

OE Link™ Update *Bulletin*

July 2, 2024

Q2 2024 REVIEW AND FORECAST



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OE Link™ is a comprehensive database containing global historical and forecasted OEM production volumes. This document outlines important forecast trends as well as the additions and enhancements applied to the database in the second quarter of 2024.

Highlights

Global

Q2 2024 Global Update – Mixed Factors Across Sectors. Page 9

Europe

European industry Looks for Better Times. Page 12

China

China's Exports Drive Domestic Manufacturing. Page 17

Far East

Looking For A Growth Driver, But Can't Find One. Page 23

Southeast Asia

Changing Markets During Recovery. Page 28

India

Economic Factors Shaping India's Auto Industry. Page 29

South America/Brazil

Economy Is Uncertain Short Term, But Recovery Expected in Medium/Long Term. Page 30

North America

Economy Keeps Chugging Along. Page 40



Inside

I. Executive Notes	3	V. Research Methodology	41
II. Introduction	5	VI. Forecast Methodology	42
III. OE Link™ Database Update Notes	6	VII. Contact Information.....	43
IV. Forecast Trends	9		



Commercial Vehicle Outlook

Production of heavy-duty vehicles in North America is expected to drop by an estimated 20% in 2024 to 255,000 vehicles, according to research by Power Systems Research (PSR).

Analysts cite a number of reasons for this anticipated production decline heading into 2024,

including a slowdown in freight resulting in excess truck capacity, pent-up demand being mostly satisfied by the end of this year and continued high interest rates expected to extend into next year.

To get the full story, contact us today.



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I. Executive Notes



PowerTALK News Reviews Important Industry Developments

As we finish the second quarter of 2024, I would like to briefly discuss our monthly PowerTALK News publication. We have published PowerTALK for seven years and it has grown into an important publication that informs our readers about the latest events in the global powered equipment markets. At the same time, it helps us stay engaged in the industries we follow and communicate regularly with industry stakeholders.

The articles published in PowerTALK are a supplement to our core research with OEMs that enables us to remain current on important trends in the global powered equipment markets. Our goal with PowerTALK articles is to point out and discuss many of the most interesting and significant industry events we see.

Author



Joe Zirnheld is President and CEO of Power Systems Research.

Executives read PowerTALK to discover global events that might affect their operations, and to see important stories and updates that our analysts highlight each month.

You will not find comprehensive market reviews in PowerTALK. That's not the purpose of our newsletter. It's designed. It's designed to give you a quick snapshot of what's happening around the world and then give you our take on these events.

We select articles to share in PowerTALK that we feel will most help our readers obtain a picture of the latest market developments from alternative power to commercial vehicles. In addition to re-capping the event, PSR analysts provide our their own analysis of the event and explain to readers its importance and possible implications, based on our extensive industry data and intelligence.

Over time this helps us correlate what we are hearing directly from OEMs and component suppliers and incorporate this information into our forecasts and market trends reports.

The June issue, for example, contains an interesting story on heightening tensions surrounding tariffs for light vehicles between China, the U.S. and the E.U. The stakes are potentially high when one considers the massive EV volumes involved and the need to create tariff policies that enable markets to remain competitive while meeting larger goals of countries to maintain progress towards carbon neutrality targets.

Trade tariff policy is a complex and changing situation, but it will be an interesting topic to follow over the next several years. We will keep a close eye on add comma after developments, and we will provide tariff updates in PowerTALK at the same time we reflect these changes in our data as the markets continue to evolve.

You can learn more about PowerTALK by visiting our archives here. **PowerTALK News | Power Systems Research**

Today, there are many forces at play in the current environment for the worldwide production of powered equipment. As we move forward, Power Systems Research will continue to monitor developments and reflect this knowledge in our data and intelligence. Our

mission is to keep you as informed as possible while we support your market planning and forecasting initiatives.

As we prepared this Q2 2024 update, we incorporated the important insights we have gathered during the second quarter to provide our best outlook for 2024 as well as our five-year forecast.

We hope you find this database update of value at this important time. As always, we appreciate your feedback and continued dialogue as you review this latest update.

We realize that you most likely consider many sources of information but are confident that this update bulletin will offer some chance to corroborate and validate the overall picture and complement your existing data and information you are receiving from Power Systems Research.

If you are facing new challenges or issues that require data-driven solutions, talk to us. We can be an important resource.

Thanks for reading and for being a valued client of Power Systems Research. **PSR**



II. Introduction



Power Systems Research (PSR) has developed and maintained comprehensive market data specific to the power products and drivetrain industry since 1976. Because accurate and reliable market data has always been at the heart of its activities, PSR has developed a unique family of highly specialized databases. These core databases include:

- **EnginLink™** – Engine Production and Forecast Database
- **OE Link™** – Original Equipment Production and Forecast Database
- **CV Link™** – Commercial Vehicle Production and Forecast Database
- **PartsLink™** – Original Equipment Population Database

The **PowerLink™ 3.0** dashboard effectively combines all market databases into one Internet-based tool. Using this system, subscribers can easily access, organize and download the latest engine-powered market data anytime, anywhere in the world.

The PowerLink™ 3.0 dashboard has extensive reporting capabilities and allows for customization and report

distribution within your organization. This innovative system sharpens your business and planning strategies by finding hidden opportunities and targeting potential customers. The PowerLink™ 3.0 dashboard is your link to a competitive advantage in the marketplace.

OE Link™ is continuously updated; this Update Bulletin reflects changes made to OE Link™ during the second quarter of 2024. Included in this Update Bulletin are OE Link™ database notes listing significant data modifications and an explanation of our research and forecast methodology. Additional Power Systems Research initiatives also are outlined here.

Please feel free to circulate these research notes to your colleagues and internal data users

If you have any questions regarding this update, please contact us via email at support@powersys.com or by phone at 651-905-8400. Our support email account is monitored 8-5 CDT M-F by associates at our corporate offices and at our data center.

Thank you for your continued support of Power Systems Research. **PSR**

III. OE Link™ Database Update Notes



The following are the significant changes incorporated in this update:

OEMS ADDED THIS QUARTER:

OEM NAME	OEM COUNTRY
Guangzhou Diesel Engine Factory Co.	China
Mecalac Turkey	Turkey
MIAC	Brazil
Mitsui Engineering and Shipbuilding Co., Ltd.	Japan
MTU Yuchai Power Co. Ltd.	China
Nordco – Oshawa	Canada
Tesla – Reno	United States
Tomahawk Power	United States
Volvo Truck – Mexico	Mexico

CRAWLERS

Production of crawlers manufactured in the United States was updated this past quarter. The main players in the market are CAT, John Deere, and CNH. The leader in production is Caterpillar with their two manufacturing plants. John Deere is in second place. The leading engine suppliers are CAT, Deere and FPT Industrial.

SKID STEER LOADERS

With 31% of the total units produced, Bobcat leads in production of skid steer loaders in North America. In second and third positions are Case New Holland and Deere with 21% and 14%, respectively. Total production is now in the mid 90,000-unit range. Production for 2024 is expected to be flat compared to 2023, which saw growth of 4% over 2022. The major markets which skid steer loaders are used for are construction, agricultural, rental fleets, and landscaping. Bobcat and Toro are offering some battery electric models now as well.

OE Link™ Update Editor



Jim Downey is Vice President-Global Data Products at Power Systems Research.

Trucks, Bus Chassis, Motor Home Chassis and LCVs

OEMS UPDATED INCLUDE:

EUROPE

DAIMLER Daimler Buses GmbH: EvoBus: Daimler renamed EvoBus GmbH to Daimler Buses GmbH in June 2024. The name change will take place throughout Europe and applies accordingly to all national companies.

IVECO Crossway Bus: **Iveco** introduced the Crossway Low Entry CNG Hybrid bus into production in the Czech Republic in 2023. The bus is powered by a Cursor 9 natural gas engine. Iveco also introduced the Crossway CNG Hybrid as an Intercity bus in mid 2024.

 Hydrogen Engine: **MAN** plans to introduce the TGX equipped with a hydrogen combustion engine later in 2025. They plan to introduce approximately 200 trucks in 2025/2026 to a select group of fleets in Europe. They will be deployed along routes with a hydrogen fuel infrastructure.

SCANIA Touring Bus: **Scania** has introduced the Touring bus platform with a LBG/LNG variant that is able to run on both natural gas and biogas, or a mix of the two.

 Macedonia: The **VDL Group** has acquired parts of the bankrupt Van Hool bus manufacturer. Part of the acquisition includes the Van Hool bus plant in Macedonia.

 **Volvo**: Battery Electric Truck Production: PSR Adjusted the number of Volvo branded battery electric trucks produced to date. PSR revised the historical production downward from 2019 – 2022 and increased the actual production for 2023 and 2024 (forecast) based upon information from Volvo.

NORTH AMERICA

ARRIVAL Arrival SA: Bankruptcy: In May 2024, Arrival filed for bankruptcy. The electric vehicle builder previously planned to build an electric bus platform in Rockville in 2025.

 Fuel Cell Bus: **Gillig Corp.** plans to introduce a Hydrogen Fuel Cell bus into production in 2026. The bus will be developed in collaboration with BAE Systems and Ballard Power Systems.

 Class 8 BEV: **International** plans to introduce a class 8 battery electric truck into production later this year. This will likely be the RH (Regional Haul) platform assembled in San Antonio.

ISUZU F Series BEV: **Isuzu** plans to introduce the battery electric Forward medium truck platform into production in North America in 2026. The truck will be equipped with the Cummins Accelera battery electric powertrain.

 T680 and T880 Natural Gas: **Kenworth** introduced the T680 and the T880 truck platforms equipped with the Cummins X15 natural gas into full production in the second half of 2024.

L770: **Kenworth** introduced the L770 refuse truck for limited production in 2024. The L770 is based upon the Peterbilt 520 refuse platform.

  New Truck Plant: **Volvo** plans to build a new truck plant in Mexico. The new plant will be approximately 1.7 million sq. ft., in size, and will focus on production of heavy-duty conventional vehicles for the **Volvo** and **Mack** brands. It will be a complete conventional vehicle assembly facility including cab body-in-white production and paint. The plant is expected to open in 2026.

 Pinnacle: In 2019, **Mack** was expected to supersede the heavy Pinnacle truck platform with the new Anthem. This will ultimately happen, but Mack continues to build the Pinnacle platform. PSR estimates the Pinnacle will end production ahead of the 2027 GHG emission regulations.



520, 567 and 579 Natural Gas: **Peterbilt** introduced the 520, 567 and 579 truck platforms equipped with the Cummins X15 natural gas into full production in the second half of 2024.

CARB Compliant Engines: Peterbilt Motors Co. announced that a California-compliant version of the Paccar MX-13 diesel engine is now available in its Model 579, Model 567 and Model 589 trucks. The engines will be available with 455 and 510 hp ratings.



5500 Fuel Cell: Stellantis plans to introduce a **RAM** 5500 HD hydrogen fuel cell truck into production in Mexico in the next few years. While no time frame has been announced, 2026 or 2027 would be the most likely years.

RAM 4000 Chassis: RAM superseded the 5.7 liter HEMI with the 6.4 liter engine in the RAM 4000 chassis produced and sold in Mexico.

TESLA Reno Plant: **Tesla** is building a large plant in Reno for production of the class 8 semi truck and separate battery production. The plant is expected to be completed in 2025 with production beginning at the end of 2025. The Austin plant will likely stop producing the semi-truck after 2025. PSR has revised the production for this truck downward in 2025 and 2026. Tesla does not plan to ramp up production for “external customers” until 2026.



New Truck Plant: **Volvo** plans to build a new truck plant in Mexico. The new plant will be approximately 1.7 million sq. ft., in size, and will focus on production of heavy-duty conventional vehicles for the **Volvo** and **Mack** brands. It will be a complete conventional vehicle assembly facility including cab body-in-white production and paint. The plant is expected to open in 2026.

SOUTH AMERICA



GM Colmotores: Columbia: General Motors ended production at their manufacturing plant in Columbia in April 2024. In the last few years, the competitiveness of GM’s manufacturing operations in Colombia has been severely affected by the wide opening of the automotive markets– which



have free trade agreements with the world’s major developed countries. This, combined with the small size of the markets and multiple other factors, made GM’s industrial presence in Colombian unsustainable.

JAPAN AND KOREA

Forward: **Isuzu** updated their Forward platform with additional HP ranges.

GREATER CHINA

No Significant Updates this Quarter

SOUTH ASIA

No Significant Updates this Quarter

PSR

IV. Forecast Trends

Global

Q2 2024 Global Update – Mixed Factors Across Sectors



BACKGROUND FACTORS. Several mixed factors are driving the global economy. Inflation continues to be a problem for planners and wars from Ukraine to Israel are upsetting the global economy. Even with these problems, global economic growth is expected to read 2.9% this year and 3.4% in 2025.

