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In This Issue

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DATAPOINT: *North American Tractors*

101,500

By Carol Turner, Senior Analyst, Global Operations

101,500 units is the estimate by Power Systems Research of the number of tractors to be produced in North America during 2021. In this report, we consider North America to include Canada, Mexico and the United States.

This information comes from industry interviews and from two proprietary databases maintained by Power Systems Research: **EnginLink™** , which provides information on engines, and **OE Link™**, a database of equipment manufacturers.

Market Share: With combined plant totals of 75% Deere leads in production of AG tractors in North America with about 63,200 units. In second position is Kubota (8,000 units) with 9.5%. Third is Case with about 8%.

Worldwide Distribution: Canada exports about 75% of its North American Ag Tractor production, Mexico, about 60%, and the United States, up to 45% of its total production.

Trends: In 2020, production of Ag tractors in North America decreased nearly 24% to only 84,600 units. Production is expected to rebound 20% in 2021 to more than 101,500 units. COVID-19 related factors played a role in the decline last year, especially for parts availability and equipment inventory levels. Expect production to increase 10% by 2025. **PSR**

Global Economic Report

Moving To Recovery, Despite Increased Uncertainty

By Yosyf Sheremeta, PhD, Director of Product Management and Customer Experience

Yosyf Sheremeta

The global economy is on a healthy rebound trend, but issues with supply chain, logistics and the re-surgency of COVID-19 during Q3 2021 remained. Power Systems Research witnessed a strong economic recovery globally in H1 2021; however, many challenges still remain. The rebound will continue to vary widely among different regions/countries, but a complete recovery is not expected until the global pandemic is under control. With some minor changes among regions and market segments globally, our overall forecast from last quarter remains in place, and that is good news to our industry players, OEMs, powertrain, and component suppliers.

The global economic performance last quarter was in line with our initial projections from earlier this year. As we projected last quarter, we did not expect

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Global Economic Report

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any rapid economic recovery in H2 2021, however, we continued to witness a steady increase in economic activities. During the last quarter of 2021 Power Systems Research expects this trend to remain in place.

Government support in the form of fiscal policies and public health management are driving the economic rebound and largely explain variations in performance across countries. With the targeted monetary support to consumers and certain industries, the demand for products and services globally is coming back, and we expect this trend to carry over into Q1 2022.

Differences in the strength of the economic recovery across countries are being driven by the extent of government support to vulnerable workers and businesses, by a country's dependency on particular sectors such as tourism, as well as by public health and vaccination policies.

The contraction in overall performance and employment levels has been universal, but how, when and if countries will rebound remains unclear. According to a report from the Organization for Economic Development as of October 2021, global GDP growth is now projected to be 5.9% this year. According to the OECD report, GDP has already risen above its pre-pandemic level and the recovery remains uneven with countries emerging from the crisis facing different challenges. For the global outlook in 2022, the OECD upgraded its May forecast to 4.9%.

We expect global inflation to remain broadly present during 2022. While price pressures in developed economies have already intensified as economic activity continues to recover (we have started to see this trend in the US during Q2 and Q3 2022), inflation concerns in developing markets have been declining mainly due to stabilizing currencies and reduced supply-side pressures. In 2020, global inflation levels were at 1.939% and we project this level to increase above 2% in 2021 and 2022. Consumers have been spending less on services and more on goods since the pandemic began.

To briefly summarize the global industrial outlook for 2021, it is clear that every market segment globally is set to show recovery and positive growth vs. 2020. As we have stated in the past, the only exception is China's Medium and Heavy Vehicles segment, where the demand for heavy trucks is expected to be down sharply this year as a result of the Chinese government requirement to replace all China III and lower emission vehicles with vehicles meeting China V or China VI emission standards by the end of last year.

Among all industry segments on the global scale, the On-Highway segments such as Passenger Cars, and Minivan/SUVs are expected to rebound at 2-4% globally in 2021. This rate is slightly lower from last quarter projections. It is worth mentioning that passenger car production in North America will decline 11.1% this year vs 2020. This is mainly due to Ford stopping production of cars in the U.S. and the market transition and overall demand towards SUVs type transportation.

