US Semiconductors and Semi Equipment

SemiBytes: NVDA/MediaTek, Earnings in Retrospect, Terafab/Memory, CBRS

Equities

Americas

Semiconductors

Timothy Arcuri
Analyst
timothy.arcuri@ubs.com
+1-415-352 5676

Natalia Winkler, CFA
Analyst
natalia.winkler@ubs.com
+1-415-352 4626

Gianmarco Vella
Associate Analyst
gianmarco.vella@ubs.com
+1-415-352 4555

Aaryan Wadhwa
Associate Analyst
aaryan.wadhwa@ubs.com
+1-212-821 6481

Seth Cho
Associate Analyst
seth.cho@ubs.com

Stacy Che
Associate Analyst
stacy.che@ubs.com
+1-212-713 1857

Thoughts on NVDA's deal with MediaTek

Last week, NVDA and MediaTek announced an expanded strategic partnership that includes a ~$3.5B convertible bond investment (alongside Google). We view the investment as part of a broader collaboration spanning AI infrastructure, PCs, edge AI, and automotive and ultimately a challenge to AVGO. The investment itself is not material to NVDA, but the more important takeaway is MediaTek's adoption of NVLink Fusion – this is reminiscent of NVDA's investment and partnership with MRVL earlier this year (here) and further supports our view that NVDA is actively seeding its differentiated scale-up architecture across the custom ASIC ecosystem. Much like MRVL with AWS/ MSFT, we think MediaTek could ultimately help bring NVLink Fusion into additional hyperscaler AI programs over time, potentially including GCP. However, the partnership extends beyond the data center, also targeting consumer and automotive opportunities. On the custom SoC side, NVDA referenced an upcoming AI PC platform being developed with MSFT and MediaTek, in addition to the existing roadmap for gaming PCs, AI PCs, and DGX Spark. We also see the partnership providing NVDA with an opportunity to expand its automotive ecosystem into the mid-range vehicle segment, where QCOM has gained meaningful traction over the last several years and where MediaTek has emerged as a fast follower. We think MediaTek could leverage portions of NVDA's automotive software stack, potentially expanding NVDA's presence beyond the high-end vehicle segment that NVDA has traditionally targeted with its own hardware. UBS MediaTek view here.

Semis earnings in retrospect: fundamentals improving despite volatile stock reactions

Earnings season was fundamentally very strong with 25 of 30 companies we track guiding revenue above Street, but the market generally sold these solid prints as opposed to the past few Qs where the market was more willing to underwrite beats and fundamental upticks. In particular, CEVA, WDC, and ALAB posted the largest negative returns during the first trading day following the earnings announcement, while SITM and LRCX experienced the greatest positive returns (Figure 1 - Figure 2). By subsector, compute stocks highlighted wider dispersion, with NVDA and ARM up HSD% following earnings, while the remaining companies down HSD-LDD% despite strengthening fundamentals. With the exception of SMTC, most networking names declined post-earnings despite posting the largest beats among our coverage, a reflection of elevated investor expectations given persistent optical strength. Regarding analog, negative reactions were muted among the analog companies within our coverage as the proliferating upcycle is largely understood by investors - although we believe there is upside as many verticals are still below LT trendline and DC provides a secular growth driver. Finally, the majority of SPE names declined initially following earnings given elevated expectations that only few names were able to meet/beat - most notably LRCX, ENTG, and TER. Overall, we believe fundamentals are improving throughout our coverage despite the earnings volatility experienced during CQ2 earnings, and continue to favor AMD, MU, LRCX, ENTG, and TXN.

Terafab memory update - MU IP remains the most likely enabler

We continue to closely monitor the evolution of SpaceX's Terafab given its significance to the broader semicap supply chain (we discussed here, here). More recently, we highlighted the fact that Terafab's hiring efforts have included both Memory Design Engineers and Memory Integration Engineers. While this confirms its intentions to make memory, several questions remain unanswered - most notably, where Terafab will source

