

NPE 2024 | **MADE
FOR YOU**
The Plastics Show

Produced by  **PLASTICS**
INDUSTRY ASSOCIATION



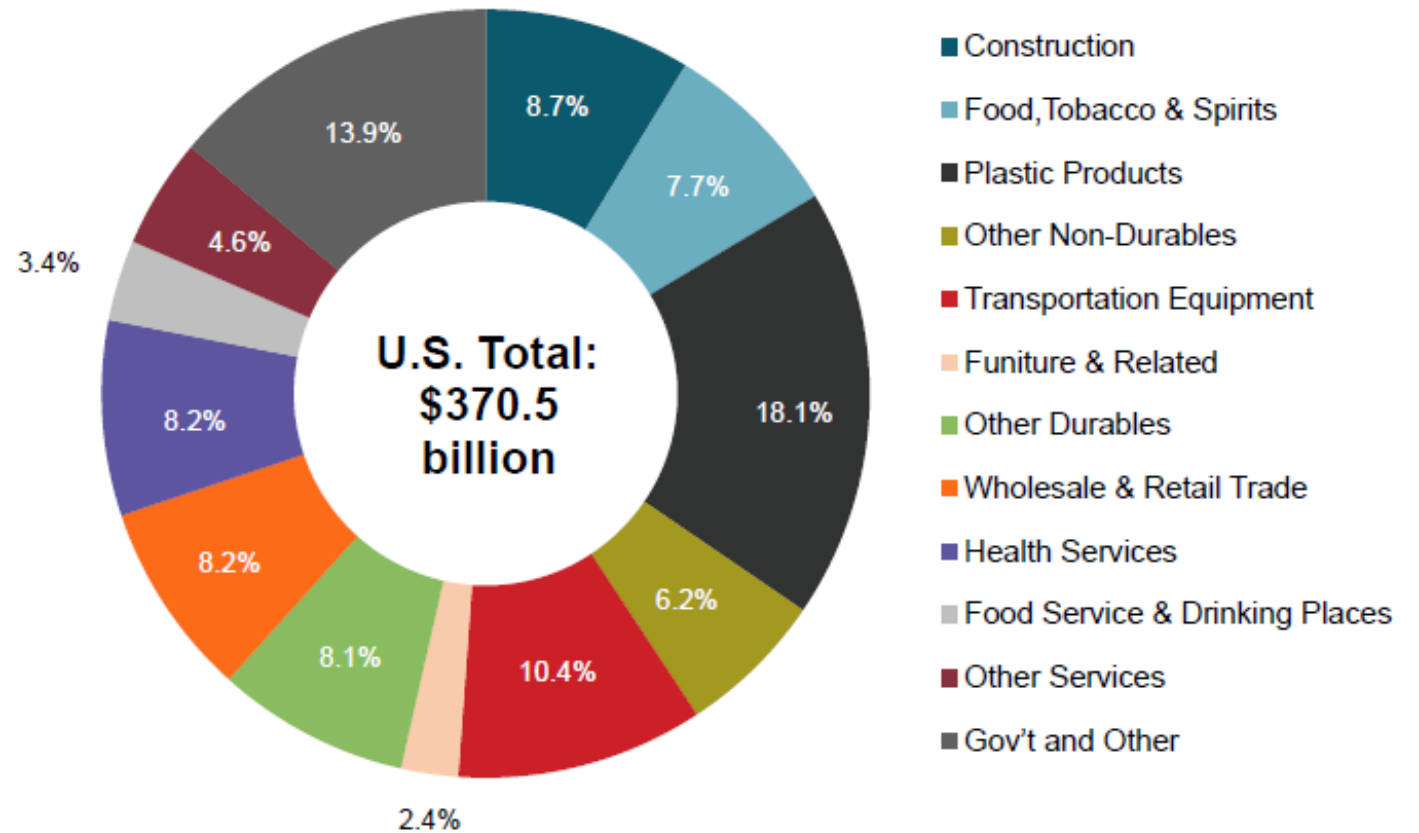
Global Economic Impact of Plastics

Perc Pineda, PhD
Chief Economist, PLASTICS

ONE INDUSTRY
THAT MAKES A
**POSITIVE
IMPACT**

2023

88.0% of Plastics Products in Personal Consumption (2022)



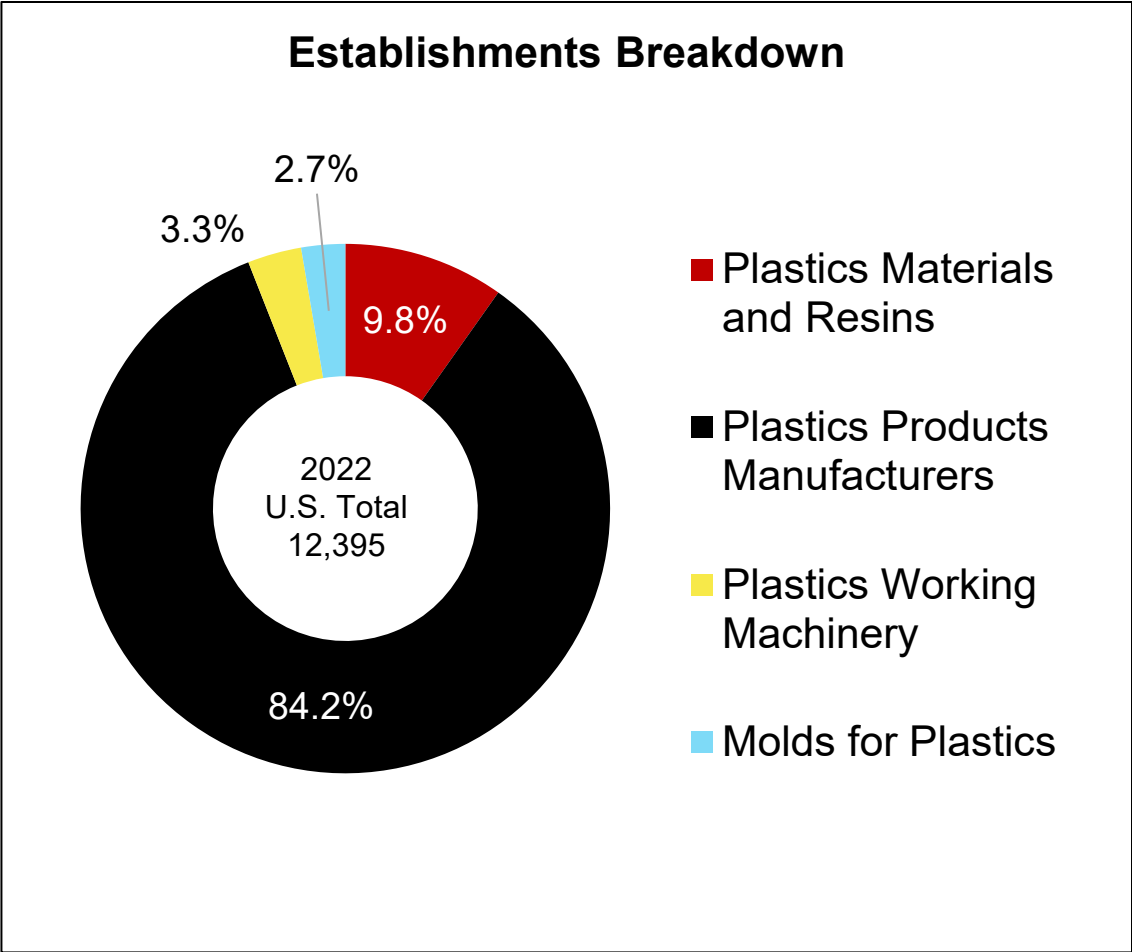
U.S. Plastics Industry Shipments and Establishments

\$548 billion

The plastics industry accounted for \$548.2 billion in total shipments in 2022.

Total value of shipments in 2022 including suppliers: \$677.8 billion.

\$678 billion



U.S. Plastics Industry: Employment Impact

**1+
million**

In 2022, the U.S. plastics industry **employed** **1,015,100** workers

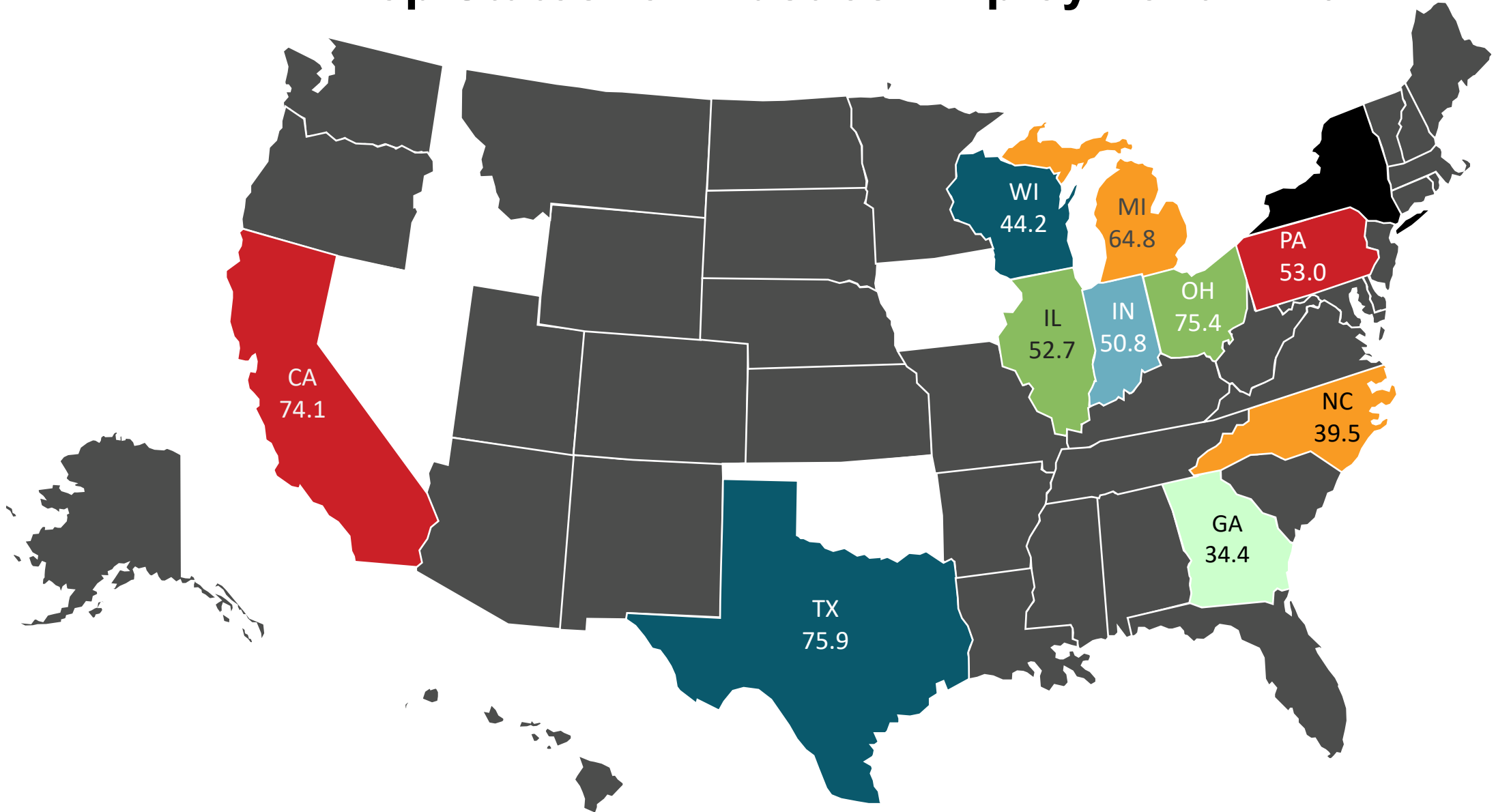
Inclusion of suppliers boosts total plastics industry employment to **1,586,000**