Despite declines in China, Commercial Vehicles segments globally will be up 5.6% in 2021 vs 2020. Consumer oriented applications are positioned to gain

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Global Economic Report

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Following a rapid deterioration of production levels in 2020, we expect global demand and production to increase across the board in 2021 vs. 2020.

alongside the economic recovery. Heavy industrial segments, such as Agricultural Equipment and Power Generation, which experienced more moderate declines in 2020, are expected to add 4.2% and 3.5% respectively.

Following a rapid deterioration of production levels in 2020, we expect global demand and production to increase across the board in 2021 vs. 2020, averaging 7.84% among all market segments, which is in line with the previous projection from Q2 2021 (at 7.4%). This growth trend is primarily driven not only by strong recovery efforts, but higher inflation rates, and current supply chain challenges are also slowing the speed of the recovery. However, we do expect the growth trajectory to continue strong into 2022. While global GDP output has reached its pre-COVID levels, it is certain that some developing economies will not reach their pre-pandemic levels even by end of 2022. **PSR**

Europe Report

By Emiliano Marzoli, Manager European Operations

BMW Starts Production of CE 04 EV Motorbike-Scooter

Emiliano Marzoli

BMW has entered full series production of its CE 04 electric motorbike-scooter at its Berlin plant.

The CE 04 falls somewhere between a maxiscooter and a light electric motorcycle, with a distinguished concept style. Initially, the rated power will be 42 Hp, giving the CE 04 a 2.6 seconds to 50km/h and 120 km/h max speed. A second model will be soon available with 31 Hp, with slower acceleration but similar top speed.

Acceleration won't be the only difference. The battery in the faster model will be bigger, with 8.9 kWh of capacity and is rated for up to 130 km (81 miles) of range. The reduced power model has a maximum range of 100 km (62 miles). It will be possible to charge the bike under different circumstances, at home, or public places. Two built-in chargers will be available, ranging from 2.3 kW to 6.9 kw. Charging will take from 1 hour and forty minutes to 4 hours depending on the selected option. BMW said that 20 to 80% battery charge will take 45 minutes, making this a very practical vehicle.

Source: *PSR OE Link™* **Read The Article**

PSR Analysis: BMW is one of the market leaders for electric 2-wheelers. What sets BMW a part is that they dominate the mid-power segment.

If we consider vehicles above 11hp (for which you need a special license to drive them in Europe) BMW is second for units produced in Europe, according to our database **OE Link™**. The introduction of the CE 04 will further consolidate BMW

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Europe Report

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leadership, and might create a new segment to shake up the European market, making the Bavarian company the largest producer of EV 2 Wheelers in Europe, above 11hp. **PSR**

Brazil/South America Report

By Fabio Ferraresi, Director Business Development-South America

Stellantis Confirms Electric LCV in Brazil

Soon after the recent launch of the Peugeot e-Expert, Stellantis announced the Citroën e-Jumpy Friday Nov. 12. Price, drives, batteries configuration, autonomy have not been announced yet. However it announced the growth expectations from 1.2% Market Share to 4% with the new electric launches.

Source: *Automotive Business* **Read The Article**

PSR Analysis: Although it has not been announced, the most likely scenario is that Citroën e-Jumpy will use the same configuration as its European product, the Peugeot e-208 GT. European Battery has 75kWh with Autonomy for 330 km per charge over the EMP2 platform. **PSR**

Fabio Ferraresi

Chinese Higer Bus To Produce Electric Buses in Brazil by 2023

This Chinese OEM confirmed the plans to start the production of its vehicles in Brazil by 2023 after the initial phase of importing the first units in 2022. In 2021, road tests of the Azure A12BR will take place in São Paulo using the regular city bus fleet.