- Energy analysts tend to agree that oil prices are unlikely to fall back sharply in the coming weeks and months despite the warming weather. While Oil demand is slowing, there is a great deal of uncertainty in the oil market.
- Supply chains remain constrained and show no signs of improving – these are further complicated by low water levels at the Panama Canal and Houthi/pirate activity in the Red Sea.
- The war in Ukraine has become stagnant and shows no sign of a conclusion any time soon.
- Ukrainian exports of wheat, other grains and fertilizer remain depressed when compared to pre-war levels. Alternative routes (overland, and via the Danube) simply don't have the capacity to handle the volume.
- Middle East tensions are rising because of the Gaza situation, and have reached Syria and Lebanon, which could lead to a wider confrontation in the region. Additionally, Iran's long-standing support for local militant organizations exacerbates the already prominent levels of regional unrest.
- Despite inflation easing, it continues to be a major concern with central banks holding their interest rates

Author



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at high levels. This will pose a risk to economic growth in all regions. Inflation and price increases are putting OEMs in a difficult situation. Global headline inflation is expected to fall to 5.8% in 2024 and 4.4% in 2025, with the 2025 forecast having been revised down (Source: IMF).

- The burden of national debt (as measured by Debt/GDP ratio) remains high with some countries exceeding 100% (USA, France, Canada and Italy) or even in Japan's case 264%.
- Risk of widespread recession has eased but remains in the background for several countries, notably China, USA and Germany, and this could potentially drag other countries into recession.
- Latent demand for machinery keeps building.

Despite all these factors, global economic growth is expected to reach 2.9% this year—before growing to 3.4% in 2025. This high-level figure can be misleading

Global: Q2 2024 Global Update – Mixed Factors Across Sectors

Continued from page 9

as it hides declines in Europe and across several sectors, with approximately half the volume growth coming from the recreational sector.

AGRICULTURAL. The Agricultural sector is showing mixed signs of growth in 2024 at about +2.2% before falling back in 2025 to +1.1% and then climbing to 3.1% in 2029. The average growth rate remains a good +2.5% and the market is expected to grow +608,000 units by the end of the forecast period.

Apart from Germany (-9.0%), Italy (-9.0%), Japan (-1.8%) and USA (-1.0%), all of the major production countries are growing in 2024. By 2029, only Germany (-4.8%) and Italy (-4.6%) will not show growth.

CONSTRUCTION. The global construction equipment sector is expected to decline by -2.5% in 2024 but is expected to bounce back in 2025 and then grow more rapidly for the rest of the forecast period. The average growth rate remains a good +2.3% and the market is forecast to grow by +234,000 units by the end of the forecast period. In 2024 China is expected to decline heavily (-5.9%) before slowly growing back during the rest of the forecast period. Germany (-7.7%) and USA (-1.4%) are also expected to decline during 2024 before recovering to positive growth from 2025 onwards. Of the major countries, only Japan and India remain in positive growth throughout the period with the segment gaining 234,000 units by the end of the forecast period.

INDUSTRIAL. Industrial is expected to continue its growth throughout the forecast period except in 2024 when the growth is expected to be marginally down (-0.6%). The average growth rate remains a good +2.8% and the market is forecast to grow +1.014 million units by the end of the forecast period. The USA is the largest manufacturer in this segment, and it is expected to grow strongly every year during the forecast period except for 2024 where it is forecast to decline by -2.0%. China is the second largest manufacturing country in this segment and is expected to grow every year from between +3.0% to +5.0%.

LAWN & GARDEN. Lawn & Garden remains positive in all forecast years except for 2024 when it is expected to decline by -3.2%. The average growth rate remains at +2.2% and the market may grow by +4.604 million units by the end of the forecast period. The USA is the largest producer for this sector with almost half of the total volume, so a fall in 2024 of -2.2% contributes significantly to the 2024 market decline. Of the Big Eight producers (United States, China, Germany, Sweden, Japan, Italy, Mexico, and Slovakia) only China and Japan remain positive in 2024 and only half of the Big Eight countries will be positive by the end of the forecast period.

The global construction equipment sector is expected to decline by -2.5% in 2024 but is expected to bounce back in 2025 and then grow more rapidly for the rest of the forecast period.

LIGHT COMMERCIAL VEHICLES. This segment is expected to remain positive throughout the forecast period with growth of between 2.5% and 4.3%. The average growth rate remains a good +3.2% and the market is expected to grow by +2.059 million units by the end of the forecast period. Both the top two countries (China and USA) remain positive throughout the forecast period with expected growth of between +2.8% and +7.9%.

MARINE AUXILIARY/MARINE PROPULSION. This segment is expected to grow by +1.2% in 2024. The average growth rate remains modest at +1.7% and the market is expected to grow by +78,000 units by the end of the forecast period. Japan is the largest producer here with over half the volume and is expected to grow by +1.2% in 2024 and +2.2% in 2025 and remain positive for the remainder of the forecast.

MEDIUM & HEAVY VEHICLES. This segment is expected to decline in 2024 by -1.3% and then grow strongly except in 2027 when growth is expected to be flat at +0.3%. The average growth rate remains good at +2.3% and the market is seen growing by +548,000 units by the end of the forecast period. Of the Big Three production countries,

Global: Q2 2024 Global Update – Mixed Factors Across Sectors

Continued from page 10

only China remains positive throughout the period with growth rates ranging from +3.0% to +5.4%.

PASSENGER CARS/MINIVANS & SUVs. 2024 is expected to remain a good year for these segments with growth around +3.8% (although Passenger Cars is only +0.8%). The average growth rate remains healthy at +3.6% and the market grows by +13.423m by the end of the forecast period.

China and USA produce a little over half of the volume in these segments and both remain strongly positive throughout the forecast period with China averaging +4.5% and USA +6.7%

POWER GENERATION. Power generation is expected to continue to grow strongly during the forecast period with growth ranging from +2.4% to +5.1%. The average growth rate remains healthy at +3.6% and the market is forecast to grow by +1.590 million units by the end of the forecast period. Both the top two power generation countries (China and United States) show good growth for every year of the forecast period with growth figures ranging between +2.1% and +5.0%

RAILWAY. Global railway production is expected to grow strongly throughout the forecast period with an average

growth rate of +5.8%. The market is dominated by China (60% of the production) which is forecast to have an average growth rate of +4.1%. This market mostly follows standard cyclical replacement rates. There will also be a push to move to more alternative drive types in that time as well.

RECREATIONAL PRODUCTS. This segment follows consumer products and includes items such as motorcycles, ATVs, scooters, personal watercraft, and snowmobiles. Now with higher inflation and rising costs, 2024 market's growth is expected to slow but hasn't done so in H1 2024, with 2024 volumes growing by +4.5%. The market is expected to grow by an average of 4.0% adding 21.692 million units by 2029. The size of this segment is so large that it can distort overall market views. Growth rates for the next years are driven by China and India which dominate the market (over 80% share) The key factors to better performance in recreational products are affordable personal transportation, significant demand for these products, the impact of electrification and higher consumer spending with more disposable income.

ALTERNATIVE POWER. After growth of +6.1% in 2024, Alternative Power (battery, Fuel Cell and Corded Electric) is expected to grow at between +6.1% and +9.0% and add an extra 27.859 million units by 2029. ICE on the other hand is growing much slower with +1.5% in 2024 and from then on growth rates are between +0.7% and +1.9%. **PSR**



Europe

European Industry Looks for Better Times

E **SUMMARY.** Two years after Russia's invasion of Ukraine, there are no signs of peace. The war remains fierce, and Russia continues shelling Ukrainian lands. While Europe continues to face many problems, Russia's war on Ukraine has intensified several issues, and has created a humanitarian emergency on the European continent.

Despite this horrible war, the European economy is showing timid signs of stabilization. Inflation pressure is steadily receding, and energy prices are showing no signs of sudden increases, despite mounting pressure from the OPEC+ decision to cut output. Central banks may ease their monetary policies, a much-needed action in order to boost investments and prepare the recovery of the real estate market.

There was a brisk improvement in component shortages in the second half of 2023, with many companies reporting improvement in supply chain dynamics, returning to pre-Covid levels. The recent attacks of Houthi militias in the Red Sea, have not caused significant impacts on logistics, but the situation could deteriorate further, given the ever-increasing atrocities in Gaza, and the expansion of the war in the West Bank.

But while economic factors are improving, some business segments are struggling in H1 2024. Euro zone PMI is showing a negative trend, and orders of new off-road equipment are lacking. OEM inventories are still high, and many companies are trying to reduce their components stocks. Demand for new machines is also weak, with the exception of passenger cars, SUVs, and motorcycles.

Nevertheless, the resiliency of the economy, the improvement in monetary policies, and the end of the elections in the EU should favor a revival in orders after summer. This trend should continue in 2025, where we expect to see machinery demand turn to positive, albeit slightly.

Inflation pressure is steadily receding, and energy prices are showing no signs of sudden increases, despite mounting pressure from the OPEC+ decision to cut output.

AGRICULTURAL. Order books intake is continuing its downward trend as expected, and this should continue for the most part of 2024. Some momentum should start picking up again around mid to late H2 2024. However, at this stage the opposite remains possible with no pickup in momentum before 2025. In fact, the overall general consensus is that the business climate will not pick up until next year. Especially low overall market confidence could delay the recovery.

The cautious optimism that we have been seeing for the last few months has however been highlighted by a slight uptake in business activity and estimated business activity according to reports from the CEMA (European Agricultural Machinery Association) barometer. However, now this optimism has severely diminished--if not completely disappeared--with most believing a negative trend will continue for at least the next six months.

CONSTRUCTION. This segment is very much following the same trend that we see in the Agricultural Segment. Demand, similarly to the agriculture segment, seems to be declining. We are seeing this decrease across many business activities, especially in the residential and private sectors. We are seeing a clear decrease in activity reported by CECE (Committee for European

Author



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Europe: **European industry Looks for Better Times**

Continued from page 12

Construction Equipment) and other trade associations. The overall trend is likely to mimic Agricultural, and we can expect it to pick up around mid to late H2 2024. There is a possibility that the recovery process could take longer due to a possible shortage of labor to fill so many incentivised positions. This could push the recovery into early 2025.

The same risks are applicable to Construction as to the other segments. For example, the potential looming recession applies, with the possible exception of government and investment help and funding on new projects to keep the markets afloat. Similarly to the CEMA, the CECE's members have reported the possibility of lower revenue and order intake for the next six months.

As expected, we see a slowdown in the second part of this year. Furthermore, we're also likely to see the smaller 19kW and below market segment struggle to keep up due to heavier price constraints. We expect Construction to start its recovery mid H2 2024. We expect a flat performance for 2024, similar to the Agricultural market, but a little lower than that segment.

LAWN AND GARDEN. We are seeing a slowdown overall due to lower demand especially on the residential consumer side. The same risks could be reduced by the electrification shift that is more and more prevalent throughout the EU. We expect the overall segment to slow down through 2024 but remain positive. This is partly due to the lower sales and order intakes, which are expected to continue. However, there is hope, that the consumer side of this segment will be balanced by professionals, and new homeowners which bring a certain level of elastic demand.

Furthermore, many consumers are investing or switching to battery-powered equipment, and even professionals are switching so they can use it as a USP (unique selling point), especially since many government contracts now call for a portion of all machines used on the job to be low emission. This trend, while small, should continue to be fuelled by the

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EnginLink™ is the definitive source of global production, forecast and specification data for IC engines. And now it includes information on electric and hybrid-drive systems.

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Europe: **European industry Looks for Better Times**

Continued from page 13

many electrification incentives being pushed into 2025 for many member states.

INDUSTRIAL. In this segment we have been experiencing a diversified recovery over the last year and a half, with some products recovering and growing explosively while other applications are seeing slower progress.

We expect this segment to follow the trend and be down in 2024, but not as much as Ag and Construction. We expect this to continue throughout 2024 and recovery should start either late 2024, or more likely in 2025.

MARINE PROPULSION. This segment will remain relatively flat overall this year as it starts to feel the effects of reduced demand. We expect this segment to taper off as the year continues, however. There are still some issues that must be resolved before recovery can regain

full momentum. We expect this slowdown to continue in 2024, but to pick up around the end of the year.

PLEASURE BOATS. Production of marine pleasure boats and yachts remained stable for major European boat manufactures in Q1 2024, but we are seeing some difficulties in order books for sailing and medium sized power boats not being able to adapt rapidly to changing demand. Customers are looking for boats that are more sensitive to the environmental without losing comfort and performance.

The 2023 production numbers were stable, thanks to the good order books dated 2021 and 2022, but with inflation and political and economic instability in Europe and abroad, 2024 could be challenging.

The 2023 order books were good for large boats such as bigger motor yachts, super yachts, and catamarans, both sailing and power. Manufacturers of larger luxury yachts and superyachts do not have issues with sales. High level of customization helps in selling unique yachts.

Europe: **European industry Looks for Better Times**

Continued from page 14

Catamarans are in high demand largely from charter companies and other tourism operators worldwide. However, the new traditional sailing yachts and medium sized power boats market is unstable, and we are seeing an even more negative trend here.

Since customers are looking for more sustainable yachts, and some manufacturers are adapting their offerings to include boats in updated diesel, hybrid, or electric versions. Sales of electric boats are growing in the segments of a smaller day boats used on rivers and lakes and sailing catamarans used for long distance boating. Foiling boats are becoming very popular, thanks to their specific design: they are fast and CO2 and noise emission free. We have seen new arrivals in the market frequently in the last two years and this trend is expected to grow stronger. We expect to see growth of electric boats production increase by up to 50% by 2025.