**1.59
million**

6.0%

That's a **6.0%** increase in total **employment impact**

Top States for Plastics Employment in 2022



States With Most Plastics Employment by Sector

Plastics materials
and resin
TX: 20.8%

Plastic
products
OH: 7.9%

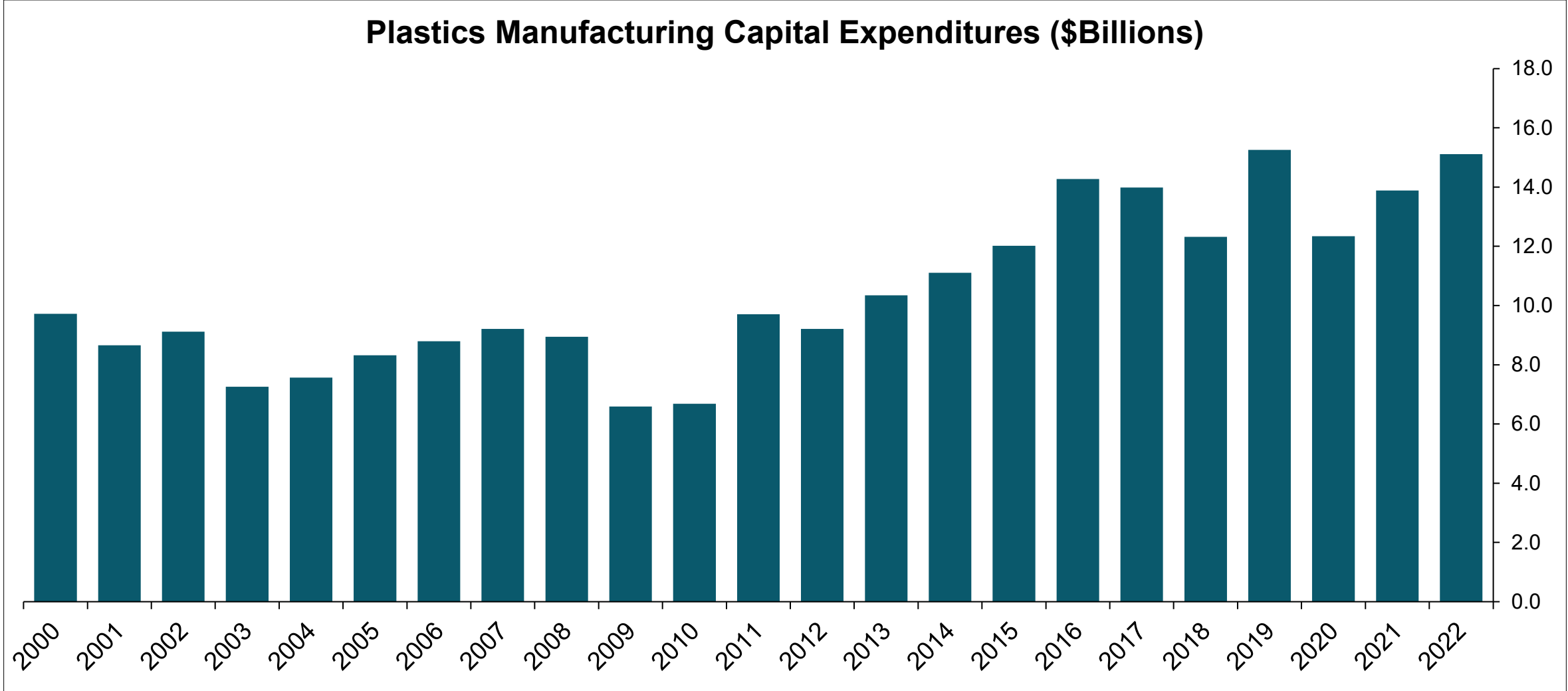
Plastics
machinery
MI: 12.8%

Molds for
plastics
MI: 19.8%

Wholesale
trade
CA: 11.3%

Captive plastic
products
CA: 8.8%

Plastics Industry: Sustained Investment Momentum



Plastics Industry Outlook

Headwinds

- Higher cost of capital
- Weaker household spending momentum
- Uneven economic adjustments across industries
- Inventory and capacity adjustments

Tailwinds

- Strong labor market
- Reshoring, friend-shoring, insourcing
- Stable healthcare and consumer essentials demand
- Spillover effects of AI on end markets (long-term)

**Set to
Track
Economic
Growth**

**Plastics:
A Mature Industry**

U.S. Economic Outlook



Perc Pineda, PhD
@PercPineda



Current interest rates are sustaining economic growth. Parsing the aggregate, housing and manufacturing sectors remain weak. The labor market remains strong, yet inflation persists at elevated levels. There's no need to excessively scrutinize the Fed's recent decision.



2023: OUTPUT EXPANSION
GDP: 2.5%
PLASTICS' FORECAST
GDP: 2.4%



2023: INFLATION DECREASED
CPI: 4.1%
PLASTICS' FORECAST
CPI: 4.1%



2023: LOW UNEMPLOYMENT
U3: 3.6%
PLASTICS' FORECAST
CPI: 3.6%

Global Economic Growth: Divergent Trends Expected

U.S. GDP Outlook	2024	2025
Congressional Budget Office (February 2024)	1.8	2.0
Fed Reserve Board of Governors* (March 2024)	2.1	2.0
Fed Reserve Bank of Philadelphia (Q1-2024)	2.4	1.8
IMF (April 2024)	1.7	1.9
World Bank (January 2024)	1.6	1.7
PLASTICS* (April 2024)	2.3	1.7

Inflation is not easing fast enough...



"Inflation Hits Romance: Candlelit Dinners Now Require a Small Loan!"



"Inflation's New Mascot: The Rubber Chicken – Now More Expensive, Less Funny!"



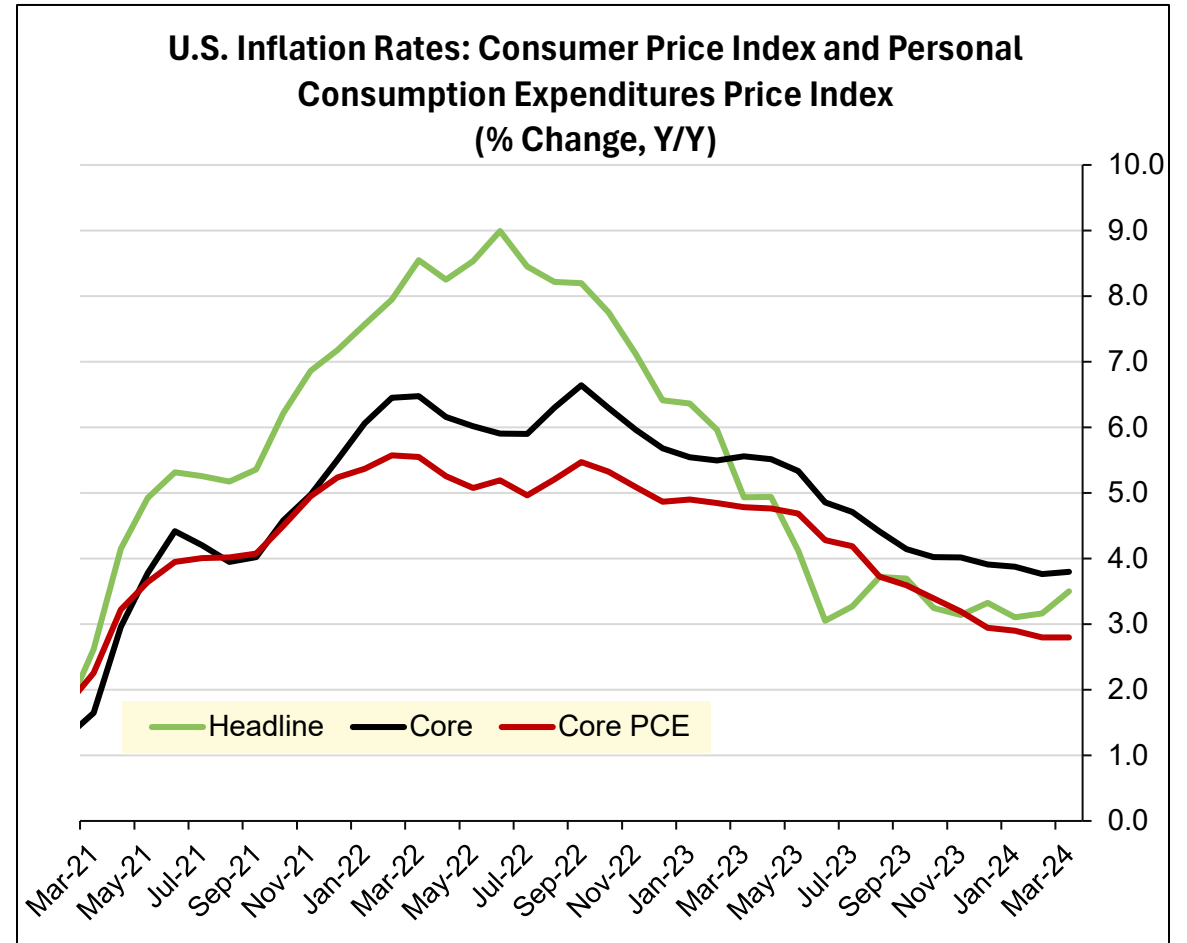
"Inflation's Latest Victim: Tooth Fairy Negotiates Lower Payouts!"



"Economists Baffled: Inflation Rates Now Outpacing Dad Jokes!"

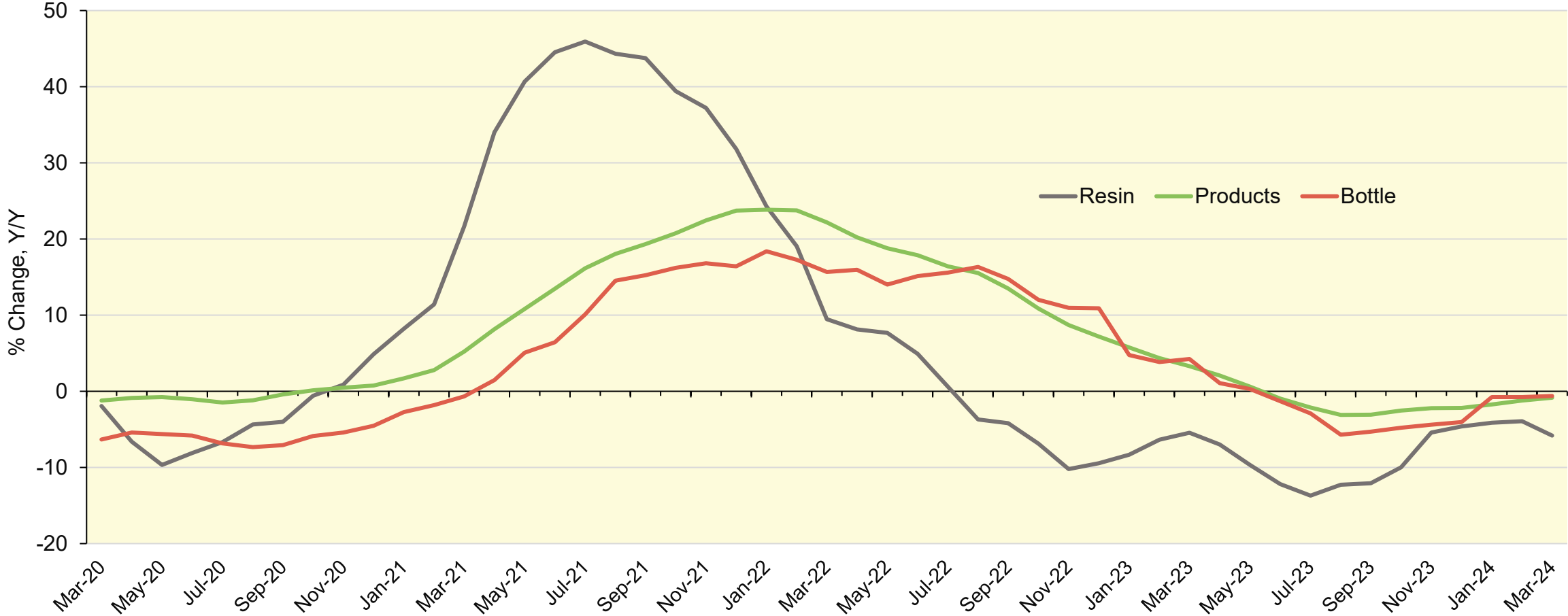


"Inflation Reality Show: Contestants Compete to Stretch \$10 into a Month's Worth of Starbucks!"



