



## Electronics Supply Chain Weekly Digest

Important Disclosures in the Appendix

A weekly collection of news summaries, survey results and channel insights, and report summaries from Edgewater Research

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**DATAPOINT OF THE WEEK:** China light vehicle production and sales maintain a strong momentum in October according to China Association of Automobile Manufacturers (CAAM). Light vehicle production and sales were relatively flat M/M on a wholesale basis at ~2.5M units. Commercial vehicle production improved 7% M/M and 43% Y/Y to 380K, the highest since Dec-21; sales, however, were more stable at down 2% M/M. NEV production surged 12.5% to 989k, setting a new record, indicating acceleration on both Y/Y and M/M basis. Vehicle exports from China also remained strong, increasing 10% M/M and 42% Y/Y to 488k units, of which 124K were NEVs (up 29% Y/Y and 12% Y/Y).

### Reports published this week:

[Memory Insights – November 2023](#)

### Key Takeaways:

1. Adjusting C4Q23 D4 32GB/64GB RDIMM ASP forecasts higher to up ~5-10% Q/Q to ~\$53/\$102, yet see a wide divergence in ASP trends depending on the individual buyer/supplier, ASP baseline, and timeline of closure – yet D4 order volumes declining Q/Q.
2. Forecasting C4Q23 PC D4 8GB/16GB ASPs to increase ~5-10% Q/Q to ~\$13.5/\$25.5, yet timeline of RFQ closure expected to heavily influence rate of increase for individual OEMs as range of increases deviated as wide as up low single digits to up >10% Q/Q.
3. Forecasting C4Q23 mobile LP4x/LP5 ASPs to increase ~20%+ Q/Q, as initial attempts by select OEMs to limit rate of increase being blunted by supplier/s citing sharp acceleration in China mobile OEM orders/acceptance of 20%+ Q/Q ASP increases as despite signals of overordering by select OEMs last quarter most OEMs remain focused on rebuilding DOI into CY24 given supply risks.
4. Adjusting cSSD ASP forecasts higher to up low-10% Q/Q in C4Q23, yet range of ASPs across OEMs/suppliers deviating widely depending on timing of closure; sharply increasing C1Q24 cSSD ASP forecasts to up ~20-25%+ Q/Q, as current ASP gap narrows.
5. Forecasting DC/eSSD ASPs to increase ~6-12% Q/Q in C4Q23 yet continue to see a wide deviation in ASP trends depending on buyer/supplier; adjusting C1Q24 DC/eSSD ASP forecasts higher to +15-20%+ Q/Q as supplier/s push for profitability by mid-CY24.

### Server DRAM Average Contract Price Forecasts - DDR4 32GB/64GB RDIMMs

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
<b>DDR4 32GB</b>												
Price	\$72	\$69	\$62	\$58	\$54	\$50	\$50	\$49	\$49	\$51	\$53	\$55
Qtr Avg.			<b>\$68</b>			<b>\$54</b>			<b>\$49</b>			<b>\$53</b>
M/M	-7%	-5%	-9%	-8%	-7%	-6%	-2%	-2%	0%	5%	3%	4%
Q/Q			<b>-19.9%</b>			<b>-20.6%</b>			<b>-9.3%</b>			<b>7.9%</b>
Y/Y	<b>-49%</b>	<b>-50%</b>	<b>-54%</b>	<b>-58%</b>	<b>-61%</b>	<b>-62%</b>	<b>-59%</b>	<b>-58%</b>	<b>-51%</b>	<b>-44%</b>	<b>-38%</b>	<b>-30%</b>
<b>DDR4 64GB</b>												
Price	\$138	\$131	\$119	\$110	\$102	\$97	\$96	\$94	\$94	\$99	\$102	\$105
Qtr Avg.			<b>\$130</b>			<b>\$103</b>			<b>\$94</b>			<b>\$102</b>
M/M	-7%	-5%	-10%	-8%	-7%	-5%	-2%	-2%	0%	5%	3%	4%
Q/Q			<b>-20.4%</b>			<b>-20.4%</b>			<b>-8.5%</b>			<b>7.9%</b>
Y/Y	<b>-50%</b>	<b>-52%</b>	<b>-57%</b>	<b>-60%</b>	<b>-62%</b>	<b>-63%</b>	<b>-60%</b>	<b>-58%</b>	<b>-51%</b>	<b>-44%</b>	<b>-38%</b>	<b>-29%</b>

Source: Edgewater Research Estimates

## Auto/Transportation

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**BYD** – BYD plans to build its first European car factory in Hungary, a German newspaper reported on Saturday.