The electric propulsion in marine pleasure industry is developing fast. Creators and manufacturers of new electric motors and battery solutions are entering the market in big numbers. Advanced solutions are coming from the Netherlands, Germany, Scandinavian countries, and China. Boat builders are creating optimal propulsion systems for their boats in-house by combining and assembling pieces coming from different sources.

Manufacturers of diesel engines for bigger sports-cruisers, motor yachts and superyachts are looking for alternative power solutions. They are developing and testing new hybrid systems, such as diesel engines capable of using renewable diesel and synthetic fuels, or hydrogen to decrease CO2 emissions without losing a power.

Rolls-Royce Power Systems, MAN, Volvo Penta, Yanmar and others are introducing the latest solutions to the market. Boat manufacturers are ready for a change respecting customers and governmental requirements. Production of power motor yachts and superyachts will remain stable while installing more sustainable engines running on synthetic fuels or hydrogen (or other new

alternatives) in coming years. Acceleration of transition is expected to happen in the period 2030-2035.

PASSENGER CARS, Minivans & SUVs. Demand for new cars in Europe continued to grow in 2023, posting a significant 17.9% increase compared to 2022. However, this segment was heavily affected by the pandemic and continues to be affected by the current economic climate and the war in Ukraine. In spite of these negative factors, we see growth continuing in the next few years.

Since customers are looking for more sustainable yachts, and some manufacturers are adapting their offerings to include boats in updated diesel, hybrid, or electric versions.

The Euro 7 emissions standards soap opera has come to an end. With the latest developments, EU lawmakers have agreed to leave limits on toxic NOx and the mass of particles emitted from new cars untouched. Furthermore, the new standards have been postponed to 2029. The new regulations put the EU in a follower position on environmental standards, behind the more stringent US EPA tier 3 Final and China 6b standards. The latest developments highlight the way in which the car industry is regaining its weight and power after a few years of weakness following Dieselgate in 2014.

With European consumers moving to EVs (electric vehicles) and hybrids much faster than expected, new challenges await the industry. Chinese and Indian manufacturers are penetrating the market where in previous years they were almost non-existent. They can offer very cheap and practical EVs. BYD, one of the leaders in production on batteries and EVs, is now developing its production facility in Hungary to anticipate any measure from the EU and offer EVs made in Europe.

The emissions regulations that in the past worked like a barrier protecting the European market, are now becoming irrelevant. If the EU and the European manufacturers do not realize that a greater challenge

Europe: **European industry Looks for Better Times**

Continued from page 15

than Euro 7 is on the horizon, they might find themselves in much more agitated waters.

POWER GENERATION. Gen-Set production and demand in Europe was hurt by the pandemic. However, the sector quickly rebounded in 2022. Demand remained positive in 2023, but we saw signs of a decrease in the last months of last year. 2024 will turn negative for this segment, but this is not a surprise, given the unprecedented levels gained during 2022 and 2023.

However, with a rebound in investments towards the end of the year, gen-set demand will start to pick up, and in 2025 the segment will return to a timid growth, followed by a more robust performance in 2026.

RECREATIONAL PRODUCTS. 2023 was a successful year for the European motorcycle and scooter industry. While the overall European economy continues to struggle, this sector, one of the largest on the continent, is showing strong figures comparatively for 2024. Consumers are finding motorcycles and scooters to be a practical and economic mobility solution. This trend is expected to continue throughout the year.

RAILWAY. Demand in this segment was less affected by the coronavirus than other segments and remained strong. As contracts tend to be of longer duration, we are seeing a slow but steady increase continuing into 2032. As a result, we are seeing a high percentage of contracts being fulfilled, although the numbers are still relatively low compared to other segments. Incentives are still very present for the push to reduce CO2 emissions for 2025 for many member states and outside of Europe demand. **PSR**



China

China's Exports Drive Domestic Manufacturing

2024 and 2025 Growth Projected at 5% and 4.5%



SUMMARY. The Chinese government has focused its efforts on achieving high-quality economic growth with measures that include support for innovation, especially in green and high-tech fields. Starting in 2024, plans call for issuing ultra-long-term special national bonds for several consecutive years, specifically for the implementation of major national strategies and the construction of security capabilities in key areas.

The Chinese government also has appropriately focused on addressing the vulnerabilities in the real estate industry, local government debt, and small financial institutions. Strengthening the bank resolution framework and strictly enforcing prudential standards will help enhance financial stability and reduce risks.

In terms of inflation, the IMF believes that China's core inflation is expected to rise but will remain low in an environment where economic growth is below potential. So far in 2024, the People's Bank of China's implementation of a loose monetary policy is welcome, but there is still room for further monetary policy easing due to low inflation and output below potential. Increasing exchange rate flexibility can reduce the risk of deflation and help absorb external shocks.

To achieve high-quality economic growth in the medium to long-term, China needs to carry out structural reforms to address adverse factors and resolve potential imbalances. Key tasks include strengthening the social safety net to achieve an economic rebalancing towards consumption, improving growth potential and creating job opportunities by opening the service industry, and

enhancing productivity, which is the most important method to drive China's economic growth.

The Chinese government has focused its efforts on achieving high-quality economic growth with measures that include support for innovation, especially in green and high-tech fields.

AGRICULTURAL. Looking at the international perspective, globalization and political turmoil are leading to the reconstruction of the international order and changes in the external environment. China's development strategy is driving the economy from high-speed growth to high-quality development. In this context, food security and the rise of industry have even greater significance.

In 2024, the national policy support direction for "three rural issues" remains clear, and its strength is undiminished. Rural revitalization and common prosperity continue to be the core of rural work. Agricultural machinery, as a key link in the development of agriculture, will continue to receive increasing subsidies from the state.

In terms of industry development, there is encouragement to add "intelligent manufacturing" and "agricultural machinery" to guide and adjust market demand through policies such as

- Increasing subsidy amounts for high-power products and reducing subsidies for medium and low-power products to promote large-scale development.
- Promoting subsidies for agricultural machinery in hilly and mountainous areas.

Author



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China: China's Exports Drive Domestic Manufacturing

Continued from page 17

- Advancing the continuous implementation of “one large, one small” agricultural machinery equipment subsidies, etc.

In 2024, the agricultural machinery purchase subsidy policy remains a key engine for driving market development.

The industry's growth rate is still likely to slow down. In 2024, whether it is the macro, or microenvironment in which the agricultural machinery industry is located, there is no comprehensive opportunity for a rebound.

Especially influenced by factors such as the global economic slowdown, sluggish consumer demand, and market saturation with oversupply, the upgrading and transformation of the domestic agricultural machinery industry is inevitable.

The impact of emission upgrades is not over, and the power machinery market faces a big test. Analyzing the operation trend of the agricultural machinery market, it is estimated that in the next two years, the topic of “national three to national four” power machinery emission upgrades will be unavoidable. The

impact of emission upgrades on the industry market operation trend will last at least two years. Combined with the current high inventory of power machinery in the market, it is predicted that in 2024, agricultural machinery power machinery manufacturers will face huge challenges, and significant growth is unlikely. The expected growth rate for 2024 is 5.3%, and it is about 4% for 2025.

CONSTRUCTION. Domestic policies continue to be favorable, and the market is growing steadily, although infrastructure and real estate, the two main downstream demands for excavators, have not yet seen significant improvements. Policies such as “trade-in for new” and “phase-out of National I/II/III” are positively impacting the domestic market. The Ministry of Housing and Urban-Rural Development issued the “Notice on the Implementation Plan for Promoting the Update of Construction and Municipal Infrastructure Facilities,” proposing to phase out construction machinery that has been in use for more than 10 years. This mainly refers to off-road machinery below National II standards.

The domestic market's equipment renewal cycle is beginning with the National III models that began sales in 2016 expected to reach the end of their service life in 2026. Currently, there are about 800,000 to 1 million units of National I and II equipment in the market. If the



China: China's Exports Drive Domestic Manufacturing

Continued from page 18

equipment renewal policy is strictly implemented, it is estimated that by 2027, 10% to 40% of the equipment will need to be updated, generating update demand of 186,000 to 300,000 units.

Overseas demand is expected to jump in 2025. Following the pandemic, China's engineering machinery exports have increased significantly due to product strength and supply and demand gaps. According to data from the China Construction Machinery Industry Association, the compound annual growth rate of China's excavator export sales from 2020 to 2022 was 60.21%. This marks the transformation of China's engineering machinery export status from "supporting" to "independently."

Due to the cooling of overseas demand and the recovery of the supply chain, the growth rate of China's engineering machinery exports has slowed since 2023. In 2024, more than 40% of the world's economies will hold elections, and projects driven by the government during the election year may be restricted, putting short-term pressure on total overseas demand. As the elections are completed, overseas demand is expected to rebound in 2025.

In the long term, the market share of Chinese engineering machinery brands in overseas markets is still relatively low, and the export market is full of opportunities; domestic brands having significant growth potential. China's engineering export business new contract amount is stable, but the export sales volume and proportion of excavators continue to increase.

With the enhancement of its engineering machinery product competitiveness, China has started to seize the overseas market. The rebound of manufacturing in North America and the infrastructure demand in Southeast Asia have brought new growth opportunities for China's excavator exports. Under policy support, the trend of manufacturing reflow in the United States has grown, and Indonesia has demonstrated a strong demand for engineering machinery equipment due to its infrastructure and real estate needs.

The number of engineering machinery equipment units exported by China to ASEAN has exceeded exports to the European Union and the United States, showing the huge potential of the ASEAN market. The growth rate will be 6% in 2024 and 5% in 2025.

Following the pandemic, China's engineering machinery exports have increased significantly due to product strength and supply and demand gaps.

INDUSTRIAL. In 2024, China's stable economic development and active industrial production activities, coupled with the continuous prosperity of the logistics industry, have created a robust demand for material handling equipment, especially forklifts, which play a crucial role in loading and unloading operations. The market demand for forklifts remains strong.

With the widespread application of intelligent manufacturing, automated warehouses, and logistics systems, high-tech products such as electric forklifts and AGV (Automated Guided Vehicles) are expanding market prospects, particularly for energy-saving and environmentally friendly electric forklifts.

Strict government requirements for the transformation and upgrading of manufacturing, environmental protection, and workplace safety are driving the forklift industry towards more advanced, eco-friendly, and safer product designs and manufacturing processes. The state provides policy support for new types of forklifts that meet national environmental standards and energy consumption requirements.

Different types of forklifts, including electric forklifts, internal combustion forklifts, warehouse forklifts, and special-purpose forklifts, each have distinct market performances. Electric forklifts benefit significantly from the promotion of green logistics concepts, leading to a steady annual increase in their market share.

Forklift rental businesses continue to expand as companies increasingly prioritize asset-light management strategies and cost controls.

China: China's Exports Drive Domestic Manufacturing

Continued from page 19

With the improvement in Chinese forklift manufacturing capabilities and China's growing international influence, an increasing number of Chinese forklift companies are moving into overseas markets. Their successful participation in international competition is pushing the internationalization of China's forklift industry.

Between 2024 and 2029, the scale of China's forklift market is expected to maintain steady growth, with notable expansions anticipated in the fields of new energy forklifts and intelligent forklifts. The growth rate will be 5% in 2024 and the rate will be 4% in 2025.

LAWN AND GARDEN. Developed countries and regions such as Europe and America are the main consumption areas of garden machinery products. The global market demand base for garden machinery products is large, and it continues to maintain a long-term growth trend, stimulated by world economic development, population and family growth, popularization of local gardening cultures, and promotion of new products.

The rapid development of the greening industry has provided unlimited business opportunities for the garden machinery and garden industry. The total output value of greening in China will increase by 30% - 50% annually. We are expecting the growth rate for this segment will be 3% in 2024 and 2% in 2025.

MEDIUM AND HEAVY VEHICLES. The economic environment in 2024 for commercial vehicles remains difficult. Although the economic fundamentals are gradually improving, the strength of the recovery is still weak. The heavy truck market is tightly related to the national economic environment, and the prospects of the medium and long-distance freight market have not fundamentally improved as the overall economy has lagged.

The real estate market continues to be sluggish, and it is not a significant demand driver in the heavy truck market. At the same time, the launch of new infrastructure projects has not met expectations, and some new infrastructure projects cannot be launched because of a lack of investment caused by financial shortages. This

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China: China's Exports Drive Domestic Manufacturing

Continued from page 20

financial shortfall has reduced the demand for heavy trucks such as dump trucks and mixers.

The situation of “too many trucks and too little cargo” in the heavy truck market continues, and some manufacturers have a large inventory of vehicles, which occupies a lot of working capital. This situation discourages these manufacturers from purchasing new vehicles. To reduce the inventory of vehicles as soon as possible, some manufacturers choose to sell products at low prices, which further impacts the new vehicle market.

The tractor market will become an important growth point. First, the year-on-year increase of new energy tractors is expected to continue to expand, mainly due to the national introduction of many policies supporting the development of new energy heavy trucks.

With attention to the carbon reduction effect of heavy trucks and the increase of environmental protection efforts, it is expected that the implementation of policies in the second half of the year will also increase, and the new energy heavy truck market will continue to show an explosive growth trend.