Plastics Price Surge Ended

Producer Price Indices: Plastics Materials and Resin, Plastics Product, and Plastics Bottle Manufacturing



Plastics Producer Prices Indices

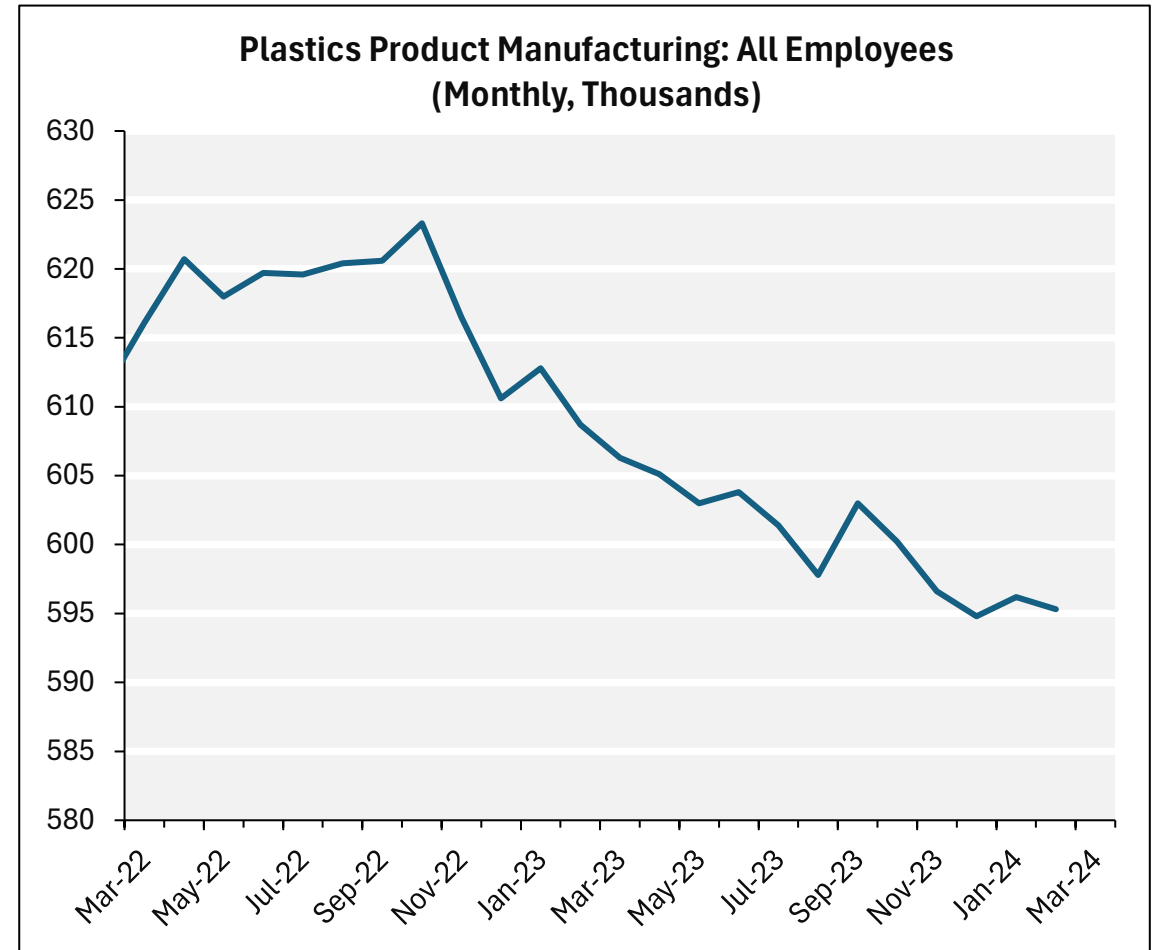
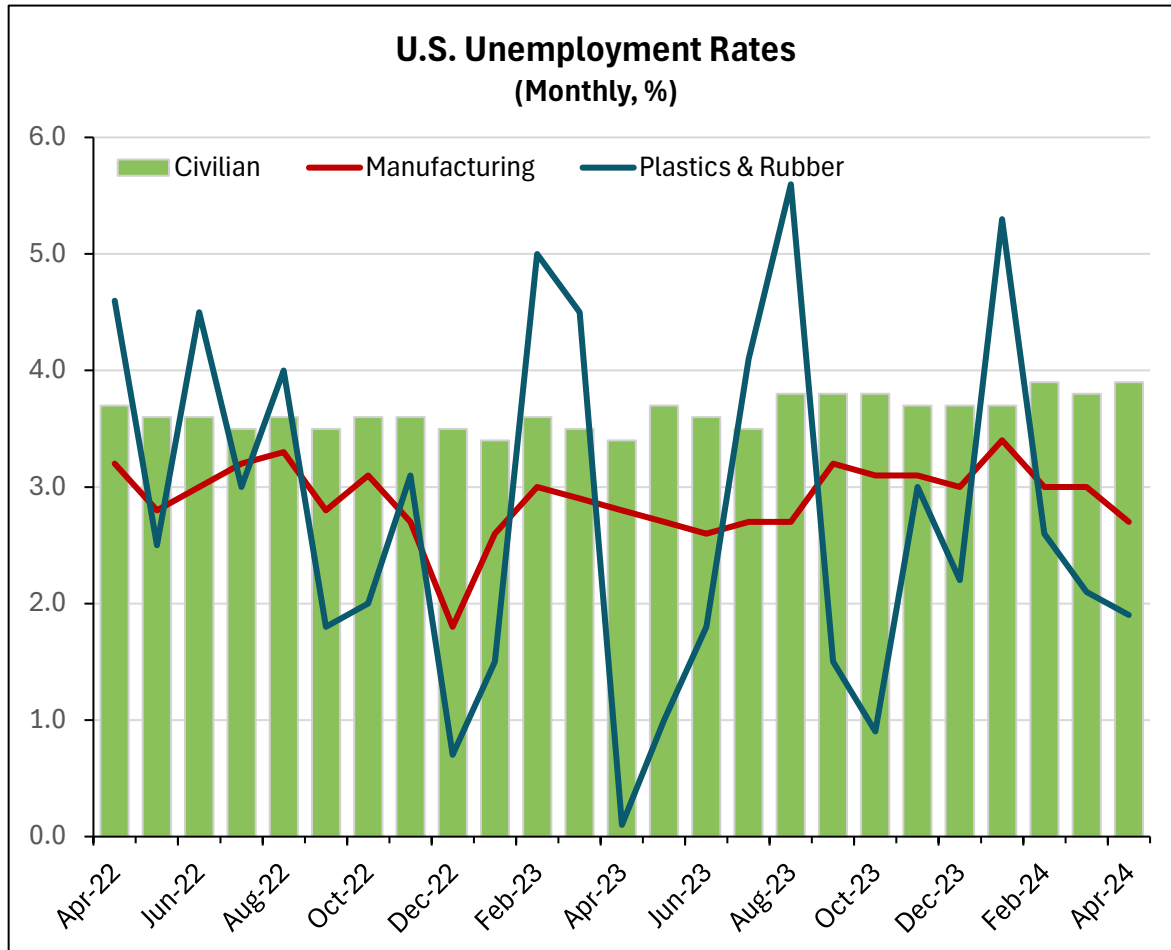
Producer Price Movements - % Change														
Month	M	M	M	M	M	M	M	I	C	C	C	M	I	M
Mar-24	Resin	Thermos Resin	Thermop Resin	Plastic Products	Bag & Pouch	Film & Sheet	PE Refuse Bags	Recyclable Plastics	Vinyl Copolymer	Machinery	Machinery Parts	Molds	Plastics Bottles	Custom Compounding
M/M	-1.0	-5.8	-0.4	0.2	0.2	0.5	-0.2	-3.6	0.0	0.0	0.0	NA	0.0	0.0
Y/Y	-5.8	-16.5	-4.3	-0.8	0.2	3.4	-1.5	-7.4	-5.2	1.1	3.2	NA	-0.6	1.7

Producer Price Index by Industry: Plastics	
Description	Data Tab
Plastics Material and Resins Manufacturing	Materials and Resin Mfg
Plastics Material and Resins Manufacturing: Thermosetting Resins and Plastics Materials	Thermosetting Resins
Plastics Packaging Film and Sheet Manufacturing: Coextruded Single-Web Film, for Flexible Packaging Uses	Packaging Film and Sheet Mfg
Plastics Product Manufacturing	Plastics Products Mfg
Plastics Bag and Pouch Manufacturing	Bag and Pouch Mfg
Plastics Bag and Pouch Manufacturing: Polyethylene Refuse Bags	Polyethylene Refuse Bags
Plastics Material and Resins Manufacturing: Thermoplastic Resins and Plastics Materials	Thermoplastics Resins
Material Recyclers: Recyclable Plastics	Recyclable Plastics
Plastic and Rubber Products: Unlaminated Vinyl and Vinyl Copolymer Film and Sheet*	Vinly Copolymer
Plastic-working Machinery (Excluding Parts)*	Machinery
Parts for Plastic-working Machinery*	Machinery Parts
Industrial Mold Manufacturing: Industrial Injection-Type Molds Made of Metal for Plastics	Molds
Rubber and Plastic Products: Plastics Bottles	Plastics Bottles
Custom Compounding of Purchased Resin	Custom Compounding

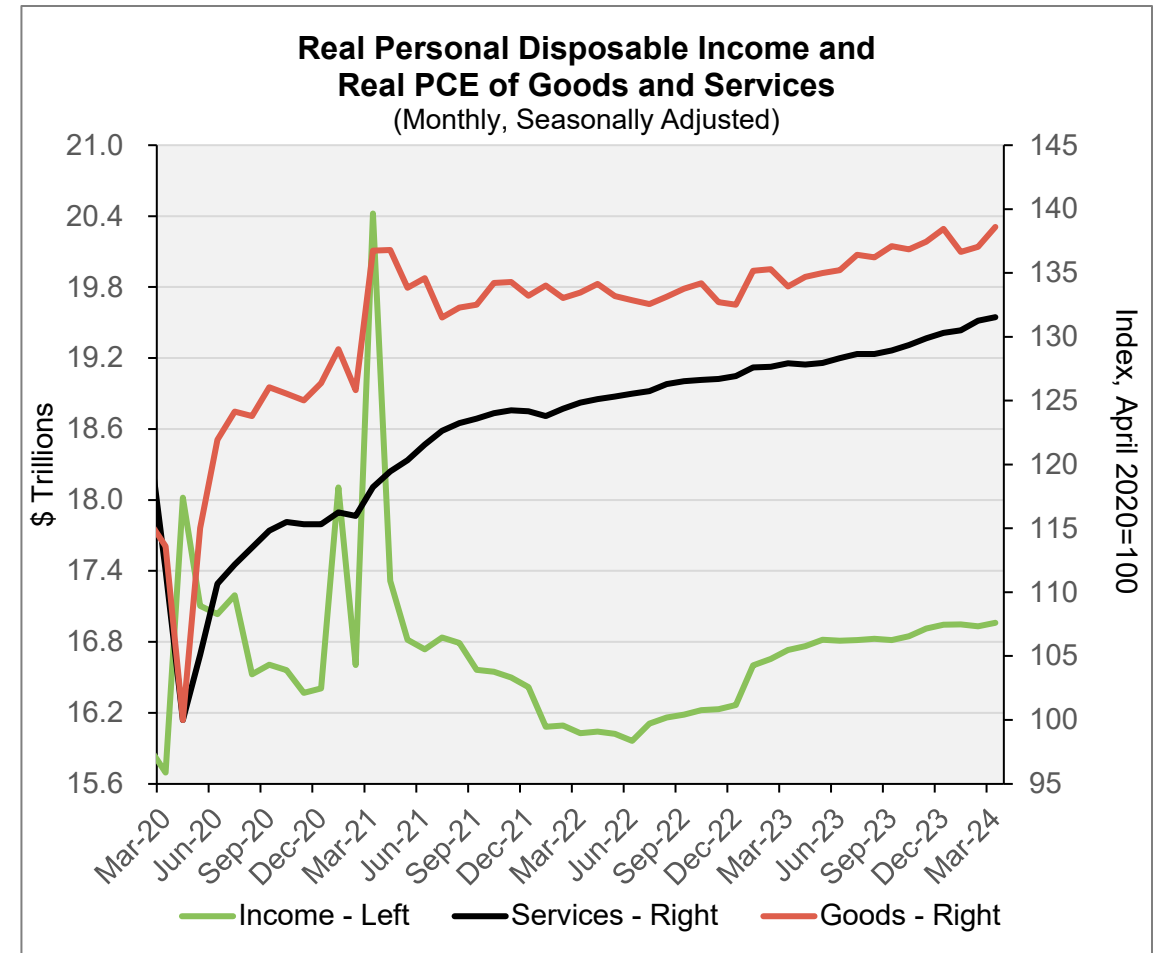
U.S. Labor Market Outlook

The New York Times

“It’s not a bad economy; it’s still a healthy economy,” said Perc Pineda, chief economist at the Plastics Industry Association. “I think it’s part of the cycle. We cannot continue robust growth indefinitely considering the limits of our economy.”



