

# China Technology

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## NVIDIA FY3Q24: Another stunning quarter on robust AI demand; New chips to China in next few months

NVIDIA reported another strong beat against elevated expectations, along with a strong outlook (guided 4Q revenue of US\$20bn, vs consensus US\$17.9bn), alleviating concerns on supply constraints and impact on China sales. Key highlights include: 1) FY4Q24E guidance beat on stronger topline/margin with strong AI demand and robust product pipeline into 2024, 2) China's sales to drop significantly in 4Q23, largely offset by strong growth in other regions, and new regulation-compliant solutions will be available for China (20-25% of DC sales) in the next few months, 3) mgmt. guided continued chip capacity expansion to meet growth, and expected data center revenue to grow through 2025, and 4) AI foundry services running on Azure with first customers from SAP and Amdocs. We believe the strong outlook will be positive to tech sector in 1H24E, benefiting NVIDIA partners and data center supply chain.

- **FY3Q24 another beat with data center doubled YoY.** NVIDIA reported FY3Q24 revenue of US\$18.1bn (+34% QoQ/+206% YoY), 13%/13% above guidance/consensus of US\$16.0bn/16.1bn. Adj. non-GAAP GPM reached 75.0% (+3.8ppts QoQ/+18.9ppts YoY), vs consensus of 72.5%. By segment, datacenter/gaming/professional visual/auto revenue delivered +279%/+81%/108%/+4% YoY, above consensus except auto segment. **1) Datacenter:** strong sales (+41% QoQ/279% YoY) driven by ramp-up of HGX platform based on Hopper GPU. Generative AI applications include Adobe Firefly, ChatGPT, Microsoft 365 Copilot, Coassist, Now Assist with ServiceNow and Zoom AI Companion. **2) Gaming:** revenue was up 15% QoQ/ 80% YoY, doubled vs pre-Covid, driven by back-to-school season with RTX ray tracing and AI technology available. **3) Auto:** sales growth (+3% QoQ/+4% YoY) in Orin-based self-driving platforms and ramp-up of AI cockpit solutions with global OEMs. Extended partnership with Foxconn for NVIDIA Drive Thor, next-gen auto SoC.
- **Upbeat FY4Q24 outlook; New compliant products available to China in next few months.** Mgmt. guided FY4Q24 sales of US\$20.0bn (+/-2%), +10% QoQ/+231% YoY, 12% above consensus of US\$ 17.9bn. Adj. GPM range of 74.5-75.5% also beat consensus of 72.6%. Mgmt. guided China's sales to decline significantly in 4Q24, which will be more than offset by growth in other regions., and mgmt. also expected to offer new regulation-compliant products to China in next few months.
- **Other highlights:** 1) mgmt. guided data center revenue will grow through 2025; 2) Amazon, Google Cloud, Microsoft Azure and Oracle Cloud will be among the first CSPs to adopt H200 next year; 3) AI Foundry on Azure launched last week will onboard SAP and Amdocs; 4) Accelerated demand from enterprise software companies and government for sovereign AI infrastructure (e.g. UK, German, India).

### Valuation Table

Name	Ticker	Mkt Cap (US\$ mn)	Price (LC)	P/E (x)		P/B (x)		ROE
				FY23E	FY24E	FY23E	FY23E	
NVIDIA	NVDA US	1,233,617	499.44	153.1	45.7	57.5		29.7
AMD	AMD US	192,503	119.16	44.9	31.5	3.5		6.4
Intel	INTC US	183,986	43.64	45.9	23.3	1.8		2.7
TSMC	2330 TT	483,360	585.00	18.5	15.6	4.3		25.3
SK Hynix	000660 KS	73,628	130,800	N/A	16.6	1.7		(13.7)

Source: Company data, Bloomberg, CMBIGM estimates

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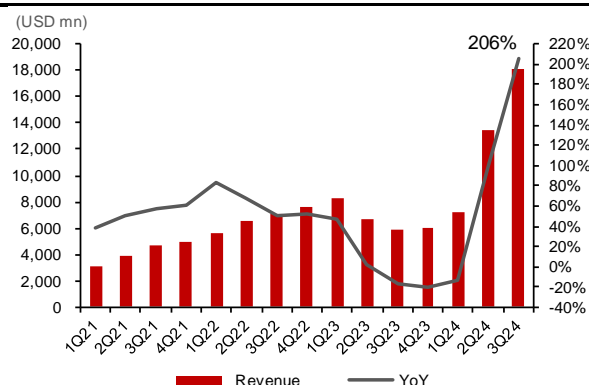
### Related Reports:

- Global fabless/IDM 3Q23 wrap: PC/SP recovery, auto/ industrial mixed; Eye on Edge AI as new growth driver – 17 Nov 2023 ([link](#))
- SMIC/Hua Hong Semi 3Q23: in-line revenue; ASP/GPM pressure to persist into 4Q23E – 10 Nov 2023 ([link](#))
- AMD 3Q23: PC recovery, smooth ramp-up of MI300 Series and AI PC opportunities- 2 Nov 2023 ([link](#))
- Intel 3Q23: PC recovery, server destocking progress and new platform launches – 30 Oct 2023 ([link](#))
- UMC 3Q23: inventory correction, UTR/margin under pressure, PC & smartphone rush order-26 Oct 2023 ([link](#))
- Texas Instruments 3Q23: weaker industrial, destocking and slower China recovery-26 Oct 2023 ([link](#))
- TSMC 3Q23: cycle nearing the bottom; Positive on smartphone/PC supply chain -24 Oct 2023 ([link](#))
- ASML/LAM Research 3Q23 results - 20 Oct 2023 ([link](#))
- Implications of US's updated chip export restrictions to global/ domestic SPE/GPU companies - 18 Oct 2023 ([link](#))