Second, the gas tractor market is expected to continue to grow at a steady rate. Looking at the macro economy in the second half of the year, experts predict that China's manufacturing investment will increase significantly, and the scale of this investment may exceed infrastructure and real estate investments to become the key driver of China's economic growth. Therefore, it is expected that the domestic gas tractor market will continue to grow at a stable rate in H2 2024.

Third, the national six diesel tractor market is expected to stabilize in H2 2024 because the significant increase in China's manufacturing investments in H2 2024 may exceed total investment in infrastructure and real estate.

The dump truck market is expected to improve. With gains in local economies in the second half of the year, the investment in new infrastructure is expected to increase, driving the demand for dump trucks. Coupled with the strong drive of new energy vehicle policies, the year-on-year increase of new energy dump trucks will continue to rise. The fuel dump truck market will also improve, but this improvement will be limited. Overall, the dump truck market will improve in the second half of the year, but the improvement will not be too great.

In summary, the downward trend of the domestic medium and heavy truck market in the second half of

China: China's Exports Drive Domestic Manufacturing

Continued from page 21

the year may be curbed, and the possibility of achieving double-digit growth year-on-year is small. Overall, the possibility of stabilization in the domestic heavy truck market in the second half of the year is relatively large, and the sales volume will be basically the same year-on-year or slightly increased. The heavy commercial vehicle growth rate will be around 5% in 2024 and the growth rate will be 5% in 2025.

PASSENGER CARS. In 2024, macroeconomic factors and consumer confidence will continue to recover moderately, but the probability of strong stimulus policies in the car market is unlikely. Fundamentals support a slight increase in sales in the car market but combined with factors such as the continuation of the “price for quantity” trend, accelerated demand for replacement, and new product drivers, the passenger car market will maintain only a moderate growth rate.

The domestic market growth rate of fuel vehicles will continue to decrease, while the market position of new energy vehicles, mainly pure electric models, will rapidly improve and will maintain a relatively fast growth rate. The annual sales of new energy vehicles in 2024 will undoubtedly exceed 10 million units, with a market penetration rate of over 40%. We expect that the sales volume of passenger vehicles in China will be around 3% in 2024 and rate will gain another 4% in 2025Y.

POWER GENERATION. The power generation market for some high horsepower diesel generator sets will continue to grow in 2024. By contrast, the small gas gen-set market is vulnerable to external forces in export markets. The trend toward natural gas power generation will grow with the energy consumption conversion from coal to NG, and an increased need for renewable energy backup power generation.

More competition will occur in the small horsepower segment both at home and abroad. The biggest change will come from the North America market, which is the key region for the small gasoline power generation market. The growth rate is 3% in 2024 and the rate will be 3% in 2025.

RECREATIONAL PRODUCTS. Today, China's motorcycle market is seriously saturated, and electric motorcycles are gaining market share. Comparing the performance, price and safety of electric motorcycles and fuel motorcycles, electric motorcycles are cheaper to buy, cheaper to use, and generate almost no pollution during use. As an option for transportation in the city, electrics have several obvious advantages over gas-powered units.

In 2024, macroeconomic factors and consumer confidence will continue to recover moderately, but the probability of strong stimulus policies in the car market is unlikely.

With the continuous implementation of policies aimed at carbon neutralization and carbon peaks, China has established a policy goal of green development for the motorcycle industry. In the past, the development of China's motorcycle industry has been in a relatively disordered state: motorcycles with excessive emissions have been on the road illegally, and electric motorcycles have not been clearly defined, and there are many loopholes in supervision and technical indicators.

However, in recent years, the state actively has promoted the standardized and green development of the motorcycle manufacturing industry. In coming years, the supply and demand of motorcycles in China will continue to be affected by national environmental protection policies, and the development and transformation of the industry will be further accelerated. This will cause the growth rate of motorcycle production to slow. With the continuous emergence of regulations and the advantages of electric motorcycles, the proportion of electric motorcycle production will further increase. It is predicted that in 2027, the output of motorcycles in China will reach 22.5 million units. With a compound annual growth rate of about 5%, the proportion of electric motorcycles will increase from 20% to 30%. The growth rate for this segment will be 4% in 2024 and the rate will be 3% in 2025. **PSR**

Far East (Japan and South Korea)

Looking For A Growth Driver, But Can't Find One

JK **JAPAN SUMMARY:** As in the first quarter, there is no reason for optimism about the future. According to the Bank of Japan's Tankan survey released April 1, 2024, the Diffusion Index (DI) for business confidence in the large manufacturing sector fell 2 points from the previous survey. DI is an index of various judgments about business conditions, facilities, and excess or shortage of employees.

In particular, the DI for automobiles fell 15 points from the previous survey. This is believed to be due to the suspension of automobile production and shipments due to certification test irregularities at finished vehicle manufacturers, with production continuing to be negative year-on-year every month from January to April. The impact of this slump in automobile production has also been felt in the deteriorating business climate for steel and other industries. Exports and domestic consumption are showing weakness, and business sentiment in the manufacturing sector remains weak.

The weak yen has become a major factor in high consumer prices, high commodity and energy prices, stagnant consumer spending and slowing capital investment. The longer the yen remains weak, the more damaging it will be for Japanese manufacturers. While foreign exchange gains have been significant for Japanese companies with overseas sales, many manufacturers in Japan are suffering from rising costs of all kinds of materials. Such cost increases are reflected in the selling prices of products, and as the quality of low-cost products made in China has improved in recent years, price competition with Chinese products will intensify everywhere in the future.



There has been little action by the government to correct or overcome this weak yen situation, and politics has failed to play a leading role at all. The current prime minister's term as LDP (Liberal Democratic Party) leader expires in September, but the current cabinet has an approval rating of 21% and a disapproval rating of over 60%. The ruling party's scandals continue, and if things continue as they are now, the party could be wiped out in the next election. If the LDP, which has been the ruling party for most of the postwar period except for a few years, were to go down, it would have an extremely large impact on Japanese politics. And with the current attempts to directly involve South Korea and China in Japan's national politics, the current opposition parties are heavily influenced by them. A change of government would risk further economic stagnation.

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Far East: Looking For A Growth Driver, But Can't Find One

Continued from page 23

Labor shortages are becoming apparent in all segments of the economy, stimulating the development of systems and equipment that contribute to labor savings. This is especially true in the agricultural and construction machinery segments, where labor shortages are severe. Because such new products are often expensive, users tend to wait until the price is affordable before making a purchase decision.

In terms of electrification, demand appears to be shifting from BEVs to hybrids as the passenger car segment reevaluates its shift to EVs. Outside of cars, leading OEMs in each segment are working to develop such new energy-driven products, but product specifications are dependent on battery specifications, and significant improvements in specifications cannot be expected until significant technological advances in batteries are achieved. This is more than five years away, and currently the only market where batteries have completely replaced engines is the lawn and garden hand-tool market.

SOUTH KOREA SUMMARY: Statistics and economic indicators show that the ROK's manufacturing industry seems to be recovering at an increasing pace, especially in exports. Many media reports have argued that Korea's manufacturing industry, which has been in the doldrums for a long time, has begun to revive. In reality, however, the semiconductor industry is responsible for most of the positive impact, and the state of non-semiconductor manufacturing has remained virtually unchanged.

Excluding semiconductors, manufacturing production has declined for three consecutive quarters. Some analysts believe that persistently high interest rates and the slow economic recovery in China and Europe have also led to continued trade contraction in some manufactured goods, which is holding back non-semiconductor production.

The president's centripetal force has been weakened by the ruling party's crushing defeat in the April parliamentary elections, and he will face an even more difficult task in the future as opposition parties are

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Far East: Looking For A Growth Driver, But Can't Find One

Continued from page 24

expected to intensify their opposition to any effective economic measures. The rate at which legislation is passed in the Diet has continued to decline because of the intensifying political disputes between the ruling and opposition parties, and it has been pointed out that the function of the Diet has deteriorated. Despite the dysfunctional state of the National Assembly, there is no sign of a compromise between the ruling and opposition parties, and this situation is becoming a risk to the growth of the ROK economy.

The core industries of the Korean economy include electronics, automobiles, steel, petrochemicals, shipbuilding, and semiconductors. Among these, semiconductors account for 60% of the world's production of memory semiconductors and nearly 20% of Korea's exports. Another emerging industry that is attracting attention is rechargeable batteries for EVs, for which demand is growing rapidly on the wave of energy transition. However, it is unclear at this point how the global reassessment of the EV shift will affect the Korean battery industry in the future. Although there will be a gradual slowdown, I forecast that demand itself will remain strong.

AGRICULTURAL. Japan. Farmers are holding back on purchases of agricultural equipment due to uncertainty about the future. This means that demand is shifting to less expensive used equipment. However, the concentration of demand for used farm equipment means that the main advantage of used farm equipment - its low price - is being lost.

New machines are expensive and take a long time to deliver, especially large machines, so dealers are encouraging early orders, but such actions do not seem to be translating directly into sales. Kubota and Iseki are expanding their product lines to meet all kinds of demand, but unless farmers' purchasing power improves, it will be difficult to achieve a significant increase in agricultural machinery sales.

It has always been the case that the market for agricultural machinery and agriculture is established through subsidies and support, but it must be said that

Japan's new measures for agriculture are very limited compared to those in other countries. For example, in some countries, European farmers receive more than 70% of their income from government spending. In the U.S., the government spends to bridge the gap between the market price of agricultural products and the producer price (a price at which farmers can make a living). Thus, while Europe and the U.S. provide

The core industries of the Korean economy include electronics, automobiles, steel, petrochemicals, shipbuilding, and semiconductors.

generous protection to farmers, Japan's Ministry of Agriculture, Forestry and Fisheries (MAFF) has tried to implement such measures, but the Ministry of Finance refuses to allow it. Although food self-sufficiency is one of the most important issues in terms of international security, there is no mood for major changes in Japanese agriculture.

CONSTRUCTION. Japan. There are no major changes from the Q1 2024 forecast. Demand in Japan is expected to be supported by infrastructure construction and urban redevelopment, while exports are expected to remain strong, with residential construction in North America on the receiving end.

Komatsu and Hitachi Construction Machinery are accelerating their electrification efforts. There is a shift toward proposing solutions using electrified machines rather than just electrifying machines. The high cost of energy is an obstacle to the widespread use of electrically powered construction equipment. Hitachi Construction Machinery has set the goal of reducing the power consumption of the entire construction site by forging an electric power management system through demonstration experiments involving more than just construction machinery.

CONSTRUCTION. South Korea. The sharp decline in construction demand in the Chinese market has led to an oversupply of construction equipment in



Far East: Looking For A Growth Driver, But Can't Find One

Continued from page 25

China, which has affected the poor sales of Korean construction equipment in the Chinese market. The impact is significant as China is the largest export partner for Korean construction equipment manufacturers. The slowdown in the Chinese market occurred in 2023, with Korean excavator production falling 10% year-on-year for the whole of 2023. Some recovery is expected in 2024, but the situation remains challenging.

MARINE. Japan. Compared to 2023, when demand for outboard motors for outdoor activities increased due to COVID-19, the domestic market in 2024 appears to be somewhat more settled. Overseas demand is firm, with particularly strong demand for large machines. Yamaha is preparing its plants to increase production of large machines.

One trend in market expansion is the shift from inboard to outboard engines. Currently, 90% of the market is for outboard engines and 10% for inboard engines, but

outboard engines will continue to grow. The advantages of outboard engines include ease of maintenance and the ability to use a larger interior space, and demand is shifting from inboard engines to boats equipped with outboard engines. Boats with outboard engines are gradually getting larger, and boats that used to be in the mid-30-foot range are now in the 50-70-foot range. As boats get larger, the number and horsepower range of outboard motors installed increases.

Electricity will depend on whether regulations are enforced on gasoline engines. In Europe, gasoline engines are regulated in canals and lakes in urban areas, and electric models are used in such places, but the production volume is very small at this point because such places are very limited, including Japan.

INDUSTRIAL. Japan. Demand for forklift replacements has run its course and will remain flat or increase only slightly through 2024.

LAWN & GARDEN. Japan. Hand tools such as lawn mowers and chain saws have been almost completely replaced by battery models from major manufacturers.

Far East: Looking For A Growth Driver, But Can't Find One

Continued from page 26

Of course, there is still some demand for engine models, but this demand is met by the inventories of small and large manufacturers. The commonization of batteries among models has been completed, and the current problem is the delivery time and high cost of battery procurement. This situation will continue until the first half of 2025 at least.

PASSENGER CARS / MINIVANS and SUVs. Japan.

Following Toyota Industries Corporation, Daihatsu, and Hino in 2023, Toyota Motor Corporation, Mazda, Yamaha, Honda, and Suzuki have now reportedly committed fraud in their type of designation applications. Type designation is a system set up by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) to waive pre-shipment inspection for vehicles of a designated model because of standard conformity examination and quality control examination by the same party. In other words, the government says that the type of designation is proof that the vehicle in question can be driven safely and reduces environmental pollution.