Business Inventories, Disposable Personal Income, and Consumption Trends



Plastics End Market Outlook



TRANSPORTATION



CONSTRUCTION



FOOD &
BEVERAGE



ELECTRONICS



APPLIANCES



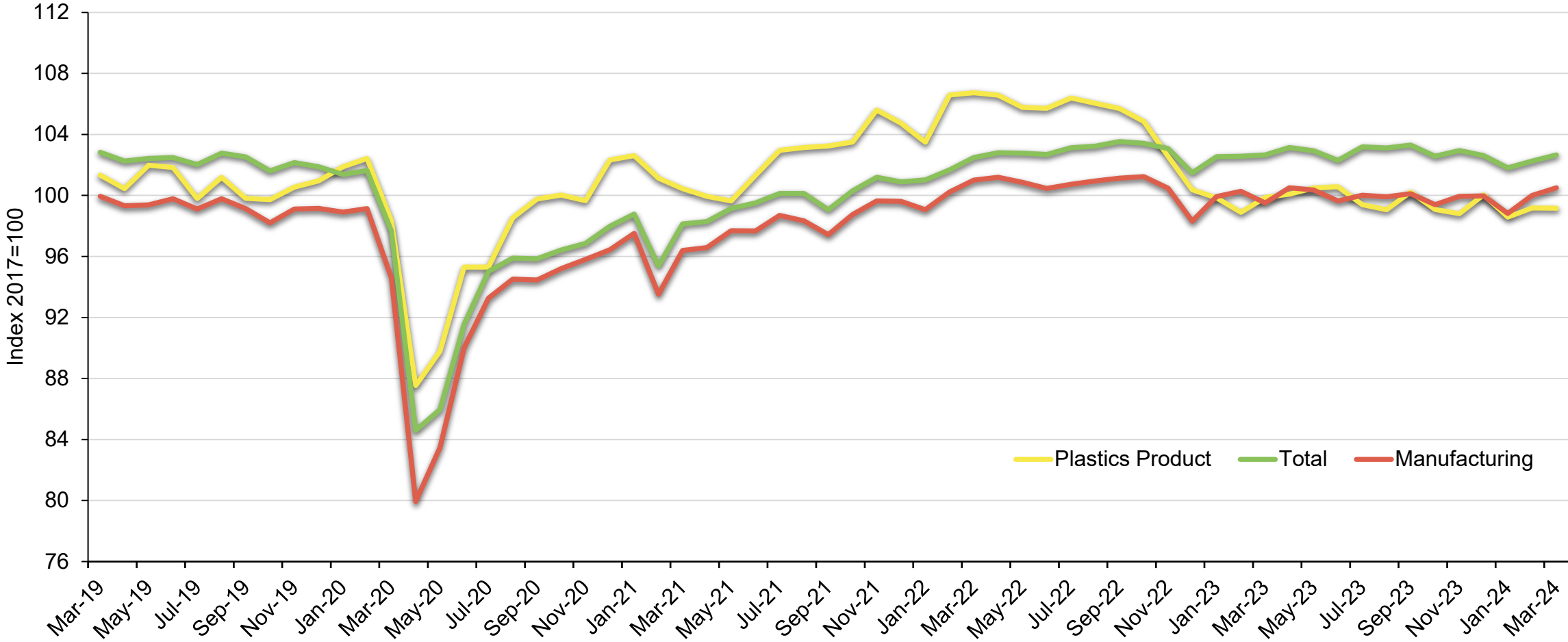
HEALTHCARE



ELECTRICAL &
INDUSTRIAL

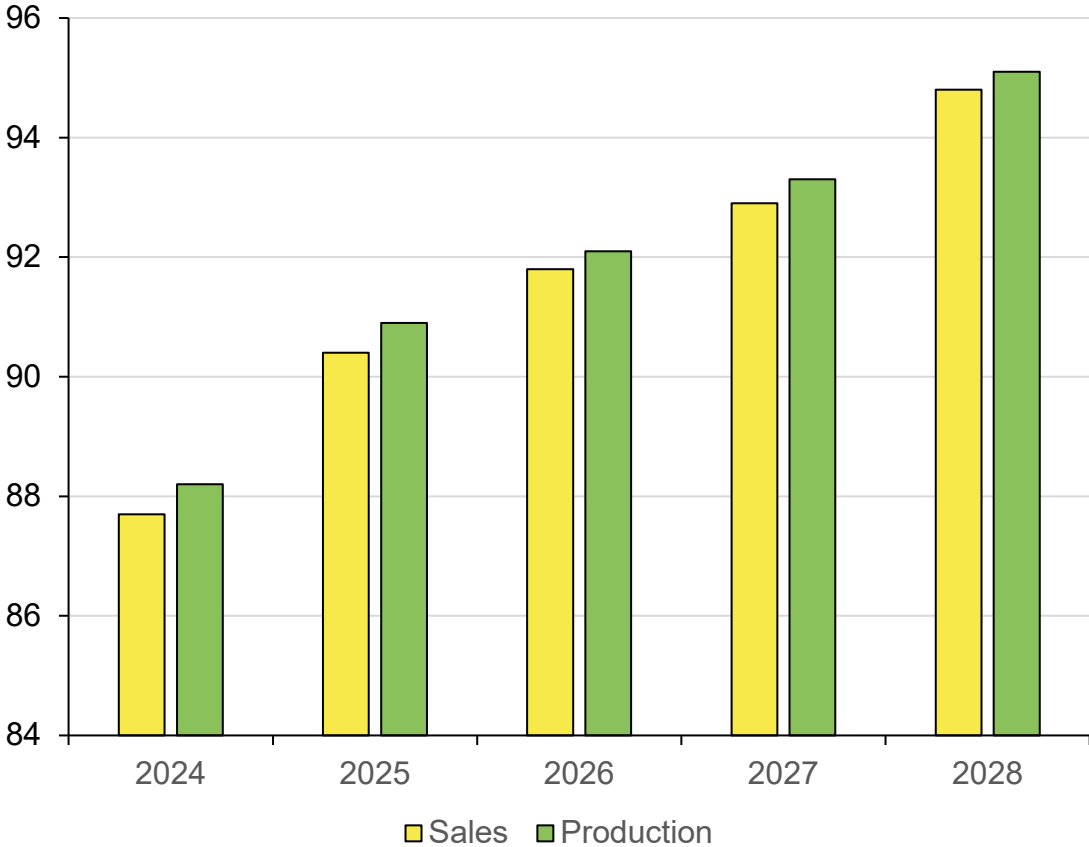
U.S. Manufacturing Outlook

Industrial Production Indices

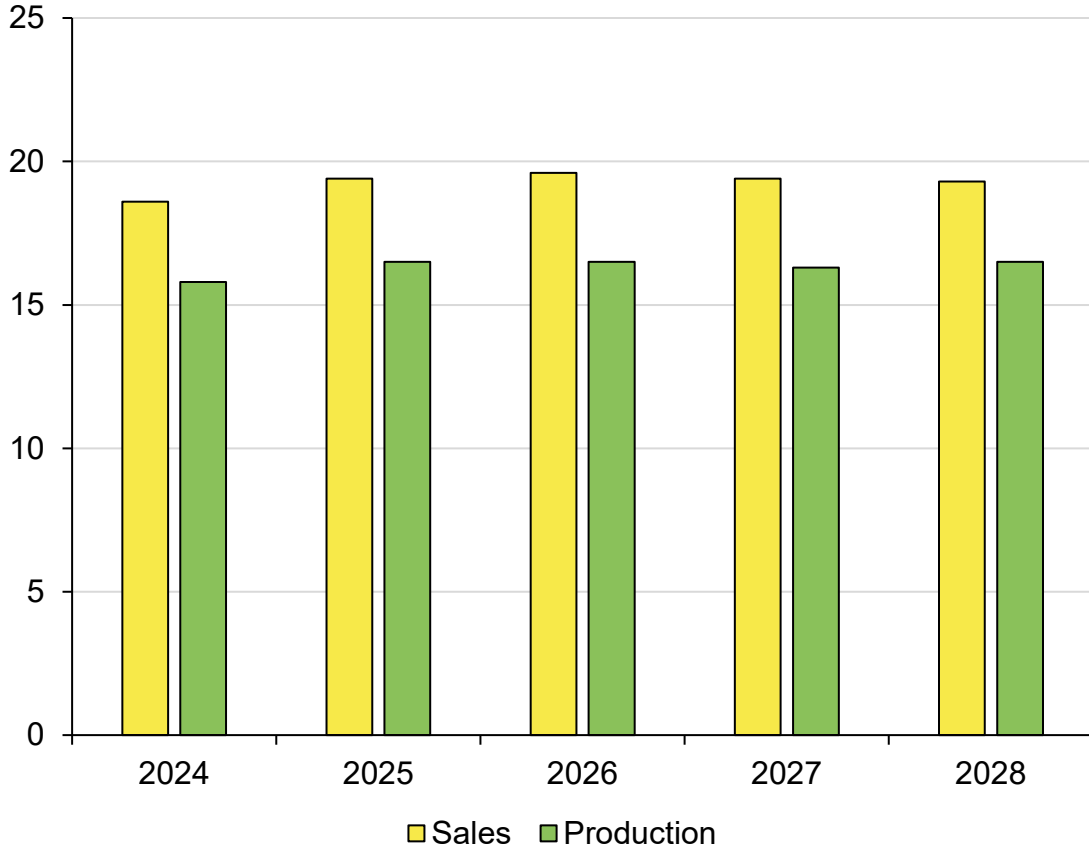


Global Light-Vehicle Outlook

Global Light-Vehicles Sales and Production Outlook (Million Units)

