US Semiconductors and Semi Equipment

Key Takeaways from Semis Bus Tour

Equities

Americas

Semiconductors

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We hosted in-person investor meetings with management from NVDA, MU, and ADI and also hosted dinner with a prominent developer of data center infrastructure. The tone from all three company meetings was expectedly bullish, but we thought ADI was the most incrementally bullish. Regarding data center infrastructure, our dinner re-affirmed the view that there could ultimately be a mismatch between semiconductor IT rack shipments and powered shell availability as timelines for large projects are taking longer due to a variety of factors. Below, we provide our key takeaways, with more detailed meeting notes at the back:

NVDA: we think NVDA's tone remained exceptionally bullish on demand, with the key constraint increasingly shifting toward land/power/shell rather than end demand. Importantly, NVDA believes its systems are uniquely durable and fungible, which should allow available powered shells to be deployed quickly for NVDA, while other accelerators may have a harder time coming to market as infrastructure tightens. Management also emphasized that supply remains the limiting factor across memory, wafers and other components, with customers ready for additional capacity and NVDA actively working to secure memory supply. Second, financing looks like an increasingly important unlock for AI infrastructure, with NVDA arguing it is currently the only truly financeable compute asset given its fungibility, durability and secondary demand; residual value guarantees are already moving lower, and management expects financing costs to continue declining as the asset class matures, which could further expand available capital for AI build-outs. Finally, open-source models appear likely to become an incremental opex driver for NVDA, with the vast majority of its $29B cloud commitments being used internally to train NVDA's own models, alongside continued investment in agentic solutions. More broadly, NVDA is pushing to become the go-to resource for open-source models as enterprises stand up models around their own data. Lastly, the company re-emphasized a slide from its recent NDR in which it estimates frontier model developers indirectly represent ~40% of its shipments to hyperscalers (or ~20% of total company revenue) – a number it points out is much lower than some key peers like AVGO.

MU: the meeting focused almost entirely on the factors underpinning the DRAM industry's low-DD% Y/Y bit supply outlook over C2027/2028 - while commentary on buyback was largely unchanged. On the former, we sensed that the supply headwinds that memory suppliers are facing are, to some extent, larger than we/many investors appreciated, starting with diminishing bit gains from node transitions (e.g., ~40% more bits going from 1z to 1a, ~35% from 1a to 1b, ~30% from 1b to 1c - and the transition to 1-delta very much along the same path), to larger die sizes (e.g., trade ratio going to 4:1 at HBM4E), and, interestingly, from increasing ECC overhead as the DRAM mix shifts to DC. On buybacks, MU reiterated its intensions to return 100% of excess cash "over time", with target cash levels expected to be achieved by FQ1. Notably, MU's 10K (filed on Friday 10/9) disclosed a new ~$33B repurchase authorization - and after speaking with the company, we believe this to represent ~1Q (Feb-27) worth of share repo and is just a "starting point" for a much larger authorization that could come in early C2027. See our separate takeaways on MU's repo authorization here.

ADI: this might have been the most incrementally bullish meeting as management struck a very positive tone surrounding the strength of the current upcycle, with bookings remaining strong despite higher interest rates. In particular, the company is benefiting from secular growth drivers in areas that cumulatively represent ~50% of ADI's revenue (ATE + A&D + Data Center + ADAS (half of autos)). The remaining ~50%



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of total revenue is still below prior peak and ADI still does not see signs of customers building inventory, so thus believes there is a long runway of growth still ahead. Regarding data center, management suggests there is ~$1.0-1.5B of incremental analog market SAM per GW of installed IT capacity. Ergo, based on our numbers as assuming ADI can capture share of this wallet that is consistent with its overall analog share, this could easily add ~$6-7B/yr in revenue for ADI just over the next 3yrs. Finally, management suggested A&D is currently at a $2B/yr run-rate, ATE >$1B/yr run-rate, DC $2B/yr run-rate, and Energy $500MM/yr run-rate.

