



Market Outlook: Automotive

November 2023

Build strategy and manage risk through the lens of geopolitics and macroeconomics.

Understand the forces shaping the future of your organization

Assess their economic impact

Separate noise from signal

Find better options



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Executive summary

Market sizing and macro drivers

- **Consumer drivers are still under pressure** globally due to rising central bank interest rates that crimp borrowing and persistent inflation for both new and used vehicles.
- However, **auto sales are poised to recover** from the COVID slump this year, with APAC and China leading the pack.
- EV sales are projected to grow to a third of all auto sales by 2030 but some **demand uncertainties** such as bloated EV inventories present risks.

Production: supply-side global policy drivers and uncertainties

- While global auto production is set to recover in 2023, **auto FDI remains weak**. Amongst US, China and Europe, Mexico is the most popular auto FDI destination.
- France is most active in **North Africa and Turkey**, mainly in manufacturing projects due to low labor costs, transit time.
- Moroccan **production and exports are growing** from an FTA with the EU and persistent investment.

Cost of key inputs

- **Purchases and labor costs are the most significant costs** for automakers. However, labor costs are projected to rise in most manufacturing locations such as Mexico and China.
- **Vietnam** still maintains competitive labor costs due to its demographic dividend.
- Raw material prices down from peaks, but **intermediate prices remain high**, driving up material costs for automakers.

SECTION I

Market sizing and macro drivers

Global economic forecast highlights

GDP FORECAST FOR MAJOR ECONOMIES REAL ANNUAL % GROWTH

REGION	2020	2021	2022	2023F	2024F	2025F
US	-2.8%	5.9%	2.1%	2.2%	1.1%	2.0%
China	2.2%	8.5%	3.0%	5.0%	4.5%	4.4%
Eurozone	-6.3%	5.3%	3.5%	0.6%	1.0%	1.8%
Japan	-4.3%	2.2%	1.0%	1.3%	1.0%	1.0%
India	-6.0%	8.9%	6.7%	6.0%	6.3%	7.7%
UK	-11.0%	7.6%	4.1%	0.4%	0.4%	1.5%
Brazil	-3.6%	5.3%	3.0%	2.2%	1.5%	2.5%
Australia	-1.8%	5.2%	3.7%	1.5%	1.5%	2.5%

US: IS THIS TIME DIFFERENT?

Growth accelerated in Q2, significantly reducing recession risks for 2023. But we're not out of the woods yet as risks for 2024 remain.

CHINA'S REOPENING: PEAKED EARLY

Multiple headwinds, but primarily China faces a balance sheet problem and deflationary pressures

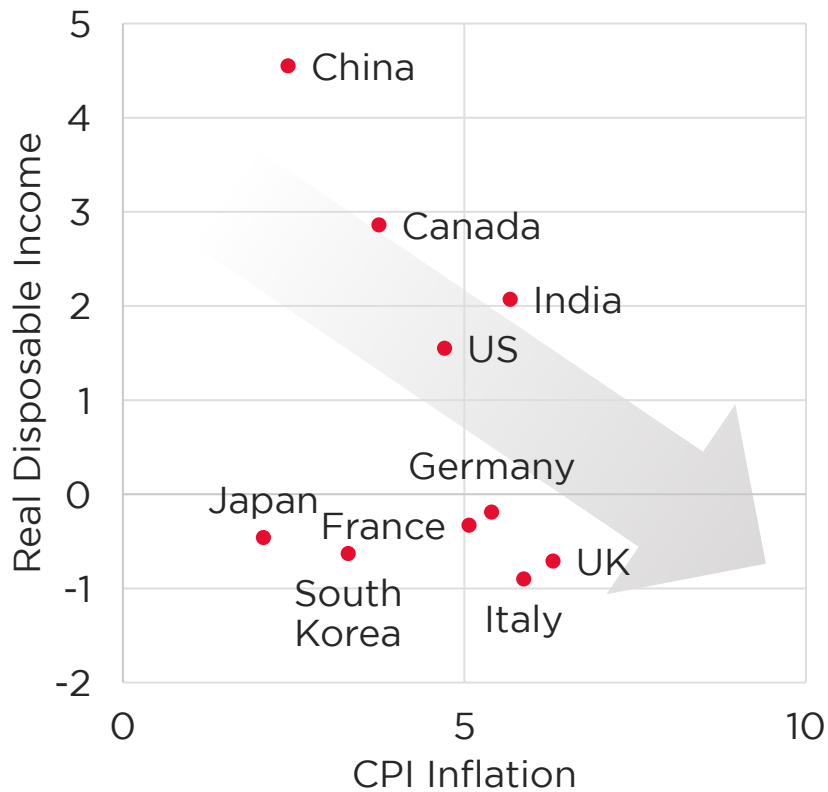
EUROPE: FLIRTING WITH RECESSION

Inflation is decelerating, and growth turned positive in Q2. But significant challenges remain, including a German recession.

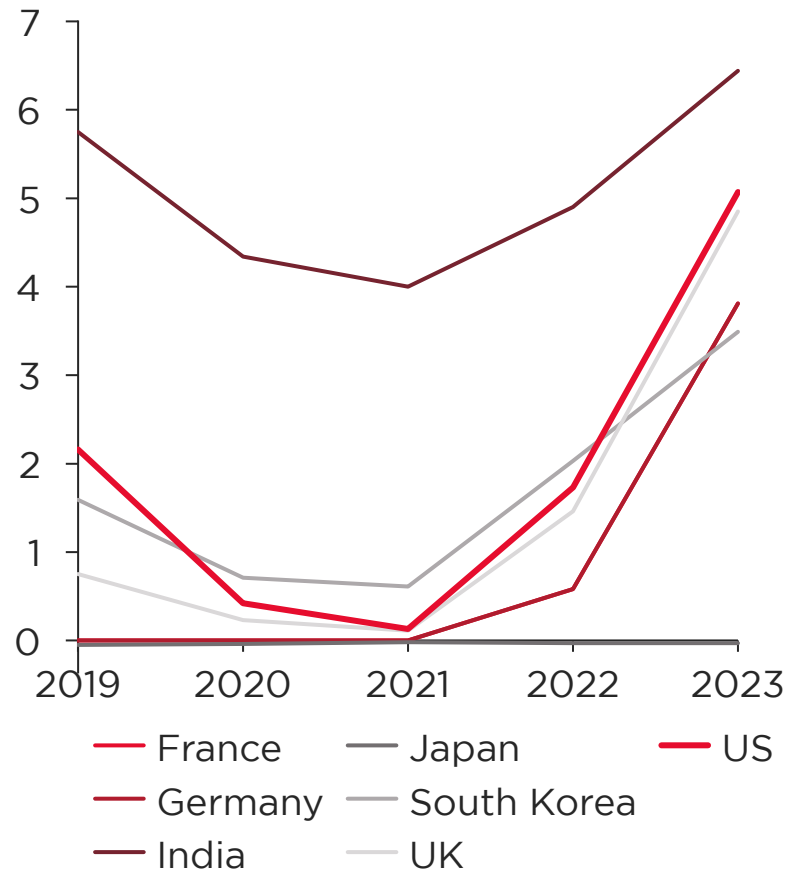
Underlying consumer drivers are under pressure