Source: *Automotive Business* **Read The Article**

PSR Analysis: Higer Bus has announced an investment of US$ 10 million for production infrastructure but it has not announced the location of the manufacturing facility. Although they say there are many suppliers in Brazil, as ZF, Dana, Valeo, Bosch and Siemens, the amount seems low and limits the operation for something similar to a CKD with shared assembly infrastructure. **PSR**

Brazil Government Signals Concessions for Proconve L7 Introduction

The current production limit for Production of L6 emissions level of Dec. 31 is expected to be extended by three months for cripple vehicles finishing. All the other terms should be kept as it is.

Source: *Automotive Business* **Read The Article**

PSR Analysis: With the semiconductor shortage, there are about 93,000

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Brazil/South America Report

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incomplete vehicles in Brazil waiting for parts, such as infotainment, auxiliary control systems and engines. This extension will bring some relief, but it does not solve the issue. A new rush at the third and fourth week of March is certain, and a new extension likely will be requested. **PSR**

Argentina Car Sales Drop 24%, But Production Grows

Sales in October 2021 are 24.1% lower than the same period of 2020 in Argentina, at about 25,000 units. This is also 1.6% lower than September 2021. On the other hand, production has grown 42.8% in October 2021 over October 2020 with 41,000 units produced, driven by strong exports.

Source: *Automotive Business* **Read The Article**

PSR Analysis: Brazil's shortage of cars is due to a shortage of semiconductors and supply chain issues caused by the demand increase for Argentinian cars and the effect of higher exports. Economic issues and exchange rates boost the high demand in Brazil. **PSR**

China Report

By Jack Hao, Senior Research Manager - China.

Weichai's 150-Ton Mining Trucks Delivered

Jack Hao

The 150-ton large-scale mining truck delivered by Weichai has accumulated more than 50,000 hours of trial operation, with a total mileage of more than 360,000 kilometers, a 70% increase in efficiency, and a 10% reduction in unit energy consumption.

This product is equipped with a powertrain system consisting of Weichai Group's 17-liter engine + 3300 Nm high torque 8-speed gearbox + 60-ton drive axle. The operation equals the output of two trucks, which significantly reduces the number of vehicles need for a specific job, greatly reduces operating costs, and brings considerable economic benefits to customers.

Source: *Weichai Power* **Read The Article**

PSR Analysis: Most of the big horsepower rigid pump trucks used in China today are imported. Volvo, CAT and Komatsu take the biggest market share. The China mining truck segment has developed slowly due to insufficient demand, but recent increased demand has boosted sales of rigid pump trucks in recent years.

Most OEMs are pay high attention to rigid haul trucks and the new direction is electric drive (120ton - 360 ton). The wide body mining truck (rigid haul tuck) is the main product in the China market, although there are some other electric drive dumps being produced as well.

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The International Air Transport Association (IATA) expects a recovery in aviation demand in 2024 to the same level as in 2019.

Weichai Power also previously signed a strategic cooperation agreement with BELAZ to jointly develop large mining trucks beginning in 20218.. Weichai will provide power assemblies for 130 ton, 150 ton and other mining trucks to BELAZ.

Presently, Weichai mining power development has made a substantive breakthrough, and has successfully entered the global mining industry market. **PSR**

Far East: Japan Report

By Akihiro Komuro, Research Analyst, Far East and Southeast Asia

NEDO Begins R&D of Hydrogen Aircraft

The New Energy and Industrial Technology Development Organization (NEDO) says it will launch a four-topic research and development project for the development of next-generation aircraft, including core technologies for hydrogen aircraft and drastic weight reduction of major structural components of aircraft.

Akihiro Komuro

By using Japan's strengths in elemental technologies such as hydrogen and materials, the project aims to increase the ratio of participation in international joint development of airframes and engines (currently about 20-30%) and contribute to the decarbonization of the aviation sector. It will be implemented as part of the Green Innovation Fund project with a total of 2 trillion yen. The budget is 21.08 billion yen. Kawasaki will develop the core technology for hydrogen aircraft, while Mitsubishi Heavy Industries, Ltd. and ShinMaywa Industries, Ltd. will develop complex shapes and dramatically reduce the weight of major structural parts of aircraft.

