Economic and Industry Outlook

Federal Reserve Bank of Chicago
Automotive Outlook Symposium

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Topics Today

- Recent Economic Developments
- U.S. Vehicle Buying Conditions
- Auto Industry Revenue and Segmentation
Recent Developments

• Economic environment remains challenging

• Active policy response on both fiscal and monetary fronts

• Oil and other commodity prices remain elevated despite slower U.S. demand growth

• Light vehicle sales have averaged 15.0 million units (SAAR) after sales of 16.1 million in 2007, with pronounced shifts in segmentation
U.S. Consumer Sentiment Index

Preliminary May reading is lowest since 1980

Historical Average 88

Gray Bars Indicate Recessions


59.5
Gas prices represent a “tax” on consumer disposable income of over $200 billion since 2004.

* Personal Saving Rate

* Based on 3-month moving average
Current and Prior Housing Cycles in U.S.

The adjustment to new home construction may be nearing bottom

Index*
Peak = 100

* Index based on total U.S. housing starts
Home Inventories

Stock of homes for sale suggests prices still have to further to fall

Months' Supply at Current Selling Rates

Long-Run Averages
New: 6.0
Existing: 7.1

Yearly Sales
New: 11.2
Existing: 9.6

Graph shows the months' supply of new and existing homes for sale from 2000 to 2008, with a recent increase in supply for both new and existing homes.
Vehicle Sales
(2007 Percent Change Over Year Ago)

- MT
- WA
- ID
- OR
- CO
- TX
- AK
- CA
- NV
- FL
- LA
- MS
- AL
- GA
- SC
- NC
- VA
- MI
- WI
- IA
- MN
- ND
- SD
- NE
- KS
- OK
- AR
- TN
- KY
- WV
- OH
- PA
- WV
- MD
- VA
- DC
- VT
- NH
- ME
- MA
- CT
- RI
- NJ
- PA
- NY
- NY
- NJ
- DE
- CA
- AZ
- NV
- OR
- WA
- AK

< (10.0)%
(9.9)-(6.0)%
(5.9)-(2.0)%
(1.9)-(0.1)%
> 0.0%
2007 Home Prices and Vehicle Sales

% Change Over Year Ago
Home Prices

Sales
U.S. Housing Downturn and Spending

Uses of Mortgage Equity Withdrawal

<table>
<thead>
<tr>
<th>Pct.</th>
<th>Investments</th>
<th>Vehicles</th>
<th>Consumer Goods and Bill Payments</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>48%</td>
<td>8%</td>
<td>44%</td>
<td>4%</td>
</tr>
<tr>
<td>Low-Middle</td>
<td>55%</td>
<td>11%</td>
<td>30%</td>
<td>5%</td>
</tr>
<tr>
<td>High-Middle</td>
<td>56%</td>
<td>14%</td>
<td>25%</td>
<td>8%</td>
</tr>
<tr>
<td>High</td>
<td>61%</td>
<td>10%</td>
<td>21%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: Federal Reserve 2004 SCF and Brookings Institution
Total consumer credit was $2.5 trillion as of February 2008, not including mortgage debt

Note: Based on 3-month moving average
Net Percentage of Banks Tightening Standards for Consumer Loans

Note: Excluding credit cards and mortgages
U.S. Auto Financing Conditions

Interest Rate for New Auto Loans and the Federal Funds Rate

<table>
<thead>
<tr>
<th></th>
<th>4Q 2001</th>
<th>4Q 2007</th>
<th>1Q 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Funds Rate</td>
<td>2.08</td>
<td>3.03</td>
<td></td>
</tr>
<tr>
<td>Auto Loan Rate*</td>
<td>4.42</td>
<td>4.55</td>
<td>5.17</td>
</tr>
</tbody>
</table>

Pct. 0 2 4 6

Decline in New Vehicle Retail Sales

- Subprime
- Total

2007 O/(U) 2006
2007 13.1
Memo: Total Retail Sales (Mils. SAAR)
2007 11.9
1Q 2008 O/(U) 2007

* Consumer auto loans at captive finance companies; 1Q 2008 is January-February 2008 average
U.S. Real GDP Growth

Expect growth at the low end of the 1-2% range this year

Annual % Chg.
The Fed may have to cut more as housing and credit issues persist.
U.S. Vehicle Sales

Forecast represents a decline of over 2 million units from 2005 peak

Note: Lower half of bar is light vehicle sales
Industry revenue, measured by total new vehicle spending as a share of GDP, is likely to hit a new low in this cycle.
New Vehicle Transactions Price Growth

Mix and content growth has averaged 2.8% since the 1970s, and has become the key driver of automotive industry revenue growth in recent years.

Transactions Price Growth equals:
- Nominal Net Pricing plus Mix and Content

<table>
<thead>
<tr>
<th>Average Period</th>
<th>Annual % Chg.</th>
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<tbody>
<tr>
<td>1970-1979</td>
<td>7.6</td>
</tr>
<tr>
<td>1980-1989</td>
<td>7.1</td>
</tr>
<tr>
<td>1990-1999</td>
<td>4.5</td>
</tr>
<tr>
<td>2000-2007</td>
<td>2.1 (-0.6)</td>
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Industry Segmentation Trends

Gas prices have accelerated industry segmentation shifts that were already underway due to changes in demographics and product offerings.

<table>
<thead>
<tr>
<th>Share of Total U.S. Industry Sales (%)</th>
<th>First Quarter</th>
<th>April</th>
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<tbody>
<tr>
<td>B Car</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>C Car</td>
<td>13.2</td>
<td>14.4</td>
</tr>
<tr>
<td>Crossover Utility Vehicles</td>
<td>13.3</td>
<td>14.3</td>
</tr>
<tr>
<td>Sport Utility Vehicles</td>
<td>13.2</td>
<td>11.0</td>
</tr>
<tr>
<td>Full-Size Pickup</td>
<td>14.7</td>
<td>14.5</td>
</tr>
<tr>
<td><strong>Memo:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail Gasoline ($/gallon)</td>
<td>$1.85</td>
<td>$2.27</td>
</tr>
<tr>
<td></td>
<td>$2.57</td>
<td>$2.80</td>
</tr>
<tr>
<td></td>
<td>$3.11</td>
<td>$3.46</td>
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Housing Market and Full-Size Pickup Sales

Full-size pickup sales are correlated with residential construction activity

Full-size Pickup and Residential Construction Shares

Correlation: Pick-up/Residential Const. = 0.55

Pick-up Share = Pickup sales as % of industry sales
Residential share = Residential construction spending as % of GDP
Age of median car on the road has risen to over 9 years, while age of median truck is just under 7 years.

Source: R. L. Polk & Co.
Residual values for less fuel-efficient vehicles have declined sharply with higher gas prices, while values for small cars have been relatively steady.
Summary

• Total vehicle sales in the 15.0-15.4 million unit range this year

• Segment shifts are becoming more pronounced and likely have a structural component

• Industry revenue under pressure from pricing, volume decline and mix adjustments

• But demand for content will remain a key element of the new vehicle market