Inside China: Understanding China’s Current and Future Automotive Industry

“Focus on the Future”
UM Automotive Research Conferences

WELCOME!

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Automotive Futures
University of Michigan
Transportation Research Institute

Funding

Affiliate Program
- Supporting Members
- Research Partners

Research
- Globalization
- Powertrains
- IT

Conferences
- 5 Annual Conferences
## Automotive Futures Affiliate Program

### Affiliates Members and Research Partners

**IT Organizations**
- Oracle Corporation
- IBM
- HP
- Siemens-PLM

**OEMs**
- General Motors
- Toyota Tech Center
- Nissan Tech Center
- Ford Motor Company
- Chrysler LLC

**Government/NGOs**
- NREL / EPA
- NSF
- Motor Carrier
- Energy Foundation
- The Hewlett Foundation
- National Resources Defense Council
- Union of Concerned Scientists
- CALSTART
- Argonne National Labs
Automotive Futures
Affiliate Program

Affiliates Members and Research Partners

**Suppliers**
- Chevron
- Visteon
- Denso
- Dana
- Delphi
- Peterson Spring
- Continental
- TRW
- Valeo

**Suppliers**
- Michelin
- Continental
- JCI
- BorgWarner
- Yazaki
- Eaton
- BASF
- Dow
- Bosch
Automotive Futures
Affiliate Program

Recent Affiliate Members

Argonne National Labs
BorgWarner
Oracle
Valeo
ITS America

Thank you for your support!
Automotive Futures
Current Research Programs

• Powertrains
  • 2014 Powertrain Strategies for the 21st Century Survey (Sponsor: Affiliates)
    • Survey continuing

• Total Cost of Ownership: Comparing Diesel and Gas Vehicles (Bosch)
  • Based on resale value of 30K vehicles sold through Mannheim auctions in 2012 / 2013
  • Report available
Automotive Futures
Current Research Programs

- ITS
  - Stuck in Traffic: Analyzing Real Time Traffic Capabilities of Personal Navigation Devices and Traffic Phone Applications
    - Final report available
  - Integrated Mobile Observations: Micro-level weather reporting using cell phones in MDOT vehicles (Sponsor: MDOT and FHWA)
    - Continuing data collection through October, 2015
Automotive Futures
Current Research Programs

- ITS
  - Roadway Evaluation Project: Measuring road roughness via accelerometers in cell phones mounted in MDOT vehicles
    - Final report available
  - Deploying Safety Technologies in Commercial Vehicles
    - Familiarity and penetration currently and in the future of: Forward Collision Warning / Lane Departure Warning / Blind Spot Detection / ESC / Vehicle Communications
    - Final report available (Sponsor: ITS America)
Automotive Futures
Researchers

• Visiting Researchers:
  • Janghwan Shin (Korea): LG
    • Focus on the future trends in vehicle batteries: What will be the next generation vehicle battery?
    • Supporting the next Powertrain Strategies for the 21st Century conference in July, 2016 on the theme of next generation vehicle batteries
  • Sergio Goncalves Muniz (Brazil): Federal Technology University of Parana
    • Focus on global efforts to support electric vehicles: What policies and/or incentives are the most effective?
Automotive Futures
Researchers

• Student Researchers:
  • Kunal Haria: Sophomore, Mechanical Engineering
    • Working on data collection, management, and analysis of this year’s Powertrain Strategy for the 21st Century expert survey
  • Alexa Kershenheiter: Sophomore, Mechanical Engineering
    • Working on pre-conference analyses: China 2014 Production data, China auto manufacturer information, and conference highlights
Upcoming UMTRI-AF Conferences

- February 17, 2016: *New Mobility: The Future of Freight.* A new conference that examines the major changes IT-enabled goods movement will have on the freight movement industry.

- April 13, 2016: *Globalization of the Automotive Industry: The 2016 Update.* A new conference that brings everyone up to date on the trends in the globalization of the automotive industry from a manufacturer and supplier perspective.

- July 20, 2016: *Powertrain Strategies for the 21st Century.* Our 8th annual conference will provide an overview of all the electrification progress that has been made in the global auto industry.
The UM Alumni Discount

Alumni who sign up in advance for five conferences in a row receive a $250 discount
AM Presenters

9am    Bruce Belzowski, Managing Director, Automotive Futures, UM Transportation Research Institute

• Jacob George, Vice President and General Manager of Global Consulting Services for J.D. Power

• Loren Brandt, Professor, University of Toronto

10:25-10:40am  Break

• Michael Thomas, CEO, Automotive Insights

• AM Panel Q&A

12:00-1:30pm  Lunch
1:30pm       Yingzi Su, Senior Economist, North America and China, General Motors Corporation

•   Yan Zhou, Transportation System Analyst, Argonne National Labs

2:35-2:45pm  Break

•   Michael Dunne, CEO, Dunne Automotive
•   PM Panel Q&A

4:00pm       Adjourn
Conference Questions

• How do Chinese auto buyers differ from US buyers?
• What are the different vehicle characteristics that Chinese buyers consider important in their assessment of vehicle quality?
• What are the longer term quality issues Chinese buyers report?
• How have Chinese policies and markets affected the growth of the auto industry?
Conference Questions