**China Auto sales** – China retail auto sales totaled 2.033m in October, up 10.2% Y/Y and up 0.7% M/M according to China Passenger Car Association (CPCA) data. xEV sales in October totaled 767k, higher than CPCA's forecast of 750K at the end of October and up 38% Y/Y and 3% M/M, signaling continued strengthening in xEV demand. The data suggests NEV penetration in October reached 37.7% up from 36.9% in September. BEV sales increased 38% Y/Y but declined 1% M/M in October.

**China xEV** – Chinese Neo, Li Auto and Xpeng have provided 2024 annual production outlook to suppliers this week. According to reports from Asia, Neo targets 230k units, up 50% from the 158K expected to be produced in 2023. Xpeng targets more than 280k units, which would represent 100% increase from the ~140k units expected in 2023 while Li Auto targets 800k BEV and PHEVs also reflecting an outlook for 100% increase from the ~400K units produced in 2023.

**Continental** – Continental expects a strong fourth quarter for its automotive business. The company raised its 2023 global vehicle production outlook to 5-7% from 3-5% previously but warned outlook for 2024 is more conservative at just 1-3% growth. Continental inventory declined in 3Q and the firm expects further reduction in 4Q as chip supply has stabilized.

**Germany** – Sales of new cars in Germany remained subdued in October declining 2% M/M, following an 18% monthly drop in September according to data from the Germany Automotive Associations. Sales of xEVs rebounded 14% M/M in October but remained in a downtrend Y/Y, declining 21% Y/Y after dropping 35% in September. BEV sales fared better increasing 18% M/M and growing 4% Y/Y after dropping 29% in September. BEV registrations however were the 3<sup>rd</sup> lowest in 2023.

**Lucid** – Lucid Group cut prices of its Air range of luxury sedans earlier this week for a limited time ahead of the holiday season, amid stiff competition and slowing demand for electric vehicles. Lucid slashed the price of its Air Touring model to \$87,500 from \$95,000 and the more powerful Grand Touring by \$10,000 to \$115,600. Lucid had previously cut prices for its cars in August as the company burned through cash as it ramped up production in a tough economy.

**Polestar** – Swedish electric vehicle maker Polestar trimmed its 2023 delivery forecast on Wednesday to the lower end of its earlier guidance and halved its gross margin target, amid fears of a slowdown in EV demand and global economic uncertainty. Polestar, which operates in 27 markets globally, said it would now deliver about 60,000 vehicles this year, down from between 60,000 to 70,000. It had reiterated that forecast just last month after slashing the target in May from the 80,000 it had estimated earlier.

**Tesla** – Tesla plans to build a 25,000-euro (\$26,838) car at its factory near Berlin, reported Reuters citing sources. In a separate report, Tesla's management in Germany late last week informed 11,000 workers they will receive a 4% wage raise effective in November, The Wall Street Journal reported on Sunday, where unions have previously said they earn below the industry average. The U.S. electric maker will also pay a 1,500 euro (\$1,609) bonus in December to offset inflation and from February raise annual wages by an additional 2,500 euros for the German workers, according to WSJ.

**Tesla** – Tesla raised prices by \$200 of its long-range versions of Model 3 and Model Y in China this week. That follows the price increase of Model Y Performance trim at the end of October. The company said the increases are due to cost increases.

**UK car sales** – UK car sales increased 14% Y/Y in October reports UK auto association. The association increased its 2023 sales forecast to 1.89 million units or 2.1% higher than its previous outlook. The outlook for 2024 was also raised by 1% to 1.97 million units. Demand for EV in October

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remained strong, increasing 38% Y/Y driven by fleet uptake. Private BEV sales however accounted for 25% of total sales in October, underscoring the need for fiscal incentives for consumers.

**US new car sales** – US new car retail sales increased 3.3% y/y in October to SAAR of 13.4M, up from 12.5M last year and 12.9 in Sep as buyers came into the market early in October hopeful to buy cars before inventory dried up and prices climbed on UAW strike concerns. Conversely, sales into large rental, commercial and government fleets in October declined by 10.4% Y/Y

**US car inventory** – Despite the UAW strike at several plants through the month, new vehicle inventory in the US increased 9% in units basis to 2.4M and 7 days to 67, the highest since Feb 2021, according to Cox data. According to Cox, Stellantis continues to have the highest days of inventory with most brands above 100 days. Cox considers 60 days of inventory as normal.

**US used car prices** – Wholesale used-vehicle prices (on a mix, mileage, and seasonally adjusted basis) decreased 2.3% in October from September, according to Cox Automotive.