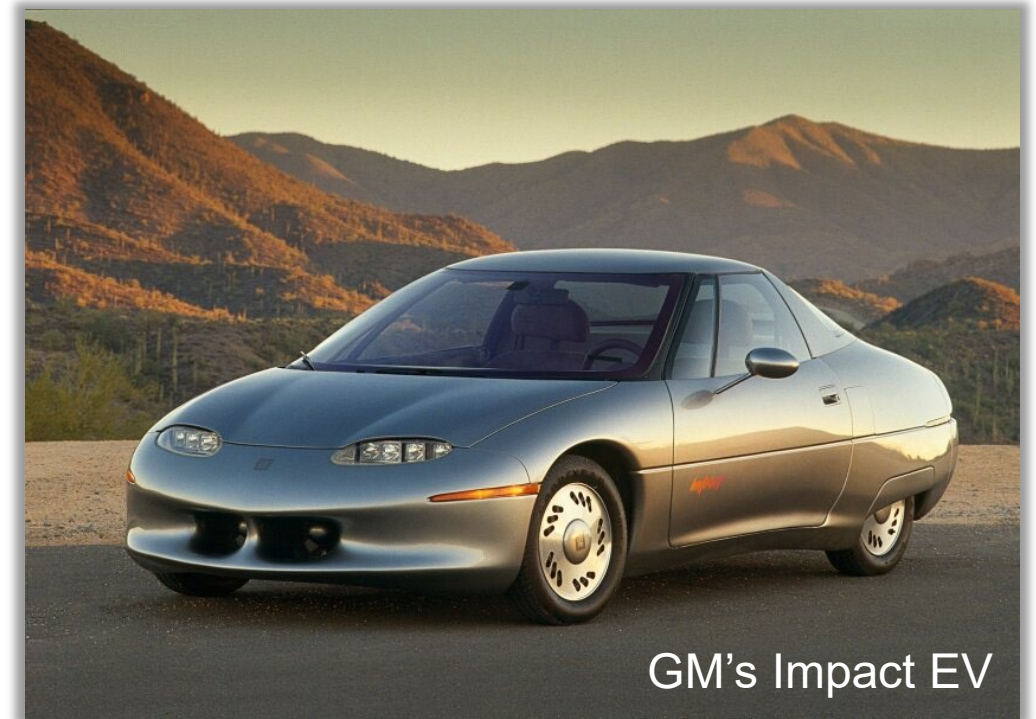
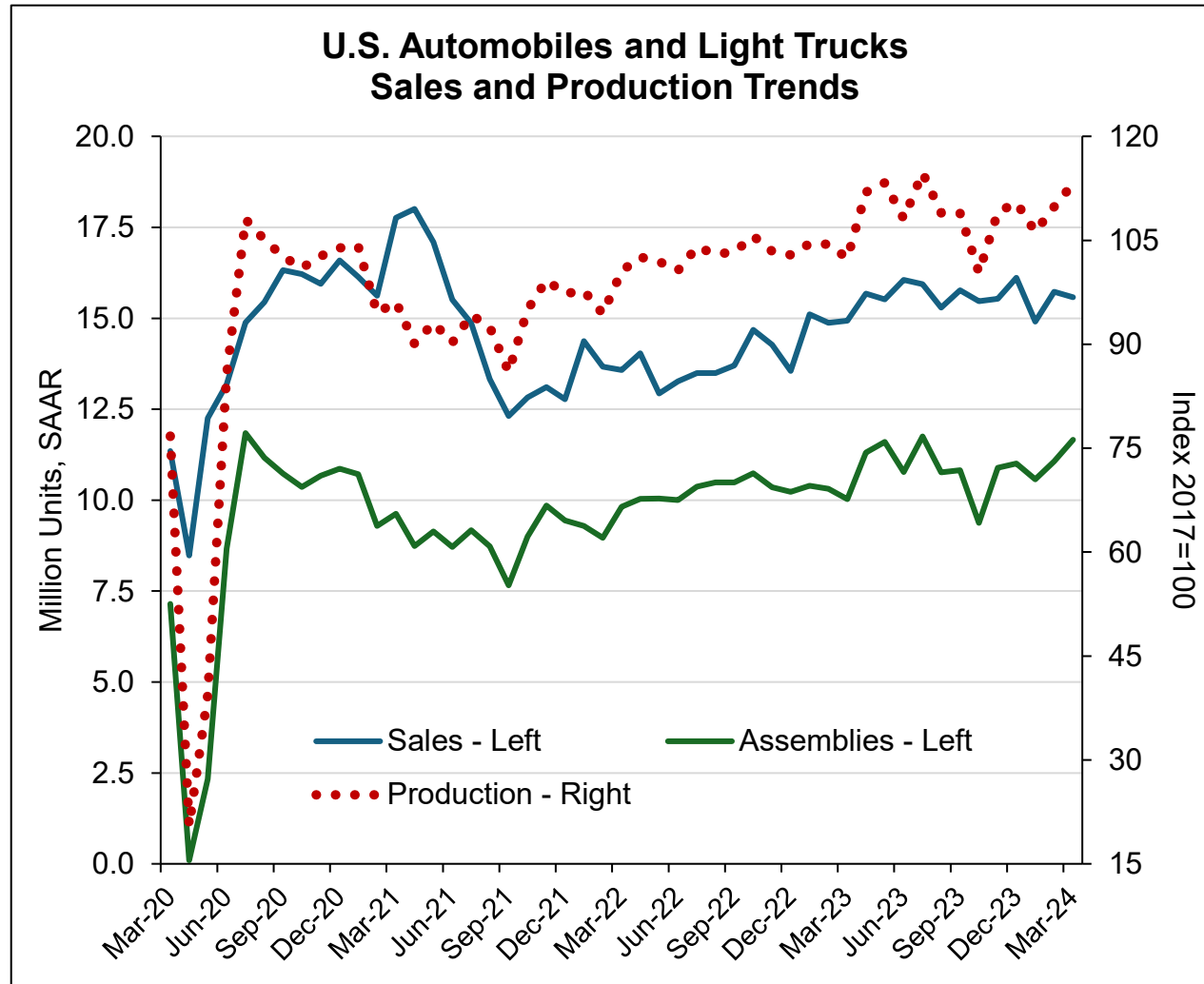


North America Light-Vehicle Sales and Production Outlook (Million Units)



Source: S&P Global, Automotive News

Auto and Light Truck Demand to Maintain Steady Course



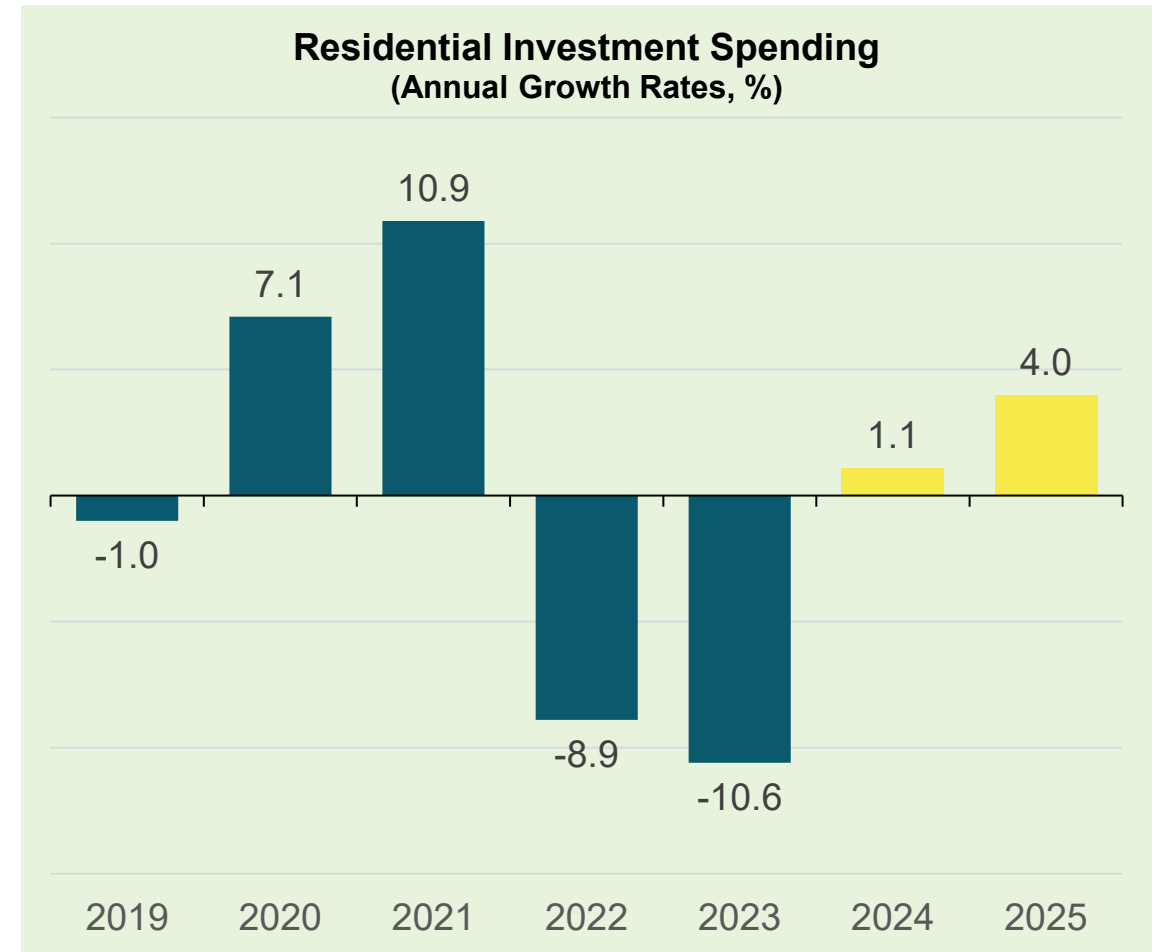
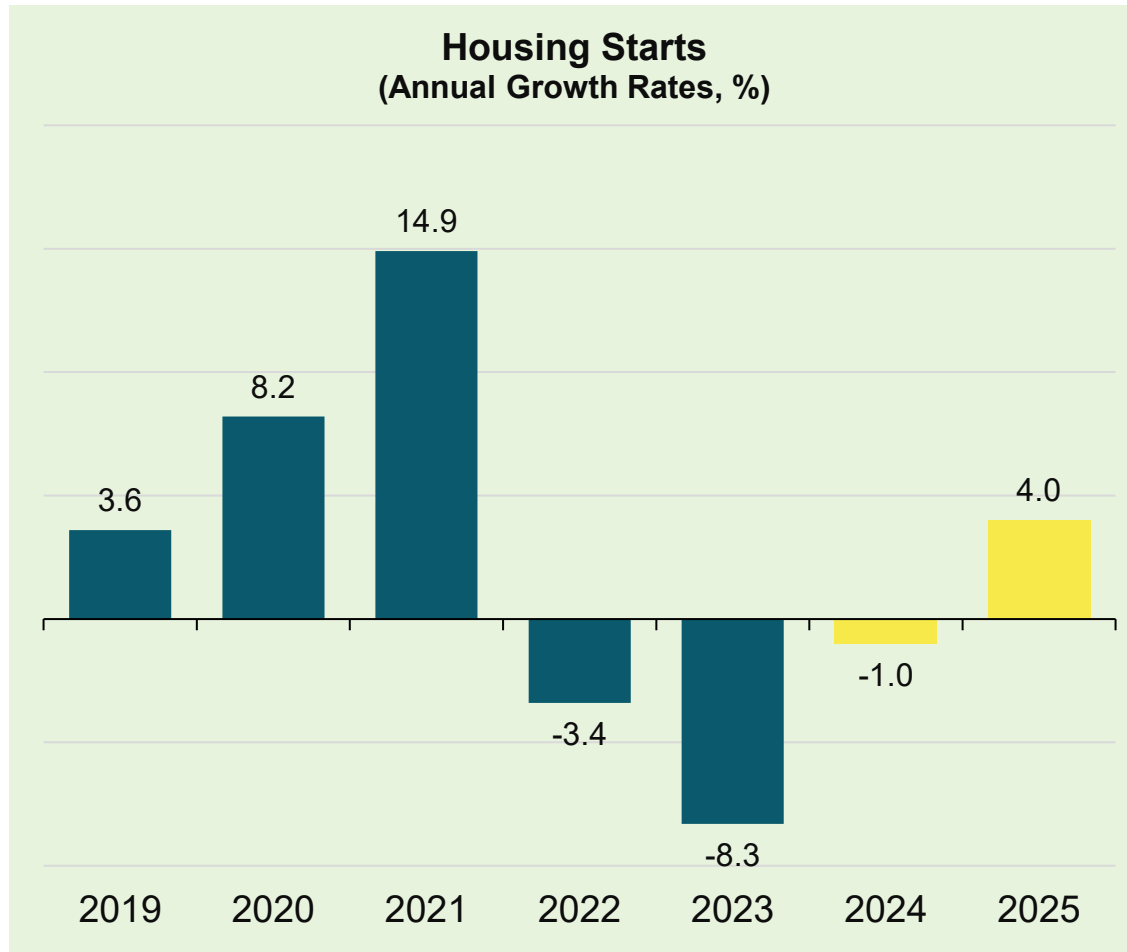
GM's Impact EV

Electric Vehicles Market Share Q1-2024 (NADA)

