



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 production and wholesale of passenger vehicles declined 4.7% and 7.4% M/M in July and 4.3%/13.2% on Y/Y basis, reflecting a slowdown compared to prior months when production and sales were positive Y/Y. Jule NEV production increased 2.7% M/M and 30.5% Y/Y to 805 reflecting further deceleration in growth from the +45% YTD. Wholesale of NEVs however declined 3% M/M in July. In the retail channel performance was similar with overall passenger vehicles sales declining 6.3% M/M and 2.3% Y/Y while NEVs declined 3.6% M/M with Y/Y growth slowing to +31.9% vs +42.9% YTD, according to data from the Chinese Passenger Car Association. In NEV, Chinese brand sales continued to outperform the market with BYD, Li Auto, Xpeng and Nio posting stronger than 50% Y/Y increase. Despite that Chinese NEV sales remain below their annual sales goal at the midpoint of the year according to a Bloomberg analysis.

Recently published reports:

[Memory Insights August 2023](#)

Key Takeaways:

1. Forecasting CY23 DRAM bit demand growth to +5-7% Y/Y, yet modest uptick somewhat blurred by PC/mobile OEM inventory positioning/buffering and continued high density RDIMM order strength; unit recovery across end markets muted into C2H23.
2. Forecasting C3Q23 DDR4 32GB/64GB RDIMM ASPs down ~7-9% Q/Q to/slightly below \$50/\$95, pace of ASP erosion continues to moderate M/M as supplier/s attempt to drive market bottom yet DDR4 order weakness continues to weigh on DOI digestion.
3. C3Q23 DDR5 RDIMM ASPs remain the most fluid to-date as ASP ranges across various supplier/s (and buyer/s) deviating by as much as \$5-10+; forecasting average DDR5 32GB/64GB ASPs to remain flattish Q/Q at ~\$75/\$150 +/- \$5 assuming orders migrate to more flexible supplier/s (when applicable); average DDR5 128GB RDIMM ASPs increasing ~5-10% Q/Q to \$1,200-1,300+.
4. Forecasting C3Q23 PC DDR4 8GB/16GB ASPs to ~\$12.5/\$23.75 +/- \$0.50, or down ~3-5% Q/Q, supplier/s still cited as holding ASPs firmer QTD following initial decline at the start of the quarter; forecasting PC DDR4 ASPs to remain flat/up slightly Q/Q in 4Q.
5. Adjusting CY23 NAND bit demand growth forecast to +6-11% Y/Y, as improved PC cSSD and mobile orders into C2H23 boosting shipment forecasts, yet improved orders appear increasingly tethered to OEMs desire to build buffer inventories via 3PLs aligning with signals that module house customers had accelerated wafer orders last quarter due to ASP views/political uncertainty.

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
DDR4 32GB												
Price	\$72	\$69	\$62	\$58	\$54	\$50	\$50	\$49	\$49	\$49	\$50	\$51
Qtr Avg.			\$68			\$54			\$49			\$50
M/M	-7%	-5%	-9%	-8%	-7%	-6%	-2%	-1%	0%	0%	2%	3%
Q/Q			-19.9%			-20.6%			-8.7%			1.6%
Y/Y	-49%	-50%	-54%	-58%	-61%	-62%	-59%	-57%	-51%	-46%	-42%	-34%
DDR4 64GB												
Price	\$138	\$131	\$119	\$110	\$102	\$97	\$96	\$94	\$94	\$93	\$95	\$98
Qtr Avg.			\$130			\$103			\$94			\$96
M/M	-7%	-5%	-10%	-8%	-7%	-5%	-2%	-2%	0%	0%	2%	3%
Q/Q			-20.4%			-20.4%			-8.5%			1.3%
Y/Y	-50%	-52%	-57%	-60%	-62%	-63%	-60%	-58%	-51%	-47%	-42%	-34%

Source: Edgewater Research Estimates

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Auto/Transportation

Aptiv – Aptiv does not expect semiconductor prices to cool off in the near future. Even though supply-chain challenges are easing, prices of certain parts remain high, denting profits, the supplier said during an investor conference.

Audi – Semiconductor shortages will take years to resolve despite chipmakers' plans to build factories in the country, Renate Vachenauer, Audi's head of procurement, was quoted as saying by a German newspaper. Vachenauer said automakers could ease the bottlenecks by reducing the varieties of chips used from the 8,000 different types in vehicles today. "We have to use many levers to stabilize the supply of semiconductors and also stock up on the broker market to some extent," she added.