NVDA

Colette Kress - CFO

Toshiya Hari - VP of IR and Strategic Finance

- **Demand Environment / LPS.** Demand remains well ahead of supply, with management indicating some customers will not receive all requested GPUs given ongoing industry constraints. NVDA characterized land, power, and shell (LPS) capacity as both durable and fungible, and noted demand for its latest products, including Vera Rubin, remains exceptionally strong. Management would like to bring additional LPS capacity online and suggested customers are prepared to absorb incremental deployments. Even under a high-end scenario of 70-100% growth in 2027, the company believes demand would be sufficient to consume available supply. Should LPS constraints become more acute, NVDA could benefit from brownfield upgrade opportunities.
- **HBM Supply / Consignment.** NVDA continues to emphasize its ability to secure and manage memory supply, highlighting strong HBM availability and a willingness to help customers optimize memory procurement for both GPU and CPU deployments. Management noted it remains responsible for memory throughout the life of a system and suggested few companies have been as effective in securing constrained memory supply. Given current HBM tightness, management believes customer-led HBM consignment decisions would likely require significant advance planning.
- **System Optimization / HBM de-spec.** Management described ongoing efforts to optimize system architectures for customers, though it pushed back on the notion that all optimization efforts equate to HBM de-speccing. Customers continue to request a variety of configuration changes, and NVDA sees opportunities to improve efficiency across pre-training, post-training, and DPU-related workloads. While memory remains a critical system component, management acknowledged that lower HBM configurations could make sense in select use cases.
- **Open-Source Models.** NVDA views open-source models as increasingly competitive with frontier offerings and indicated many users may have little reason to move away from open ecosystems. Management suggested open models help inform future hardware requirements, while the company's own open-source models are approaching frontier-model performance. Longer term, NVDA sees a substantial opportunity among enterprise and sovereign customers seeking greater control of their AI stack.
- **Open vs. Closed Models.** While open-source models generate the majority of tokens today, monetization remains concentrated within proprietary ecosystems. Management expects many enterprises to deploy and operate their own models over time and highlighted platforms such as Hugging Face as important repositories for future model development. However, customers continue to value providers that maintain, support, and assume responsibility for models, supporting an enduring market for proprietary solutions.
- **Sovereign / Enterprise AI.** Sovereign AI customers increasingly want ownership of both their data and underlying models. Management noted these deployments often begin with an open-source model before being customized with proprietary data and capabilities. NVDA emphasized that much of the associated software stack is already incorporated into its business model.
- **Software / Cybersecurity.** Management highlighted cybersecurity as an increasingly important AI workload, though it does not expect NVDA to be the sole provider of security-related solutions. Beyond hardware, the company continues to see monetization opportunities through CUDA libraries, developer tools, and other software offerings.
- **Opex / AI Investments.** A significant portion of spending is being directed toward internal AI model development. Management identified engineering talent and compute capacity as its two most important strategic inputs and suggested acqui-hires could be an effective mechanism for expanding technical capabilities.
- **GPU Financing / GPUs as an Asset Class.** NVDA argued that GPUs have evolved

into a durable, fungible, and financeable asset class, claiming the company is uniquely positioned in this regard. Management pointed to strong resale values and ROI trends for prior-generation A100 systems and highlighted growing interest in GPU-backed financing structures. Current arrangements typically feature ~25% residual value guarantees, though management would like to reduce those guarantees over time. Financing costs continue to decline, supported by a broad pool of buyers willing to acquire excess capacity. Longer term, management compared the potential evolution of GPU financing markets to those seen in aircraft, mortgage, and automotive financing.