Rising inflation, interest rates and lower disposable income hurt spending

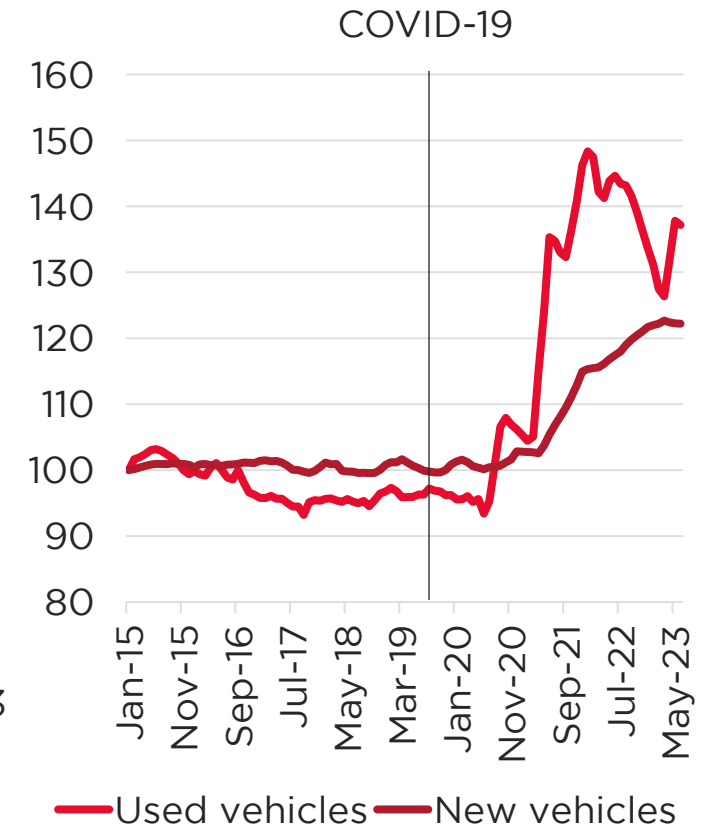
INFLATION AND REAL DISPOSABLE INCOME FOR MAJOR ECONOMIES
ANNUAL PERCENT CHANGE IN 2023



CENTRAL BANK INTEREST RATES
%



CPI FOR NEW AND USED VEHICLES
2015 = 100



Source: Oxford Economics, FRED, Onyx

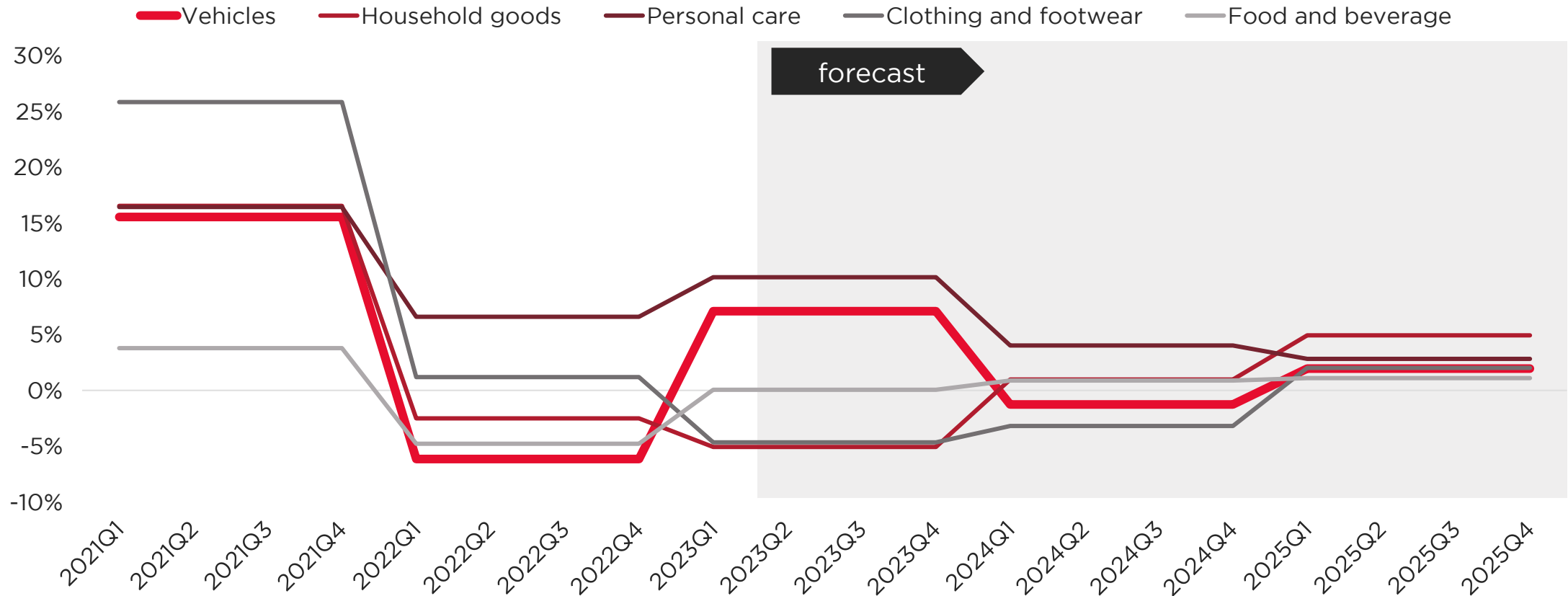
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US Consumer: Discretionary spending slowing