• How successful has government policy been in creating competitive Chinese automotive companies?
• What areas of support provided by engineering service firms are the most important for Chinese auto companies?
• Which types of Chinese companies are more likely to need engineering service firm support?
• What are the drivers of China’s current automotive economy?
• What is currently holding back growth in the Chinese auto market?
Conference Questions

- How much can the Chinese market grow, based on government emissions and registration restrictions?
- What technologies will be the most important for US and Chinese researchers to develop?
- What key technologies will be the focus of work by US and Chinese researchers?
- How is the Chinese government supporting new energy vehicles in China?
- Who is driving these vehicles and what technologies are in use?
Post Conference Mailing

Attendees:
• Link to presentations
• Link to China auto company info

Affiliates:
• The above items
• Document and link to a review of highlights from the conference
• Document and link to 8 years of UMTRI Automotive Futures Inside China presentations organized by topic area
Chinese Auto Production: 2014
Total China Vehicle Production

Source: 2014 Ward’s Automotive Yearbook
## 2014 Top Ten Vehicle Production

<table>
<thead>
<tr>
<th>Company</th>
<th>Number of Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAW VW</td>
<td>1,807,633</td>
</tr>
<tr>
<td>SAIC GM Wuling</td>
<td>1,803,189</td>
</tr>
<tr>
<td>Shanghai VW</td>
<td>1,743,281</td>
</tr>
<tr>
<td>Shanghai GM (Independent)</td>
<td>1,731,325</td>
</tr>
<tr>
<td>Chang'an (Independent)</td>
<td>1,135,681</td>
</tr>
<tr>
<td>Beijing Hyundai</td>
<td>1,120,000</td>
</tr>
<tr>
<td>Dongfeng Nissan</td>
<td>936,394</td>
</tr>
<tr>
<td>Chang'an Ford</td>
<td>811,662</td>
</tr>
<tr>
<td>Dongfeng (Independent)</td>
<td>804,695</td>
</tr>
<tr>
<td>Dongfeng PSA</td>
<td>718,734</td>
</tr>
</tbody>
</table>

Source: 2014 Ward’s Automotive Yearbook
2013 to 2014 Comparison of Top Ten Vehicle Production

Source: 2014 Ward’s Automotive Yearbook
2014 Top Joint Venture Production

VW & Audi: 4,129,846
GM: 3,555,750
Hyundai & Kia: 1,761,087
Nissan: 987,684
Toyota: 963,981
Honda: 856,389
Ford: 811,662
BMW: 287,780
Suzuki: 169,536
Mercedes: 146,255
Mazda: 103,207
Fiat: 69,088
Mitsubishi: 66,718

Source: 2014 Ward’s Automotive Yearbook
2013 to 2014 Comparison of Top Joint Venture Production

Source: 2014 Ward’s Automotive Yearbook
2014 Chinese Independent Brands with Joint Ventures

Source: 2014 Ward’s Automotive Yearbook

- Chang'an: 1,135,681
- Dongfeng: 804,695
- Beijing AIC: 553,444
- FAW: 395,518
- Guangzhou AC: 138,149
- Shanghai AIC: 75,485

Source: 2014 Ward’s Automotive Yearbook
2013 to 2014 Comparison of Chinese Independent Brands with Joint Ventures

Source: 2014 Ward’s Automotive Yearbook
2014 Top Chinese Independent Manufacturer Production
(Non-Joint Venture Companies)

Great Wall: 643,513
Chery: 459,730
BYD: 433,718
Geely: 429,145
Jianghuai: 403,816
Foton: 336,702

Source: 2014 Ward’s Automotive Yearbook
2014 Top Chinese Independent Manufacturer Production (Non-Joint Venture Companies)

<table>
<thead>
<tr>
<th>Company</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>JMC</td>
<td>314,975</td>
</tr>
<tr>
<td>Jinbei</td>
<td>282,452</td>
</tr>
<tr>
<td>Nanjing</td>
<td>228,115</td>
</tr>
<tr>
<td>Lifan</td>
<td>206,051</td>
</tr>
<tr>
<td>Changhe</td>
<td>144,965</td>
</tr>
<tr>
<td>Haima Zhengzhou</td>
<td>96,960</td>
</tr>
<tr>
<td>Hafei</td>
<td>76,197</td>
</tr>
</tbody>
</table>

Source: 2014 Ward’s Automotive Yearbook
2013 to 2014 Comparison of Top Chinese Independent Manufacturer Production
(Non-Joint Venture Companies)

Source: 2014 Ward’s Automotive Yearbook
2013 to 2014 Comparison of Top Chinese Independent Manufacturer Production (Non-Joint Venture Companies)

Source: 2014 Ward’s Automotive Yearbook
E-mobility in China

- Study performed by KPMG in 2015, one of the largest professional services companies in the world and one of the Big Four auditors

- Survey of 200 automotive executives

- Included manufacturers, Tier 1,2, and 3 suppliers, dealers, financial services providers, and mobility service providers
Share of E-vehicles in China by 2025

Source: 2015 KPMG
Survey Results

Average Shares of E-Vehicles by 2025

Source: 2015 KPMG
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WELCOME!

The Link to Presentations Will Be Emailed This Weekend