Automotive Outlook - Managing Chaos Through Uncertainty

Management Briefing Seminars

Jeff Schuster

Senior Vice President

Oxford ● Detroit ● Frankfurt ● Bangkok ● Shanghai

Website: www.lmc-auto.com; email: jschuster@lmc-auto.com
The Auto Industry Moves Forward Into Uncertain Territory

…but One Thing Remains Certain
It is Certainly Changing!

What is In Store for the Future Automotive Market?

• The Here and Now

• NA Long-term Outlook

• Market-changing Drivers
  • Evolving Global Landscape
  • Regulation and Electrification
  • Changing Consumer
  • Downsizing
2012 Global Light Vehicle Sales Trying to Hold in Positive Territory

Global: 79.4M
5%

N. America: 16.9M
11%

Europe: 18.2M
-5%

S. America: 5.3M
-2%

Asia: 33.4M
10%

USA: 14.3M
12%

Brazil: 3.4M
-2%

India: 3.2M
11%

Russia: 2.9M
8%

Japan: 5.0M
21%

Germany: 3.4M
-1%

China: 19.5M
8%

ASEAN: 2.9M
23%

Source: LMC Automotive
European LV Production is At Risk - Double Dip Recession Scenario is Base Case

Source: LMC Automotive
European LV Production Could Get Much Worse Before Better – Eurozone Default Scenario is Real

Source: LMC Automotive
• University of Michigan Consumer Sentiment turns negative again
• Strong link with consumer sentiment and new vehicle sales
• Volatility remains high as economic recovery fluctuates and translates to flat or lower sales

Source: LMC Automotive, University of Michigan
2012 U.S. Retail Sales Volume Faces Magnitude of Variables

Risk of slower 2H12 is increasing...but not time to hit the panic button!!

Total Sales

<table>
<thead>
<tr>
<th>Year</th>
<th>Disposable Income</th>
<th>Unemp.</th>
<th>Housing Market</th>
<th>Stock Market</th>
<th>Fuel Prices</th>
<th>Credit Avail.</th>
<th>Vehicle Equity</th>
<th>Vehicle Price</th>
<th>Incentive Actions</th>
<th>Product Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>9.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>10.3</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

Source: LMC Automotive, Oxford Economics, Industry Sources
Describe the general twelve month outlook for your business. Over the past two months, has your opinion become:

- **Significantly more optimistic**: 6% (Jul-12), 3% (May-12)
- **Somewhat more optimistic**: 32% (Jul-12), 45% (May-12)
- **Unchanged**: 49% (Jul-12), 37% (May-12)
- **Somewhat more pessimistic**: 8% (Jul-12), 15% (May-12)
- **Significantly more pessimistic**: 4% (Jul-12), 4% (May-12)

Source: OESA Automotive Supplier Barometer - July 2012
North American Short-Term Production Outpaces Demand Growth

**Volume Support**
- Positive vehicle replacement factors
- High volume launches
- Increasing commercial fleet
- Resourced production bolsters regional output
- Increasing exports

**Volume Risks**
- Economy/Demand moving sideways
- Inventory in check now but starting to grow

*Source: LMC Automotive*
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North American LV Sales Ascend Slowly – Below Pre-recession Until 2015

Source: LMC Automotive
Key Long-term Growth Must Haves

- Economy expected to return to stability with growth in 3% range by 2015
- Positive US household growth adds 20+ million new drivers
- Supportive credit markets and consumers that are deleveraged
- Replacement demand - average trade-in age stable at 6.2 years; Expect to hold or decline through forecast horizon
- Resourcing and localization (NA Production)
The Auto Market Faces Many Challenges!
The World is Small and Global Auto Industry is Even Smaller

Impact Felt Around the World

- 2008 US Financial Crisis = Global recession - 6+M units lost
- 2011 Japan Disaster = Parts/assembly shortage - ~.5M units lost
- 2011 Thailand Floods = Parts/assembly shortage - ~.1M units lost
- 2012 Germany Resin Plant Fire = Parts shortage averted
- 2012 European Financial Crisis = EU recession/Global jitters
- 2013-2019 - Is the Auto Industry Ready?
Where Will Fuel Prices End Up?