2023 car purchases rebound from pandemic backlogs; 2024 contraction

US SPENDING BY CATEGORY

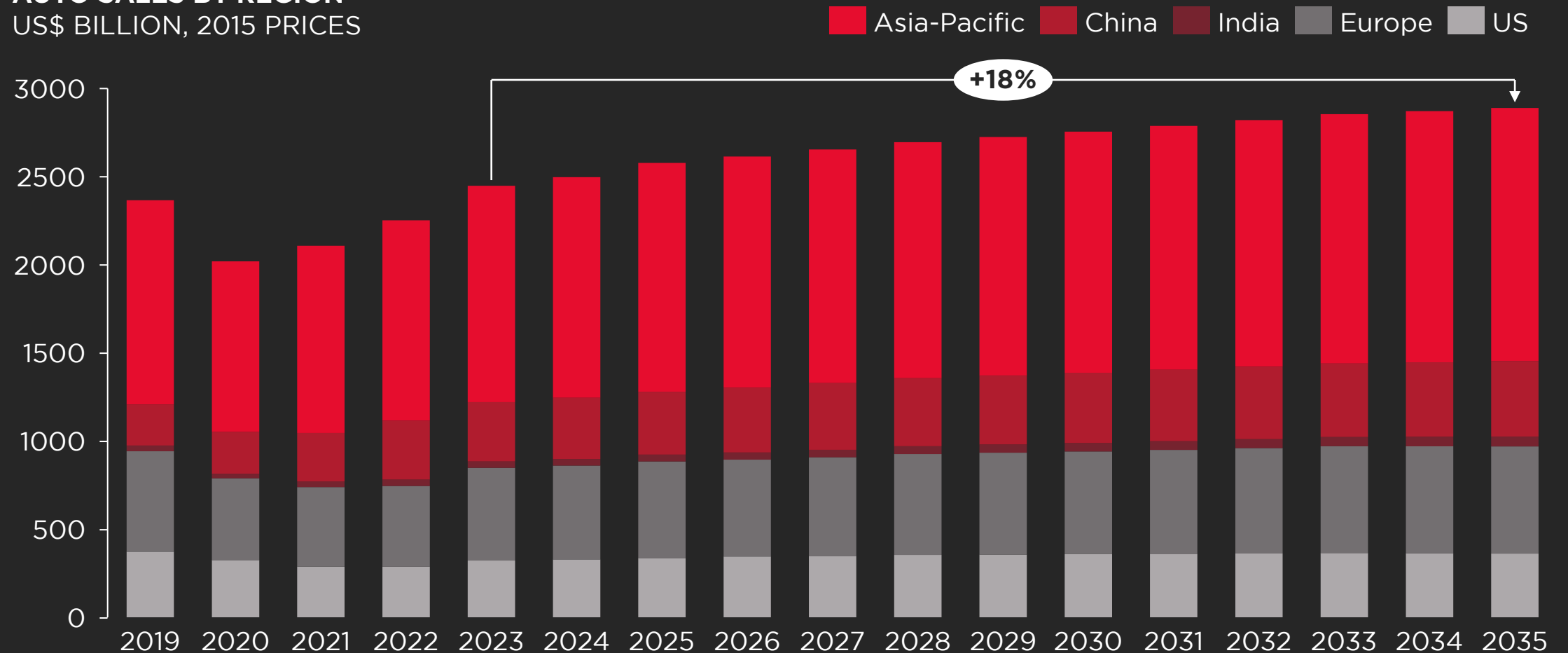
REAL ANNUAL % CHANGE



Auto sales will recover from COVID slump in 2023

With APAC and China leading the pack

AUTO SALES BY REGION
US\$ BILLION, 2015 PRICES

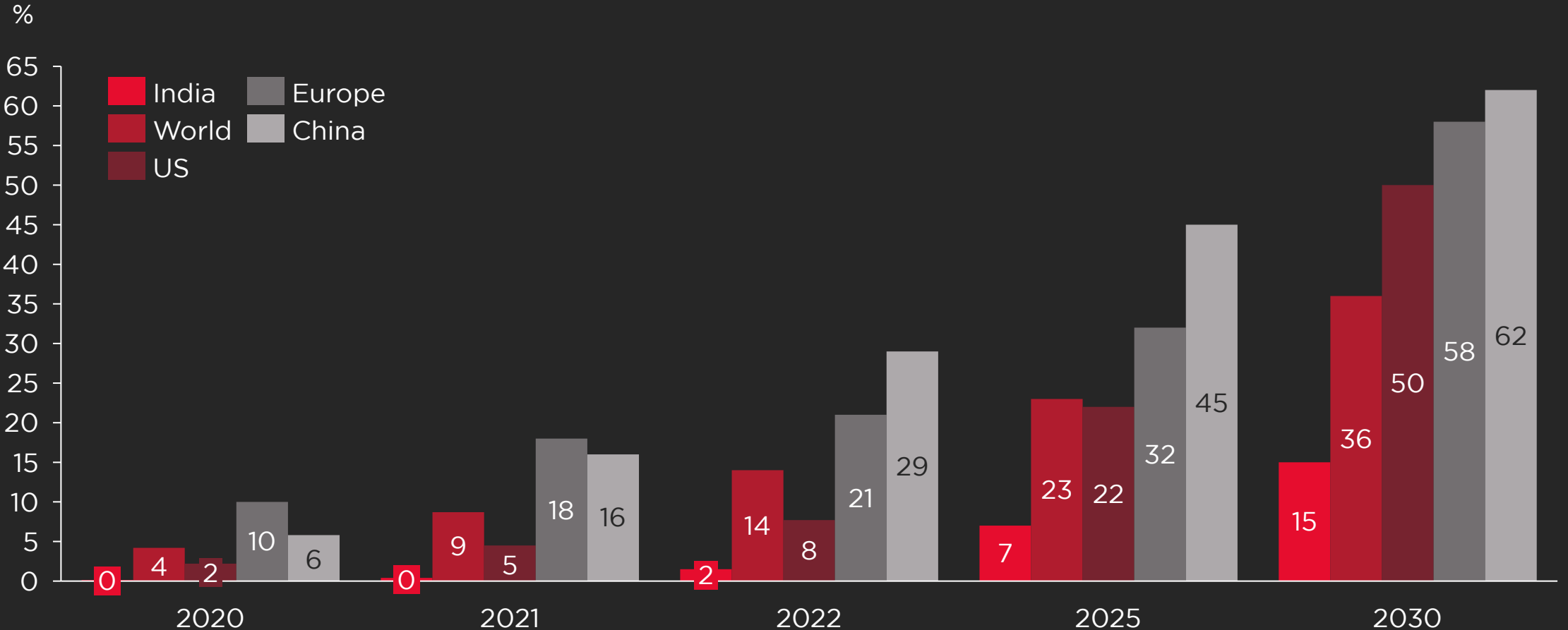


Source: International Energy Agency, Onyx
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A third of global auto sales will be EVs by 2030

