POST NVIDIAS Q2 2023 EARNINGS WILL THE AI HYPE KEEP DRIVING EQUITY PERFORMANCE

Christopher Gannatti - Global Head of Research, WisdomTree. 12 Sep 2023

On 23 August, we saw another set of incredible results from Nvidia.

The company's data centre business grew revenues more than three times in six months, hitting \$10.323 billion and a figure of more than 171% growth year-over-year. Guidance for the current quarter is now \$16 billion, while consensus was in the range of \$12.6 billion¹.

Looking at Figure 1, we see Nvidia's year-to-date return alongside Taiwan Semiconductor Manufacturing Co. (TSMC), SK Hynix, and the Nasdaq 100 Index.

350 300 Cumulative Growth of 100 250 149 150 137 109 100 50 30/12/2022 13/01/2023 07/04/2023 05/05/2023 10/02/2023 24/02/2023 10/03/2023 24/03/2023 21/04/2023 02/06/2023 -Nasdaq 100 Index -SK Hynix -TSMC

Figure 1: Year-to-date performance, Select Companies in the AI Semiconductor Ecosystem (31 December 2022 to 25 August 2023)

Source: Bloomberg. Historical performance is not an indication of future performance and any investments may go down in value.

It's clear that the train of artificial intelligence (AI) adoption is leaving the station, but it's possible that the journey itself is still in the early



stages.

As investors consider Nvidia's valuation in the autumn of 2023, it is rational to think of two primary factors. One is whether this forecast, that the total market size for AI-accelerating semiconductors in 2027 will be around \$150 billion, will prove true (it might be too high…or too low). The other regards how much market share Nvidia itself will be able to maintain.

From what we can see today, the biggest risk to Nvidia's continued domination of AI computational resources would be the 'Big 3' cloud providers 1) designing their own chips and 2) incentivising their customers to use them for their AI workloads. We say this because it is difficult to picture either AMD or Intel, on their own, making a significant dent.

While Nvidia might be perceived as being at the centre of the AI megatrend, exemplifying the hopes and predictions of many with regard to the topic, Nvidia graphics processing units (GPUs) do not operate in isolation. Nvidia doesn't even fabricate the physical chips.

TSMC fabricates the actual H100 chips that firms are presently racing to buy. TSMC is the most significant fabricator of semiconductors in the world. With all the attention on AI, one would assume that TSMC would be on fire (like Nvidia), but that has not been the case.

Even if AI-related semiconductors are dominating the headlines, they do not yet dominate the full global market for semiconductors.

Consider this question: in 2023, are people or companies racing to buy new smartphones or personal computers?

These are two important areas to monitor when thinking about the totality of the semiconductor market and, while they had been hot in recent years, in the ongoing cyclical trend, 2023 is one of the colder years for this type of demand.

Some might be surprised to learn that AI-chips are only responsible for about 6% of TSMC's total revenue. This is one of the signals that tells us that we are still early in our AI adoption journey. However, TMSC has also stated that this figure should compound at roughly 50% per year for the next five years and, in 2027 AI-related chips, should be roughly 13% of TSMC's total revenue².

Another consideration regards the relative sizing of TSMCs customers, as it helps in understanding the revenue picture that much better. With all the Nvidia attention, we might be tempted to assume that it is TSMC's biggest customer, but that honor actually goes to Apple. In fact, if we add up the estimated share coming from Qualcomm, AMD and Nvidia together, it would be very similar to Apple's estimated revenue contribution³.

TSMC does get some attention by virtue of being in Taiwan amidst the 'US vs China' geopolitical tensions, but Nvidia's H100 also needs high bandwidth memory to function. SK Hynix is the primary provider. Its next generation chips can process the equivalent of 230 high definition, full-length movies in a second. The dynamic random-access memory (DRAM) market that relates to AI is about 16% of revenue today but should grow to roughly 41% of the total by 2025⁴.



How might performance of the AI-theme evolve from here?

As we approach the latter part of 2023, we know that AI has been a catalyst for some of the world's largest tech companies to drive US equity markets higher for the better part of the year so far. After a rough 2022, the change in performance from negative to positive was welcome. However, we know that investors overestimate the short term and underestimate the long term, so there is a chance that the AI journey will take longer and we'll have some ups and downs performance-wise. The funny thing is that we're already seeing a diverse performance experience across the space.

Conclusion: riding the multi-year trend in AI

AI research and advancement is occurring all the time. In a year like 2022 it was nearly impossible to talk about it due to poor market performance and a rough macro backdrop. Now, in 2023, it's nearly impossible not to talk about it and people are reaching for exposure in myriad ways. We can think about it like this:

- 1. Nvidia has moved a lot and may continue to move, but in H2 2023 it is difficult to rationalise chasing Nvidia as a single stock too much further in the near term. We have seen a lot of interest in strategies focused on semiconductors, but there is really only one Nvidia.
- 2. The Nasdaq 100 Index is extremely top-heavy in terms of putting lots of weight in a narrow set of very large tech companies. Many of these companies have developed or are developing large language models to push AI forward. It's possible that AI is the catalyst that keeps growth in favour within US equities in the coming decade and leads to these companies continuing in the veritable equity driver's seat.
- 3. Software is an interesting area for consideration. As the first part of 2023 was transpiring, many were thinking about a potential recession later in the year. Spending on software was not necessarily in an upward trend. In H2 2023, while the idea of a recession is fading away, the idea of 'spending on software' has shifted more towards 'spending on AI.' One of the areas we continue to look at is cybersecurity: any time customers are expanding access to new technologies, it needs to be accompanied by increased focus on security.

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Sources

 $^{^{1}}$ Source Moore et al. "NVDA reports another exceptional quarter as AI spending surges."



Morgan Stanley Research. August 24, 2023.

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 $^{^2}$ Source Chan et al. "Correction: AI Semi Demand Outshines; keep OW." Morgan Stanley Research. July 20, 2023.

³ Source Chan, 2023.

⁴ Source Sohn, Jiyoung and Yang Jie. "This Company is Nvidia's AI Chip Partner—and Its Stock is Soaring." Wall Street Journal. August 27, 2023.

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