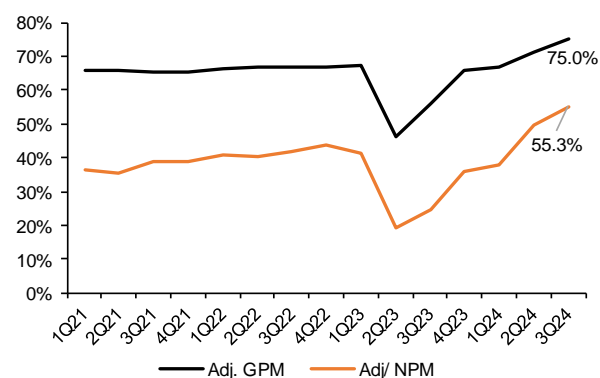
**Figure 1: NVIDIA FY3Q24 earnings summary**

NVIDIA (NVDA US) non-GAAP				Actual		Consensus	
US\$ mn	FY3Q23	FY2Q24	FY3Q24	QoQ	YoY	FY3Q24E	Diff (%)
Revenue	5,931	13,507	18,120	34%	206%	16,094	13%
EPS (cent US\$)	0.58	2.7	4.02	49%	593%	3.36	20%
GPM	56.1%	71.2%	75.0%	3.8 ppt	18.9 ppt	72.5%	2.5 ppt
<b>End Market Revenue</b>							
Datacenter	3,833	10,323	14,514	41%	279%	12,816	13%
Gaming	1,574	2,486	2,856	15%	81%	2,698	6%
Professional Visualization	200	379	416	10%	108%	409	2%
Automotive	251	253	261	3%	4%	267	-2%
OEM & IP	73	66	73	11%	0%	75	-3%
<b>Revenue Mix</b>							
Datacenter	64.6%	76.4%	80.1%			79.6%	
Gaming	26.5%	18.4%	15.8%			16.8%	
Professional Visualization	3.4%	2.8%	2.3%			2.5%	
OEM & IP	4.2%	1.9%	1.4%			1.7%	
Automotive	1.2%	0.5%	0.4%			0.5%	

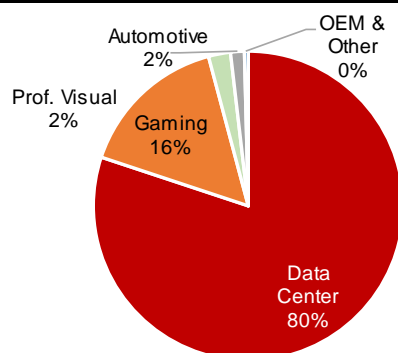
Source: Company data, Bloomberg, CMBIGM

**Figure 2: NVDA revenue trend and YoY growth**

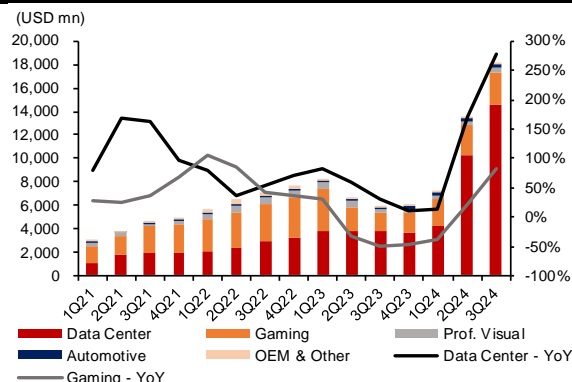
Source: Company data, Bloomberg, CMBIGM

**Figure 3: NVDA GPM and NPM trends**

Source: Company data, Bloomberg, CMBIGM

**Figure 4: NVDA revenue by segment (FY3Q24)**

Source: Company data, Bloomberg, CMBIGM

**Figure 5: NVDA segmental revenue and growth**

Source: Company data, Bloomberg, CMBIGM

## Key Takeaways of Nvidia (NVDA US) FY3Q24 earnings results:

- **FY3Q24 revenue** of US\$ 18.12bn, +34% QoQ/+206% YoY, 13%/13% above guidance/consensus of US\$16.0bn/US\$16.1bn.
  - **Data center:** revenue was US\$ 14.5bn (+279% YoY), **13% above consensus**, driven driven by ramp-up of HGX platform based on Hopper GPU architecture.
  - **Gaming:** revenue was US\$2.86bn (+81% YoY), **6% above consensus**, doubled vs pre-Covid, driven by back-to-school season with RTX ray tracing and AI technology available
  - **Professional visualization:** revenue was US\$ 416mn (+108 YoY), **2% above consensus**.
  - **Automotive:** revenue was US\$ 416mn (+4% YoY), **2% below consensus**, driven by in self-driving platforms based on Orin SoCs and ramp-up of AI cockpit solutions with global OEMs.
- **Adj. GPM:** 75.0% (+3.8ppts QoQ/+18.9ppts YoY), **above consensus 72.5%**, driven by higher data center sales.
- **Adj. EPS:** US\$ 4.02 +49% QoQ/+593% YoY, vs. market consensus of US\$ 3.36.
- **FY4Q24 outlook:** beat on both topline and margin.
  - Revenue was US\$ 20bn (+/-2%), beating market consensus of US\$ 17.9bn.
  - Adj. GPM ranged 74.5% to 75.5%, beating market consensus of 72.6%.