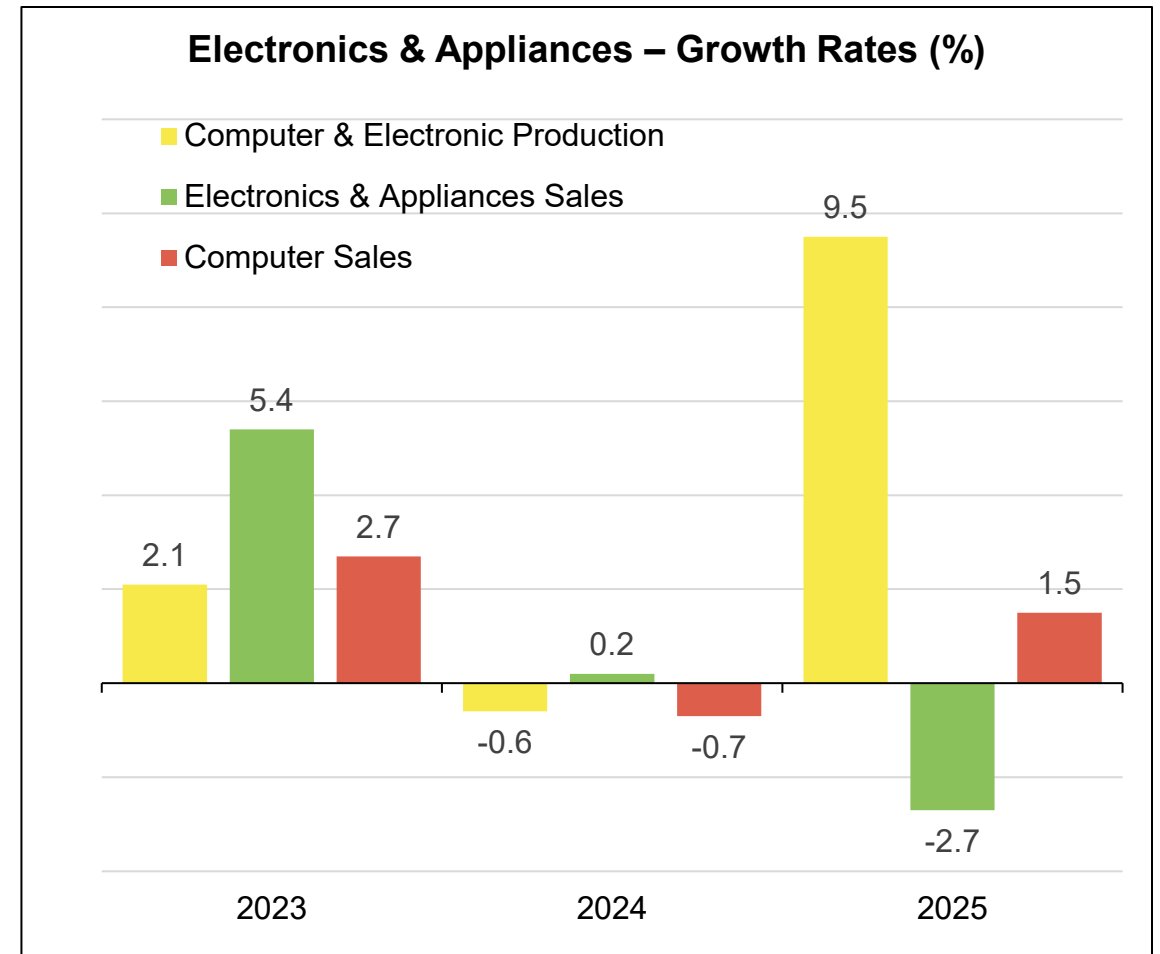
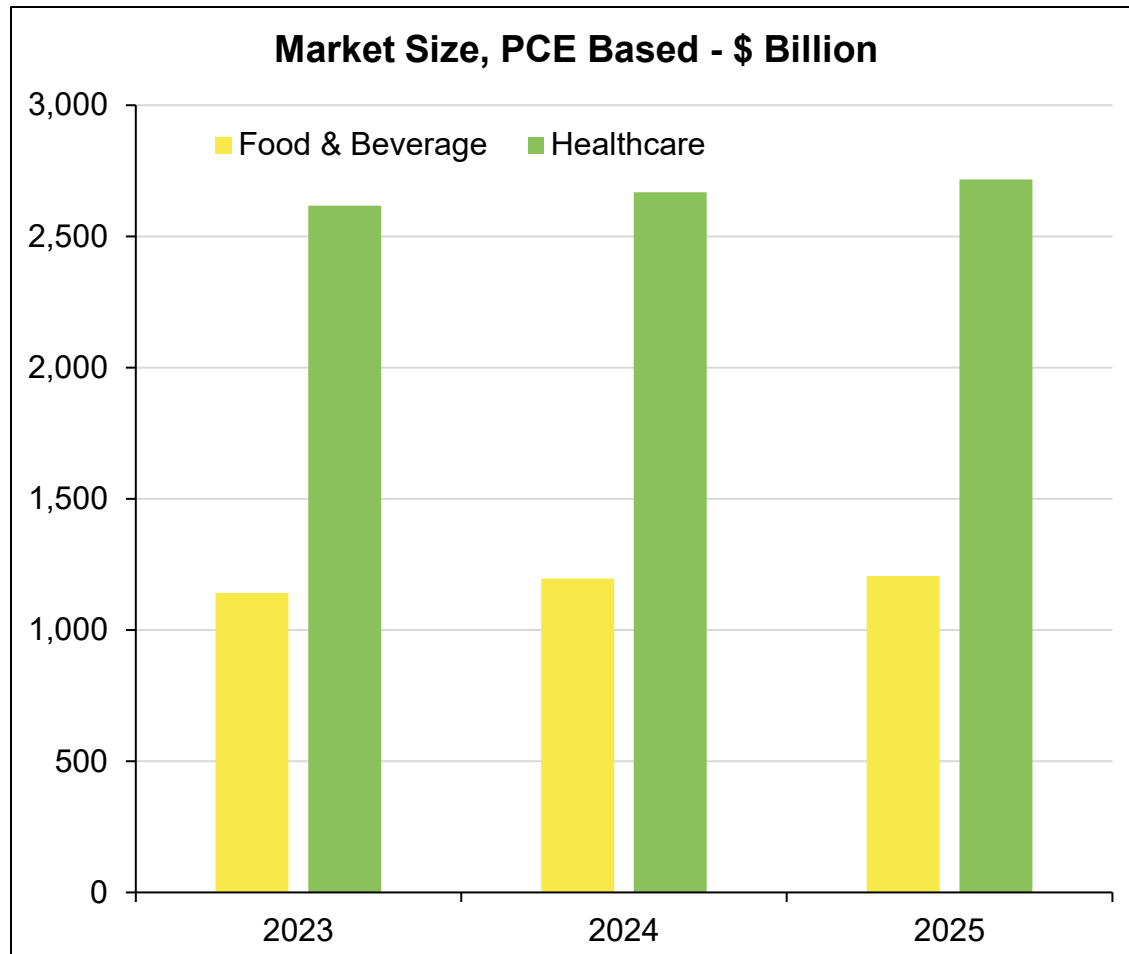
BEV: 7.1%

PHEV: 2.3%

Higher Interest Rates Dim Housing Market Outlook



Healthcare and Packaging Outlook Stable, Electronics and Appliances Evolving



Plastics Quarterly

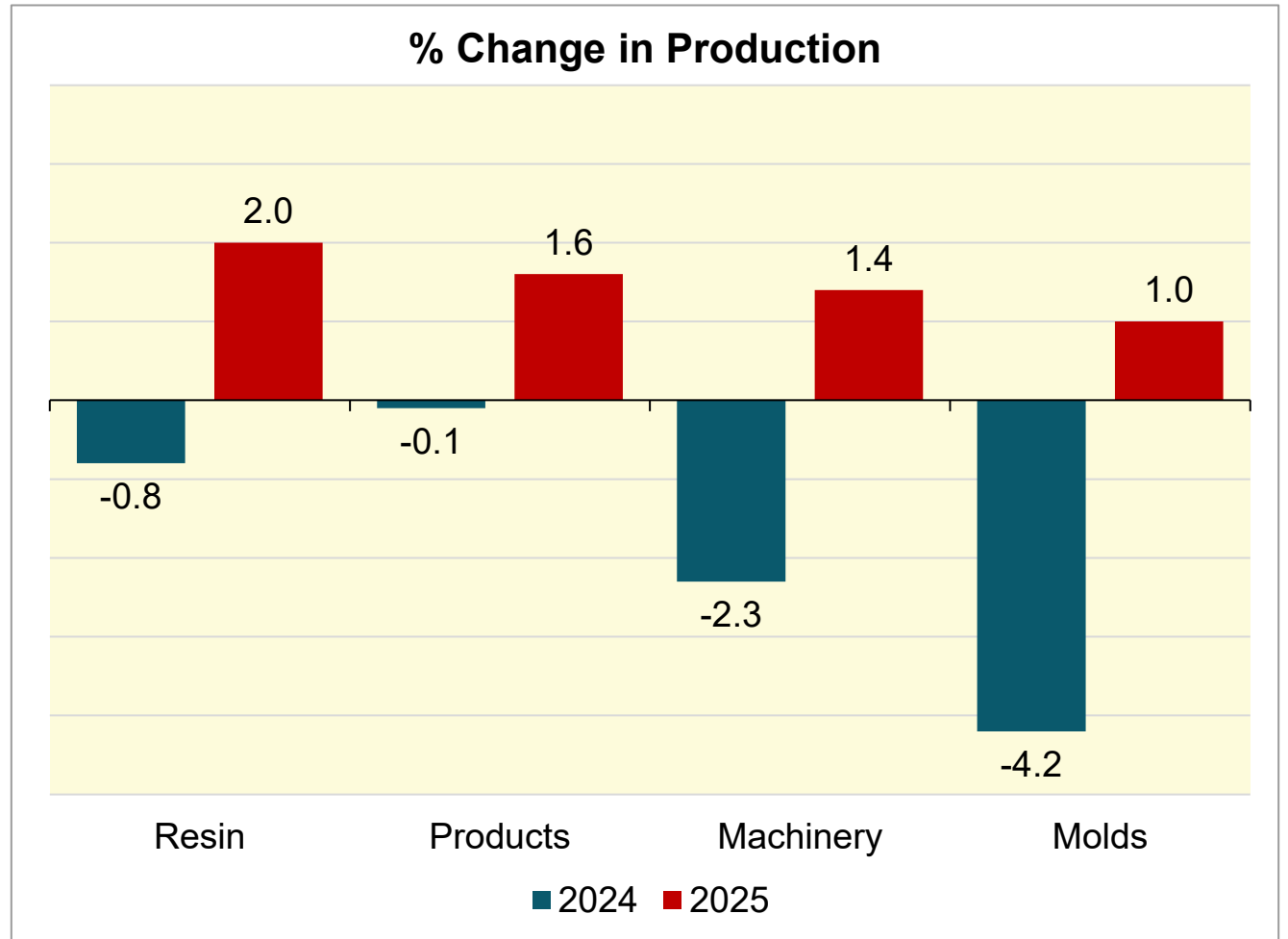
A publication of PLASTICS providing a macroeconomic, plastics end markets, and plastics industry outlook



1425 K Street NW, Suite 500, Washington, DC 20005
P 202.974.5200 | plasticsindustry.org

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Plastics Industry Outlook



Economic and Plastics Industry Reports and Data @PLASTICS



<https://www.plasticsindustry.org/resources/member-resources-data-reports/>

COMMITTEE ON EQUIPMENT STATISTICS

The Committee on Equipment Statistics (CES) is the leading provider of plastic equipment machine sales data, benchmarking participant operations with current market information on equipment orders or shipments for all major sectors of the industry. Current reports include:

- **Injection Molding**
- **Auxiliary**
- **Extrusion**
- **Plasticating Screws**
- **Blow Molding**
- **Hot Runners**



Whitney Taveras

Director, Industry Engagement (Equipment)

wtaveras@plasticsindustry.org



Madeline Kramer

Manager, Industry Engagement (Equipment)

mkramer@plasticsindustry.org

Join us at NPE2024!