This report has been prepared by UBS Securities LLC. **ANALYST CERTIFICATION AND REQUIRED DISCLOSURES, INCLUDING INFORMATION ON THE QUANTITATIVE RESEARCH REVIEW PUBLISHED BY UBS, BEGIN ON PAGE 6.**

its memory IP. Our team's recent discussions with industry contacts suggest that it is highly unlikely Samsung or SK Hynix (covered by Nicolas Guadois) would extend licensing of their core memory IP to Terafab - or, presumably, to any other non-Korean entities. This leaves MU as the more likely source of IP in our view, though this would probably be part of a broader discussion around the US government's approach with CXMT. Separately, feedback from our channel check suggests that SPCX has a large supply agreement with MU. Another alternative could be to lean on INTC's floating-gate memory IP (although the technology is outdated). Finally, as previously discussed here, we now believe even more strongly that the emergence of another potential supplier capable of producing memory at scale - if successful - should ultimately prompt Korean companies to invest in US front-end manufacturing for memory (more likely for DRAM), also noting that, for example, Samsung has ample land available to add capacity in Taylor, TX. Overall, we continue to view this development as supportive of SPE suppliers.

We think CBRS' 165MW Finland project largely captured within previously announced EU capacity

Cerebras announced a 165MW AI data center in Mikkeli, Finland with Compute Nordic, consisting of a phased build-out from 50MW (already underway) to then 80MW and ultimately 165MW under long-term contracted agreements. However, we believe this announcement was largely contemplated within the company's prior announcement of ~200MW in European capacity (here) rather than a material step-up in new data center collocation infrastructure, but importantly, at this scale, CBRS is seeing its projects become increasingly strategic for the local stakeholders as the press release highlights a network of local partners and national organizations involved in the buildout. More broadly, we have fielded a notable increase in investor questions on CBRS over the past two weeks, which we think reflects growing interest in the ultra-fast inference market, CBRS' traction with OAI and AMZN, and heightened focus on the upcoming lockup expiration that we discussed previously (here).