## Highlights by segment:

### Data Center revenue was US\$ 14.5bn, +41% QoQ, +279 YoY

- HGX H200 with new H200 Tensor Core GPU, the first GPU with HBM3e memory, expected to be available in 2Q24.
- Introduced AI foundry service (w/ AI Foundation Models, NeMo framework, DGX Cloud AI) to accelerate the development and tuning of custom generative AI applications, first available on Microsoft Azure, with SAP and Amdocs among first customers.
- Spectrum-X Ethernet networking platform for AI will be integrated into servers from Dell, HPE and Lenovo in 1Q24.
- Partnered with a range of companies on AI, including Amdocs, Dropbox, Foxconn, Genentech, Infosys, Lenovo, Reliance Industries, Scaleway and Tata Group.

### Gaming revenue was US\$ 2.9bn, +15% QoQ/ +81% YoY

- Launched DLSS 3.5 Ray Reconstruction for high-quality ray-traced images for intensive ray-traced games and apps, including Alan Wake 2 and Cyberpunk 2077.
- Released TensorRT-LLM for Windows, speeding on-device LLM inference by up to 4x.
- Added 56 DLSS games and over 15 Reflex games, bringing the total number of RTX games and applications to over 475.
- Surpassed 1,700 games on GeForce NOW, including launches of Alan Wake 2, Baldur's Gate 3, Cyberpunk 2077: Phantom Liberty, Forza Motorsport and Starfield.

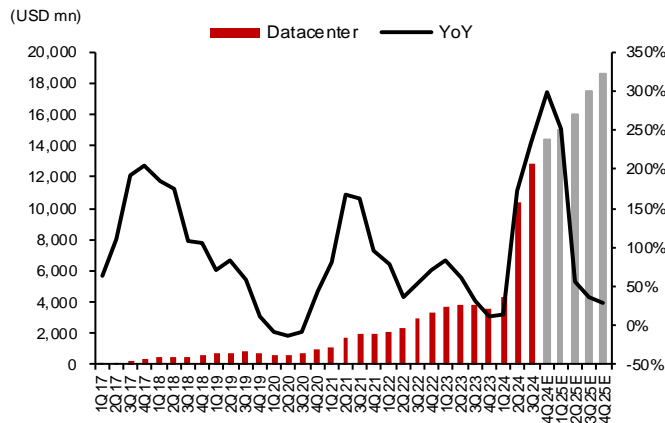
### Professional Visualization revenue was US\$ 416bn, +10% QoQ / +108% YoY

- Mercedes-Benz is using NVIDIA Omniverse to create digital twins to help plan, design, build and operate its manufacturing and assembly facilities around the world.
- A new line of desktop workstations with RTX 6000 Ada Generation GPUs and ConnectX smart interface cards for training smaller AI models, fine-tuning models and running inference locally.

### Automotive was US\$ 261mn, +3% QoQ/ +4% YoY

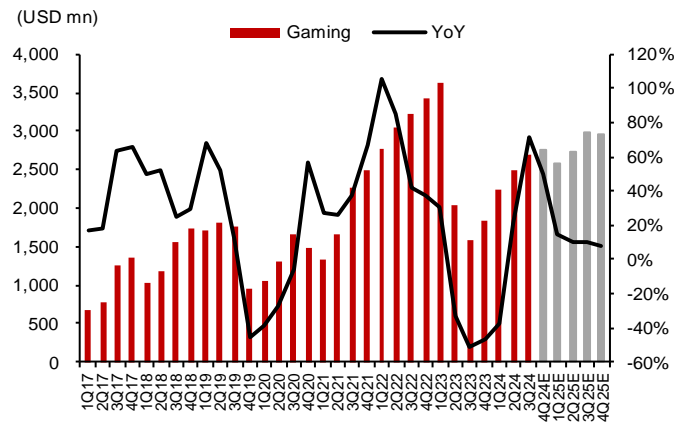
- Furthered collaboration with Foxconn to develop next-generation electric vehicles for global market, using the next-generation NVIDIA DRIVE Hyperion platform and NVIDIA DRIVE Thor system-on-a-chip.