Wednesday, May 8 at 8:00am

West Hall – W314A

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Bioplastics Market Watch Report Session



Perc Pineda
PLASTICS



Charlie Martin
Leistritz Extrusion



Dan Martens
Novamont



Heather Nortz
PLASTICS

**Its
positive
impact is
global**

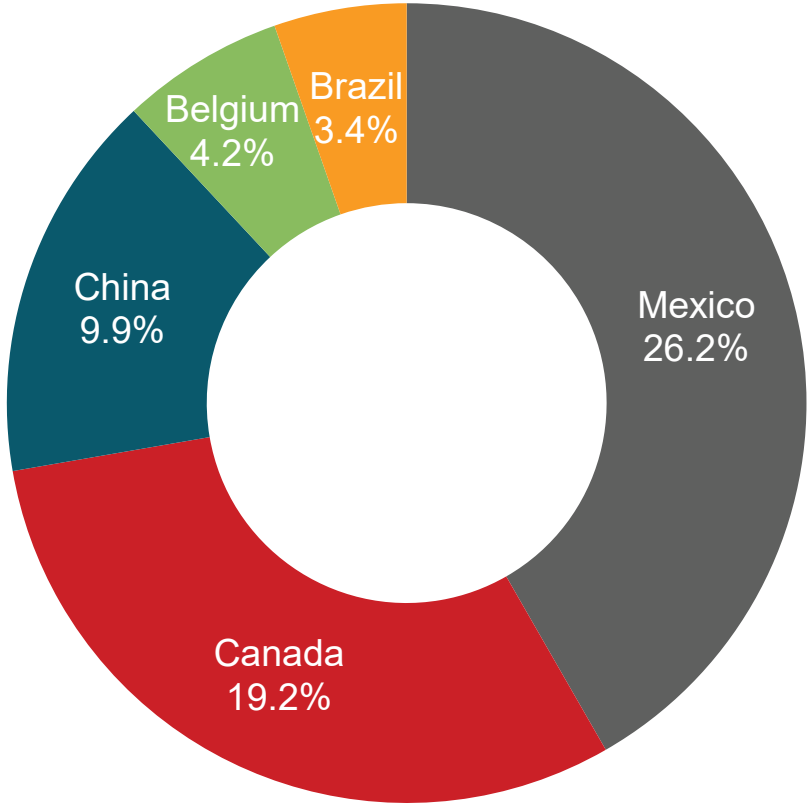
**Plastics:
The World is the Market**

Global Economic Growth Impacts Trade

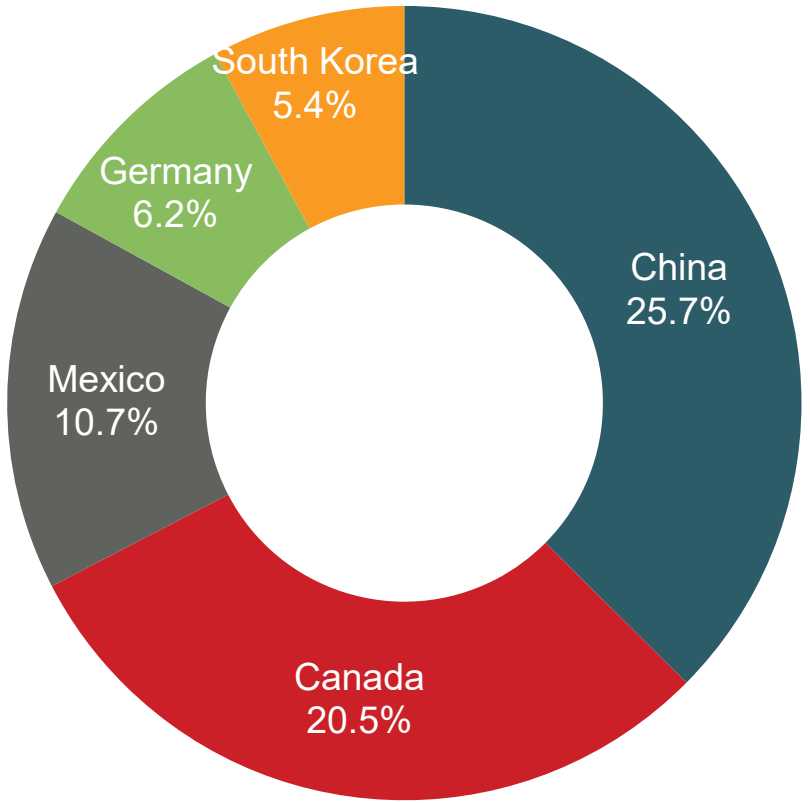
(International Monetary Fund, World Economic Outlook, April 2024)	2024	2025
World Output	3.2	3.2
U.S.	1.7	1.9
Mexico	2.4	1.4
Canada	1.2	2.3
China	4.6	4.1
Germany	0.2	1.3
Japan	0.9	1.0
United Kingdom	0.5	1.5
Advanced Economies	1.7	1.8
Euro Area	2.7	1.9
Emerging Market and Developing Economies	4.2	4.2
Latin America and the Caribbean	2.0	2.5
Middle East and Central Asia	2.8	4.2
Sub-Saharan Africa	3.8	4.0

U.S. Main Trade Partners in Plastics in 2023

Share of U.S. Exports



Share of U.S. Imports

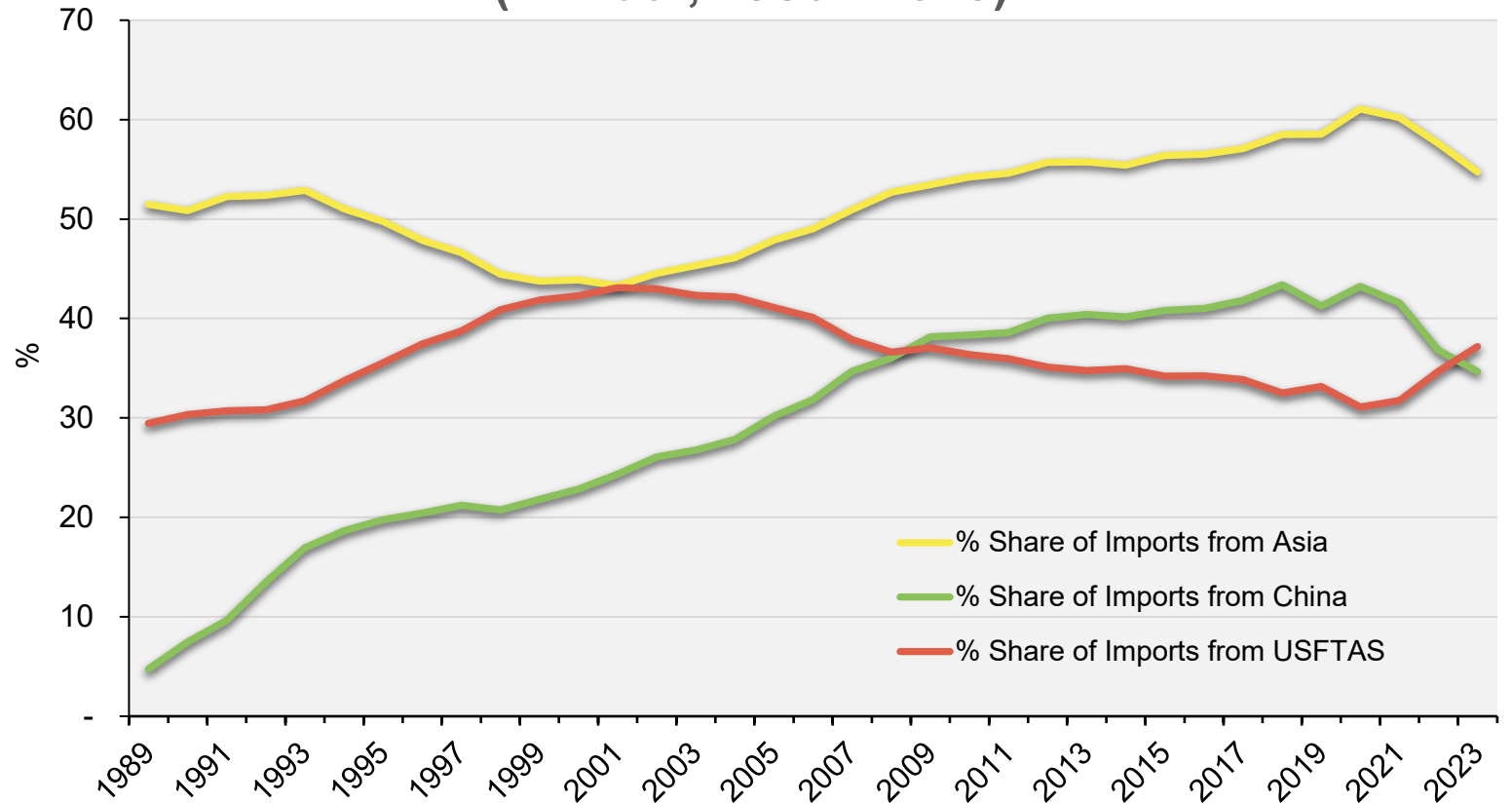


PLASTICS' Analysis of U.S. International Trade Commission data

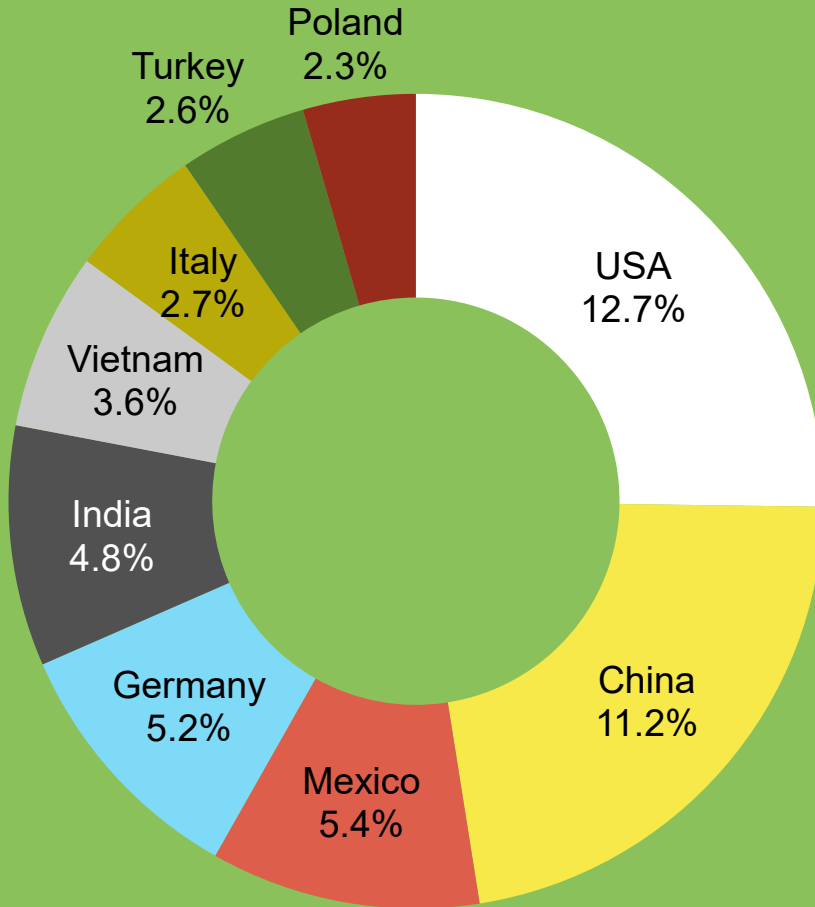
Rising Share of Plastics Imports from Asia



Share of U.S. Imports of Plastics Products (Annual, 1980 - 2023)