Source: Kankyo Business Online (The original article was partially revised by the author.)

PSR Analysis: The aviation industry is being hit hard worldwide by the drop in aviation demand due to the spread of the new coronavirus. However, the International Air Transport Association (IATA) expects a recovery in aviation demand in 2024 to the same level as in 2019, followed by sustained growth of about 3% per year on the back of economic growth in emerging countries and other regions.

It is also expected to have the effect of spreading the applied technology to other fields. Kawasaki Heavy Industries is a driving force in the domestic hydrogen market and has extensive knowledge of hydrogen utilization. Mitsubishi Heavy Industries has already developed a domestic jet aircraft.

There are many issues to be addressed in the use of hydrogen, and it will be a long time before hydrogen-powered aircraft actually appear on the market.

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I hope that this investment will promote research and that Japan will lead the world in the use of hydrogen as a next-generation energy source. **PSR**

Far East Report

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極東 > 日本レポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

NEDO、次世代水素航空機の研究開発に着手 コア技術の確立へ

新エネルギー・産業技術総合開発機構（NEDO）は11月5日、次世代航空機の開発に向け、水素航空機向けコア技術や航空機主要構造部品の飛躍的軽量化に関する4テーマの研究開発事業に着手すると発表した。水素や素材などの国内の要素技術の強みを活用することで、機体・エンジンの国際共同開発参画比率（現状約2～3割）の向上を目指すとともに、航空分野の脱炭素化に貢献する。

同事業は総額2兆円のグリーンイノベーション基金事業の一環で実施される。予算は210億8000万円。水素航空機向けコア技術開発は川崎重工が、航空機主要構造部品の複雑形状・飛躍的軽量化開発は三菱重工と新明和工業が実施する。

出典: 環境ビジネスオンライン（一部筆者により元記事内容を改編しました）

PSR 分析: 航空機産業は現在、新型コロナウイルス感染症の拡大による航空需要の落ち込みによって世界的に大打撃を受けているが、IATA（国際航空運送協会）は、今後の航空需要について2024年には2019年と同じ水準まで回復し、その後新興国などの経済成長を背景に年3%程度の持続的な成長を遂げると見込んでおり、回復が期待されている。また、適用技術が他の分野に波及する効果も期待される。川崎重工業は国内の水素市場のけん引役であり、すでに豊富な知見を有している。三菱重工業は国産ジェット機開発の実績がある。

水素の活用については課題も多く、現実に水素航空機が登場するのはまだまだ遠い先のことだ。

この投資によって研究が促進されることで、次世代エネルギーとしての水素活用分野で、日本が世界をリードすることを私は期待している。**PSR**

Far East: South Korea Report

By Akihiro Komuro, Research Analyst, Far East and Southeast Asia

Hyundai Motor Launches 'Wage Half Price Plant'

For the first time in 23 years, a finished car plant has started operations in South Korea. The operator is Gwangju Global Motors (GGM). This unfamiliar company was established under the leadership of the city of Gwangju in southwestern South Korea, with Hyundai Motor taking a stake, to specialize in contract manufacturing

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Far East Report

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This compact car is Hyundai Motor's first model exclusively for online sales, the Casper. It is a mini-SUV, and the cheapest type costs 13.85 million won (about 1.34 million yen).

of small cars. The city of Gwangju, which aims to attract industry and create jobs, and Hyundai Motor, which wanted a plant where production can be outsourced at a low cost, coincided in their intentions.

The site area of 455,000 square meters is lined with three buildings: a pressed car body factory, a painting factory, and an assembly factory. Inside the assembly plant, which measures 340 meters by 140 meters, eight colorful car bodies flow smoothly down a three-dimensional production line.