Figure 6: NVDA datacenter revenue



Source: Company data, CMBIGM, Bloomberg

Figure 7: NVDA gaming revenue



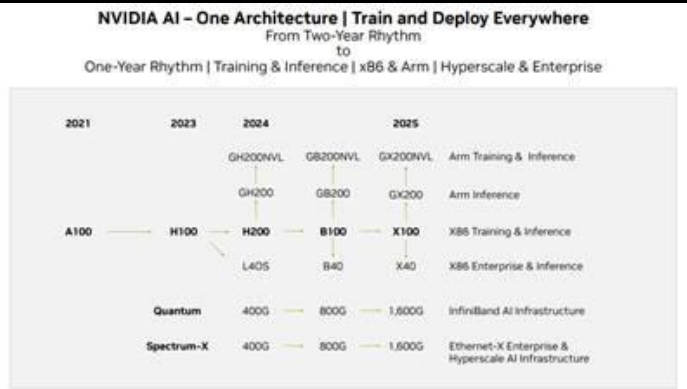
Source: Company data, CMBIGM, Bloomberg

Figure 8: Spec comparison of NVDA's H200, H100, A100

	H200	H100	A100 (80GB)
FP16 Tensor	1979 TOPS	1979 TOPS	624 TOPS
FP32 Tensor	989 TFLOPS	989 TFLOPS	312 TFLOPS
FP64 Tensor	66.9 TFLOPS	66.9 TFLOPS	19.5 TFLOPS
GPU Memory	141GB HBM3e	80GB HBM3	80GB HBM2e
GPU Memory Bandwidth	4.8 TB/sec	3.35 TB/sec	2 TB/sec
Interconnect	NVLink 4	NVLink 4	NVLink 3
	18 Links (900GB/sec)	18 Links (900GB/sec)	12 Links (600GB/sec)
Power	Up to 700W	Up to 700W	Up to 400W
GPU	GH100 (814mm <sup>2</sup> )	GH100 (814mm <sup>2</sup> )	GA100 (826mm <sup>2</sup> )
Manufacturing Process	TSMC 4N	TSMC 4N	TSMC 7N
Form Factor	SXM5	SXM5	SXM4
Architecture	Hopper	Hopper	Ampere