Continental – Continental said it is pushing for additional price increases to end customers because of continued cost increases. The supplier expects to bring down its working capital by 10% from the current level but it does not foresee a return to pre-COVID levels. Continental added that is struggling with higher logistics costs and the demands from UAW are strong and likely to lead to a new category of cost inflation.

Germany Auto Sales – Battery-electric car registrations in Germany jumped 69 percent to 48,682 in July, giving the drivetrain a 20 percent market share, according to data from the German motor transport authority (KBA). Overall registrations including gasoline and diesel vehicles rose 18 percent to 243,277. July's growth was driven by automakers gradually fulfilling their backlog of orders, which were caused when supply shortages lowered production.

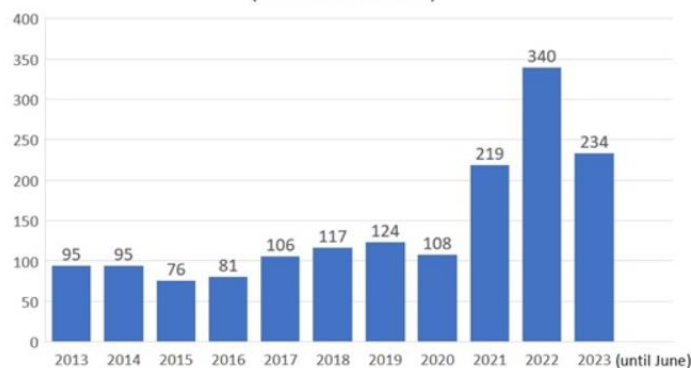
China Price War – The intense price war China is starting to calm down. In the past two months, the proportion of cars subject to significant price cuts has fallen. In July, 428 variants of passenger cars — about 16 percent of the market — had undergone price drops of more than 5 percent within a three-month period, according to Bloomberg analysis of data compiled by research provider China Auto Market. The

figure had peaked at 30 percent of car and light truck models as recently as May — the highest since at least 2015, when CAM's data became available.



China EVs – Chinese vehicle exports increased 73% Y/Y to 2.43M in 1H23 dethroning Japan for the first time in the half-year record, according to China Passenger Car Association (CPCA). The surge has been driven by China produced NEVs with most exports going to UK, Thailand, France, Germany and Netherlands according to CPCA. The agency adds that for 2023 Chinese auto exports are expected to reach 5 million up from 3.4M in 2022 with the European market offering the country a great opportunity.

China car exports volume, 2013-2023
(in 10k vehicles)



Source: CPCA

Ford – Ford is postponing the European market launch of the Explorer, its first all-electric volume model in the region, by about six months. Instead of arriving in showrooms at the

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beginning of next year, the compact SUV is now scheduled to roll out in the summer of 2024.

Li Auto – Li Auto said it aims to outsell BMW, Mercedes-Benz, and Audi in China in 2024 as the up-and-coming Chinese automaker accelerates rollouts of new models and ramps up production. "We would strive to become the no.1 premium car brand in China in 2024 in terms of sales," Li Auto's CEO Li Xiang told investors on Tuesday night, adding that the company could achieve a monthly delivery of 40,000 units in 4Q23 after a production ramp-up.

Honda – Honda reported strong 2Q23 results, with shipments in the US surging 44.7% Y/Y to 347,000 units, partially offset by weakness in China where units dropped 5% Y/Y to 309,000. Business conditions in China had grown worse for Honda compared to when it issued its forecast of selling 1.4 million vehicles for the full year, a Honda official said.

Magna – Magna said it is prepared to consider laying off staff in the short term to combat disruptions in case of a strike by United Auto Workers (UAW) union at the Detroit Three carmakers. A recent report highlights disappointment from UAW from initial contract negotiations with Stellantis.

New Vehicle Inventory – New-vehicle inventory in the US at the end of July was mostly unchanged from the end of June, as production and sales remained generally balanced through the month, according to Cox Automotive. The total U.S. supply of available unsold new vehicles stood at 1.96 million units at the end of July, down just slightly from a revised 1.98 million at the start of the month. Days of supply stood at 56 at the end of July, unchanged from a revised 56 at the start of the month. Cox notes incentives increased for the tenth consecutive month in July to the highest level since October 2021, averaging \$2,148 per vehicle, or 4.4% of the Average Transaction Price. A year ago, incentives were only 2.4% of ATP.

VW – Sales of VW's EV ID.3 in China have increased 3x in July compared to June, according to Asian reports. The surge is

seen as most likely to be driven by the \$16K price cut implemented in early July.