This compact car is Hyundai Motor's first model exclusively for online sales, the Casper. It is a mini-SUV, and the cheapest type costs 13.85 million won (about 1.34 million yen). The affordable price range has made it popular mainly among women, and more than 10,000 units have been sold before shipment.

The company plans to produce 12,000 units by the end of this year and 70,000 units in 2022. Currently, the company produces 22 units of a single model per hour.

In the future, the company will also take on the production of small EVs and will engage in mixed production where multiple models are produced on a single production line.

There is still room for expansion of the second and third production buildings on the site, and GGM plans to increase production capacity to more than 200,000 units per year as orders increase. GGM, which is not well known even to Koreans, is a company specializing in contract manufacturing that was founded by the city of Gwangju. The city of Gwangju is the largest shareholder with a 21% stake, followed by Hyundai Motor with 19%, Bank of Gwangju with 11%, and the government-affiliated Industrial Bank of Korea with 11%. Other local companies have also invested in the company, which was established with a capital of 230 billion won.

Source: The Nikkei

PSR Analysis: This is a unique approach to the establishment of a plant in which the local government, banks, and local companies are each a shareholder, rather than the manufacturer making the decision almost solely on its own.

This is due to the labor-management conflicts facing the Korean auto industry. Hyundai has been the victim of numerous wage hike strikes led by union hardliners, and its average salary has reached almost the same level as Toyota.

In contrast, the average salary at GGM is less than half that of Hyundai. Housing and benefits are supported by the city of Gwangju and the government, providing a safe and secure work environment in a land far from Seoul.

For Hyundai Motor, which until now had no choice but to charge high labor costs to its sales prices, having a plant in the country that can produce at low labor costs is significant. Since the models currently being produced are sold exclusively online, the labor cost on the sales side can also be reduced, making it possible to sell at a reasonable price. **PSR**

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Far East Report

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極東 > 韓国レポート:

現代自、自治体と「賃金半額工場」　23年ぶり国内工場

韓国で23年ぶりとなる完成車工場が稼働した。運営会社は光州グローバルモーターズ（GGM）だ。聞き慣れないこの企業は韓国南西部の光州市が主導し、現代自動車も資本参加して小型車の受託生産専業として新たに設立された。産業誘致と雇用創出を目指す光州市と、安価に生産委託できる工場を求めた現代自の思惑が一致した。敷地面積45万5000平方メートルにプレス加工の車体工場、塗装工場、組み立て工場の3棟が並ぶ。340メートル×140メートルの組み立て工場内では、8色のカラフルな車体が立体的な生産ラインをスムーズに流れていく。この小型車が現代自として初となるネット販売専用モデル「キャスパー」だ。軽自動車のSUVで、最も安いタイプは1385万ウォン（約134万円）。手ごろな価格帯が主に女性の人気を集め、出荷前の売約件数は1万台を超えた。年内に1万2000台、2022年は7万台の生産を予定する。現在は単一車種を1時間当たり22台生産する。将来的には小型電気自動車（EV）の生産も請け負い、複数の車種を1つの生産ラインで造る混流生産を手掛ける。敷地内には第2生産棟、第3生産棟の拡張余地を残し、今後も受注拡大に応じて生産能力を「年間20万台以上に高める」（GGM）方針を掲げている。

韓国人にもあまり知られていないGGMは、光州市が発起人で設立した受託生産専業企業だ。光州市が21%を保有する筆頭株主で、現代自が19%、光州銀行が11%、政府系の韓国産業銀行が11%と続く。このほか地元企業も出資し、資本金2300億ウォンで発足した。

出典: 日経（一部筆者により元記事内容を改編しました）

PSR 分析: これまでのようにメーカーがほぼ単独で決定してきた工場設立ではなく、地方自治体・銀行・地元企業がそれぞれ株主となるユニークな工場設立の態勢だ。この背景には韓国の自動車産業が抱える労使対立がある。特に現代自動車は組合の強硬派が主流となり賃上げのストライキを何度も実施し、平均給与はトヨタとほぼ同額のレベルにまで達している。これに対してGGMの平均給与は現代自動車の半額以下である。住居や福利厚生は光州市や政府が支援して、ソウル市とは離れている土地でも安心して働ける環境を提供している。