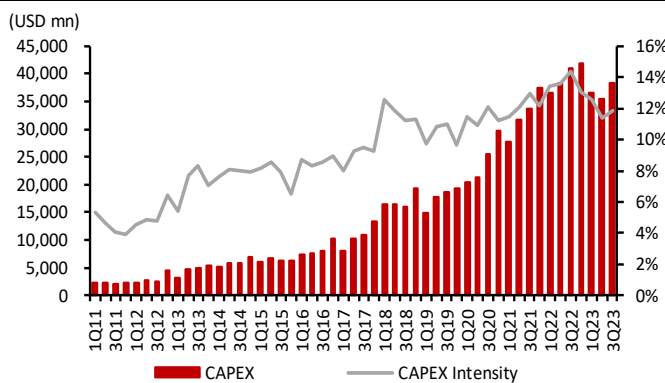
Source: Company data, CMBIGM

Figure 9: NVDA's GPU product roadmap



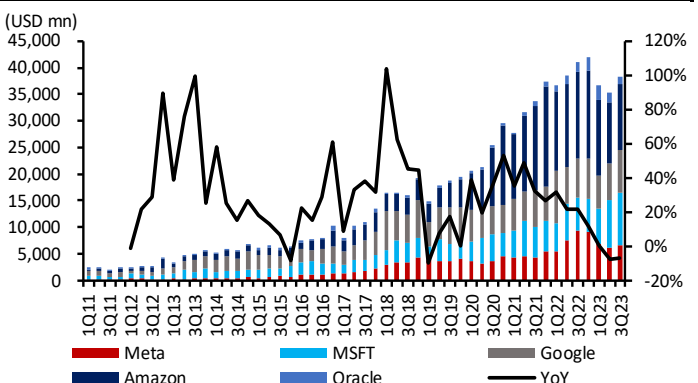
Source: Company data, Bloomberg, CMBIGM

Figure 10: Global key cloud players CAPEX and intensity ratio



Source: Company data, Bloomberg, CMBIGM

Figure 11: Global key cloud players CAPEX and YoY trend



Source: Company data, Bloomberg, CMBIGM

Figure 12: Global fabless/IDM semi: 3Q23 results and 4Q23 guidance

Company	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23E Guidance	FY24E Guidance	Comment/Outlook
<b>Revenue QoQ Growth</b>										
NVIDIA	8%	-19%	-12%	2%	19%	88%	34%	up 10%	-	* 3Q23 QoQ: <b>DC</b> +41%, <b>Gaming</b> +15%; <b>Pro Visual</b> +10%; <b>Auto</b> +3% * 4Q23: <b>Data Center</b> to grow strong QoQ, for both Compute and networking; <b>Gaming</b> to decline QoQ, on NB seasonality. * <b>China</b> : sales will decline significantly in 4Q, but will offer new regulation-compliant solutions in next few months.
AMD	22%	11%	-15%	1%	-4%	0%	8%	up 5%	-	* 3Q23 QoQ: <b>DC</b> +21%, <b>Client</b> +46%, <b>Gaming</b> -5%; <b>Embedded</b> -15% * 4Q23 QoQ: <b>Data Center</b> to grow strong DD %; <b>Client</b> to increase, <b>Gaming/embedded</b> to decline DD%. * <b>Data Center</b> to grow strongly in the next couple of quarters.
Intel	-11%	-17%	0%	-8%	-17%	11%	9%	up 7%	-	* 3Q23: Beat with broad-based strength across all segments; <b>Computing</b> done inventory burn in 1H23; <b>DC</b> returned to profitability; <b>Edge</b> showed signs of recovery; <b>IFS</b> strong due to higher packaging revenue and IMS nanofabrication tools. * 4Q23 QoQ: <b>CCG</b> to grow QoQ on normalized inventory and return of historical purchasing cycles; <b>DCAI</b> to increase QoQ with Xeon's strength offset by PSG decline; <b>Edge</b> to recover offset by persistent network weakness.
Broadcom	5%	4%	6%	0%	-2%	2%	5%	-	-	* 3Q23 is guidance. To be reported
MediaTek	11%	9%	-9%	-24%	-12%	3%	12%	up 12%	-	* 3Q23: <b>Mobile</b> : increase on inventory restocking and model launches; <b>Smart edge</b> : demand for wireless/wired improved QoQ; WiFi shipments Qtr record; <b>Power IC</b> : PMIC for SP/PC performed better due to restocking demand. * 4Q23: <b>Mobile</b> : grow faster than Q3, driven by Dimensity 9300 SoC; <b>Smart edge</b> : down QoQ on seasonality and cautious CE outlook; <b>Power IC</b> : Flatish QoQ revenue.
Qualcomm	4%	-2%	4%	-17%	-2%	-9%	2%	up 10%	-	* 3Q23 QoQ: <b>Handset</b> +4% QoQ, earlier stages of Android recovery; <b>IoT</b> -7% QoQ, soft industrial IoT; <b>Auto</b> +23% QoQ, 12th qtr of DD% YoY growth. * 4Q23 QoQ: <b>QCT handset</b> DD% growth; <b>IoT/auto</b> to decline consistent with last year. <b>QCT handset</b> boosted by normalization of Android inventory and flagship launches with Snapdragon 8 Gen 3. * CY23 <b>handset shipment</b> : Down mid-to-high single-digit % relative to CY22, improving from previous guidance.
Texas Instruments	2%	6%	1%	-11%	-6%	3%	0%	down 10%	-	* 3Q23: Broad weakness <b>ex-auto</b> . Weakness broadening <b>industrial</b> , <b>Personal electronics</b> up QoQ off low base. * 4Q23: Do not see significant changes in market behaviour into 4Q23E vs 3Q23.
Silergy	-2%	13%	-12%	-22%	-27%	5%	14%	up QoQ	-	* 3Q23: Driven by demand pull from <b>consumer electronics</b> downstream. * 4Q23: Up QoQ driven by <b>consumer electronics</b> demand recovery.
Infineon	4%	10%	15%	-5%	4%	-1%	1%	down 8%	EUR 17bn (+/- 500mn) +4% YoY	* 3Q23: QoQ growth for <b>automotive</b> , on share gain/content value per vehicle; Resilient performance in China EV market. * 4Q23: Strong <b>auto/MCU</b> ; Sluggish demand in <b>consumer electronics</b> , <b>communications</b> , <b>computing and IoT</b> .
STMicro	0%	8%	13%	2%	-4%	2%	2%	down 3%	-	* 3Q23: Driven by <b>automotive</b> , partially offset by lower revenues in <b>Personal Electronics</b> . * 4Q23: <b>Industrial</b> in Asia below as customers are re-assessing demands and undergoing inventory correction; May sustain to earlier next year.
ON Semi	5%	7%	5%	-4%	-7%	7%	4%	down 8%	-	* 3Q23: <b>Automotive/Industrial</b> achieved record revenue, driven by demand in both silicon and silicon carbide. * 4Q23: Cautious outlook due to soft tier-1 customers in Europe, inventory and rising risk of auto demand. * FY23: Lowered silicon carbide shipment target from US\$ 1bn to 800mn due to one auto OEMs demand reduction
WolfSpeed	9%	22%	-17%	14%	6%	3%	-16%	up 5%	-	* 3Q23: Smooth ramp of Mohawk Valley fab, offset partially by slower <b>industrial/energy</b> in China and Asian market. * 4Q23: Mohawk Valley ramp but offset by soft demand and for <b>industrial/energy</b> in China and Asia markets. Very heavy demand from <b>auto customers</b> from EU, US, China and Asia. Weak outlook for <b>industrial/energy</b> markets, particularly in China and Asia.
<b>Gross Margin</b>										
NVIDIA	66%	43%	54%	63%	65%	71%	73%	75%	-	* 3Q23: Driven by improved product mix from Data Center growth and lower net inventory provisions. * 4Q23: Continue to expand