UK Car Sales – U.K. new-car registrations increased 28 percent in July to 143,921, according to figures from the SMMT industry association. Battery-electric vehicles recorded an 88 percent increase to account for 16 percent of all new registrations for the month. Growth was driven by large fleets and business registrations while private retail demand remained stable Y/Y.

US Used Vehicle Prices – Wholesale used-vehicle prices (on a mix, mileage, and seasonally adjusted basis) decreased 1.6% in July from June, according to Cox Automotive. After 6 months of consecutive declines the used vehicle pricing index is back to levels last seen in April 2021 says Cox. The firm adds that used retail inventory continues to rebuild; but with used retail sales also showing some summer strength, Cox does not foresee wholesale price declines of serious magnitude through December.

US Auto Dealer Sentiment – Dealer sentiment in the U.S. improved slightly in Q2 2023 to 45 from 43 in 1Q but still below the threshold of 50, indicating that more dealers see the current auto market as weak than see the market as strong. The forward-looking market outlook index declined in Q2, falling from 52 to 47, suggesting a majority of auto dealers now feel the market in the next three months will be weak, not strong.

Datacenter

Servers – Shipments of general-purpose servers are missing forecasts due to a shift to AI servers, prompting ODMs to be concerned about x86 shipment prospects for the rest of the year, according to DigiTimes.

Industrial

Siemens – Siemens missed 2Q expectations and warned of weakening demand in several markets. The company noted it has seen only a tepid recovery in China and broad

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normalization of demand after customers pre-bought last year to avoid shortages. Siemens expects China demand to remain flattish and noted seeing softening in Europe as well. In 2Q, Siemens's Industrial units covering its mobility, smart infrastructure, and factory automation businesses fell 4% Y/Y, missing forecast. Siemens also lowered the full year outlook for its controller business to +13-15% from +17-20% prior.

IP&E

Murata – Murata announced that it will start the construction of a new production building in the Philippines in August 2023, aimed at developing the capacity to accommodate the increased demand for multilayer ceramic capacitors over the medium and long term.

Semiconductors

Allegro MicroSystems – Allegro MicroSystems announced plans to acquire Crocus Technology for \$420 million in cash as the company looks to accelerate innovation in TMR sensing technology in high-growth applications in e-Mobility, Clean Energy and Automation.

Renesas – Renesas announced plans to acquire cellular IoT chip and module designer Sequans for \$249M. The deal will allow Renesas to enhance its offerings in the WAN/PAN/LAN markets.

Semis – US Administration signed an executive order that will prohibit US investments in Chinese entities in three sectors: semis, microelectronics, quantum technology and certain AI systems. The administration said the restrictions would apply to "narrow subsets" of the three areas but did not give specifics. The proposal is open for public input.

Semi Sales – Global semi sales increased 4.7% Q/Q in 2Q according to the latest data by SIA. For the month of June sales increased 1.7% M/M. Regionally, month-to-month sales increased in the Americas (4.2%), China (3.2%), Japan (0.9%), and Europe (0.1%), but fell slightly in Asia Pacific/All Other (-0.5%). Year-to-year sales were up in Europe (7.6%),

but down in Japan (-3.5%), the Americas (-17.9%), Asia Pacific/All Other (-20.4%), and China (-24.4%).

Hynix – At Flash Memory Summit 2023 in Santa Clara, Hynix unveiled a sample 321-layer 3D NAND chip with 1 terabit TLC capacity. The new chip is projected to enter mass production in the first half of 2025, indicating it's in the early stages of development.

TSMC – TSMC announced plans to form a JV with Bosch, Infineon, and NXP called European Semiconductor Manufacturing Company which will own and operate an advanced 300 mm semi fab in Dresden, Germany. The fab will provide automotive and industrial geared semis based on TSMC's 28/22 nm planar CMOS and 16/12 nm FinFET process technologies with a monthly capacity of 40,000 wafers. Construction is expected to start in 2024 with production targeted to begin by the end of 2027. The JV will be 70% owned by TSMC, with Bosch, Infineon and NXP each holding a 10% stake. Total investments are expected to exceed \$10B.

TI – TI is planning to invest up to \$1B to expand its Philippines back-end facility, according to a statement from the country's president's office.

Consumer

Smartphones – Sony Group, the supplier of camera sensors for smartphones – is pushing back its expectations for a smartphone market recovery to 2024 at the earliest after seeing worsening demand from China and US customers, according to news reports from Asia.

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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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