これまで高い人件費を販売価格に乗せるしかなかった現代自動車にとって、安い人件費で生産できる工場を国内に持った意味は大きい。現在生産しているモデルはネット販売専用であるため営業サイドの人件費も抑えることができ、リーズナブルな価格で販売が可能になった。**PSR**

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SouthEast Asia: Vietnam Report

By Akihiro Komuro, Research Analyst, Far East and Southeast Asia

VinFast Launches Two EVs, Announces US HQ and Manufacturing Plant for 2024.

VinFast has selected Los Angeles as its US headquarters and recently shared plans to begin manufacturing in the U.S. in 2024.

VinFast is the automotive manufacturing subsidiary of VinGroup, a Vietnamese conglomerate that develops everything from real estate to technology and healthcare. The VinFast subsidiary was founded in 2017.

VinFast is working to deliver its flagship EV, the VF e34, later this year in Vietnam. When that happens, it will be the first-ever EV sold in the entire Vietnamese market.

Last month, we reported that VinFast was ambitiously entering markets overseas, beginning with the US, Canada, and Europe at the same time.

The two new VinFast EVs integrate ADAS with driver monitoring, fully-automated parking, and summoning, plus smart infotainment features like voice and virtual assistant.

More details are expected when VinFast begins accepting EV pre-orders in the first half of 2022, ahead of production late next year.

Source: Electrek

PSR Analysis: VinFast's name recognition is gradually penetrating the market, according to recent reports. They have already made huge investments and continue to make significant efforts to gain a presence in the global market. The European-like interior and exterior design of the flagship VF e36 is designed by Pininfarina, and the design that has been the weak point of Asian automakers until now has been overcome by VinFast.

The global trend toward electrification has increased the potential of previously unrecognized manufacturers. Who would have known 10 years ago that TESLA would become the giant it is today, and it is possible that VinFast could become another TESLA.

VinFast's breakthrough is a great example of how new entrants to the manufacturing industry have great growth potential.

東南アジア > ベトナムレポート:

小室 明大 – 極東及び東南アジア リサーチアナリスト

Vinfast社は、米国本社をロサンゼルスに置くこと、2024年に米国の地で製造を開始する計画していることを発表した。

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Southeast Asia Report

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VinFastは、不動産からテクノロジー、さらにはヘルスケアまであらゆるものを開発するベトナムのコングロマリット、VinGroupの自動車製造子会社である。VinFastの子会社は、親会社が自動車製造に参入するために2017年に設立された。

電動化という点では、VinFastは、フラッグシップEVである「VF e34」を今年後半にベトナムで納入することを目指している。それが実現すれば、ベトナム市場全体で販売される史上初のEVとなる。先月、我々は、VinFastが海外市場に意欲的に参入しており、アメリカ、カナダ、ヨーロッパに一気に進出することを報告した。

2台の新しいVinFastのEVは、ドライバーモニタリング、完全自動駐車、召喚などのADASに加え、音声やバーチャルアシスタントなどのスマートインフォテイメント機能を統合している。来年後半の生産に先立ち、2022年前半にVinFastがEVの予約注文を開始すれば、より詳細な情報が明らかになることだろう。

典: Electrek (一部筆者により元記事内容を改編しました)

PSR 分析: VinFastの知名度はここ最近の報道によって徐々に市場に浸透している。彼らはその事業規模やアクションスピードから見ても、単なるEV市場のニューカマーの1社であるとは言えない。彼らは巨額の投資をすでに行っており、グローバル市場で存在感を得るために大きな努力をし続けている。フラッグシップモデルであるVF e36が持つ欧州車のような内外装のデザインはピニンファリーナが手掛けており、今までのアジアの自動車メーカーの弱点であったデザインはVinFastには存在しない。

グローバルな電動化の潮流は今までに認知されていなかったメーカーの台頭の可能性を高めている。TESLAを10年前に知っていた人は居ただろうか。知っていたにせよ、10年後の今日、TESLAがこれほどまでに巨大になると予見できていただろうか。VinFastは第2のTESLAにはならないと誰が断定できるだろう。VinFastの躍進、これは製造業への新規参入には大きな成長ポテンシャルがあると示す好例である。**PSR**

India Report

By Aditya Kondejkar, Research Analyst – South Asia Operations.