AMD	48%	46%	42%	43%	44%	50%	51%	52%	-	* 3Q23 YoY: driven by strong client segment and better product mix. * 4Q23: Positive impact from strong data center biz and ramp of M300 products.
Intel	50%	36%	43%	39%	34%	40%	46%	47%	-	* 3Q23: Strong margin due to revenue strength and higher ASPs. Also backed on excellent execution of spending, efforts on dealing with under-loadings and re-sell of previously reversed inventories. * 4Q23: up QoQ.
Broadcom	76%	76%	75%	74%	76%	75%	74%	-	-	* 3Q23 is guidance. To be reported
MediaTek	50%	49%	49%	48%	48%	48%	47%	47%	-	* 3Q23: In-line with guidance. * 4Q23: expect GPM at 47%, plus or minus 1.5 ppts.
Qualcomm	58%	56%	57%	57%	55%	55%	55%	-	-	* 3Q23: QTL: EBT margin 66%, in-line with prev. expectations; QCT EBIT margin 26%, near the high-end of previous guidance on strength in handset and automotive revenues. * 4Q23: QTL: EBT margin 70-74%; QCT EBT margin 26-28%
Texas Instruments	70%	70%	69%	66%	65%	64%	62%	-	-	* 3Q23: did not give pricing as a reason for gross margin downturn, mainly due to lower revenue, higher manufacturing costs and reduced factory loadings; Depr also lowered GPM. * 4Q23 and 1H24: GPM expected to level off.
Silergy	54%	54%	52%	51%	45%	41%	43%	level off	-	* 3Q23: Benefited from better product mix, offsetting pricing pressure from market competition. * 4Q23 and 1H24: GPM expected to level off.
Infineon	43%	43%	44%	47%	47%	45%	44%	45%	45%	* FY24: Overall ASP to decline, 2.5ppts -ve effects to GPM from capacity idle costs.
STMicro	47%	47%	48%	48%	50%	49%	48%	46%	48%	* 3Q23: Improved product mix offset by higher manufacturing costs and unused capacity charges. * 4Q23: GPM guidance includes 130 bps of unused capacity charges.
ON Semi	49%	50%	48%	49%	47%	47%	47%	45.5% to 47.5%	-	* 3Q23: Headwinds from East Fishkill fab and factory utilization, offset by strong silicon carbide. Current UTR at 72% as silicon carbide UTR improved and silicon UTR trended lower; 3Q silicon carbide biz GPM > 40% on fully-loaded basis * 4Q23 beyond: GPMs mid-40%, Proactive lower UTR to mid to high-60% range; Silicon carbide biz GPM to perform at corporate level in Q4.
WolfSpeed	34%	35%	36%	31%	30%	27%	13%	16%	-	* 3Q23: Better materials manufacturing & 150mm materials costs/yields. Lower underutilization cost (Mohawk Valley). * 4Q23: GPM 12-20%, at mid-point includes -1700 basis points of underutilization costs on ramp up at Mohawk Valley fab.
<b>Days of Inventory (DOI)</b>										
NVIDIA	101	93	144	212	165	97	92	-	-	-
AMD	71	68	94	106	127	141	131	-	-	* 3Q23: Inventory levels in PC market normalized and demand began returning to seasonal patterns. * 3Q23: Embedded products in process of inventory destocking; Continue at least into next quarter. * 4Q23: Inventory digestion at cloud players approaching end; Server CPU market to return to growth.
Intel	118	113	131	139	152	130	127	-	-	* 3Q23: PC market completed inventory burn in 1H23 and returned back to normal seasonal purchasing cycles. * 4Q23: Server market inventory level normalizing; drive modest sequential TAM growth. * 4Q23: FPGA business with persistent inventory correction.
Broadcom	46	50	53	55	57	60	-	-	-	-
MediaTek	113	104	104	114	125	107	83	-	-	* 3Q23: Improvements on channel inventory, esp. smartphone. Reduced inventory for 5 consecutive quarters. * 4Q23: Inventory environment to continue to improve in coming quarters.
Qualcomm	88	101	117	154	149	157	149	-	-	* 3Q23: Android channel inventory has normalized. * 4Q23: QCT IoT revenue forecasts reflect the on-going lower demand and elevated channel inventory.
Texas Instruments	127	125	133	157	195	207	205	-	-	* 3Q23: DOI down 2 days QoQ, marking the turning point. Inventory up for US\$ 179bn, less than half the increase vs. the last quarter, given lower factory starts in the third quarter. * 4Q23: Near desired level of inventory, impact from lowering factory starts will further reflect in 4Q.
Silergy	100	102	156	199	219	162	119	-	-	* 3Q23: DOI dropped significantly with active inventory control and CE demand pull. * Inventory digestion should continue into the near future.
Infineon	121	124	120	140	143	149	153	-	-	* 3Q23: Auto backlog still equals to 2x annual auto products revenue; Certain auto customers to pull inventory in next quarter to ease inventory elevation; Further inventory digestion within consumer segment.
STMicro	102	103	95	100	121	124	111	-	-	* 3Q23: inventory level US\$ 2.87bn compared to US\$ 2.38bn in 3Q22. DOI 114 days, down from last quarter's 126 days. * 4Q23: Further decline in inventory with target DOI in range of 100-110 days by year-end.
ON Semi	137	134	125	134	157	161	163	-	-	* 3Q23: 64 days of bridge inventory to support fab transition and silicon carbide ramp; total inventory days +3 days QoQ; base inventory days declined 7 days QoQ. * 3Q23: Distribution DOI down 0.8 week QoQ at 6.9 weeks; Continue to proactively manage the distribution inventory.
WolfSpeed	159	137	179	161	162	172	178	-	-	* 3Q23: inventory up due to raw materials/MIP to support substrate ramp, Min. growth in finished goods inventory.

