675 gallons over 400k miles

---

A.C.T. Research Co., LLC, Copyright 2007
TL Carrier Database:
Net Profit Margin
Q1'97 - Q1'07

5% Margin (2006)

3% Margin (Q1'07)

TL Carrier Database:
Revenue Per Total Mile
Q1'97 - Q1'07

$2.00/mi. Revenue
Will there be Prebuy III?

- Higher new purchase price
- Early adapters have no initial recourse to recover higher costs
- Early buyers get the bugs
- Fuel economy/Ad Blue concerns
  - Active vs. Passive Regeneration
- ULSD quality in early 2007
  - Ability to use higher energy content LSD where available
- DPF technology/Associated maintenance
  - Parts availability
  - Spare cores and cleaners
  - Mechanic training
- Heat rejection impact on component/engine life
- First engine not certified until November 9, 2006
  - Nor definitive pricing
    » Tough to plan without knowledge
B-B-B-B-B-B-BAD

- April Class 8 Market Indicators
  - Orders: 55-month low
  - Backlog: 40-month low
  - Build: 48-month low (looks like the bottom)
  - Retail sales: 38-month low and falling
  - Inventory: 9-month low, but ~50% too large
## Noncompliant Markets Thriving
(Data through April, 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>Total (000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past 12</td>
<td>130.8</td>
<td>21.1</td>
<td>27.8</td>
<td>32.1</td>
<td>211.8</td>
</tr>
<tr>
<td>Past 6 (AR)</td>
<td>104.5</td>
<td>12.1</td>
<td>32.5</td>
<td>28.5</td>
<td>177.6</td>
</tr>
<tr>
<td>Past 3 (AR)</td>
<td>84.0</td>
<td>9.6</td>
<td>36.9</td>
<td>23.7</td>
<td>154.3</td>
</tr>
<tr>
<td>April (AR)</td>
<td>73.1</td>
<td>10.9</td>
<td>30.8</td>
<td>11.1</td>
<td>125.9</td>
</tr>
<tr>
<td>C8 RS 2006</td>
<td>290.7</td>
<td>38.5</td>
<td>20.0</td>
<td>20.1</td>
<td>369.3</td>
</tr>
<tr>
<td>6NO/06RS</td>
<td>-64%</td>
<td>-69%</td>
<td>+63%</td>
<td>+42%</td>
<td>-52%</td>
</tr>
</tbody>
</table>

A.C.T. Research Co., LLC, Copyright 2007
TOTAL CLASS 8: N.A. NET ORDERS
January '00 - April '07 (Not Seasonally Adjusted)
TOTAL CLASS 8 NA:
NET ORDERS (Trailing 12 Months) & BUILD
January '00 - April '07 (Not Seasonally Adjusted)
TOTAL CLASS 8: N.A. BACKLOG & BL/BU RATIO
January '00 - April '07 (Not Seasonally Adjusted)

Units (000s) vs. BL/BU Ratio (Months)

A.C.T. Research Co., LLC: Copyright 2007
TOTAL CLASS 8: N.A. INVENTORY/RETAIL SALES RATIO

January '00 - April '07 (Not Seasonally Adjusted)
Trailers

• Uninspired activity through peak order season
  • Commodity driven trailer prices increases hit just as freight volumes cratered in late Q3’06
  • Truckers swimming in excess Class 8 capacity (~5%) decide not to add to their equipment predicament

• Backlogs down 28% y/y April

• Industry responds quickly to weak Fall orders
  • Build down 10% y/y YTD April, 11% y/y April
TOTAL TRAILERS: NET ORDERS & CANCELLATION RATE

January '00 - April '07

* AS MODELED BY A.C.T. Research Co., LLC: Copyright 2007
U.S. TICG:TRAILER INDUSTRY CONTROL GROUP
Longer-Term Considerations

• Class 8 overbuy in 2009 could lead to softer trucker profits again in 2010

• Current Congressional fuel efficiency legislation proposes taking GVW to 97,000 pounds
  • At capacity, railroads less likely to fight higher GVW
  • When, not if

• Small engine emissions mandate in 2013 likely to cause reefer van prebuy in 2012
Classes 5-7

• Market not as homogeneous as Class 8
  • 3 Configurations
    – Truck (70%), Bus (15%), RV (15%)
    » ~135 applications

• Due to proximity to home, it is easy for Classes 5-7 customers to defer purchases
  • Also, MD vehicles are not typically profit centers
TOTAL CLASSES 6-7: N.A. NET ORDERS & BUILD - 6 Mo. Avg.
January '00 - April '07 (Not Seasonally Adjusted)

Units (000s)

NET ORDERS:
6 Mo. Avg.

BUILD:
6 Mo. Avg.

A.C.T. Research Co., LLC: Copyright 2007
TOTAL CLASSES 6-7: N.A. INVENTORY/RETAIL SALES RATIO

January '00 - April '07 (Not Seasonally Adjusted)
Forecast Notes

• 2007: Should be very close to final
  • Inventory assumptions inject greatest variability

• 2008: Rising downside concerns as forecasts are predicated on economic rebound
  • Stronger domestic economic activity in 2H’07 leads to
  • Stronger CV orders in Q4’07 leads to
  • Rising production in Q1’08

• 2009: Leaning towards new Class 5-8 build records
  • UPSIDE: Higher 2010 lifecycle costs and sustained industry through late 2006 suggest possibility of bigger prebuy
  • DOWNSIDE: If 2008 gets off to slow start, build rates in 2009 will start the year below expectations.
N.A. Class 8 Production

1998-2012

Units (Thousands)

'98 267
'99 333
'00 252
'01 146
'02 181
'03 182
'04 269
'05 341
'06 378
'07 224
'08 265
'09 378
'10 225
'11 243
'12 317

A.C.T. Research Co., LLC: Copyright 2007
TRAILER FACTORY SHIPMENTS
2002-2008

Orders (000s)

<table>
<thead>
<tr>
<th>Year</th>
<th>Dry Vans</th>
<th>Reefer Vans</th>
<th>Flatbeds</th>
<th>All Other Trailers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>139k</td>
<td>27</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>2003</td>
<td>179k</td>
<td>33</td>
<td>14</td>
<td>26</td>
</tr>
<tr>
<td>2004</td>
<td>235k</td>
<td>43</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>2005</td>
<td>251k</td>
<td>47</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>2006</td>
<td>281k</td>
<td>51</td>
<td>34</td>
<td>38</td>
</tr>
<tr>
<td>2007</td>
<td>242k</td>
<td>48</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>2008</td>
<td>265k</td>
<td>49</td>
<td>28</td>
<td>37</td>
</tr>
</tbody>
</table>
Summary

• Where is oil (gasoline) headed and what will the velocity of the U.S. economy be in the second half of 2007?
  – Economic timing will determine recovery timing
  – Trucker profits sagging, but shouldn’t fall apart
  – If the economy remains weak, there is a HUGE stock of late-model equipment
  – Orders from Mexico should be strong into late Q3/early Q4

• How much will the OEMs incentivize to prop up demand in 2007?

• Will Congress incentivize the market for 2010?