Aditya Kondejkar

Chip Shortages Cause Worst Festive Season in Decade for Auto Industry

2021's festive period from Navratri to Diwali (October) marked the worst performance for India automakers in nearly a decade. Usually, sales of passenger cars peak during the period, however, the demand was much lower this year.

Further, two-wheeler and tractor sales dropped by about 10%.

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The major reason for this drop is supply-side challenges on semiconductors and lack of demand in entry-level segments for both PVs and two-wheelers.

In the commercial vehicles space, the situation was somewhat better with an increase in demand for interstate movement of goods.

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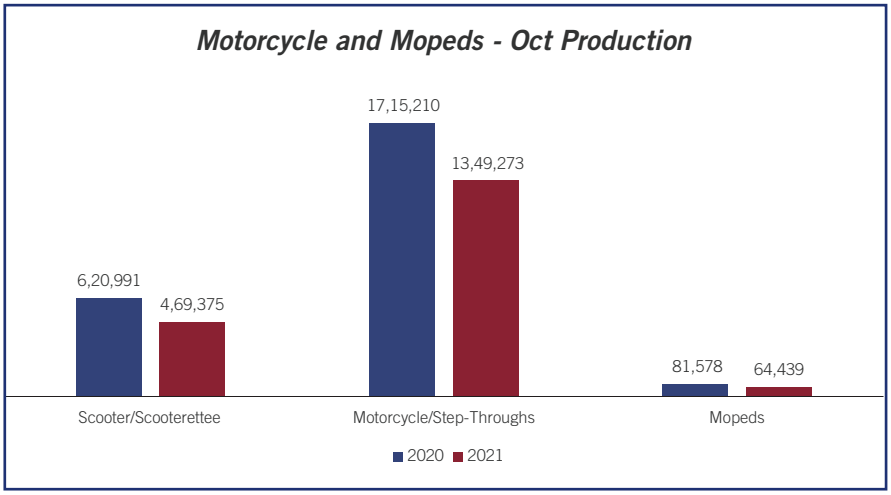

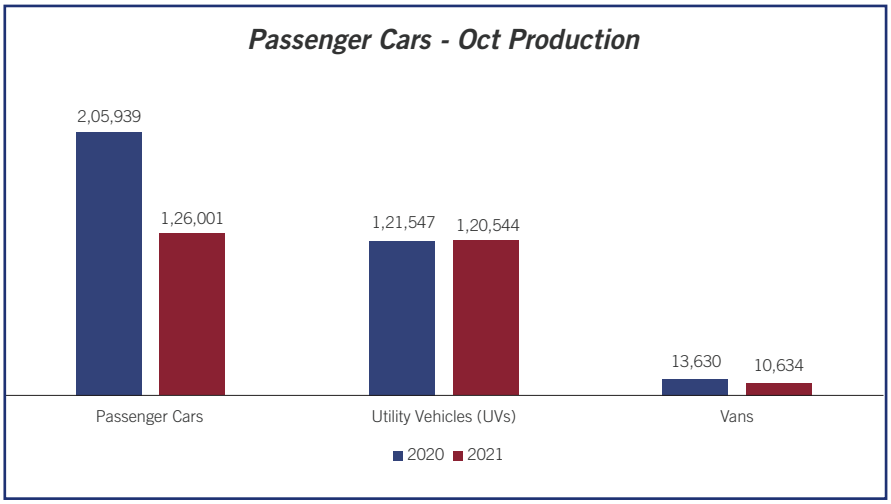

PSR Analysis: The Indian auto industry is going through a rough period caused by rising fuel prices and a shortage of semiconductors which are resulting in production delays for manufacturers across India.