The details of each company's fraud are too varied to explain here, but the general idea is that the automakers thought that since they passed tests that were stricter than MLIT's standards, they must be OK, so they submitted their own test scores as MLIT test scores. However, the actual test results did not comply with the procedures and conditions set by MLIT and were declared fraudulent. The companies have stated that this fraud has no negative impact on the safety performance of their vehicles.

In other words, this issue is extremely unfortunate in the sense that it would not have become such a major topic of conversation if the government and automakers had been more proactive in exchanging opinions and handling the issue in good faith. However, the fact is that the production of the affected models has been temporarily halted and there is a movement to hold off buying them until the news related to this issue dies down, which will not have a single positive impact on the market.

In terms of electrification, the share of EVs (including PHEVs) in new vehicle sales is about 3.58% in 2023. Compared with the 7.6% EV penetration rate in the U.S. in 2023 and the 14.6% share of EVs in the EU, the EV penetration rate in Japan is still low. It is somewhat doubtful whether EV penetration will accelerate in the future. This is because the shift to EVs is under review, especially in Europe, where subsidies are being phased out and conditions are being tightened. In Japan, HEVs are expected to play a central role in EV penetration. In fact, HEVs are the best-selling vehicles in terms of sales volume.

Following Toyota Industries Corporation, Daihatsu, and Hino in 2023, Toyota Motor Corporation, Mazda, Yamaha, Honda, and Suzuki have now reportedly committed fraud in their type of designation applications.

South Korea. There is no significant change from the Q1 2024 forecast.

RECREATIONAL PRODUCTS. Japan. Soaring energy prices, high raw material prices and a weak yen continued to drive up prices of parts and accessories for new motorcycle models and in the aftermarket. In the domestic market, the number of telecommuting jobs has decreased, and more office workers are coming to work, and many have returned to their regular work patterns. This has limited their leisure time to some extent and reduced opportunities for obtaining motorcycle licenses, and the number of people obtaining licenses is gradually returning to the pre-COVID-19 level. The effect of the weak yen has been that manufacturers have been active in overseas exports due to higher overseas demand and high foreign exchange gains from the weak yen. In the financial results announcements of Japanese manufacturers, the motorcycle sector stands out for its increased sales in overseas markets and increased profits due to foreign exchange rates. **PSR**

Southeast Asia

Changing Markets During Recovery

A **SUMMARY.** Real GDP growth in the January-March period accelerated from the October-December period in the Philippines, Malaysia and Indonesia, and slowed in Thailand and Vietnam. Exports are recovering and domestic demand is generally firm.

Looking ahead, the economy is expected to remain generally strong, but the sluggish Chinese economy is likely to be a downside factor for Southeast Asia.

The outlook for the five major Southeast Asian countries is as follows:

- **Thailand:** The economy is expected to pick up due to a rebound in manufacturing and an increase in foreign tourism, as well as a recovery in consumption due to the new government's stimulus measures.
- **Philippines:** The economy is expected to be supported by infrastructure investment, as well as a recovery in foreign tourism and strong consumption on the back of a favorable employment environment and rising wages.
- **Vietnam:** Although consumption momentum is slowing, solid growth is expected to continue, driven by increased foreign direct investment, continued stimulus measures, and other factors.
- **Indonesia:** Although the economy is expected to be supported by increased public investment, including the construction of a new capital city, and solid consumption due to stable prices and employment conditions, previous interest rate hikes may weigh on the economy.

- **Malaysia:** The economy is expected to be supported by a recovery in demand for semiconductors and an increase in foreign tourism, as well as progress in infrastructure projects.

AGRICULTURAL: There are no major changes from the Q1 2024 forecast. While the global trend is towards larger machines, demand for low horsepower small size tractors is increasing in Southeast Asia due to farmers' lower disposable income and smaller acreage. Specifications that are being emphasized include waterproof performance due to the rainy season and good fuel efficiency.

CONSTRUCTION: Large infrastructure projects and road maintenance support demand for construction equipment. Electric models are gradually being added to rental fleets, but their share is still small. In the past, used construction equipment was very often repaired and maintained for use, but in recent years the program-controlled nature of the machines has made repairs more difficult, and the growing awareness of compliance at construction sites has made it impossible to use such used construction equipment at some sites. Under these circumstances, the opportunities for new equipment will gradually increase.

PASSENGER CARS / MINIVANS and SUVs.

Compared to 2023, both sales and production are negative year-over-year. This is likely due to rising interest rates; as explained in June 2024 PowerTALK, Japanese automaker Suzuki has pulled out of production in Thailand, and Subaru has announced it will close its Thai plant. Chinese manufacturers are rapidly expanding EV sales, and the market's performance map is being rewritten: Malaysia has overtaken Thailand in new-vehicle sales in 2023 to take second place in the region. The future will largely depend on how far Chinese companies can increase their local market share.

RECREATIONAL PRODUCTS: No major changes from the Q1 2024 forecast. **PSR**

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India

Economic Factors Shaping India's Auto Industry



SUMMARY. India's automotive industry is being significantly influenced by policies and economic conditions at a macroeconomic level that affect consumer spending and business operations. Strategic policy interventions and the influx of new market entrants have fostered a competitive environment, leading to capacity expansions and substantial employment opportunities within the sector.

These policies, including initiatives such as the “Make in India” campaign, stimulate domestic demand and also attract foreign investments aimed at bolstering local manufacturing capabilities and enhancing global competitiveness.

On the microeconomic front, rapid urbanization, a growing middle-class with increasing disposable incomes, and evolving consumer preferences contribute to the expanding market for motor vehicles.

Despite India's comparatively low car ownership per capita compared to developed nations, the rising aspirations and purchasing power of its population present a promising outlook for growth in vehicle sales and associated industries. Furthermore, innovations in car financing, including manufacturer-backed programs and online platforms, are pivotal in facilitating consumer access to vehicles, thereby stimulating demand and supporting market expansion.

In conclusion, the interplay between macroeconomic policies and microeconomic factors like consumer behavior and financing options collectively shapes the trajectory of India's automotive sector. As the industry navigates through global trends and domestic challenges, sustained investments in infrastructure, technological advancements, and regulatory frameworks



will be essential to capitalize on the sector's growth potential and solidify its position as a pivotal driver of India's economic development.

RECREATIONAL PRODUCTS. This segment is divided into two groups: Motorcycles and Scooters and Three-Wheel vehicles. Both groups are set for significant growth in 2025.

Motorcycles and Scooters. The Indian two-wheeler industry is set for significant growth in FY2025 (FY2025 = April 2024 to March 2025), driven by an influx of first-time buyers and increasing rural demand. Key players like Hero MotoCorp and TVS Motor Company are optimistic about favorable monsoon forecasts and a strong pipeline of new product launches. This growth is further supported by government incentives for the electric vehicle (EV) segment, despite reduced consumer subsidies.

Hero MotoCorp and TVS Motor Company reported strong performances in Q4 FY2024, reflecting their

Author



Aditya Kondejkar is PSR Research Analyst, South Asia Operations.

India: Economic Factors Shaping India's Auto Industry

Continued from page 29

resilience and strategic market positioning. The companies are seeing a promising increase in first-time buyers, particularly in entry-level motorcycles, driven by positive consumer sentiment and a growing focus on personal mobility. TVS Motor Company's CEO K.N. Radhakrishnan noted a gradual recovery in rural markets, anticipating stronger sales with a normal monsoon, which is crucial for rural economic health.

The electric vehicle segment is also poised for growth. Hero MotoCorp plans to launch new PLI-eligible EV products by Q2 FY2025, while TVS Motor Company will expand its iQube range and introduce an electric three-wheeler. These initiatives highlight the companies' commitment to innovation and adaptation in a rapidly evolving market.

Exports are recovering, with Bajaj Auto and TVS Motor Company leading the charge. Bajaj's export growth in Latin America and MENA regions and TVS's strategic market expansions underline a positive outlook for Indian two-wheeler exports in the coming year. The industry's ability to balance strong domestic sales with increasing export demand will be key to sustaining growth.

Three Wheelers. The Indian three-wheeler industry is poised for significant growth, with market analysts projecting an 11% increase in CY24, reaching pre-COVID levels by CY25. This optimistic outlook is driven by several factors: strong rural demand supported by a favorable agricultural season, potential moderation in fuel prices, and the extension of FAME II incentives promoting electric vehicle adoption.

Additionally, improving consumer sentiment, increased capital expenditures by central and state governments, and a pickup in urban consumption demand are contributing to this growth. On the global front, a steady revival in demand is expected as severe inflation, geopolitical tensions, and forex issues stabilize, creating a more favorable environment for the auto industry. Overall, the convergence of these positive factors sets the stage for a robust recovery and expansion of the Indian three-wheeler market in the coming years.

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India: Economic Factors Shaping India's Auto Industry

Continued from page 30

PASSENGER CARS, MINIVANS & SUVs. The Indian passenger vehicle (PV) segment is expected to see moderate growth of 3-5% in FY25, influenced by factors such as a high-base effect from FY24, a dwindling order book, and subdued demand for entry-level models. Despite these challenges, electric car sales are expected to rise to 1.30-1.50 lakh (100,000) units, driven by improving market penetration and government incentives supporting electric mobility initiatives.

Utility vehicles have become pivotal in driving overall PV sales growth, experiencing significant increases of 41% in FY22 and 33.2% in FY23. This surge underscores their appeal, bolstered by lower interest rates and increased demand for personal mobility, post-pandemic. Utility vehicles now constitute over 55% of new PV sales, surpassing traditional passenger cars and vans for the first time in FY24.

The preference for utility vehicles is reinforced by their advanced designs, technological enhancements, and superior safety features, which have captured consumer interest over the past decade. With a compound annual growth rate (CAGR) of 15.51% from FY13 to FY24, utility vehicles are poised to further expand their market share in the coming years, reflecting shifting consumer preferences towards more versatile and robust vehicle options.

While demand for premium vehicles remains strong, buoyed by luxury and high-end models, the market for entry-level variants faces challenges in both rural and urban sectors. Rising prices have dampened demand in rural areas, while urban consumers increasingly favor SUVs, signaling a notable shift in market dynamics towards more feature-rich and lifestyle-oriented vehicles.

COMMERCIAL VEHICLES. In FY25, the Indian commercial vehicle (CV) industry is anticipated to face a challenging environment with a projected decline of 4%-7% in wholesale volumes, according to ICRA (Investment Information Credit Rating Agency). This downturn is primarily influenced by the high base effect from previous strong years and an expected slowdown in economic activities ahead of the 2024 General

Elections. The sector saw a mixed performance in early 2024, with a marginal year-on-year decline of 0.7% in February but it saw a sequential growth of 5.1%, reflecting uncertainties surrounding pre-election periods impacting construction activities.

The Indian passenger vehicle (PV) segment is expected to see moderate growth of 3-5% in FY25, influenced by factors such as a high-base effect from FY24, a dwindling order book, and subdued demand for entry-level models.

Within the CV segment, the medium and heavy commercial vehicles (M&HCV) category is expected to bear the brunt of the decline, with projections pointing to a 4%-7% drop in FY25. Despite a promising start in FY24 driven by favorable macroeconomic indicators and increased freight availability, challenges in the latter part of the year contributed to the overall contraction. Similarly, the light commercial vehicles (LCV) segment is poised for a decline of 5%-8% in FY25, influenced by factors such as a high base effect and ongoing slowdowns in the e-commerce sector, exacerbated by competition from electric three-wheelers.

Conversely, the bus segment presents a contrasting outlook with an expected moderate growth of 2%-5% in FY25. This growth is supported by replacement demand from state road transport undertakings (SRTUs) and a gradual shift towards electric buses. In FY24, the bus segment surpassed expectations with a notable 27% year-on-year growth, benefiting from lower base effects and increasing urban bus fleet expansions. Despite these near-term challenges, long-term prospects for the CV industry remain promising, driven by continued infrastructure development initiatives and an uptick in mining activities, which are expected to bolster demand in the medium to long term.

AGRICULTURAL. A healthy precipitation would aid crop sowing and boost the tractor industry, given the favorable neutral El Niño conditions early in the

India: Economic Factors Shaping India's Auto Industry

Continued from page 31

monsoon and the expected development of La Niña and positive Indian Ocean Dipole (IOD) later in the season. However, despite favorable monsoon conditions, the overall area sown under rabi crops is expected to remain flat year-on-year, according to the Ministry of Agriculture and Farmers Welfare. This is due to muted production across most crops and delayed rabi sowing caused by a late kharif harvest amid uneven precipitation in the previous fiscal year. However, we are expecting the revival of muted export demand – which was down by 27% in CY23. As a result, a single digit growth rate of approximately 3% is anticipated for CY24.

CONSTRUCTION EQUIPMENT. The anticipated high growth momentum in FY25 and beyond for India's construction equipment segment is driven by several factors. The sector benefits from a robust pipeline of infrastructure projects, both ongoing and new, slated for the second half of the current fiscal year. This steady influx of projects ensures sustained demand for construction equipment.

The projected 6% growth rate for the construction equipment segment in CY24, although modest, is influenced by the general elections. Two-three quarters post-election periods typically see increased government spending and expedited project approvals, driving demand for construction equipment.