- Could impact topline
- Consumers shift purchases and driving habits
- OEM may need to subsidize and absorb risk
- But risk will lead to technology development
- Curbed infrastructure spending

Source: US Energy Information Administration
Tougher CAFE standards and California ZEV Mandates Increase Cost of Vehicle

2012 model year:
- 30.1 mpg fleet average
- 33.8 mpg for Cars, 25.7 mpg for Light Trucks

2016 model year:
- Car: 39 mpg
- Truck: 30 mpg
- Fleet: 35.5 mpg
- Cost: $1,300 → $4,000 per vehicle

Getting to 2025

<table>
<thead>
<tr>
<th>Year</th>
<th>4.9% annual increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>35.5</td>
</tr>
<tr>
<td>2017</td>
<td>37.2</td>
</tr>
<tr>
<td>2018</td>
<td>39.0</td>
</tr>
<tr>
<td>2019</td>
<td>40.9</td>
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<tr>
<td>2020</td>
<td>42.9</td>
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<tr>
<td>2021</td>
<td>45.0</td>
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<tr>
<td>2022</td>
<td>47.2</td>
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<tr>
<td>2023</td>
<td>49.5</td>
</tr>
<tr>
<td>2024</td>
<td>51.9</td>
</tr>
<tr>
<td>2025</td>
<td>54.5</td>
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Outlook for US Light Vehicle Sales

- **Upside** – Higher corporate investment; Replacement demand/household growth; Fleet above 20%
- **Downside** – Prolonged European Crisis; Fleet sales below 18% of total; External Shock; Weak Domestic Growth

Source: LMC Automotive
Import Substitution Drive NA Production Volume Support

- Canada: <1% or 14k growth, CAGR = 0.1%
- United States: 43% or 3.6m growth, CAGR = 4.5%
- Mexico: 30% or 771k growth, CAGR = 3.4%
North American Long-term Production Base Forecast

- Demand driven growth; leaner environment, legacy vs. new capacity
- Global platforms facilitate increasing North American sourcing, exports
- Increasing localization as currency, labor and logistics hedge

Source: LMC Automotive
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Global Landscape Continues to Shift

Source: LMC Automotive
Global Scale Takes Shape with Higher Volume Platforms

Source: LMC Automotive
Platform Flexibility Will Lead to More Model Variations and Shorter Development Cycles

- Globally rationalized platform consolidation
- Expanded scalability
- Emphasis on increasing platform scope
- Scope = different vehicle types, sizes, segments
- Increasing centralization of platform development
- Regional opportunities
  - Development
  - Purchasing
  - Sourcing
Global Top Light Vehicle Producers

2012 LV Production

- Toyota Group: 9.4
- Volkswagen Group: 9.0
- Renault-Nissan Group: 8.2
- General Motors Group: 8.1
- Hyundai Group: 7.2
- Ford Group: 5.5
- Fiat-Chrysler Group: 4.3
- Honda Group: 4.0
- PSA Group: 3.2
- Suzuki with Maruti: 2.7

Source: LMC Automotive

% Stake

2019 LV Production

- Toyota Group: 11.9
- Volkswagen Group: 11.8
- Renault-Nissan Group: 10.7
- General Motors Group: 10.4
- Hyundai Group: 9.8
- Ford Group: 7.5
- Fiat-Chrysler Group: 6.2
- Honda Group: 5.9
- Suzuki with Maruti: 4.9
- PSA Group: 4.7

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  - Electrification
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Infrastructure Growth is Key

<table>
<thead>
<tr>
<th>Gasoline and hybrid: 130,000 gas stations across the country</th>
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</thead>
<tbody>
<tr>
<td>Diesel: approximately 50% of the stations offer diesel</td>
</tr>
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<table>
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<tr>
<th>Flex fuel: Less than 3,000 E85 stations nationwide</th>
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</thead>
<tbody>
<tr>
<td>PHEV/BEV: Around 9,500 charging stations; 23,000 by 2015</td>
</tr>
</tbody>
</table>
BEVs Get the Attention, but Plug-ins are Coming and Should Outsell BEVs

• Driving range and infrastructure are not obstacles to plug-in sales - high initial sales price is

• The Chevrolet Volt is the standard-bearer, but sold only 7,671 units in 2011.

• 300+ mile driving range is three times higher than typical BEV driving range.

• YTD July 2012 sales have been higher: 10,666 units, outselling the Nissan Leaf by over 2 to 1

Future models:
  • Ford C-Max Energi (fall 2012). 550 mile total driving range
  • Ford Fusion PHEV (Q3 or Q4 2012)
  • Honda Accord PHEV (2013)
  • Hyundai Blu-Will (2013)
  • Mitsubishi Outlander Sport PHEV (2013)
  • BMW i8 (2014)
  • Fisker Atlantic (2014)
  • Cadillac ELR (2014)
  • Acura MDX (2014)
PHEV + BEV Sales Forecast – 1.1 million by 2017

