In Rust We Trust:
Commercial Vehicle Demand Drivers
and Forecast Update

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Federal Reserve Bank of Chicago
Automotive Outlook Symposium
June 5, 2009
Overview

• Underlying Economics
• Population Metrics
• External Influences
• Current Market Conditions
• Forecasts
• Questions & Answers
The Economy & CVs

• You buy Class 8 trucks & tractor trailers to haul freight
• The economy generates the freight that needs to be hauled
• Medium-duty trucks are purchased for second derivative/service level business activities
Real Gross Domestic Product
Q/Q at SAAR
Q1'96 - Q4'10

Percent Change

-2.6%  +1.7%
ACT U.S. Freight Composite
Q/Q at SAAR, Y/Y
Q1'96 - Q4'10

Percent Change

ANNUAL
-9.2% +3.0%

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Class 8 Market Dynamics

• Economic contraction extends period of overcapacity
  • Y/Y Q4: 6% less freight in 2009 = 6% too many trucks
  • Below replace sales, used truck exports narrow capacity overhang

• Fleet demographics suggest a strong replacement cycle is a healthy economy away
  • Fleet age to rise to record high in 2010

• Synchronized global economic downturn slows used truck exports, but exodus continues
  • NAFTA rule change allows exports to Mexico starting in ’09. But …
TL Carrier Database: Average Miles Per Tractor

Q1'95 - Estimated Q1 '09

<table>
<thead>
<tr>
<th>Year</th>
<th>Avg</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
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<td>26.3</td>
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AVERAGE AGE:
U.S. Class 8 Active Population
1979 - 2014
Used Class 8 Exports
1996 - March 2009, 2009 Estimated
Used Class 8 Exports 2008
Geographic Distribution of 22,100 Road Tractor Exports

- Africa: 37.7%
- E.Europe: 29.9%
- W.Europe: 2.2%
- N. Am: 8.6%
- S&C Am.: 12.6%
- Carribean: 1.3%
- SE Asia & ME: 7.9%
Tightening the Supply Chain

• Higher fuel prices in 2008 make shippers reexamine supply chains and shipping costs
  – Packaging revolution:
    • Square milk, flat balls, wringing out the water
    • The flip side of the Amazon-ization of consumer spending
  – Sourcing closer to home
  – Producing closer to end markets/assembly facilities
  – Willingness to slow system velocity
    • Consider shift to intermodal
Trucking & Intermodal

[Map of the United States with various lines connecting different points, indicating capacity levels such as 'Below Capacity', 'Approaching Capacity', 'Exceeding Capacity', and 'Other'.]

Base 2020
- Below Capacity
- Approaching Capacity
- Exceeding Capacity
- Other

0 100 200 300 400 Miles

Battelle, February 25, 2002
Driver Pool Will Get Shallower

**DRIVER SUPPLY: U.S. MALES**
Potential Hirees & Impending Retirees
2000-2020

- **HARD TO FIND DRIVERS**
- **SUPPLY OF INCOMING CDL-AGE U.S. MALES SHRINKS**
- **U.S. MALES AT RETIREMENT AGE RISES SHARPLY**

Source: U.S. Census Bureau, ACT Research Co., LLC: Copyright 2009
Class 8 Market Direction

• Class 8 Market Indicators

  • Orders: Credit squeeze, freight freeze, choke-off demand
    » September - December: 10k
    » Jan. - April: 8k

  • Backlog: Smaller than it looks
    » BL at 46k in March – first increase in 13 months
    » BL/BU at 4.6 months/97 days

  • Build: Down weeks, not down days
    » Big holes remain in near-term build plan

  • Retail Sales: Seasonal rise in March, but at low level
    » In highly spec’d market, sales follow where build leads

  • Inventory: Lowest since December 2004
    » IN/RS ratio remains elevated
## Class 8 Order Distribution
(Data through April 2009, 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 Mo.</td>
<td>103.7</td>
<td>13.3</td>
<td>8.8</td>
<td>10.9</td>
<td>136.7</td>
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<tr>
<td>Past 6 Mo.</td>
<td>89.4</td>
<td>6.2</td>
<td>3.9</td>
<td>3.0</td>
<td>102.6</td>
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<tr>
<td>Past 3 Mo.</td>
<td>77.6</td>
<td>8.1</td>
<td>4.0</td>
<td>3.2</td>
<td>92.9</td>
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<td>April</td>
<td>79.2</td>
<td>12.1</td>
<td>2.3</td>
<td>0.3</td>
<td>93.8</td>
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<tr>
<td>April SAAR</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>96.6</td>
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</table>
TOTAL CLASS 8 NA:
NET ORDERS (Trailing 12 Months) & BUILD
January '02 - April '09 (Not Seasonally Adjusted)
Fleet Spec Class 8 Truck
(4 years old, 500,000 miles, good condition)