Looking ahead, order inflows are expected to rise significantly in the second half of FY25. This increase will be fueled by supportive government budgets from the new administration, which will continue to prioritize infrastructure development. Additionally, there is an expectation of accelerated private sector capital expenditures, reflecting improved business confidence post-elections. This combination of robust government support and increased private investment creates a positive growth outlook for the sector in FY25 and beyond.

INDUSTRIAL. The overall Industrial equipment segment will grow 4% - 6% during the forecast period. Cranes and forklifts are expected to expand at 6% and 4%, respectively, in 2024. Owing to electrification, ICE pumps will continue to shrink over the forecast period. **PSR**



South America/Brazil

Economy Is Uncertain Short Term, But Recovery Expected in Medium/Long Term



ECONOMY

South America. Good results on inflation and interest rates reduction in the Q1 2024 including Argentina. Governments are facing difficulties managing expenses impacting the cycle of interest rate reduction.

GDP growth will remain at a low level because of internal and external factors. Internal factors will be described below, while the external factors are becoming more unpredictable due to the conflicts in East Europe, Middle East, and technological dispute between US and China.

Brazil. GDP grew 0.8% in Q1 2024 mainly to the Livestock and Services segments, while the Industrial segment was flat. For 2024 the GDP for Agriculture segment is forecasted to be negative in the range of -0.5%. Some recovery in the Industrial segment plus the Services activities would end up in a GDP growth at the level of +2.0%. The impact of the floods in the South of the country has not yet been accounted for, which could mean an even smaller GDP.

The lack of investment in infrastructure and industry are the major challenges to have a more robust GDP growth.

The trade balance continues its positive trend.

The Central Bank reduced interest rates by more than 0.25%, reaching 10.5% at the end of May. However, government expenses are bringing more uncertainties to the market so it seems this reduction in the interest rate would be the last in 2024.

Argentina, Colombia and Chile. In **Argentina**, After depreciating the local currency by 60%, the new

president Javier Milei, got approval in the Congress for his plan of drastic reduction of government expenses. Inflation has been reduced from 13% in December 2023 to 4% in May 2024. Additionally, in May, Argentina has achieved a public surplus after 12 years deficit. Despite these achievements, poverty has accelerated, reaching 50% of the population.

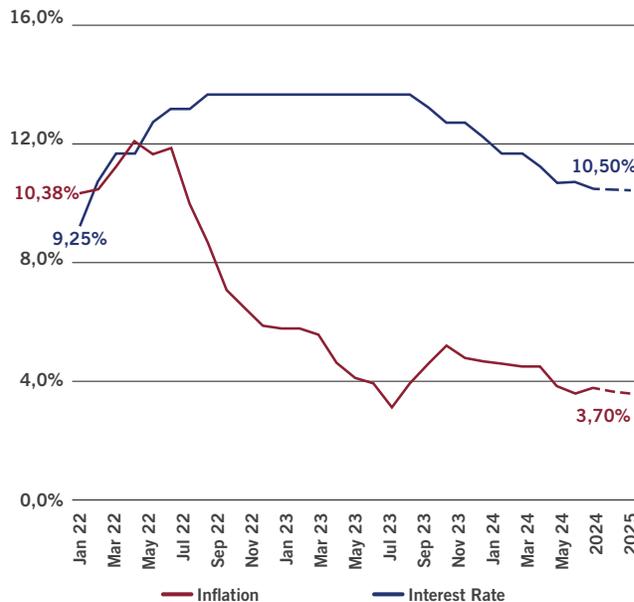
Colombia. Changes in the inflation scenario made the government stop the plan of interest rate reduction. This means a small GDP growth, in the range of 1% in 2024.

Chile. We saw an outstanding inflation reduction to 4.5% in 2023 allowing a forecast of GDP growth above 2% in 2024 after a small growth of + 0.2% in 2023.

LEGISLATION

BRAZIL – LV and MHV. New Legislation for emission and energetic efficiency was launched by government on Dec 30th, 2023. The program’s name now is

INFLATION & 12 MONTH INTEREST RATES BRAZIL



Source: Central Bank of Brazil

Author

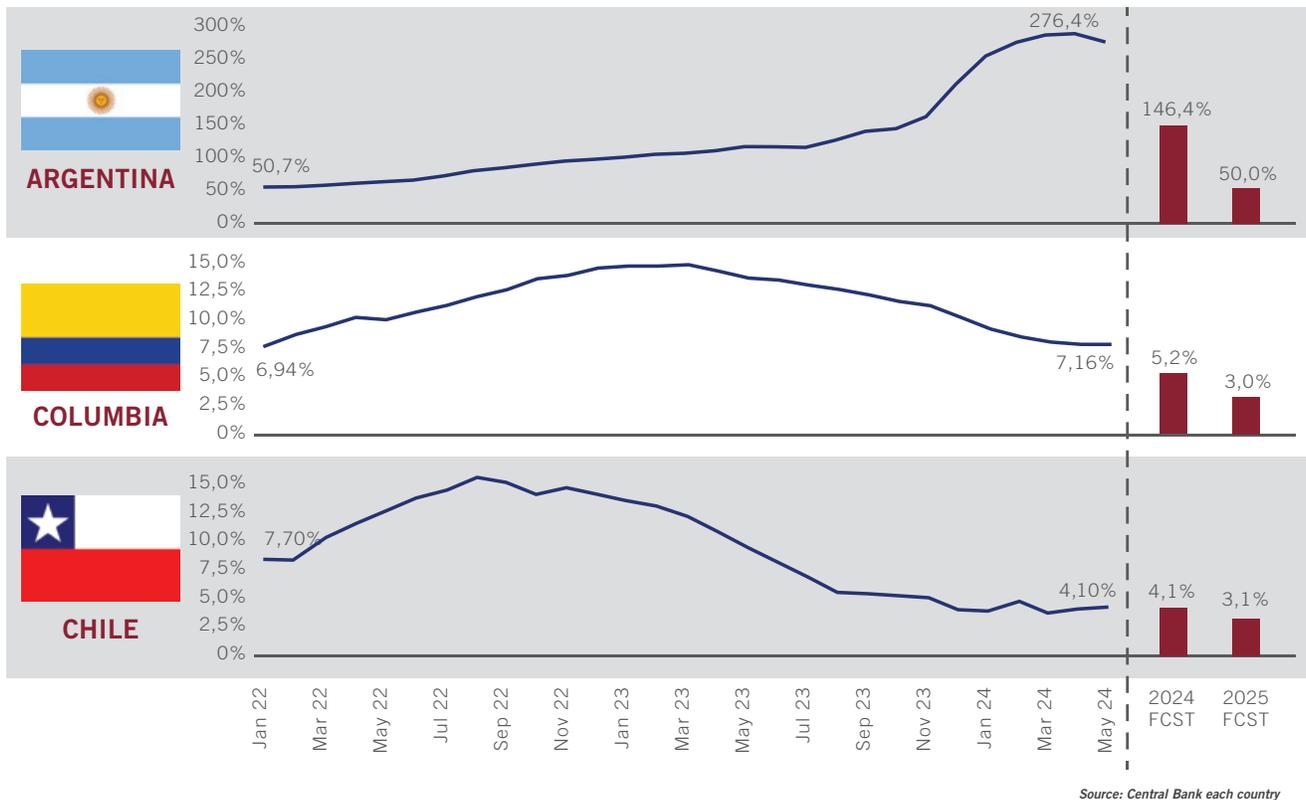


Carlos Briganti is the Managing Director of South America Operations at Power Systems Research.

GDP – BRAZIL
(Brazil – 2013-2025)



INFLATION – SOUTH AMERICA
(Argentina, Colombia, and Chile – 2022-2025)



South America/Brazil:
Economy Is Uncertain Short Term, But Recovery Expected in Medium/Long Term

Continued from page 33

MOVER (Green Mobility and Innovation). Congress has approved the incentives of the plan, but emissions regulations have not been defined yet.

There is a clear direction on measuring CO2 emissions within the well-wheel concept which could be favorable to biofuels.

LV:

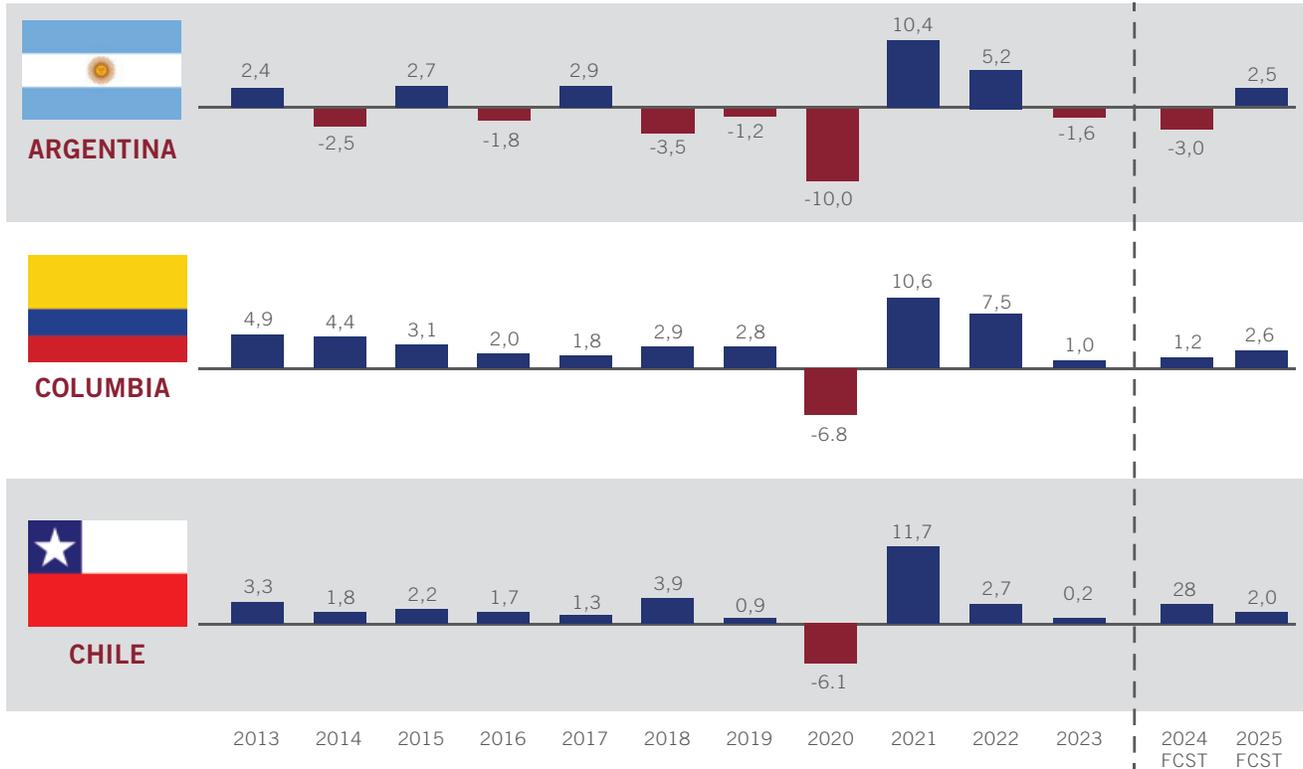
a. Emission legislations: Continuous reductions of toxics emissions are already contemplated with introduction of Proconve L8 starting in 2025. This step of legislation also covers energetic efficiency, and it is fully aligned with US Tier 3.

Next steps will be detailed by **MOVER** program.

b. Starting on Jan 1st, the Government increased import tax to 10% for EV and 12% for HEV. The plan is to reach 35% by 2026.

GDP – SOUTH AMERICA

(Argentina, Colombia, and Chile – 2013-2025)



South America/Brazil: Economy Is Uncertain Short Term, But Recovery Expected in Medium/Long Term

Continued from page 34

MHV:

a. Biodiesel: Government agency has just approved the increase of biodiesel in fossil Diesel to 14% or B14. The plan is to reach B25 by 2030. There a dispute between Petrobras, supported by the OEM's, versus soybean farmers, supported by government. Current biodiesel, which formula is an Ester is considered more harmful to the Diesel IC process as its % increases. Other solutions such as HVO and R10 are considered more adequate to improve emissions reductions as well as to improve efficiency.

The expectation is that the **MOVER** program can give directions on this.

MOTORCYCLES BRAZIL

A proposal published in October 2018 contained draft requirements for Euro 5 based standards now is a

regulation which was published in final form in June 2019 and will see the introduction of the PROMOT M5 standards, equivalent to Euro V on 1 January 2023 for new models and on 1 January 2025 for all new vehicles. The standards will apply to all vehicles sold in Brazil. Prebuy is not expected due to the new program.