Source: Company announcement, Bloomberg, CMBIGM



## Computing (PC/Data center): 3Q23 results/latest guidance

Figure 13: Nvidia: CY3Q23 results and consensus/guidance

USD mn	4Q23 1/29/2023	1Q24 4/30/2023	2Q24 7/30/2023	3Q24 10/30/2023	4Q24E 1/30/2024	FY23	FY24	FY25E
Revenue	6,051	7,192	13,507	18,120	17,897	26,970	56,716	82,531
YoY	-21%	-13%	102%	206%	196%		110%	46%
QoQ	2%	19%	88%	34%	-1%			
Adjusted Gross Margin (%)	66.1	66.8	71.2	75.0	72.6			
<u>End Market Revenue</u>								
Data Center	3,616	4,284	10,323	14,514	14,426	15,005	43,547	67,145
YoY	11%	14%	171%	279%	299%		190%	54%
QoQ	-6%	18%	141%	41%	-1%			
Gaming	1,831	2,240	2,486	2,856	2,750	9,067	10,332	11,249
YoY	-46%	-38%	22%	81%	50%		14%	9%
QoQ	16%	22%	11%	15%	-4%			
Professional Visualization	226	295	379	416	421	1,544	1,511	1,792
YoY	-65%	-53%	-24%	108%	86%		-2%	19%
QoQ	13%	31%	28%	10%	1%			
Automotive	294	296	253	261	283	903	1,093	1,370
YoY	135%	114%	15%	4%	-4%		21%	25%
QoQ	17%	1%	-15%	3%	8%			
OEM & Other	84	77	66	73	76	455	292	323
YoY	-56%	-51%	-53%	0%	-9%		-36%	11%
QoQ	15%	-8%	-14%	11%	5%			

Source: Company data, Bloomberg, CMBIGM

Figure 14: Intel: CY3Q23 results and consensus/guidance

USD mn	4Q22 12/31/2022	1Q23 4/1/2023	2Q23 7/1/2023	3Q23 9/30/2023	4Q23E 12/31/2023	FY22	FY23	FY24E
Adj. Revenue	14,042	11,715	12,949	14,158	15,113	63,054	53,935	61,695
YoY	-32%	-36%	-15%	-8%	8%		-14%	14%
QoQ	-8%	-17%	11%	9%	7%			
Adj. Gross Margin (%)	43.8	38.4	39.8	45.8	46.5			
<u>Segment Revenue</u>								
Client Computing	6,644	5,767	6,780	7,867	8,461	31,772	28,875	33,083
YoY	-36%	-38%	-12%	-3%	27%		-9%	15%
QoQ	-18%	-13%	18%	16%	8%			
Datacenter and AI	4,420	3,718	4,004	3,814	4,025	19,444	15,561	17,174
YoY	-31%	-39%	-15%	-10%	-9%		-20%	10%
QoQ	4%	-16%	8%	-5%	6%			
Network and Edge	1,927	1,489	1,364	1,450	1,552	8,410	5,855	6,665
YoY	-8%	-30%	-38%	-32%	-19%		-30%	14%
QoQ	-10%	-23%	-8%	6%	7%			
Mobileye	565	458	454	530	623	1,869	2,065	2,590
YoY	59%	16%	-1%	18%	10%		10%	25%
QoQ	26%	-19%	-1%	17%	18%			
Intel Foundry Services	178	118	232	311	346	469	1,007	1,569
YoY	-27%	-24%	307%	299%	95%		115%	56%
QoQ	128%	-34%	97%	34%	11%			
All Other	308	165	115	186	178	1,090	644	672
YoY	-70%	-38%	-48%	-37%	-42%		-41%	4%
QoQ		5%	-46%	62%	-4%			

Source: Company data, Bloomberg, CMBIGM

Figure 15: AMD: CY3Q23 results and consensus/guidance

USD mn	4Q22 12/31/2022	1Q23 4/1/2023	2Q23 7/1/2023	3Q23 9/30/2023	4Q23E 12/31/2023	FY22	FY23	FY24E
Revenue	5,599	5,353	5,359	5,800	6,133	23,601	22,645	26,382
YoY	16%	-9%	-18%	4%	10%		-4%	17%
QoQ	1%	-4%	0%	8%	6%			
Adj. Gross Margin (%)	51.0	50.0	50.0	51.0	51.5			
<u>Segment Revenue</u>								
Data Center	1,655	1,295	1,321	1,598	2,302	6,043	6,516	10,512
YoY	42%	0%	-11%	-1%	39%		8%	61%
QoQ	3%	-22%	2%	21%	44%			
Client	903	739	998	1,453	1,516	6,201	4,706	6,131
YoY	-51%	-65%	-54%	42%	68%		-24%	30%
QoQ	-12%	-18%	35%	46%	4%			
Gaming	1,644	1,757	1,581	1,506	1,248	6,805	6,092	5,161
YoY	-7%	-6%	-4%	-8%	-24%		-10%	-15%
QoQ	1%	7%	-10%	-5%	-17%			
Embedded	1,397	1,562	1,459	1,243	1,068	4,552	5,332	4,468
YoY	1868%	163%	16%	-5%	-24%		17%	-16%
QoQ		7%	12%	-15%	-14%			