Average Selling Price

$70,000

$60,000

$50,000

$40,000

$30,000

$20,000

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TOTAL CLASS 8: N.A. BACKLOG & BL/BU RATIO
January '02 - April '09 (Not Seasonally Adjusted)
### Build Timing of Units in Backlog: as of April 30, 2009

<table>
<thead>
<tr>
<th>CLASS 8</th>
<th>Actual:</th>
<th>Q2’09</th>
<th>Q3’09</th>
<th>Q4’09</th>
<th>Beyond</th>
<th>TOTAL</th>
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<tr>
<td>BACKLOG DISTRIBUTION</td>
<td>--</td>
<td>12,765</td>
<td>13,421</td>
<td>16,824</td>
<td>2,957</td>
<td>45,967</td>
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<tr>
<td>. Mix by scheduled build date</td>
<td>--</td>
<td>27.8%</td>
<td>29.2%</td>
<td>36.6%</td>
<td>6.4%</td>
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<tr>
<td>Class 8 Actual/Forecast</td>
<td>35,945</td>
<td>18,051</td>
<td>28,000</td>
<td>35,500</td>
<td>--</td>
<td>117,496</td>
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<td>. Open build slots</td>
<td>--</td>
<td>5,286</td>
<td>14,579</td>
<td>18,676</td>
<td>--</td>
<td>38,541</td>
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<tr>
<td>. % Open</td>
<td>--</td>
<td>29.3%</td>
<td>52.1%</td>
<td>52.6%</td>
<td>--</td>
<td></td>
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</table>
TOTAL CLASS 8: N.A. INVENTORY/RETAIL SALES RATIO
January '02 - April '09 (Not Seasonally Adjusted)
Medium Duty: Three Major Markets

• Trucks/Step Vans (70% ▲)
  – Distribution 70%
  – Construction 18%
  – Refuse Truck 5%
  – Services Truck 5%
  – Fire/Emergency 2%

• Buses (15% ▲)

• Recreational Vehicles (15% ▼)
<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>
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</thead>
<tbody>
<tr>
<td>Past 12 Mo.</td>
<td>67.0</td>
<td>29.2</td>
<td>3.0</td>
<td>101.0</td>
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<tr>
<td>Past 6 (AR)</td>
<td>53.7</td>
<td>27.8</td>
<td>0.8</td>
<td>82.9</td>
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<tr>
<td>Past 3 (AR)</td>
<td>52.7</td>
<td>22.9</td>
<td>0.6</td>
<td>77.5</td>
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<tr>
<td>April (AR)</td>
<td>43.8</td>
<td>21.1</td>
<td>2.0</td>
<td>67.2</td>
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</table>
TOTAL CLASSES 5-7:
N.A. NET ORDERS (Trailing 12 mo.) & BUILD (Actual)
January '02 - April '09 (Not Seasonally Adjusted)
TOTAL CL. 5-7: N.A. BACKLOG & BL/BU RATIO
January '02 - April '09 (Not Seasonally Adjusted)
TOTAL CLASSES 5-7: N.A. INVENTORY/RETAIL SALES RATIO

January '02 - April '09 (Not Seasonally Adjusted)
Class 8 Summary

• Primary question for CV demand recovery:
  – How long will deleveraging process continue?
    • Economic growth will be constrained through forecast

• As economy stabilizes and trucker confidence improves, U.S. Class 8 demand should be strong
  – If there is freight to haul, trucks are needed to haul the freight
  – EPA 2010 expected to cause drag through 1H’10
    • By the end of 2010, fleet age will be at record levels
    • Replacement cycle will drive significant demand
  – Potential remains for modest Class 8 demand pickup ahead of EPA2010
    • Lack of freight & confidence will keep any up-tick modest
N.A. Class 8 Production
2002-2014

<table>
<thead>
<tr>
<th>Year</th>
<th>Tractors/Artics</th>
<th>Trucks/Rigids</th>
<th>Total C8</th>
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<tr>
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<td>204</td>
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<tr>
<td>'99</td>
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<td>'09</td>
<td>84</td>
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<td>'10</td>
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<td>'14</td>
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<td>85</td>
<td>280</td>
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MD Demand Summary

• Recovery from EPA2007 pre-build
• M&A potential
• It’s tough out there:
  – Net orders may just be bottoming
  – Build at historically weak levels
  – Housing’s “collateral damage” quashing MD truck demand
  – RV decline tantamount to disappearance
  – Buses slowing, further declines possible
• Velocity of growth for medium duty market is determined by the pace of economic growth
## Total Classes 5-7 N.A. Production
### 1998-2014

<table>
<thead>
<tr>
<th>Year</th>
<th>RVs</th>
<th>Trucks</th>
<th>Buses</th>
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<tbody>
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<td>11</td>
<td>163</td>
<td>37</td>
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*Units (Thousands)*

The chart above illustrates the production of RVs, trucks, and buses from 1998 to 2014, broken down by year. The data shows a fluctuation in production, with peaks and troughs in different years. The years '01 and '07 had a notable increase in production compared to the previous and following years. The overall trend indicates a fluctuating market for these classes of vehicles.