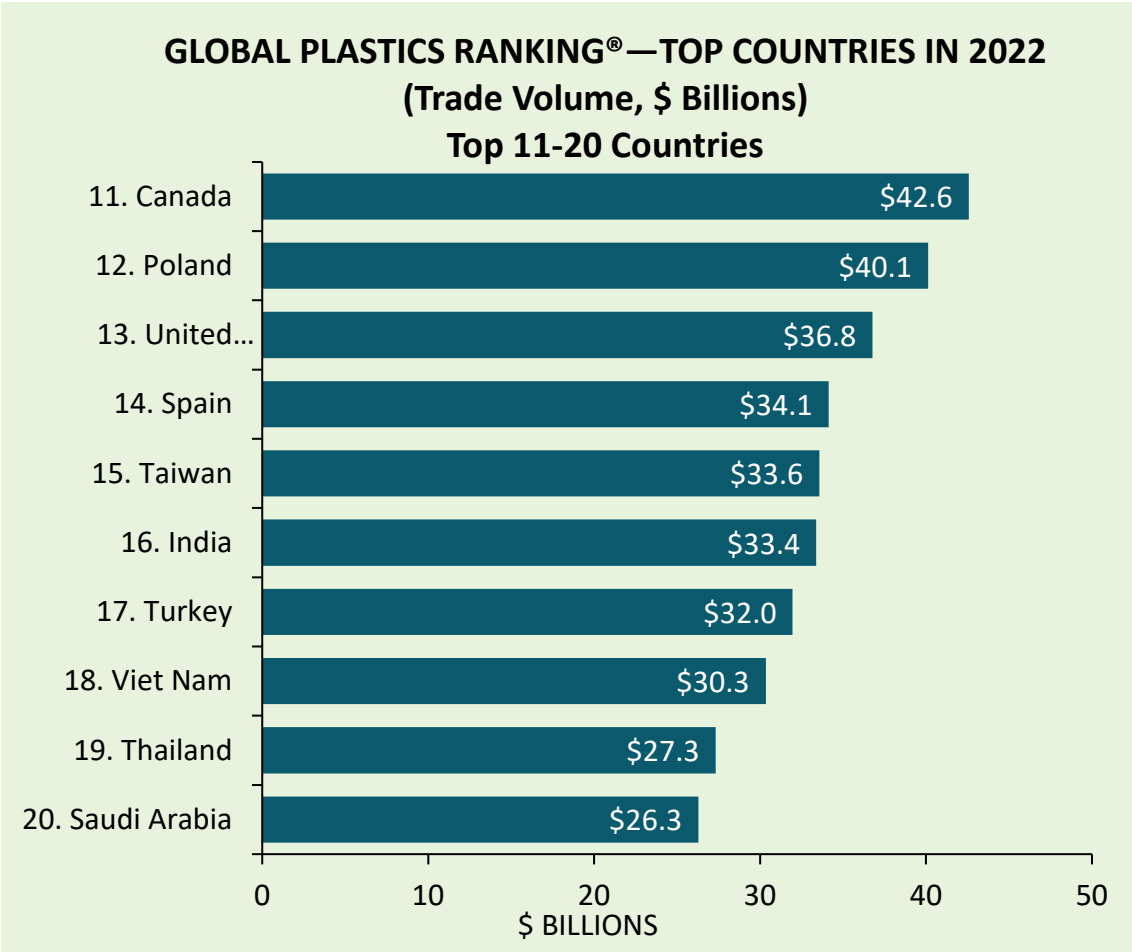
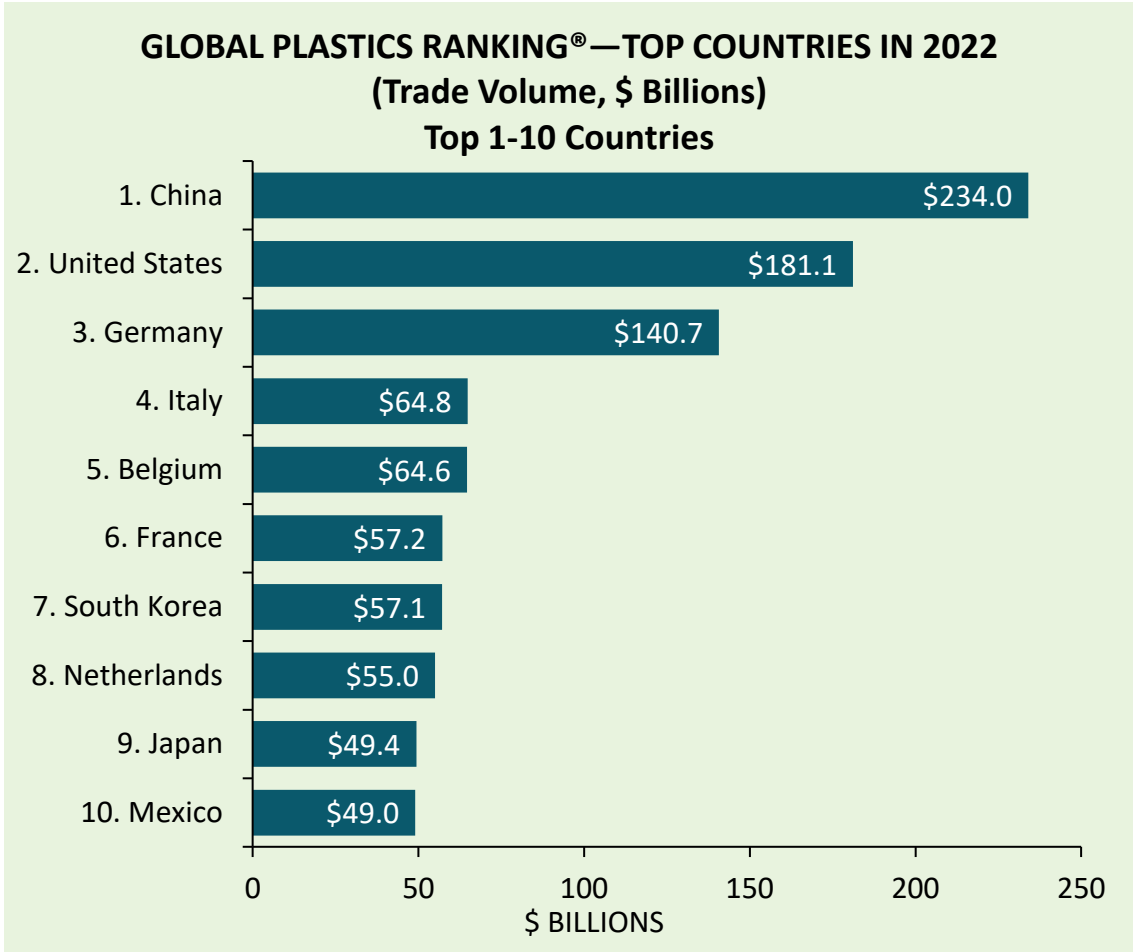
% Share of Plastics Machinery Imports in 2022



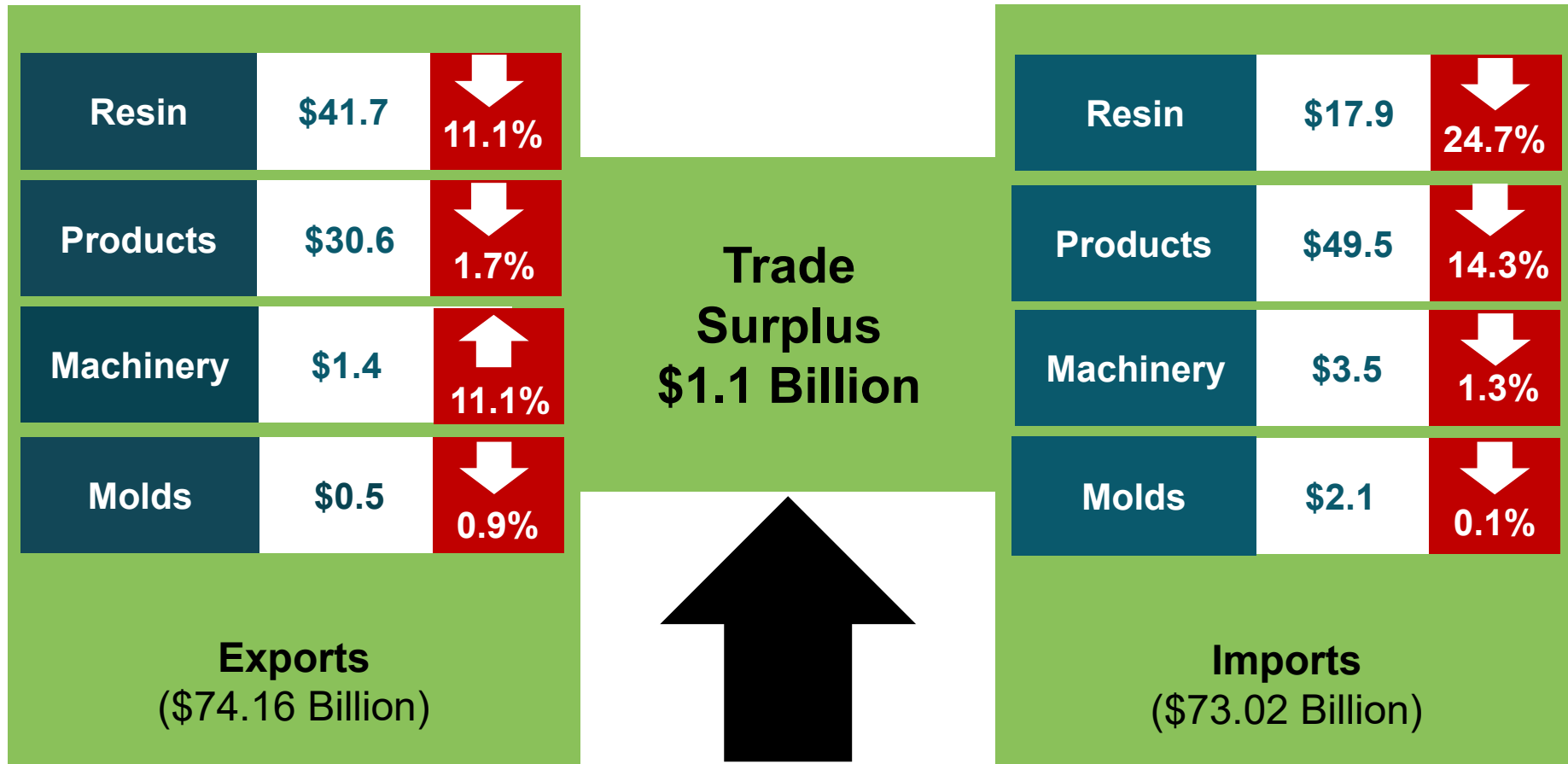
50.5% of Plastics machinery worldwide were imported by nine countries

US: World's largest importer of plastics machinery

Plastics: The World is our Market



U.S. Plastics Global Trade in 2023



SUSTAINABLE DEVELOPMENT GOALS



Economic development goals

Plastics: Supporting economic well-being



At the end of 2020,
over 80 percent of
acutely food-insecure
people lived in fragile
and conflict-affected
situations.

80%



Food insecurity is expected to reach
an unprecedented peak in 2023 and
projections indicate that it will

**continue worsening through at least
2027, reversing progress on
eliminating poverty
and hunger by 2030.**



Food insecurity remains a global issue

Plastics: Supporting food security efforts

Global Economic Impact of Plastics

\$38.0 trillion global income benefit (2016-2040)*


The preferred material for food and beverage packaging

Making medical care affordable and accessible worldwide

*Cordier, et al. "Reducing plastics production: Economic loss or environment gain", University of Cambridge, Cambridge Prism: Plastics, January 30, 2024

World Bank's International Finance Corporation Waste Management Business: A Circular, Whole-Value-Chain Approach

TRANSACTIONS

<p>Brazil</p>  <p>Orizon</p> <p>\$27 million</p> <p>Sustainability linked loan</p> <p>2023</p> <p>Sanitary landfill & recycling</p>	<p>Poland</p>  <p>Elemental</p> <p>\$90 million</p> <p>Equity</p> <p>2022</p> <p>E-waste</p>	<p>China</p>  <p>BGE</p> <p>Invest 1: \$87 million Invest 2: \$57 million</p> <p>Bond/loan</p> <p>2022, 2019</p> <p>Waste to energy</p>	<p>Middle East/Africa</p>  <p>Averda</p> <p>\$30 million</p> <p>Loan</p> <p>2022</p> <p>Multi-material recycling</p>	<p>China</p>  <p>New CWI</p> <p>\$50 million</p> <p>Equity</p> <p>2022</p> <p>Landfill gas to energy</p>
<p>Vietnam</p>  <p>Bac Ninh</p> <p>\$30 million</p> <p>Loan</p> <p>2022</p> <p>Waste to energy</p>	<p>China/Indonesia</p>  <p>Alba Asia</p> <p>Tranche 1: \$60 million Tranche 2: \$40 million</p> <p>Loan/equity</p> <p>2022, 2020</p> <p>Hazardous waste and bio-waste</p>	<p>Thailand</p>  <p>Indorama</p> <p>\$300 million</p> <p>Blue loan</p> <p>2020</p> <p>Plastic recycling</p>	<p>Serbia</p>  <p>Belgrade</p> <p>\$178 million</p> <p>Loan</p> <p>2019</p> <p>Waste to energy</p>	<p>China</p>  <p>Canvest</p> <p>Invest 1: \$60 million Invest 2: \$180 million</p> <p>Loan, equity</p> <p>2018, 2016</p> <p>Waste to energy</p>

Innovation

**Let's not allow our critics
to dim the light of innovation.
Plastics are here to stay.**

Perc Pineda, PhD

Chief Economist

Plastics Industry Association

ppineda@plasticsindustry.org

@PercPineda