Back to “normal”? 
The U.S. auto industry in 2023 & 2024

30TH ANNUAL AUTOMOTIVE INSIGHTS SYMPOSIUM
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Is the auto industry back to “normal”
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**U.S. Light Vehicle Sales**
*(2015-2023 vs. 2015-2019 Average)*

- **2015-2019 Average**
- **2015-2023**

**U.S. Light Vehicle Production**
*(2015-2023P vs. 2015-2019 Average)*

- **2015-2019 Average**
- **2015-2023**

**U.S. Light Vehicle Inventory**
*(2015-2023 vs. 2015-2019 Average)*

- **2015-2019 Average**
- **2015-2023**

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**Source:** Wards Informa

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3. Automotive Insights Symposium 2024

Shaded areas indicate U.S. recessions. Source: Board of Governors of the Federal Reserve System (US) fred.stlouisfed.org

2015-2019 average = 80.6%
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Production & Non-Supervisory Employment
(2023 11 Months/2015-2019 Average)

- Private, 106%
- Manufacturing, 104%
- Motor Vehicle, 148%
- Motor Vehicle Parts, 100%

Production & Non-Supervisory Real Wages
(2023/2015-2019 average)

- Private, 105%
- Manufacturing, 101%
- Motor Vehicle, 90%
- Motor Vehicle Parts, 103%

Labor Productivity
(2022/2015-2019 average)

- Private, 108%
- Manufacturing, 97%
- Motor Vehicle, 75%
- Motor Vehicle Parts, 102%

Production & Non-Supervisory Average Weekly Hours
(2023/2015-2019 average)

- Private, 101%
- Manufacturing, 97%
- Motor Vehicle, 107%
- Motor Vehicle Parts, 93%

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Production schedules have been volatile

U.S. Production, month-over-month % change in volume, 2019-November 2023 (excluding April-June 2020)

Source: Wards Informa
Supply chain pressures easing are bringing down goods inflation; back to neutral

- All industries
- Net change in supply chain flows has been negative since May
- Moved back slightly above normal (0) in November 2023 for the first time since January indicating pressures were rising and then back below normal in December
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U.S. Motor Vehicle & Parts Trade

Imports (USD Billions 2022/2015-2019 average)
- Motor Vehicle, 100%
- Motor Vehicle Parts, 119%

Exports (USD Billions 2022/2015-2019 average)
- Motor Vehicle, 107%
- Motor Vehicle Parts, 93%

Balance of Trade (USD Billions 2022/2015-2019 average)
- World
- Mexico
- Canada
- Japan
- China
- Germany
- South Korea

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2020-November 2023 U.S. New & Used Vehicle Price Inflation (Consumer Price Index, YoY% change)


fred.stlouisfed.org
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The incentive share of average transaction prices is rising again.

Source: Federal Reserve
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BEV prices are falling driven by incentives & price cuts

Source: Kelley Blue Book
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Electrified vehicles were the fastest growing segments in the U.S. market in 2023.
The annual value of private construction put in place in computer/electronic/electrical grew 5.5X larger since passage of the Infrastructure bill & 2.8X larger since passage of the Chips Act.
December 2023: Ohio opens the first EV fast charging station funded by the NEVI Program
### U.S.-produced battery electric, plug-in hybrid, & fuel cell vehicles are expected to rapidly shift to U.S.-sourced battery cells

**TRENDS**

U.S. BEV, PHEV, & FCEV Light Vehicle Volume Installation; Region/Country Source of Battery Cells

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Canada</th>
<th>Mexico</th>
<th>China</th>
<th>Other Asia Pacific</th>
<th>Europe</th>
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Source: S&P Global Mobility, High Voltage Battery forecast, November 2023.
IRA incentives available, but requirements start to bite

1 January 2023 (43 models/variants qualify):

18 April 2023 (43 models/variants qualify):
- 40% U.S. or FTA critical minerals
- 50% North American components

1 January 2024 (19 models/variants qualify):
- 50% U.S. or FTA critical minerals
- 60% North American components
- ZERO components from “Foreign Entities of Concern”
- Point-of-sale incentives begin

1 January 2025:
- 60% U.S. or FTA critical minerals (80% by 2027)
- 60% North American components (100% by 2029)
- ZERO components from “Foreign Entities of Concern”
- ZERO critical minerals from “Foreign Entities of Concern”

Attention: Not every version of the models listed below will necessarily qualify. Please check with the dealer/seller to determine the eligibility of your specific vehicle.

Are EV sales about to run out of charge?
Rogers’ Technology Adoption Life Cycle

- Innovators: 2.5%
- Early Adopters: 13.5%
- Early Majority: 34%
- Late Majority: 34%
- Laggards: 16%

Moore’s Crossing the Chasm

- Tech Enthusiasts: 2.5%
- Visionaries: 13.5%
- Pragmatists: 34%
- Conservatives: 34%
- Skeptics: 16%
How to convince the pragmatists?
China...
- Was the #1 Vehicle exporting nation in 2023—reversing a trade deficit as recently as 2021 to a trade surplus
- Had the #1 Global electric vehicle brand in 2023 (BYD)
- Gained an 8% share of the EU’s EV market in 2023—prompting an EC trade investigation
- Chinese-build light vehicles (ICE, not EV) went from 0% to 20% of Mexico’s market (ICE) in 6 years
- Makes up just 1% of Mexico’s foreign direct investment, but is the fastest growing source of FDI since 2016
- Chinese market is becoming more Chinese—lower market share for JV & import brands
- Started to impose export restraints on critical inputs such as natural graphite & neodymium magnets
There was only one Chinese-built passenger EV in the U.S. market in 2023:
- EVs made up 9% of the value of U.S. passenger vehicle imports
- Chinese EVs were just 0.17% of U.S. imports
Macroeconomic headwinds or smooth sailing?
Trade in 2024 and beyond:

• Need to develop non-China sources of components & critical minerals
• Some in Congress are talking about raising trade barriers
• EVs are likely to be a focus in this election year
Labor in 2024 and beyond:

- Impact of change in labor costs
  - Outsourcing/offshoring
  - Automation
  - Flow-through to other automakers, suppliers, & sectors
- Success of UAW organizing in the sector
- Longer-term consequences
- Rising wages may be a lagging inflation indicator
2009-November 2023 U.S. Inflation
(Core Personal Consumption Expenditures, YoY% change)
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Summary of Economic Projections

Figure 5. Uncertainty and risks in projections of the federal funds rate

Source: Federal Reserve Board of Governors, 14 December 2023

Change since September 2023 SEP: Lower Higher Same

(in response to a question about adding the word “any” to the statement on determining the extent of any additional policy firming) “We added the word ‘any’ as an acknowledgement that we are likely at or near the peak rate for this cycle.”

Fed Chair Jerome Powell
13 December 2023 Press Conference
<table>
<thead>
<tr>
<th>Category</th>
<th>Status</th>
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<tr>
<td>Sales</td>
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<tr>
<td>Production</td>
<td>Almost</td>
</tr>
<tr>
<td>Inventory</td>
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<tr>
<td>Capacity Utilization</td>
<td>X</td>
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<tr>
<td>Trade</td>
<td>✔</td>
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<tr>
<td>Employment</td>
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<td>Real Wages</td>
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<tr>
<td>Productivity</td>
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<td>Used Vehicle Inflation</td>
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<tr>
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