Progress is faster in early adopters, China and Europe

SHARE OF EVS IN TOTAL SALES BY REGION



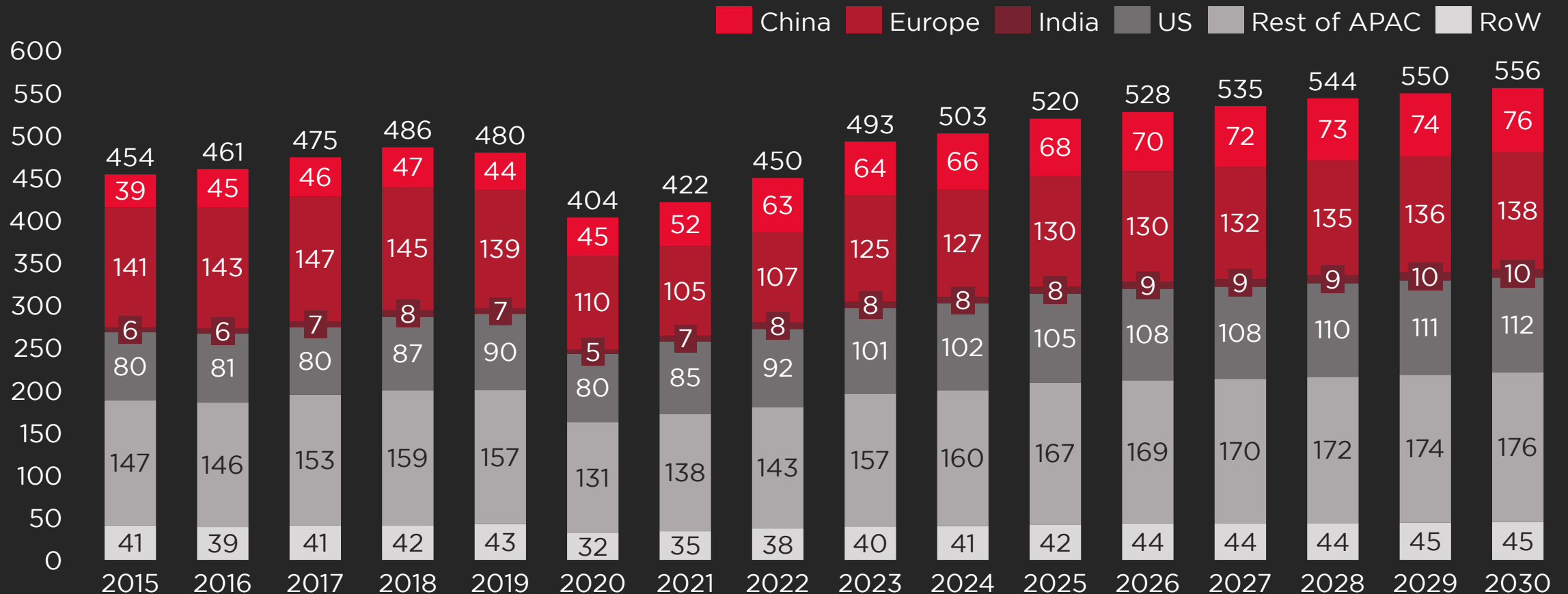
SECTION II

Production: supply-side global policy drivers and uncertainties

Global auto production to recover from pandemic slump in 2023

Growth rate to exceed pre-pandemic levels

GLOBAL VALUE ADDED: AUTOMOTIVE
\$ BILLIONS, 2015 PRICES



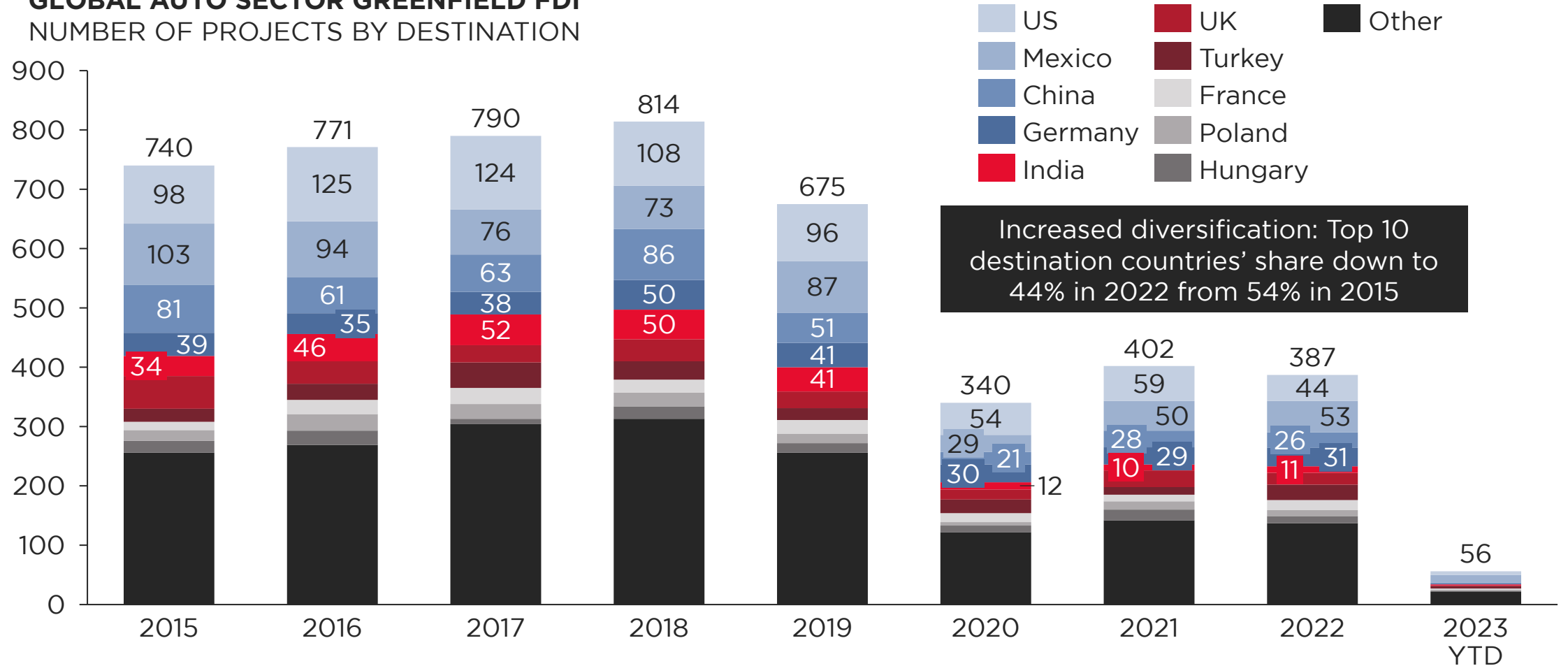
Source: Oxford Economics, Onyx

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Global auto FDI hasn't recovered from COVID

Mexico was the top destination in 2022, the first time since 2015

GLOBAL AUTO SECTOR GREENFIELD FDI
NUMBER OF PROJECTS BY DESTINATION



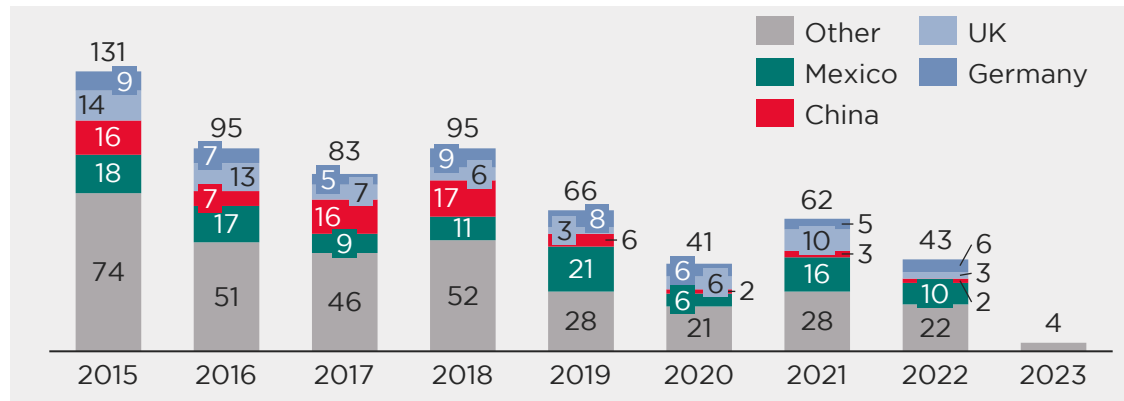
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Top auto FDI destinations for US, China, and Europe

Mexico is a common target, France most active in N. Africa and Turkey

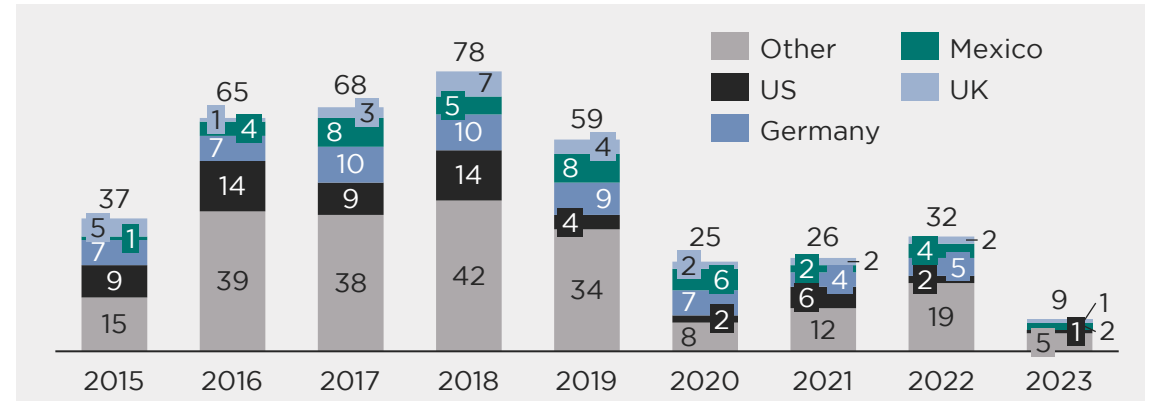
UNITED STATES OUTBOUND GREENFIELD AUTO FDI