High upfront costs due to recent price hikes for components, and a global shortage of electronic components, such as semiconductors, are causing production issues, which, in turn, have extended the waiting period of popular automobile models.

"This is the worst festive season that the Indian auto retail has seen in the last decade," said Vinkesh Gulati, FADA President. "The chip shortage is impacting supplies in PV, creating a huge shortage of vehicles in SUVs, compact SUVs, and the luxury segment."

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High fuel costs, have further combined with inflationary pressures, have dampened the sales momentum. **PSR**

Russia Report

By Maxim Sakov, Market Consultant, Russia Operations

AutoVAZ Stops Production at Tolyatti Plant

Maxim Sakov

AutoVAZ stopped assembly of cars on all three production lines at its Tolyatti plant Nov. 12, because of parts shortages, according to the plant's trade union representative.

The plant produces Lada Largus, Lada X-Ray, Renault Sandero, Logan, Lada Niva Legend, Lada Kalina, and Lada Granta.

AutoVAZ systematically stops its conveyors because of components' shortages. To compensate it, OEM tries to implement 6 days' working weeks, whose were also cancelled because of parts' scarce.

AutoVAZ also stopped production for a corporate vacation July 26 – Aug. 15.

AutoVAZ makes Lada and Renault passenger cars. Production plants of the company are located in Tolyatti and Izhevsk. Owner of 100% of Russian OEM is JV between Rostech (32%) and Renault Group (68%).

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PSR Analysis: The shortage of electronic components is the sole reason for the production stop. The main supplier problem is the Russian branch of Bosch.

At the same time, Asian component suppliers are in much better condition. For example, Nissan increased production of cars at its plant in St. Petersburg by 20%. However, total sales of passenger cars in Russia are down for the fourth consecutive month. **PSR**

Assembly of Russian Railway Machine Kits Started in India

Technical specialist of Sinara Transport Machines (STM) has started work on assembly of RTM-32 kits in India. They also will supervise trial starts of finished machines. Kit assembly works are performed under a State program "Made in India", if there is a localization level of 51%.

Based on Russian kits, there will be made rail padding and straightening machines, which are used during railway construction, repair, and maintenance. Also, the machines are working with wooden and concrete rail ties. Assembly is based on the production plant of San Engineering & Locomotives Co. Ltd, located in Bangalore which is acting as STM partner in the project.

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The Indian market is attractive for Russian and Belorussian machine building OEMs. Despite low margins, there were high volumes and a tolerance for technical decisions.

The Indian Railway market is one of key export directions for STM, according to a company representative. Today, the company supplies machines to its Indian partners for €20 million. These contracts were signed while competing with world leaders in the railway machinery market, including companies from Austria and USA. STM said it plans to participate in further competitions for machines for about €200 million.

The OEM also supplies 19 kits to India for ballast handlers. This project is part of the "Made in India" program.

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PSR Analysis: The Indian market is attractive for Russian and Belorussian machine building OEMs. Despite low margins, there were high volumes and a tolerance for technical decisions. **PSR**

Important Russian Mega-Project in Doubt

The government is considering cancelling construction of the high-speed railway between Moscow and St. Petersburg.

One alternative being considered is the replacement of the high-speed railway for selected cargo between the two cities. This option is lobbied by Russian Railways.

The plans to build a high-speed railway between Moscow and St. Petersburg were announced last August. The project was included in the federal budget for 2022-2024. Completion of construction work was expected in 2027.

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PSR Analysis: The most obvious reason for uncertainty of a mega-project like this, is a shortage in the budget. However, the Russian budget now is healthy and has a growing surplus. So, the Russian government may be considering a scenario where this money is required somewhere else. If this assumption is correct, it's a crisis scenario. **PSR**

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