**VW** – VW is pausing the production of a number of electric vehicle models at its Zwickau plant for an estimated three weeks due to a shortage of electric motors, the automaker said on Thursday. Due to this limited capacity, Volkswagen said it will halt the production of the Audi Q4 E-tron, the Audi Q4 Sportback E-tron as well as the VW ID4 and VW ID5 models in Zwickau.

**VW** – VW aims to sell an EV costing less than \$35,000 in the US in 3-4 years. "We are not scaling back" plans for EVs in the U.S. market," said Reinhard Fischer, senior vice president and head of strategy at VW Group of America. Speaking at the Reuters Events Automotive USA 2023 conference in Detroit, Fischer said VW plans to build the under-\$35,000 EV in the U.S. or Mexico.

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## Datacenter

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**Siemens** – Siemens has announced that it will be investing USD 150 million in a new high-tech manufacturing plant in Dallas Fort Worth as it looks to play a part in powering American data centers and critical infrastructure. The new plant will produce reliable and efficient electrical equipment. With the investment, Siemens is looking to support long-term customers in the data center space, where demand is expected to grow by around 10% annually through 2030.

## IP&E

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**Murata** – Murata announced it will establish a new research and development center focusing on capacitors in Japan. Construction is expected to start in Nov 2023 and the company is currently targeting inauguration in April 2026.

**Molex** – Molex announced a major expansion of its global manufacturing footprint with the opening of a new campus in Poland. The facility's initial 23,000 square meter manufacturing space will serve as a central location to help facilitate delivery of advanced medical devices for Phillips-Medisize, a Molex company, as well as electric vehicle and electrification solutions for Molex customers. Molex plans to expand the facility with phase 2 construction reaching up total of 85,000 sq meters.

## Semiconductors

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**AI** – Baidu recently has placed AI chip orders with Huawei reports Reuters. The move is seen as an alternative to US-made chips from Nvidia and AMD and as a result of the recently more stringent AI chip export restrictions. The report states Baidu has ordered 1,600 910 Ascend AI chips and as of October Huawei had delivered more than 60% of the order.

**European Semis** – The German government has cleared plans by Bosch, Infineon, and NXP to each acquire 10% of the shares in European Semiconductor Manufacturing



Company (ESMC), a company established by Taiwan Semiconductor Manufacturing Company (TSMC). ESMC intends to build and operate another large semiconductor factory in Dresden, in which the three European technology companies are also to be involved.

**Intel** – Intel is in a position to receive outsized subsidies from the US government to fund fabs producing chips for the US Military according to the WSJ. The facilities -- which have yet to be disclosed publicly -- would be explicitly designated as a "secure enclave," according to people familiar with the development. The goal is to reduce the U.S. military's dependence on chips imported from East Asia, particularly Taiwan, which some say is vulnerable to Chinese invasion.

**Intel** – Intel is reportedly putting on hold plans to expand its back-end operations in Vietnam which would have doubled the capacity. Vietnam is home to one of Intel's largest factories worldwide for assembling, packaging and testing chips, and the country has been betting on further expansion. The reports state that Intel had made that choice sometime in July. Intel has not publicly stated why it has called off the expansion – but according to a second source, Intel had voiced concerns regarding excessive bureaucracy and the stability of power supply.

**Intel** – Intel plans to transfer its silicon photonics business to Jabil in order to focus on core chip manufacturing, according to several reports. The silicon photonics business was formed when Intel acquired Altera for \$16.7 billion in 2015. The transfer to Jabil will include Intel's current silicon photonics business and customers, as well as future development of this technology.

**Nvidia** – Nvidia is planning to release three new chips for China, local media reported on Thursday, weeks after the U.S. blocked it from selling two high-end AI chips and one of its top gaming chips to Chinese firms. The STAR Market Daily news outlet, citing people familiar with the matter, said that the chips are called the HGX H20, L20 PCIe, and L2 PCIe and that Nvidia could announce them on Nov. 16 at the earliest.

**Nvidia** – One of China's emerging artificial intelligence startups went on a buying blitz earlier this year to make sure it had enough high-end Nvidia semiconductors before the

US government imposed tighter export restrictions that cut off such chip sales to all Chinese customers. The startup, 01.AI, bought enough of the chips to last for the next 18 months or so, founder and Chief Executive Officer Kai-Fu Lee said.

**NXP** – NXP Semiconductors announced an expansion of its scalable S32 vehicle compute portfolio with the introduction of the S32M2, which supports the automotive industry's transition to software-defined electric vehicles. The motor control offering is optimized for efficiency improvement across vehicle applications such as pumps, fans, sunroofs, and seat positions.