Number of Projects



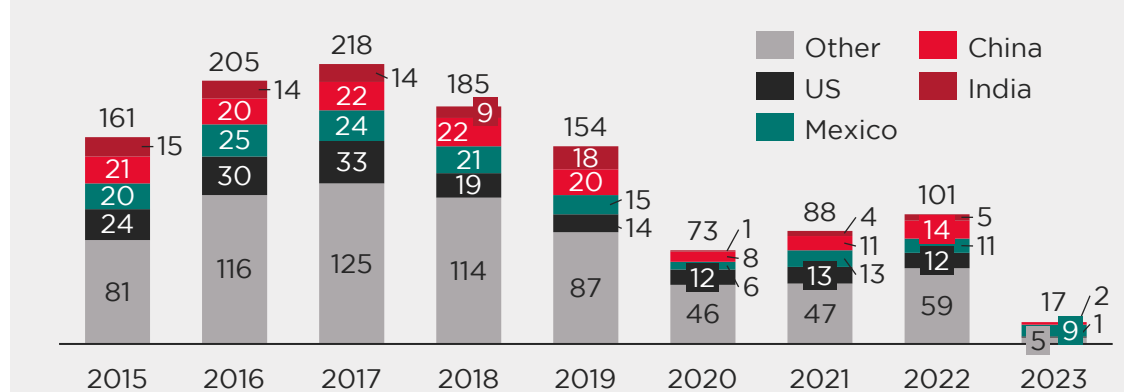
CHINA OUTBOUND GREENFIELD AUTO FDI

Number of Projects



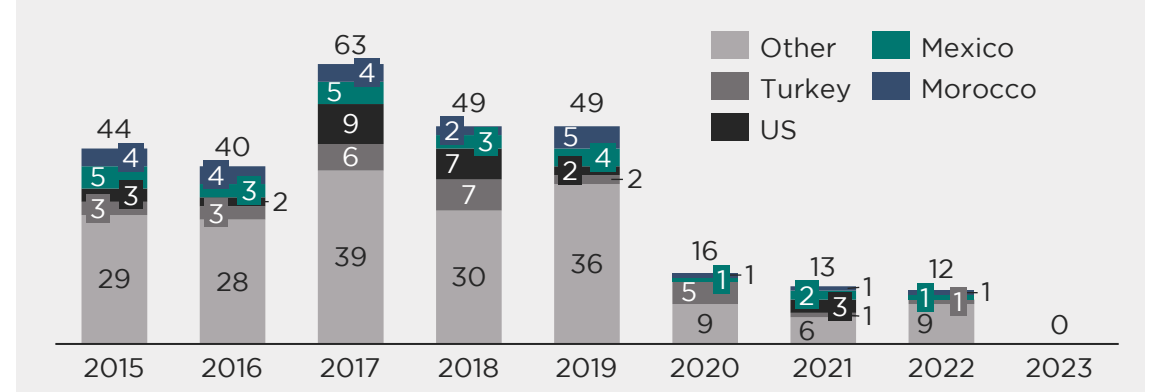
GERMANY OUTBOUND GREENFIELD AUTO FDI

Number of Projects



FRANCE OUTBOUND GREENFIELD AUTO FDI

Number of Projects



Source: fDi Markets, Onyx

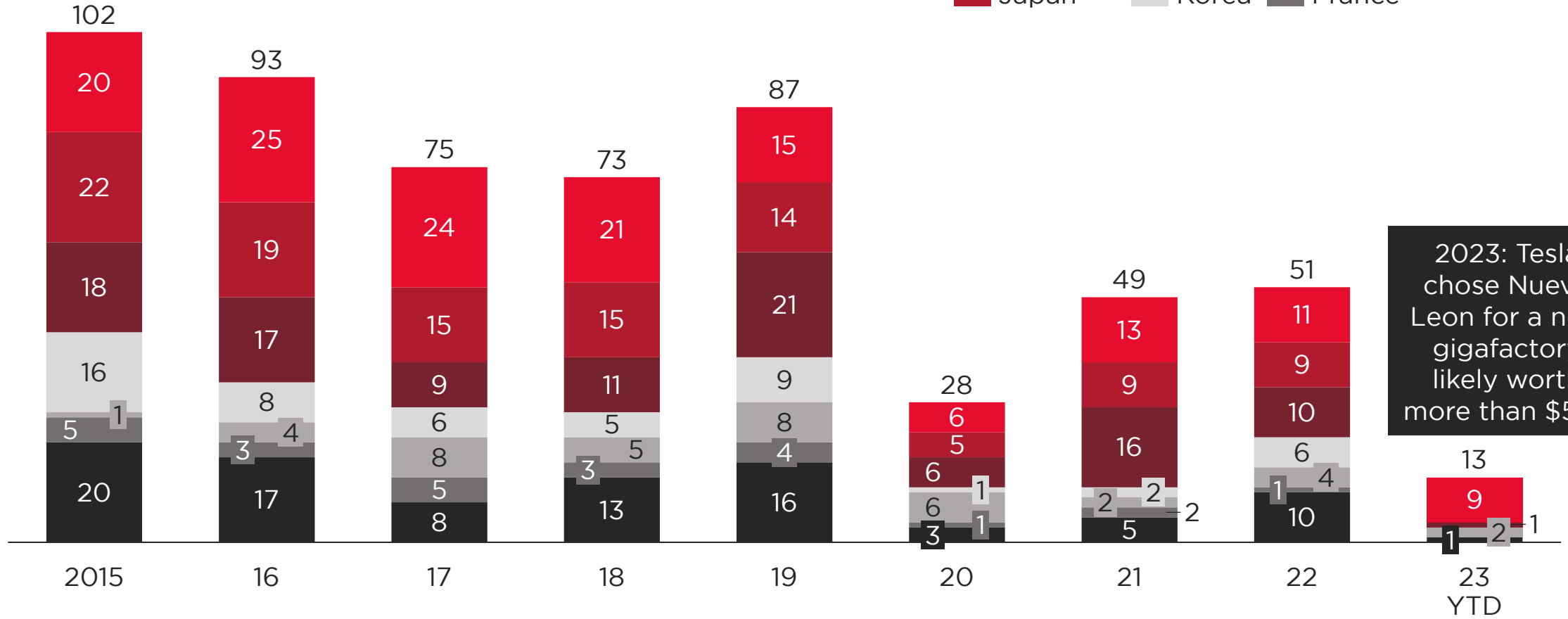
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Auto FDI into Mexico partially recovered