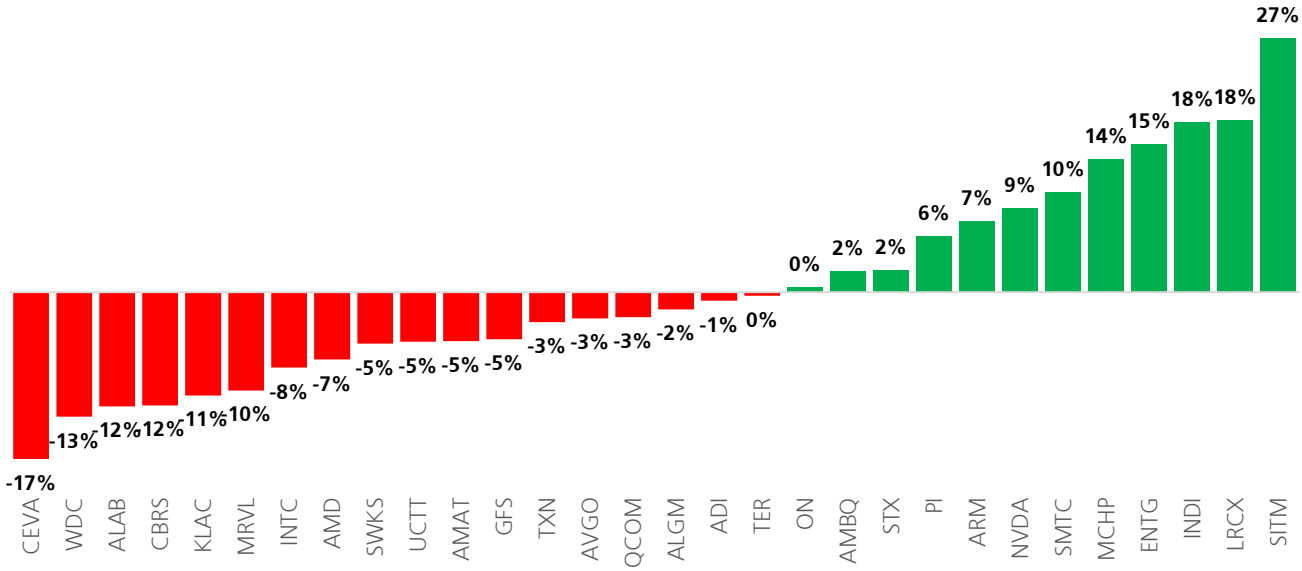
SEMIS EARNINGS IN RETROSPECT

Figure 1: CQ2 Semis Earnings Stock Reaction - Granular Table

	Ticker	Guidance vs Street Revenue	Guidance vs Street EPS	Stock Reaction T+1
Compute	NVDA	3.0%	N/A	9%
	ARM	2.7%	6.8%	7%
	AMD	3.8%	N/A	-7%
	INTC	8.1%	40.7%	-8%
	CBRS	2.4%	N/A	-12%
	CEVA	0.0%	N/A	-17%
Smartphone	QCOM	0.3%	-9.7%	-3%
	SWKS	0.9%	-1.6%	-5%
Networking	SMTC	13.9%	43.8%	10%
	AVGO	0.4%	N/A	-3%
	MRVL	3.8%	1.9%	-10%
	ALAB	33.5%	50.0%	-12%
Storage	STX	8.4%	29.4%	2%
	WDC	0.9%	4.2%	-13%
Analog	SITM	62.9%	62.7%	27%
	INDI	-0.6%	-33.3%	18%
	MCHP	3.1%	16.3%	14%
	PI	8.9%	22.0%	6%
	AMBQ	8.0%	42.9%	2%
	ON	1.6%	4.8%	0%
	ADI	5.5%	9.0%	-1%
	ALGM	2.7%	-2.0%	-2%
	TXN	4.9%	10.1%	-3%
SPE & Foundry	LRCX	13.9%	16.8%	18%
	ENTG	4.7%	6.4%	15%
	TER	18.0%	29.0%	0%
	GFS	0.5%	4.1%	-5%
	AMAT	8.6%	10.1%	-5%
	UCTT	8.7%	22.4%	-5%
	KLAC	1.9%	1.8%	-11%

Source: Company reports, UBS research, FactSet.

Figure 2: 18 out of 30 companies within our coverage posted negative stock returns following CQ2 earnings



Source: Company reports, UBS research, FactSet.

Valuation Method and Risk Statement

We use various valuation techniques such as P/E, EV/FCF for valuing the companies in this report. Risk factors include but are not limited to macroeconomic factors such as a downturn in the economy, a disruption of international trade, technological disruption due to new inventions, or business model innovation whereby structural changes in the industry alter the future course of unit sales, ASPs, and revenues.

Advanced Micro Devices Inc:
We value AMD based on a NTM P/E methodology. Upside risks to our AMD thesis include higher-than-anticipated penetration into cloud/data center servers and better traction in AI. Downside risks include margin pressure in the form of aggressive price competition from Intel and an inability to effectively shift production to TSMC in a timely manner.

Entegris Inc:
Our valuation is based on a P/E multiple methodology. ENTG more often than not is a premium grower and we could see more upside on rev growth given solid execution track record and it could very well spin its capacity into further accretive deals. On the flip side, our profitability ests could face cuts on intensified competition and broad cyclical concerns. The semiconductor industry revenues have historically been correlated to global GDP. From a macro standpoint a deep recession with demand destruction for ENTG end customers is a potential downside risk.

LAM Research Corp:
LRCX: We use a P/E valuation methodology on LRCX. Key downside risks include Macro, Trade, Regulatory risk competition. LRCX has high exposure to memory and NAND in particular. Any demand shocks to memory could also impact our view on LRCX. On the other hand faster than expected AI, 5G uptake serve as upside risks.

Micron Technology Inc:
MU: Memory industry is highly volatile. To arrive at our PT we use a valuation method solely based on P/TBV. Memory has been fairly correlated to global GDP. Therefore from a macro perspective there could be potential downside to our PT should economic conditions worsen and leading to demand destruction. Should ASP declines be more severe than our expectations, there could be more downside in the stock. Scaling both DRAM and NAND is highly complex and risks on the Technology front abound. There could be further downside should technology migration be slower than we expect. On the upside, while we expect ASPs to decline on account of incremental supply addition, any delays to the timelines could moderate the growth of supply and create an upward bias to ASPs and MU. Other risks include a faster than expected adoption of AI driving up memory content in servers and cars.

Texas Instruments Inc:
TXN: Our valuation is based on an EV/FCF multiple methodology. Texas Instruments faces a variety of risks, including rapidly changing technology, intense competition, high level of capital investment, pricing pressure, and cyclical end-market demand.