**onsemi** – onsemi has unveiled its strategic shift, planning to initiate in-house production of CMOS image sensors (CIS) in 2024 according to a presentation by the company in Japan reports media. According to the presentation initially employing a "fab lite" strategy, Onsemi outsourced the production of all its CIS solutions. However, prompted by supply chain instability during the pandemic, the company opted to revise its approach, bringing production in-house to ensure a more secure and stable supply chain. The front-end processes will be bifurcated, with one part conducted at its 12-inch (300mm) wafer fab in East Fishkill, New York—acquired from GlobalFoundries (GF) in 2019—and the other part at the Nampa factory in southwestern Idaho, focusing on microlenses and color filters. Backend packaging and testing will occur at the Malaysian factory. However not all of CIS production will be shifted in-house.

**Tokyo Electron** – Tokyo Electron Ltd. raised its full-year earnings and revenue targets after demand from China for its chipmaking equipment quickened in the September quarter. The Tokyo firm said sales to China made up almost half of its quarterly revenue of ¥428 billion yen (\$2.8 billion), which came in higher than the average analyst estimate of ¥416 billion. It lifted its full-year sales outlook to ¥1.73 trillion, from ¥1.7 trillion. "Chinese investment on mature-node chips, such as power semiconductors and automotive chips, is strong," said the company.

**TSMC** – TSMC reported October revenue of \$NT 243B, an increase of 35% M/M and 16% Y/Y, marking the return to

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Y/Y growth. Revenue was driven by volume of 3nm A17 process for Apple as well as a rebound in orders for 7nm and 5 nm for AI and non-Apple SoC chips.

**SMIC** – SMIC reported 3Q revenue decreased 3.9% Q/Q but met guidance. 3Q shipments increased 9.5%, implying more than 10% decline in ASP while average capacity declined by 1 point to 77%. SMIC expected 4Q revenue to decline 1-3% Q/Q.

**Vanguard** – Vanguard Foundry cut its 2023 capex forecast for the third time this year citing continued inventory digestion and weak demand. Vanguard expects 4Q23 wafer shipments to decline 8-10% Q/Q with average selling price decreasing by 0-2% Q/Q and utilization to drop by mid-single digit Q/Q to 55-60%. The company also cautioned about the increasing 12-inch mature capacity by Chinese wafer foundries.

**Vishay** – Vishay announced plans to buy Nexperia's Newport Wafer Fab located in South Wales, following last year's decision by the UK government that it had to be sold under national security legislation. Vishay intends to pay \$177M in cash for the fab. Nexperia acquired the fab in 2021 for \$100M. At the time the fab has 32,000 WSPM capacity for analog, IGBTs, and MOSFETs. Nexperia had invested an undisclosed amount into the fab since acquiring it.

of sluggish growth. "Low prices and discounts has been the overarching theme," said Jason Yu, greater China managing director of market research firm Kantar Worldpanel, noting that even the newly-released iPhone 15 was selling with a 500 yuan discount. "It's a sign that nobody's going to easily spend 10,000 yuan (\$1,371) on a handset right now. Confidence is a bit weak."

**Smartphones** – 3Q23 shipments of smartphone application processors (AP) to Chinese handset vendors increased 48% Q/Q says DigiTimes. The increase was driven by preparation for the arrival of new models in 2H23. The increase, however, is projected to be temporary as end demand remains weak which will drive 4Q23 AP shipments down 20% says the firm.

**Xiaomi** – Xiaomi CEO said sales of the recently launched Mi 14 smartphone have exceeded 1 million units and the phones remain in a severe short supply. The model went on sale in China on Oct. 31. It uses Qualcomm's cutting-edge Snapdragon 8 Gen 3 processor and Xiaomi's proprietary HyperOS software. The strong sales are a fresh sign that the slump in China's phone market could be nearing an end.

## Consumer/EMS/Distribution

**China** – A ferocious price war among China's e-commerce retailers during the "Singles Day" shopping event is exposing further weakness in household consumption and raising concerns that the world's second-largest economy will resume its slowdown. Originally a 24-hour online shopping event in China held on Nov. 11, Singles Day, a nod to the digits in the date, has expanded into weeks of promotions, including in brick-and-mortar stores, making it the world's largest shopping festival. This year's festival is being more closely watched than ever as a gauge of consumer confidence as China flirts with deflation and has identified boosting household demand as key to avoiding lost decades

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**APPENDIX**

*We Nik Todorov, Dennis Reed, and Sean Muir hereby certify that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities referred to in this research report. We certify that no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report. The analyst(s) responsible for the preparation of this report have no ownership stake in this company. Edgewater Research Company provides no investment banking services on this or any company*

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