SEGMENTS COMMENTS

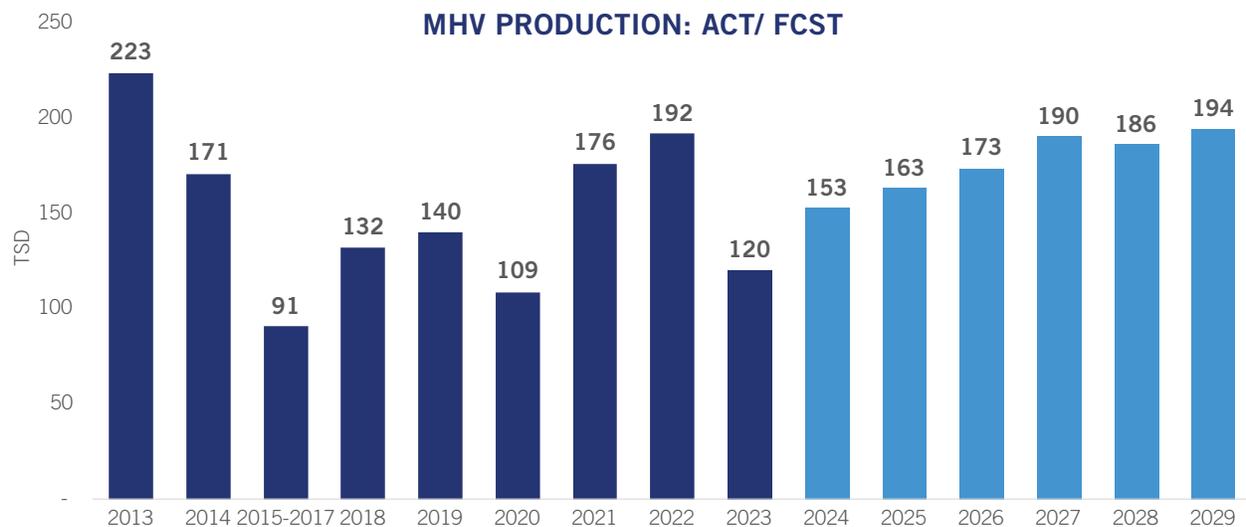
LIGHT VEHICLES: PASSENGER CARS, MINIVANS, SUVs, LCV

Brazil. Total LV production grown up 3.6% in 2023 and the forecast is to grow 4.5% in 2024, reaching 2800 thousand units by 2029.

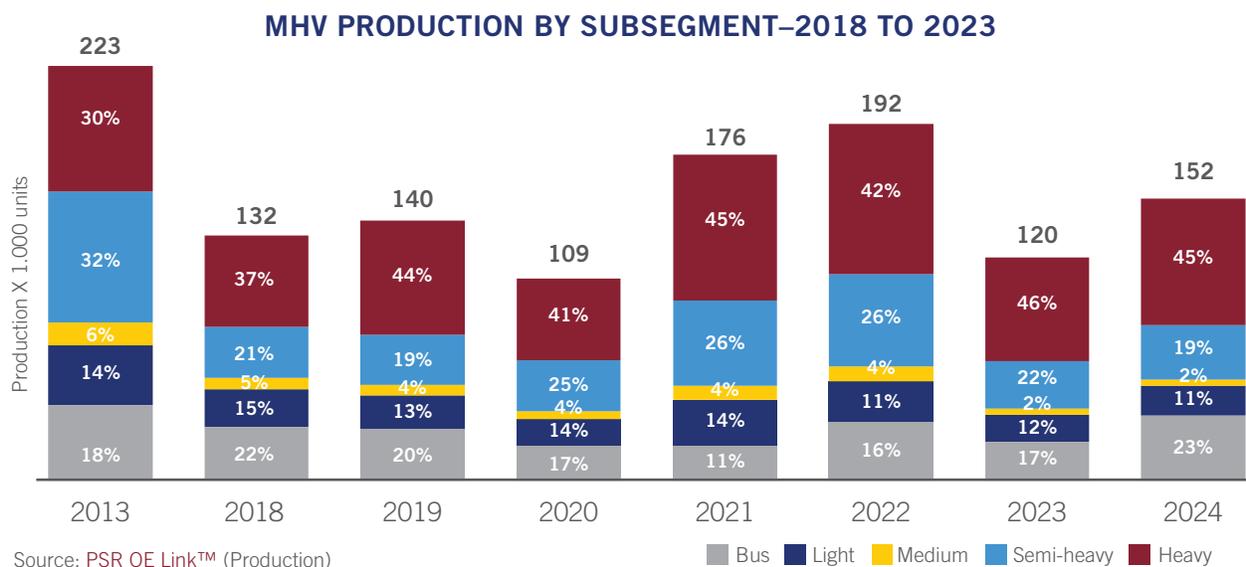
LCV and SUV are keeping the share growth over Passenger Cars, reaching 60% of share in LV by 2028.

Our forecast shows that by the 1st time SUV production will surpass Passenger Car in 2024.

Chinese OEMs are gaining market share with EV and HEV imported units, but localization plans are going on for 2025.



Source: PSR OE Link™ (Production and Sales)



Source: PSR OE Link™ (Production)

South America/Brazil: Sustainable GDP Growth Remains Challenge

Continued from page 35

Argentina. The LV grown up 8.5% in 2023, but the reduction of population purchase power will drop production volume - 20% in 2024.

Total Brazil plus Argentina would be at level of 3.5 million on units by 2029.

Colombia: As a result of the current economy plus phase out of the GM operations in the country, the production is forecasted to drop -56% in 2024.

MEDIUM AND HEAVY VEHICLES

Brazil. After an outstanding production level of 192 thousand units in 2022 due to the Proconve 8 prebuy, 2023 ended up with a production downturn of 37.5%.

2024 represents the start of the recovery with a forecast of 27% over 2023. Accumulated results in June are aligned with our forecast as well in the way to reach volume of 195 thousand units by 2029.

As stated in Q1 2024, is important to note that the mix of production in 2013, which is considered the record year, has a production mix totally different from the

South America/Brazil: Economy Is Uncertain Short Term, But Recovery Expected in Medium/Long Term

Continued from page 36

current time. The HD subsegment has gained share in total production as showed below:

Vehicles fueled by NG or Biogas are increasing the penetration in the segment for sugar and garbage plants applications. Currently represents only 0.2% of sales but the fcst is to reach 5 % by the end of this decade.

Electrical units are also growing their share due to urban electrical buses and last mile applications. Our forecast is the MHV Electrical will reach 5 % of the market share in the segment by 2030.

Argentina. In 2024 the forecast is to grow 8% over 2023 mainly due exports to Brazil. The local market is still waiting for the results of the new government.

Colombia. After a downturn of -35% in 2023, a new downturn of - 50% is forecasted for 2024 because of the economy and GM phase out.

AGRICULTURAL MACHINES

Brazil. Overall, the agricultural segment keeps doing well and Brazil is taking advantages of being one of the largest agricultural commodities producers in the world.

Despite this, 2024 will be a challenge for agriculture in Brazil due:

- Grain harvest shall be 5% lower than 2023, not considering yet flood in South of the country.
- Commodities prices such as soybean and corn are at the lowest level of the last 02 years.
- Reduction of agricultural machines exports
- Machines' power is increasing reducing machines units.

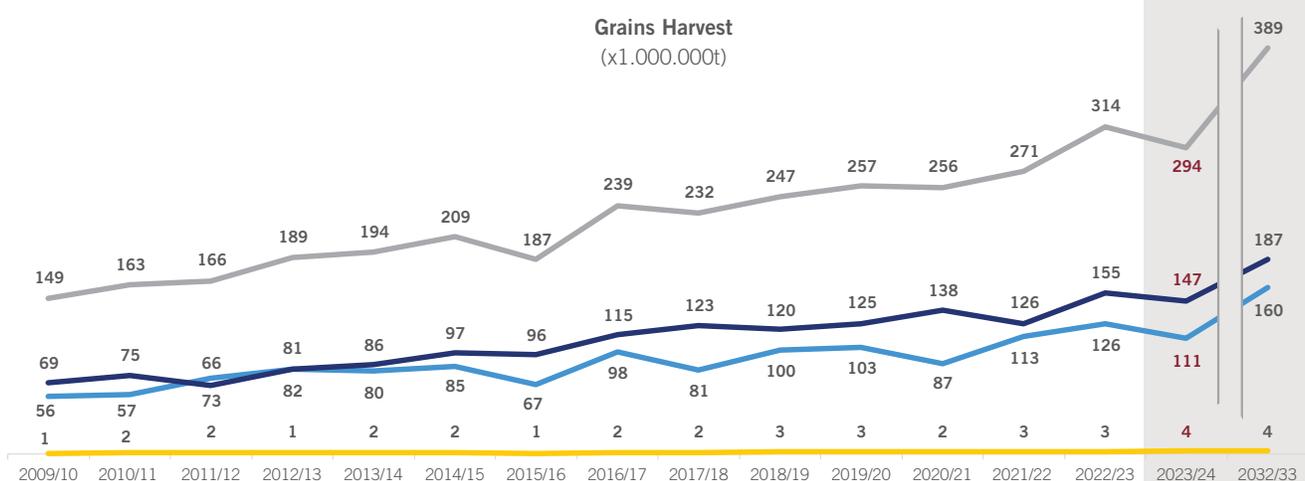
Based on this, after a downturn of -24% in 2023 we are again forecasting -15% downturn for 2024.

The market is moving to the Rental business model which can leverage acquisition of new machines. At same time large properties are concerned on reducing CO2 emissions which also needs new and modern machines. The implementation of 5G will need more connected machines to enjoy productivity increase, but all are drivers for coming years.

Argentina. After facing weather problems in last 03 years resulting in poor harvesters, Argentina will recovery in 2024 reaching record results in grain harvester.

After growing 13% in 2023 our forecast is a flat for 2024 mainly due economic situation in Argentina.

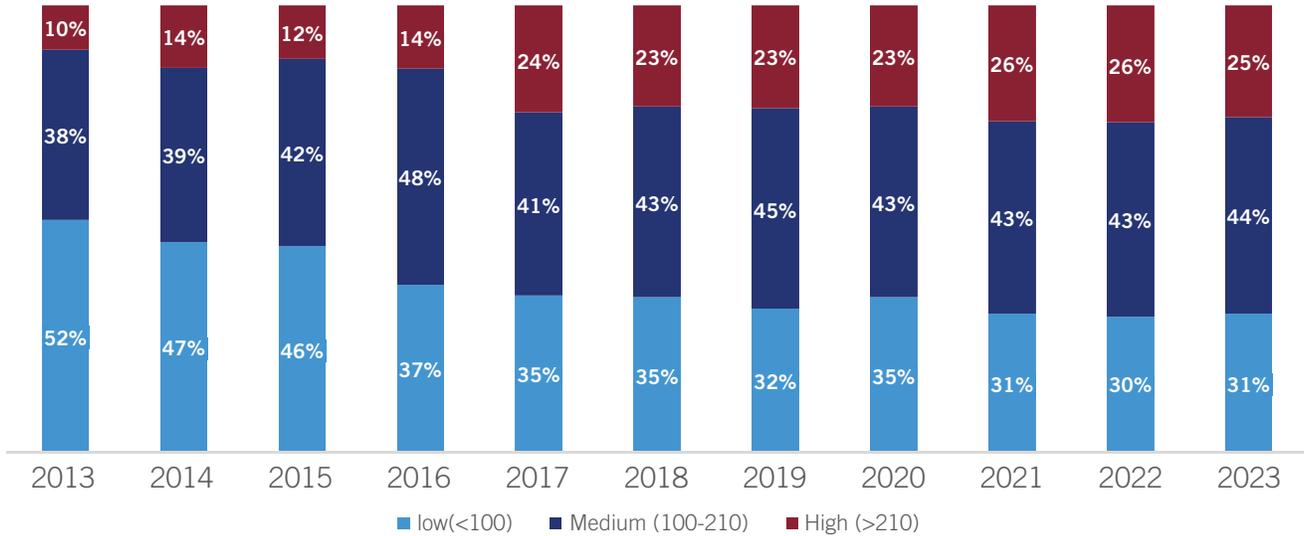
GRAIN HARVEST ACT/FCST



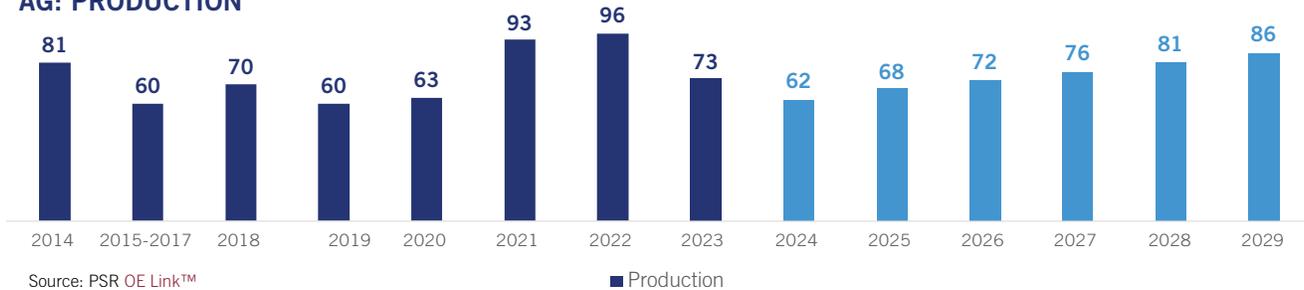
Source: CONAB / EMBRAPA | PSR

— Corn — Soy — Cotton — Total

TREND: MACHINES SOLD ALONG LAST 11 YEARS (PER POWER)



AG: PRODUCTION



**South America/Brazil:
Economy Is Uncertain Short Term, But
Recovery Expected in Medium/Long Term**

Continued from page 37

CONSTRUCTION MACHINES

Brazil as the hub of production for South America region reached 54,000 units produced in 2022, which is way above the former record of 32,000 units produced in 2013.