Number of projects masks Tesla's recent gigafactory announcement

GREENFIELD FDI INFLOW: MEXICO AUTO SECTOR
NUMBER OF PROJECTS by SOURCE COUNTRY

- Germany
- US
- China
- Other
- Japan
- Korea
- France



2023: Tesla chose Nuevo Leon for a new gigafactory likely worth more than \$5bn

Source: fDi Markets, Onyx
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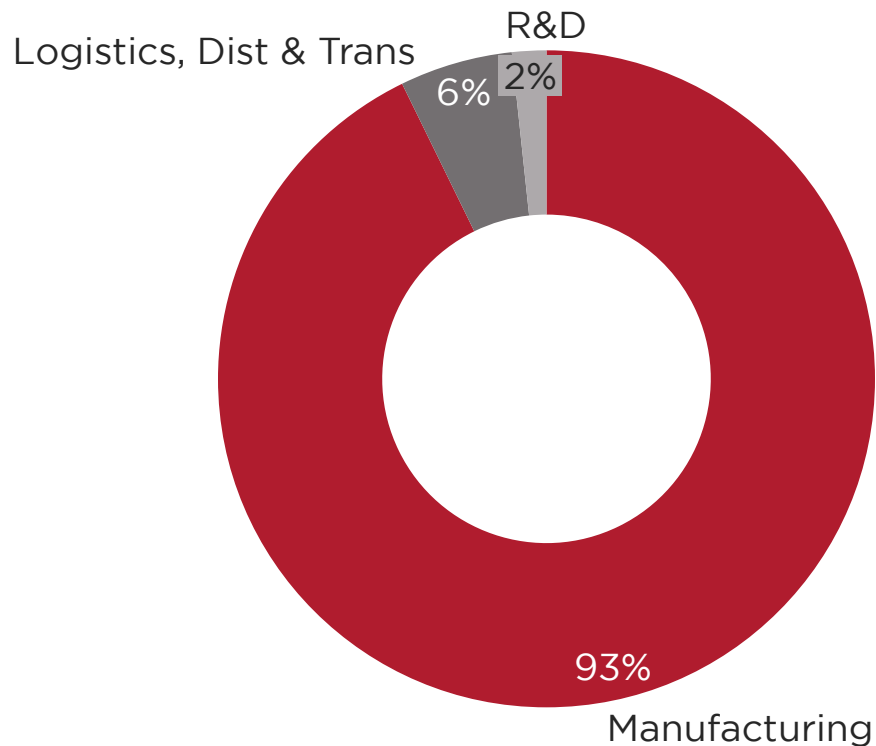
US FDI is a key driver of Mexico's auto sector

Investments creating deeper integration across the value chain

AUTO SECTOR GREENFIELD FDI

FROM US TO MEXICO

% OF TOTAL INVESTMENT VALUE BY PROJECT TYPE



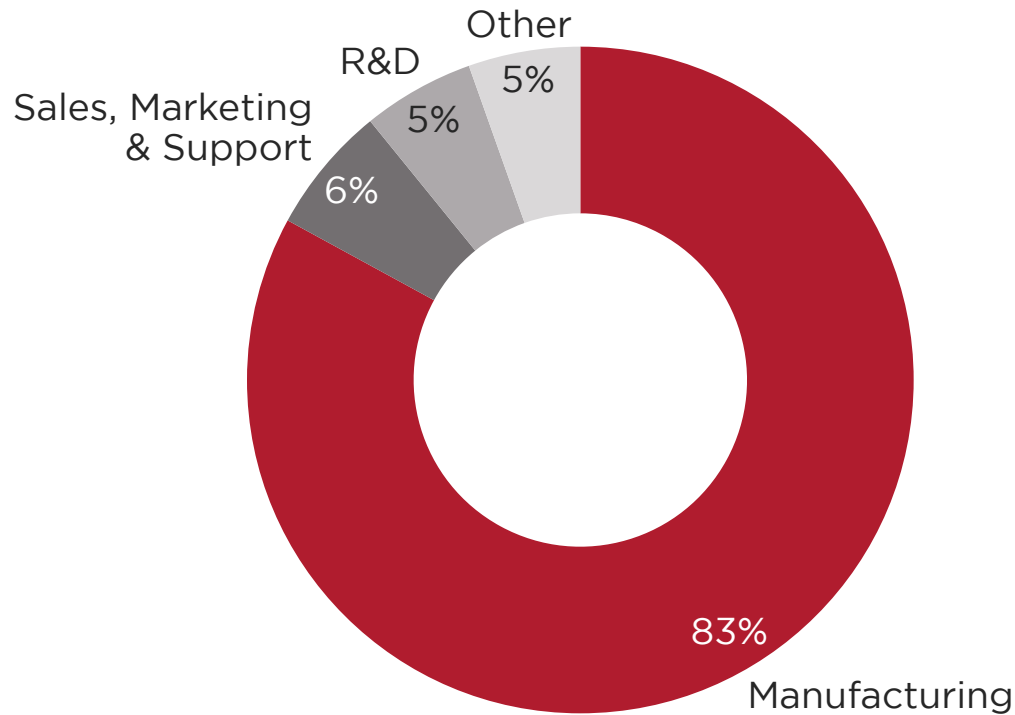
KEY TRENDS

- **Assembly was the starting point, now moving into manufacturing:**
 - Optimize by locating manufacturing close to source of supply and assembly closer to the customer
 - Assembly was the “low hanging fruit” first phase – companies increasingly looking at parts manufacturing
- **Motivations:** Shift from traditional cost drivers with acceptance of moderate supply chain risk to hedging geopolitical and supply chain risk while managing cost

Projects in N Africa focused on manufacturing

Favorable economics and supportive policy are attractive to investors

AUTO SECTOR GREENFIELD FDI
INFLOWS INTO NORTH AFRICA
% OF TOTAL INVESTMENT VALUE BY PROJECT TYPE



KEY TRENDS

- **Morocco, in particular, has created a friendly environment for foreign investment:**
 - Two industrial platforms with free zone status – five-year corporate tax exemption
 - Vocational education designed for the auto industry
- **Location and cost advantages**
 - Transit time to Spain is 1-2 days
 - Labor costs are one-quarter of those in Spain and slightly lower than Eastern Europe
- **Network advantages**
 - Renault reports that it can locally source **60% of content**
 - Working on higher-value components

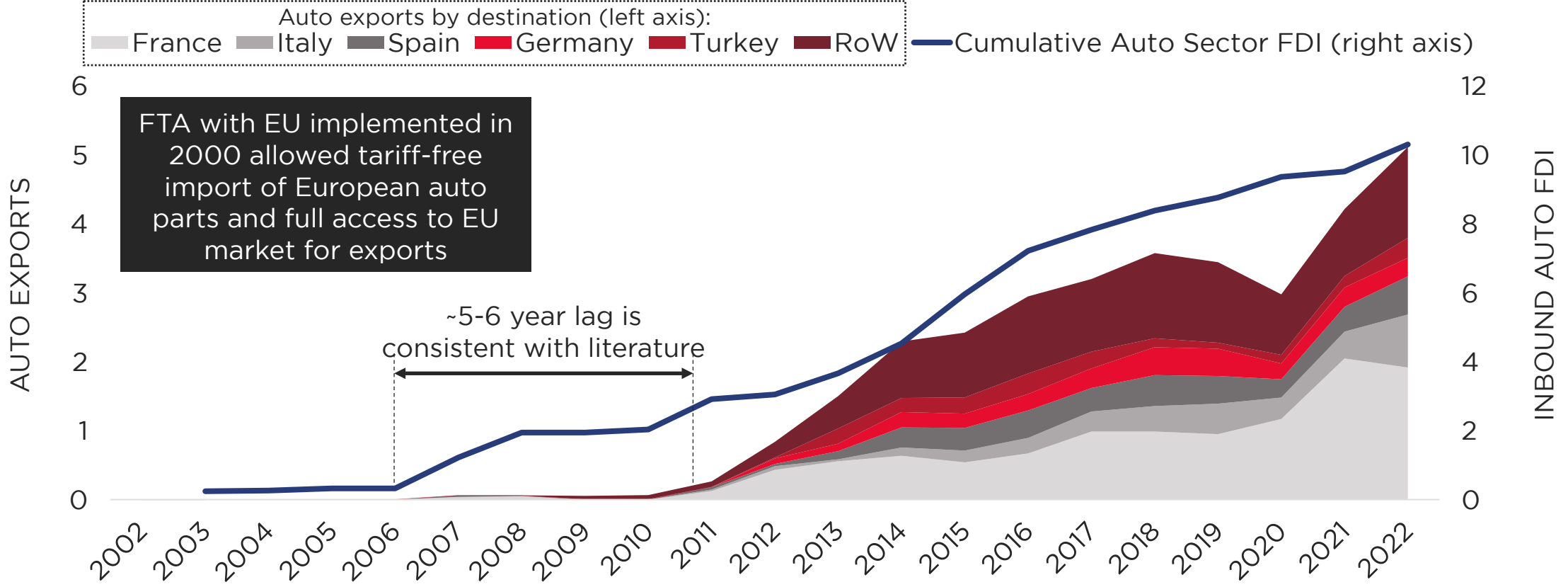
Source: fDi Markets, [Auto News](#), [Aftermarket News](#), [Just-Auto](#), Onyx
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Morocco: The making of a value chain