- **Infrastructure / Refresh Cycle.** Nearly all recognized revenue today is tied to greenfield AI deployments. Customers remain reluctant to retire existing infrastructure because doing so would reduce available compute capacity, and older systems continue to generate attractive returns and remain actively deployed. While a refresh cycle is expected eventually, management indicated customers currently prefer to maximize utilization across all available capacity.
- **Hyperscalers / Neoclouds.** Management pushed back on the view that hyperscalers and neocloud providers represent mutually exclusive deployment models. CSPs remain highly focused on securing additional NVDA GPUs, with AWS cited as a customer that still requires substantially more capacity. Given continued supply constraints, customer demand for NVDA infrastructure remains elevated. For neocloud operators, management identified financing and LPS availability as the primary constraints.
- **OpenAI / Anthropic.** NVDA described OpenAI as continuing to scale rapidly while remaining a significant consumer of NVDA compute. Anthropic has already deployed Blackwell systems alongside existing Hopper infrastructure and has reportedly renewed capacity commitments at higher pricing levels according to NVDA. NVDA indicated it is too early to assess its eventual share of Anthropic's infrastructure footprint but suggested Anthropic's collaboration with SpaceX is contributing to incremental demand.
- **Model-Layer Economics.** Management acknowledged a future characterized by multiple frontier-model developers in the U.S. and multiple open-source competitors in China. However, NVDA emphasized that its positioning is largely agnostic to which model providers ultimately win, as the company expects to benefit broadly from AI infrastructure demand regardless of model-layer outcomes.
- **Inference.** Management expects inference demand to remain a major growth driver as AI workloads increasingly diversify between latency-sensitive and reasoning-intensive use cases. Rather than converging on a single approach, NVDA believes multiple inference architectures and deployment models will coexist over time.

MU

Satya Kumar - CVP of IR and Treasury

- **Bit supply.** Beyond HBM migration, mgmt highlighted diminishing bit gains from node transitions, larger dies at higher speeds, and TSV area penalties in higher-density DRAM modules. Increasing DC mix also requires more ECC bits. For MU, low-20% bit supply growth is a point in time assessment, not a LT assumption.
- **HBM.** The trade ratio increases from 3:1 for HBM3E to 4:1 for HBM4E, with HBM4E beginning to ramp in C2027. Mgmt emphasized the increasing importance of reliability as deployments scale out.
- **Capital return.** MU expects to reach target cash in FQ1. Reinvestment is the top priority, followed by maintaining a strong BS, growing dividends, and returning 100% of excess cash "over time". Historically for MU, repo has exceeded dividends, with opportunistic repurchases exceeding programmatic. Recall the CHIPS Act currently limits quarterly repurchases to less than TTM FCF minus CHIPS Act funding minus dividends paid - with these limitations to last for the next three years.
- **NAND.** Mgmt expects a fifth consecutive year of share gains. MU has decided to exit mobile/consumer and is focused on DC, PC, and other end-markets; the Singapore fab will expand its NAND business. DC requires higher reliability, and management highlighted NAND writeability considerations without providing a view on future bit fungibility.
- **China.** 1-gamma is >50% of production, with EUV in full volume; 1-delta starts in 2H27 and uses more EUV. Mgmt described MU as 2–3 nodes ahead of CXMT. China is expected to be a single-digit % of C2027 revenue, with restrictions limiting DC participation and smartphone NAND.

ADI

Rich Puccio - CFO

- **Industrial.** Management suggests the broad markets portion of industrial has been growing over the past 4 quarters, which is layering on top of persistent A&D and ATE strength. Additionally, the company is starting to see AI demand spill into various industrial end markets, including industrial automation. Overall, 50-60% of industrial is still below prior peak, suggesting ADI's industrial recovery has a long way to go.
- **Auto.** ADI has outgrown SAAR by ~15% over the past 5 years, driven by share gains and content growth in various applications such as camera, connectivity, microphones, and immersive cabin experience.
- **Power/DC.** ADI is well positioned for vertical power, and more specifically 800V architectures, through the Empower acquisition. Management expects broad 800V adoption in 2028. The company has sized the data center analog SAM at $1.0-1.5B per GW, with an incremental ~100GW of DC infrastructure capacity coming online over the next 5 years.
- **Inventory.** ADI will add inventory in FQ4, but DOI could be flat. Overall, the channel is still quite lean, with the vast majority of inventory being industrial related. Management has not seen signs of restocking at its customers.
- **Pricing/GM.** Big foundry partners are increasing prices across ADI's nodes, but ADI has been passing these inflationary costs to its customers. Internal utilization rates for ADI are at or above the optimal level, and so utilization is no longer a bigger tailwind to GM.
- **Segment Modeling.** ADI sized its various segments within Industrial. In particular, A&D is currently at a $2B/yr run-rate, ATE >$1B/yr run-rate, DC $2B/yr run-rate, and Energy $500MM/yr run-rate. Separately, about half of auto revenue is ADAS-related, suggesting ~$1.5-2.0B/yr run-rate.

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.