In 2023 market downturn - 16.7% due high interest rate impacting construction activities and the reduction in AG segment where CE are used too. Additionally, exports are moving down due the economic problems in the neighborhood. Construction activities shall grow in 2024 due to the government program to build small

houses for low-income people. The balance is that 2024 will be a flat year. Recovery is forecasted to start in 2025, then a continuous growth to reach 58,000 units produced in 2029.

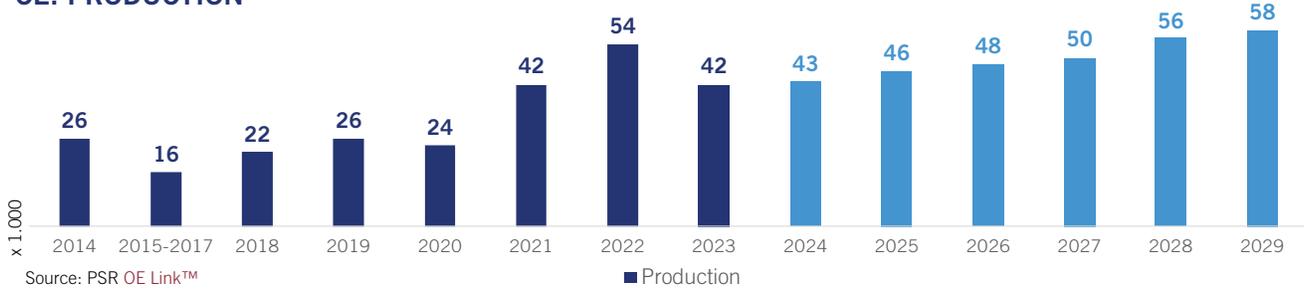
RECREATIONAL PRODUCTS

The price increase of LV and fuels plus e-commerce activities boosted the motorcycles segment in Brazil.

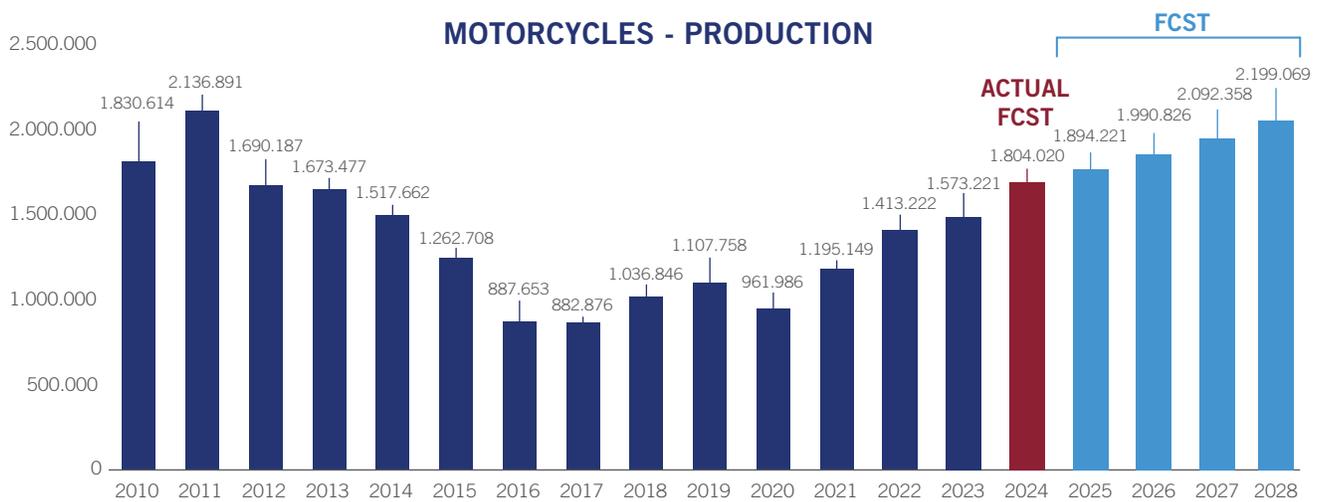
In 2023 the volume grown up 11% over 2022. Our fcst is 15% growth in 2024 to reach volume in range of 2.1 million units in 2028, which is equivalent to record year of 2013.

In Colombia, the segment of motorcycles is growing 5% in 2024, while in Argentina the segment will downturn -5% due the economic crisis.

CE: PRODUCTION



MOTORCYCLES - PRODUCTION



South America/Brazil:
Economy Is Uncertain Short Term, But Recovery Expected in Medium/Long Term

Continued from page 38

INDUSTRIAL

Industrial GDP will grow in 2024. Since there is a mix of products in this segment not linked to industry, our forecast is in the range of 2% for 2024. There is a remarkable change in the production level of Forklifts in Brazil due the penetration of Electrical units powered by Li batteries imported from China.

Brazilian OEMs are launching similar models in Brazil to recovery the production level. At same time, the share of Electrical models will increase over the IC powered units.

POWER GENERATION

After the pandemic, the risk of power shortage is over, but the segment is still grown up 14% in 2023. In the coming years due to the increase of capacity generation while the demand remains flat, our forecast is low growth since electricity in the “free market” is cheaper.

RAILWAY

This segment maintained low demand in the last decade. Now, with new infrastructure plans announced by the government in September 2021 based on legislation MP 1065/2021, the segment has grown +110% for 2021. Our forecast is an average of 40% growth per year for the coming years since the new government keeps the plan of railway expansion. **PSR**

North America

North America Economy Keeps Chugging Along

NA **SUMMARY.** The North American economic news remains similar to last quarter. The economy continues to come in above expectations despite higher interest rates, slowing in other key economies, and inflation that continues at an elevated level.

Consumer spending should remain solid for this year, 2024. The improving labor market as well as steady government and private sector spending is also currently helping the economic outlook. However, there are still challenges including geopolitical issues and inflation woes which may cause the Federal Reserve to raise interest rates.

North American total production, including all market segments, was up 3.1% in 2023 over 2022, which is lower than forecasted in Q1 2024. On-highway (other than MHV and Passenger Cars) products are still going to be growth sectors for this year, 2024. The forecast for 2024 is at 0.9% for market growth, which is a little more optimistic than last quarter's projection.

The expectation for 2024 production is that most of the other market segments will be down or flat over 2023. A few segments are showing some growth; these include power generation and railway. A smaller rebound is expected in 2025 than previously forecasted of around 2.1%, with even stronger rates of growth in 2026 and 2027, 4.5% and 5.4%, respectively.

AGRICULTURAL. Agricultural machinery production for 2023 is still expected to have a growth rate of 1.8%. 2024 is currently forecasted to have a -1% growth rate from 2023. War in Ukraine has had a dramatic negative effect on wheat and fertilizer exports and also contributes to a slowdown in this segment. PSR anticipates 2025 to rebound to growth of 2%. After an

estimated increase of 3.2% in 2026, demand should pick up and crop yield will be better by 2027 and 2028.

CONSTRUCTION. PSR is forecasting 2023 and 2024 equipment production to drop with growth rates of -1% and -2.5%, respectively. Construction equipment's undeveloped demand is a factor as well as higher costs and some lingering supply chain issues. However, government expenditures for infrastructure expansions should help with new equipment demand. Lowering interest rates should help increase demand, as well. PSR expects growth again in 2025 by 2.1% over this year, 2024. 2026 growth is projected to be around 3.6%.

INDUSTRIAL. The industrial segment usually follows the growth patterns of the Construction segment. Industrial equipment production is expected to slow down in 2023 and 2024. With predominant backorders, this is predicted to continue to increase into the future. Last year's growth, 2023, is projected at -0.4% and 2024 at -2.5%. PSR is projecting a rebound with a growth rate of 2.5% in 2025 over 2024 and 4.5% in 2026.

MEDIUM & HEAVY VEHICLES. Medium and heavy commercial vehicle production is expected to decline by 4.3% this year over 2023 after strong class 8 truck production last year was driven by on-going pent-up demand. While class 8 demand is expected to decline this year, it will still be at a relatively elevated level especially during the first part of the year.

Strength in the vocational segment and higher levels of heavy truck demand in Mexico will somewhat offset the weakness in the semi-truck segment. Continued softness in the overall freight market will negatively impact truck demand through 2024. Relatively high inflation and interest rates will also pressure demand moving forward. **PSR**

Author



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V. Research Methodology

Power Systems Research (PSR) Research Methodology

Research begins with the gathering of information from primary and secondary sources. Next, the PSR analyst team reviews and validates all data against industry benchmarks. If our analysts discover anomalies in the data, additional research and validation is performed before publishing.

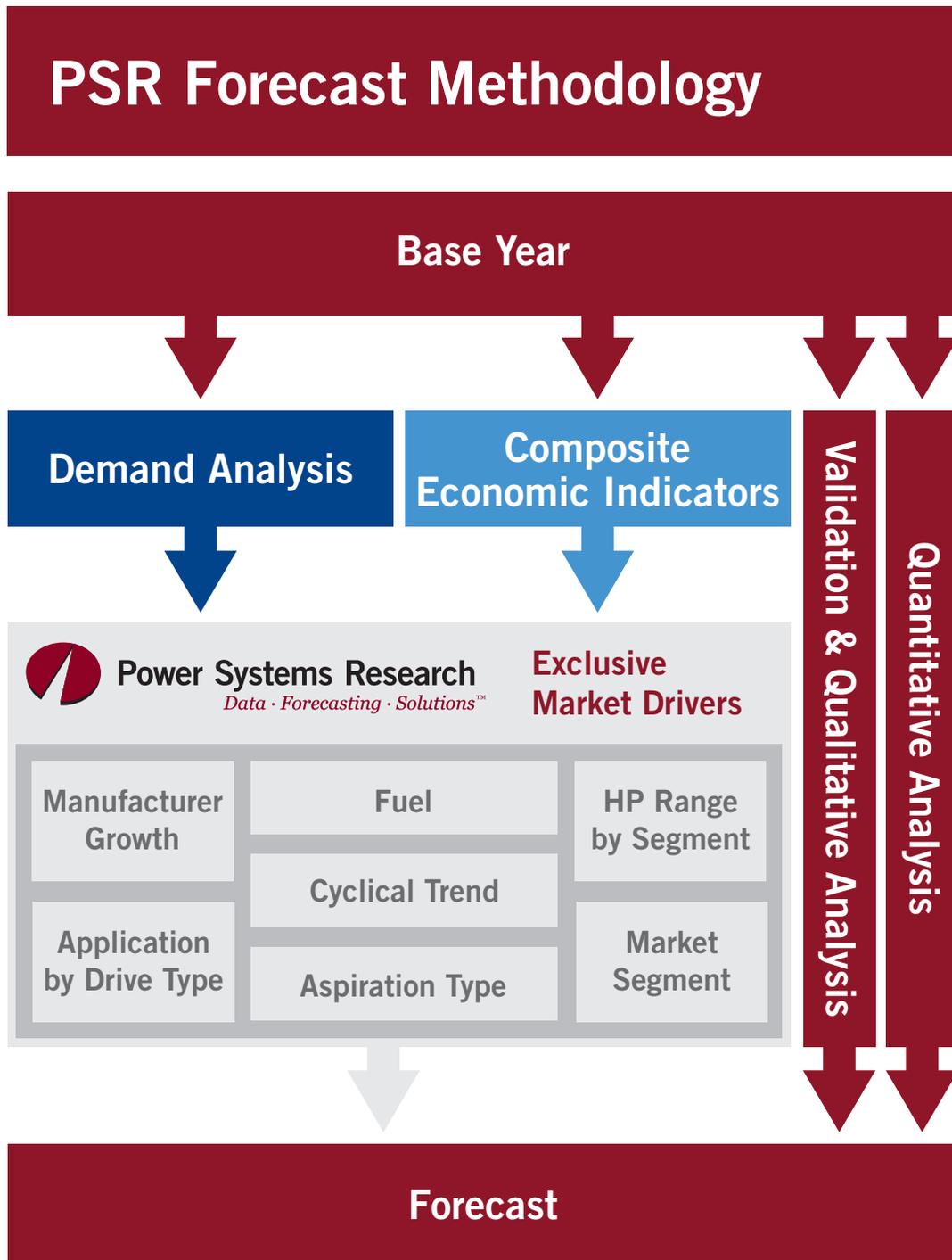
PSR RESEARCH METHODOLOGY



VI. Forecast Methodology

Power Systems Research (PSR) Forecast Methodology

The analysis begins with the Base Year and key historical data then adds current and future economic indicators and market demand. Next, our exclusive market drivers are entered and the Power System Research proprietary algorithm is applied. Extensive analysis and discussion by our PSR Analyst team validates and produces the forecast.



VII. Contact Information



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About Power Systems Research

Power Systems Research (PSR), established in 1976, is the leading source of data, analysis and forecasting on the global production of engines and engine-powered equipment, including class 8 vehicles. One of its databases, EnginLink,™ includes production figures down to the model level for OEMs in key market segments, such as commercial vehicles. PSR's global research network includes eight offices and stretches across 200 countries and four continents.



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