Note: President Obama’s target is 1 million cumulative sales by 2015

Source: LMC Automotive
Many People ‘Consider’ Buying Alt Fuel cars, but Only a Few Actually Do

- Hybrid and plug-in electric show the greatest consideration rates
- Battery electric (BEV) consideration lowest among available alternative powertrains

### Alternative Powertrain Consideration

<table>
<thead>
<tr>
<th>Powertrain Type</th>
<th>% Definitely/Probably Will Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid-Electric Vehicle</td>
<td>51%</td>
</tr>
<tr>
<td>Plug-In Hybrid-Electric Vehicle</td>
<td>37%</td>
</tr>
<tr>
<td>Clean Diesel Engine</td>
<td>31%</td>
</tr>
<tr>
<td>Battery Electric Vehicle</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: J.D. Power and Associates
Gas prices remain below $4/gallon long-term?
- We might not need diesels or hybrids, let alone electric and plug-in vehicles

Initial price premium by Alternative Powertrain:
- Clean diesel: $1,000 - $4,000
- HEV: $2,000 - $10,000 (mild hybrid to full hybrid)
- PHEV: $10,000 - $15,000
- BEV: $15,000 - $20,000

Traditional (ICE) powertrain technology has plenty of room for improvement

Engines: $500-$1500 incremental cost
- GDI: 5-10% gain
- Turbocharging: 5-10% gain
- Ecoboost: 10-15% gain
- VVT: 1-3% gain
- Cylinder deactivation: 4-6% gain
- Micro- or mild hybrid (stop-start): 4-8% gain
- HCCI: 10-20% gain

Transmissions: $500-$1000 incremental cost
- DCT: 3-10% gain compared to automatics
- CVT vs. automatic: 3-5% gain
- Man-5 to Man-6: 1-2% gain
- 6/7/8/9 speed automatic transmission: 3-6% gain
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Generational Dynamics Will Drive Further Changes in Preferences

- Positive fundamentals: population growth to 341m, 23m new drivers
- Age and duration of drivers increasing; 37% over 55, over 83m drivers
- Recession exaggerates delayed life stages trend slowing market shift

Source: US Census Bureau
A Changing Buyer Profile

**Baby Boomer**
- Delayed Retirement
  - 48 to 66 years

- Economic crash delays retirement
- Subset lacks funds to retire
- Subset desires to continue to work
- Restart career on their terms; freedom

**Millennial**
- Delayed Adulthood
  - 18 to 34 years

- Economic crash delays life stage growth
- Potential for rapid market shifts as Millennials thrust into adulthood
- Team and family oriented, need for peer approval; collaboration

**Gen i**
- Managed Expectations
  - <17 to 25 years

- First generation to grow up immersed in Internet and mobile and social communications
- More individualistic than Millennials
- Used to instant access and connectivity; impatient
Consumers Most Important Factors for Purchase Choice Continue to Evolve

Source: J.D. Power and Associates IQS Study
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Recession Accelerates Downsizing Preference

Shift in consumer preference post-recession

Source: LMC Automotive

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Non-Premium Downsizing Continues but Pace Will Slow?

- Regulations to change fleet composition
- Commodity prices spur downsizing and innovation; do more with less

- US not like Europe or Japan; vehicle size a function of geography, population density, infrastructure
- The Challenge: Difficult to design smaller vehicle than large; greater packaging, size and margin constraints
- Innovation needed to meet growing demand
- Larger vehicles (CUVs, Pickups, Vans) remain viable
Definition of premium changes as a function of socioeconomic environment

- Democratization of luxury; brands shifting down market
- Desire for luxury alive; shift occurring
- Future of luxury in smart and simple; less tangible, more personal and satisfying
- Shifting role of technology in defining luxury; dynamic
Must Serve Two Markets of Premium

• Stealth Luxury
  – Vast wealth creation and concentration in Silicon Valley
  – Inconspicuous consumption; peer pressure to keep consumption private
  – Less emphasis on external branding or cues

• Baby Boomers
  – Reflect on contributions
  – Post accumulation stage
  – Shift in spending; experiential, health and well being
Shift Downward Drives Growth in Premium Market

Premium Share

- 2019
- 2012

- Compact Premium Car
- Compact Premium CUV
- Compact Premium Sporty
- Midsize Premium Car
- Midsize Premium CUV
- Mid/Large Premium Sporty
- Midsize/Large Premium Utility
- Large Premium Car

The Automotive Market Faces Unprecedented Change and Uncertainty
Accurate Real-Time Automotive Forecasting and Market Intelligence

Oxford ● Detroit ● Frankfurt ● Bangkok ● Shanghai
Website: www.lmc-auto.com;