Source: Company data, Bloomberg, CMBIGM

Fig 16: Tech supply chain

Fig 10: Tech Supply Chain													
Company		Ticker	Mkt Cap (mn USD)	Price (LC)	P/E		P/B		ROE		Performance (%)		
					FY23E	FY24E	FY23E	FY24E	FY23E	FY24E	1M%	3M%	YTD
AI Chips													
Nvidia	英伟达	NVDA US	1,233,617	499.44	153.1	45.7	57.5	30.8	29.7	76.7	20.7	6.3	241.8
AMD	超威半导体	AMD US	192,503	119.16	44.9	31.5	3.5	3.4	6.4	8.1	17.0	10.1	84.0
Intel	英特尔	INTC US	183,986	43.64	45.9	23.3	1.8	1.8	2.7	6.1	25.0	31.7	65.1
Marvell	美满电子	MRVL US	47,178	54.68	25.7	35.7	3.0	3.0	8.8	8.0	10.5	(8.9)	47.6
Cambricon	寒武纪	688256 CH	9,043	155.00	-	-	14.9	16.7	(15.5)	(13.8)	14.3	(1.7)	184.1
Jingjia Micro	景嘉微	300474 CH	5,272	82.30	115.6	76.7	10.9	9.9	9.1	12.0	(1.0)	16.7	50.8
Hygon Info Tech	海光信息	688041 CH	21,841	67.10	126.1	91.7	8.6	7.9	6.6	8.4	13.3	29.5	67.2
Loongson	龙芯中科	688047 CH	5,451	97.07	425.7	134.8	10.1	9.7	1.4	6.3	10.1	2.2	13.6
Average					133.9	62.8	13.8	10.4	6.2	14.0	13.7	10.7	94.3
Memory													
SK Hynix	SK 海力士	000660 KS	73,628	130,800	-	16.6	1.7	1.6	(13.7)	10.1	3.6	12.3	74.4
Samsung	三星电子	005930 KS	331,885	72,000.00	46.1	16.0	1.4	1.3	3.0	8.2	4.5	8.0	30.0
Micron	美光	MU US	84,230	76.71	-	-	1.9	2.0	(11.4)	(4.6)	14.1	19.9	53.5
GigaDevice	兆易创新	603986 CH	9,143	97.90	97.9	47.1	4.2	3.9	4.3	8.5	0.5	6.3	(4.5)
Montage Tech	澜起科技	688008 CH	9,387	58.90	117.8	44.0	6.5	5.8	5.3	13.3	22.7	19.8	(5.9)
Giantec Semi	聚辰股份	688123 CH	1,468	66.26	58.6	26.6	5.1	4.3	8.8	16.8	13.9	22.6	(14.9)
Average					80.1	30.1	3.5	3.1	(0.6)	8.7	9.9	14.8	22.1
Foundry													
TSMC	台积电	2330 TT	483,360	585.00	18.5	15.6	4.3	3.6	25.3	25.2	5.2	8.1	30.4
UMC	联电	2303 TT	20,038	50.30	10.6	11.3	1.8	1.7	17.7	15.9	3.3	15.4	23.6
SMIC	中芯国际	688981 CH	31,441	53.61	72.3	62.6	3.0	2.9	4.1	4.7	(6.1)	9.8	30.3
Hua Hong Semi	华虹半导体	1347 HK	5,619	18.62	14.8	20.1	0.7	0.7	5.9	3.8	(3.4)	(2.8)	(31.7)
Average					29.1	27.4	2.5	2.2	13.3	12.4	(0.3)	7.6	13.2
OSAT													
TongFu Micro	通富微电	002156 CH	4,740	22.35	104.9	35.1	2.4	2.3	1.7	6.1	15.3	16.6	35.6
JCET Group	长电科技	600584 CH	7,938	31.69	32.3	20.0	2.2	2.0	6.4	10.0	11.4	2.5	37.5
Average					68.6	27.5	2.3	2.1	4.1	8.1	13.4	9.6	36.6
AI Server													
FII	工业富联	601138 CH	44,402	15.96	13.3	11.0	2.2	1.9	16.8	17.7	(1.3)	(28.9)	73.9
Inspur	浪潮信息	000977 CH	7,510	36.43	28.8	21.6	2.9	2.6	9.6	11.6	22.9	(15.3)	69.3
Lenovo	联想集团	992 HK	14,812	9.52	8.9	13.6	2.4	2.3	30.6	18.0	15.7	24.6	48.5
Average					17.0	15.4	2.5	2.3	19.0	15.8	12.4	(6.5)	63.9
Optical module													
Innolight	中际旭创	300308 CH	11,644	103.57	42.5	21.2	6.0	4.7	14.7	23.4	10.1	(17.8)	283.2
TFC Optical	天孚通信	300394 CH	4,440	80.28	50.9	32.8	10.3	8.3	20.3	25.3	(3.2)	(12.4)	216.7
Eoptolink	新易盛	300502 CH	3,292	29.57	40.7	30.7	3.2	3.0	8.6	10.3	5.0	3.8	88.1
Average					44.7	28.2	6.5	5.3	14.5	19.7	4.0	(8.8)	196.0
PCB													
WUS	沪电股份	002463 CH	5,582	20.89	27.4	20.1	4.2	3.5	15.3	17.5	6.6	(5.4)	75.5
Victory Giant	胜宏科技	300476 CH	2,486	20.58	19.5	14.9	2.2	1.9	11.7	13.4	7.1	(2.9)	59.0
DSBJ	东山精密	002384 CH	4,569	19.08	14.2	11.0	1.8	1.6	12.5	14.2	14.9	1.5	(22.8)
Average					20.3	15.4	2.7	2.3	13.2	15.0	9.6	(2.3)	37.2
Switch													
ZTE	中兴通讯	000063 CH	17,129	27.24	13.2	11.6	1.9	1.7	15.0	15.1	(6.4)	(25.0)	5.3
Unisplendour	紫光股份	000938 CH	8,543	21.33	25.8	21.3	1.8	1.7	7.1	8.3	6.5	(18.8)	9.3
RuiJie Networks	锐捷网络	301165 CH	3,295	41.41	34.7	25.8	5.0	4.5	13.5	16.5	11.1	(14.8)	21.4
Average					24.6	19.5	2.9	2.6	11.9	13.3	3.8	(19.5)	12.0

Source: Bloomberg, CMBIGM

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