FTA and persistent investment led to production and export growth

MOROCCO: INBOUND AUTO FDI and AUTO EXPORTS

NOMINAL USD, BILLIONS



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SECTION III

Cost of key inputs

Cost structure for auto manufacturing

Purchases are the most significant cost for automakers

COST STRUCTURE: AUTO MANUFACTURING

% OF REVENUE



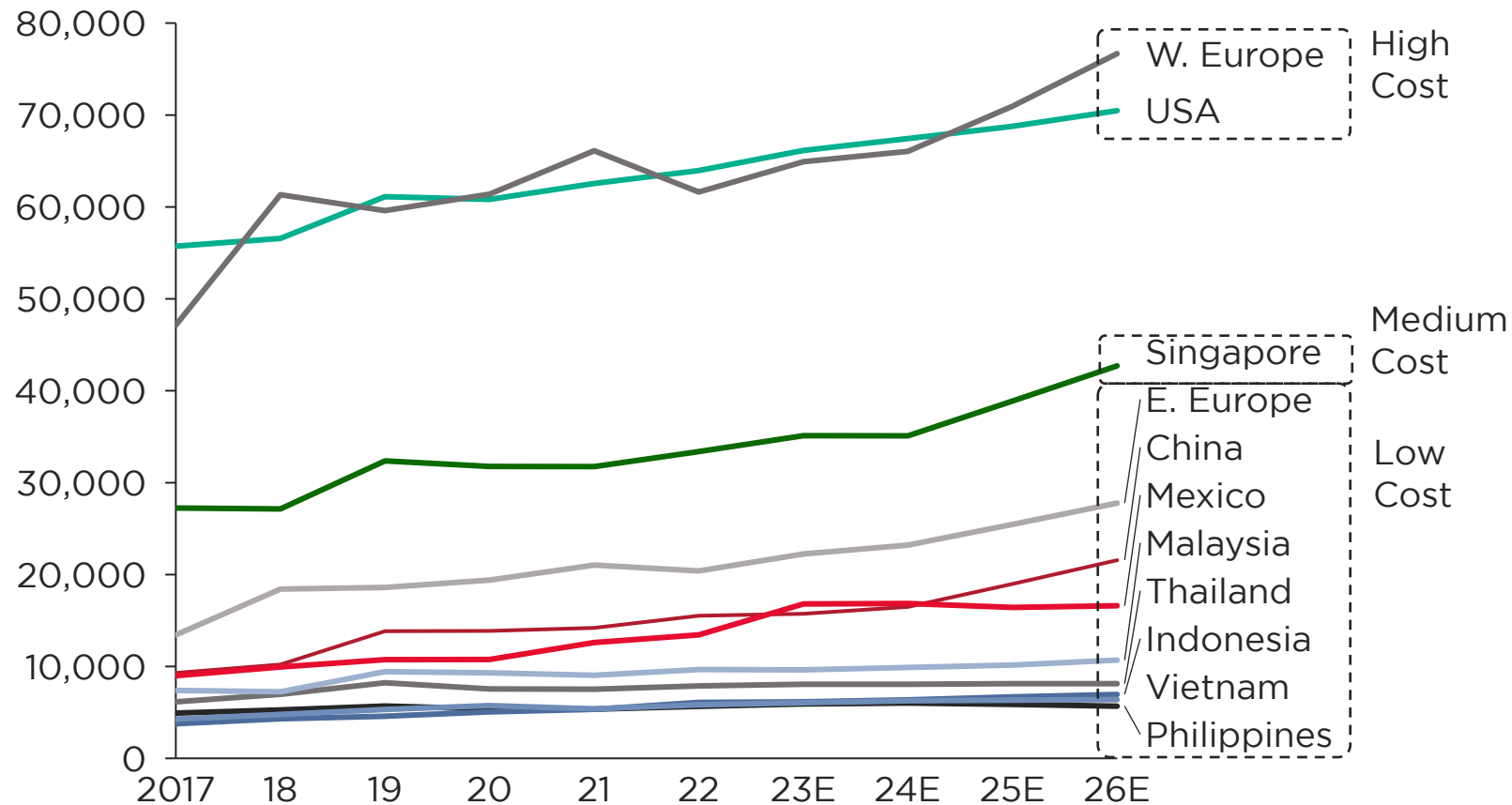
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Labor costs breakdown by region

China and Mexico wages are comparable, double rest of Emerging Asia

SKILLED MANUFACTURING ANNUAL WAGES BY COUNTRY
US DOLLARS, NOMINAL



ASEAN
Nominal wages increased 32% the past five years and are expected to rise another 11% by the end of 2026

US
Nominal wages increased 15% the past five years and are expected to rise another 10% by the end of 2026

EASTERN EUROPE
Nominal wages increased 52% the past five years and are expected to rise another 36% by the end of 2026

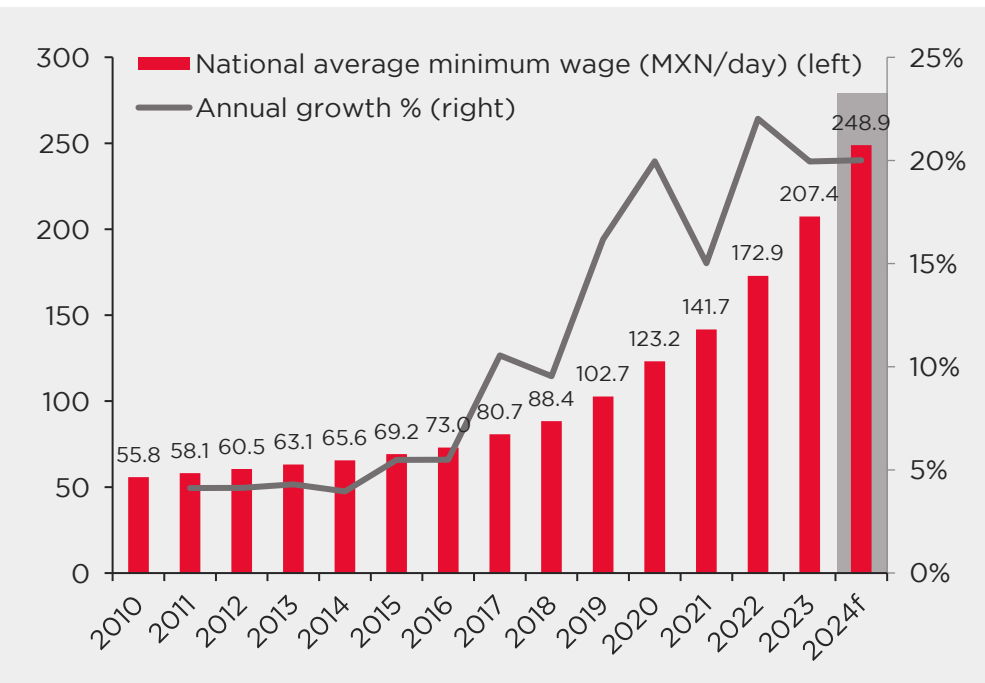
CHINA
Nominal wages increased 67% the past five years and are expected to rise another 39% by the end of 2026

Source: fDi Benchmark, Oxford Economics, Onyx
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Mexico sees rising manufacturing labor costs

The minimum wage has more than doubled under AMLO

Mexico: National Average Minimum Wage MXN/Day



Key structural trends

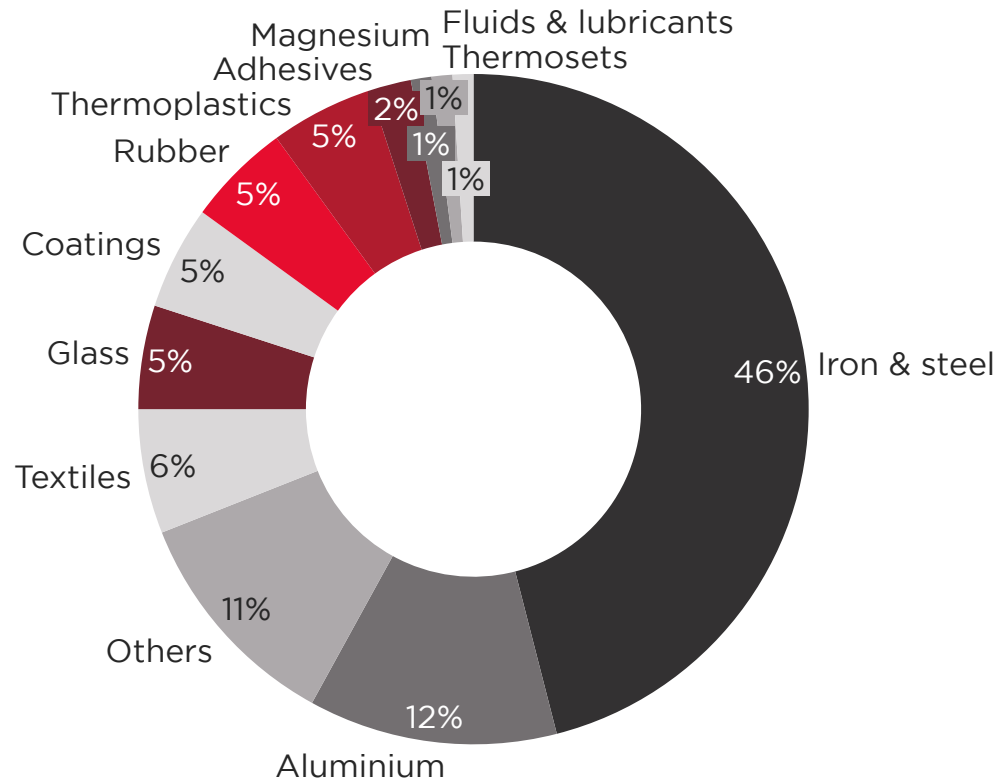
- Labor costs are rising across Mexico. Improving labor rights and a rising minimum wage are putting strong pressure on the low end.
- **Manufacturing salaries are falling in real terms, while manufacturing wages are growing 4.3% faster than inflation.**



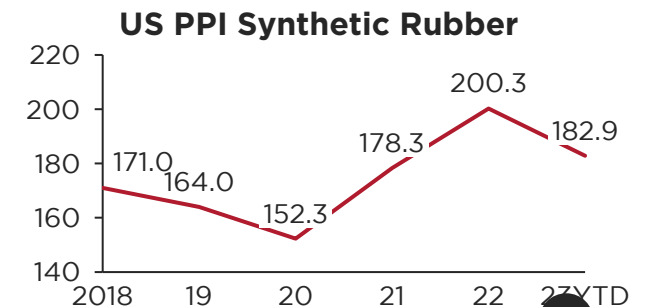
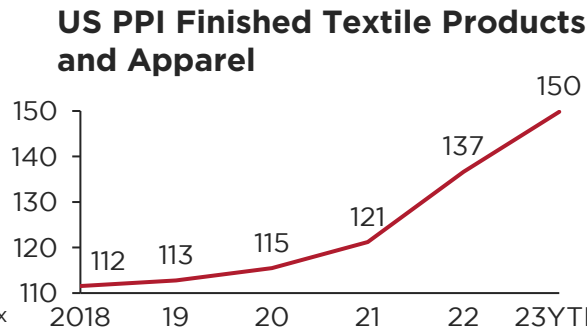
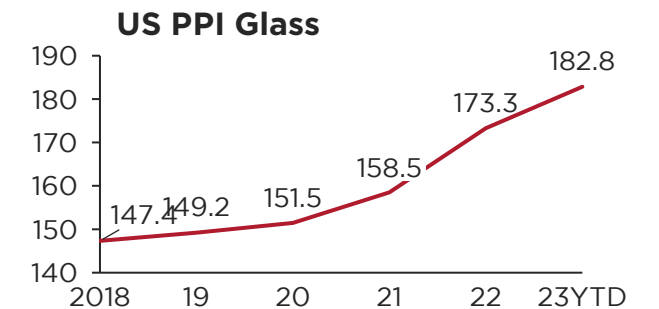
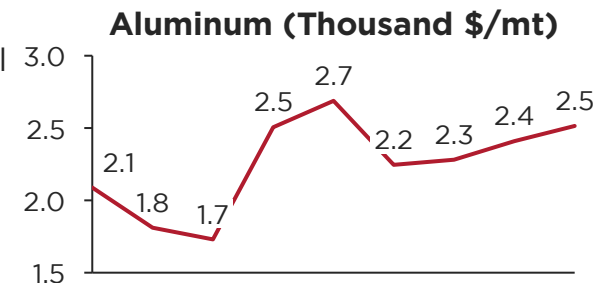
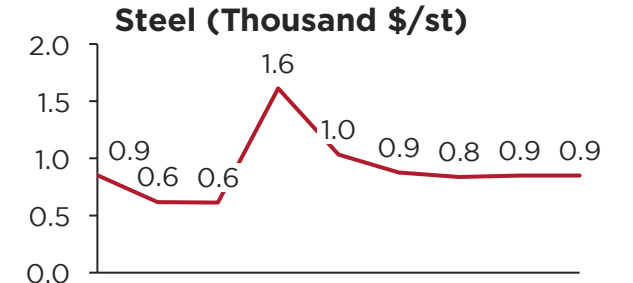
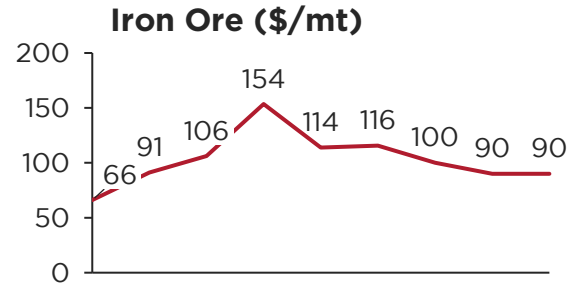
Key materials costs for auto

Raw material prices down from peaks, but intermediate prices remain high

EXAMPLE RAW MATERIALS AUTO PRODUCTS
% OF TOTAL RAW MATERIALS



KEY COST FORECASTS AND HISTORICAL TRENDS



Source: [commonobjective](https://www.commonobjective.com), Focus Economics, US Bureau of Labor Statistics, Bloomberg, Onyx
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