NVIDIA: WE ARE WATCHING HISTORY

Christopher Gannatti — Global Head of Research
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Nvidia's earnings report brought much intrigue. Consider this headline from the *Financial Times*:

"Nvidia Is Nuts, When's the Crash?"[1]

The results over the past year have been amazing, yes, but there are no precedents for a company growing from a market capitalization below a $1 trillion to $2 trillion in less than a year.[1]

Does the hype match reality?

The CURRENT share price is not necessarily a reflection the past, but rather a view on the FUTURE. One analyst believes Nvidia's current valuation would be well supported IF the company can grow their current revenues tenfold and do so with an operating margin around 55% over the coming 10 years.

We cannot know today if that will happen, but note the entire semiconductor market—meaning all sales of all semiconductors, not just AI accelerators—has been $500–$600 billion in recent years.[3]

Continued execution on an exponential growth thesis, while not impossible, is a very high hurdle to clear.

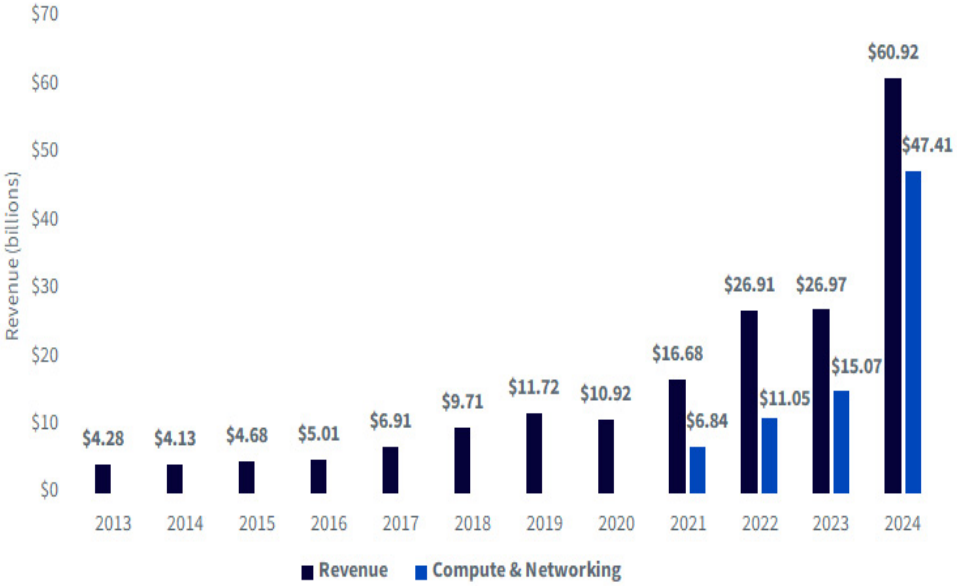
What Does a 10-Times Revenue Jump Look Like?

Nvidia has been a public company for a long time—it went public in 1999 at $12 per share.[1] Before the extreme feelings of FOMO (fear of missing out) kick in, remember the role of graphics processing units (GPUs) in artificial intelligence applications did not hit the mainstream until the so-called "AlexNet" moment in 2012.[5]

This means that we can look at Nvidia's revenues, year by year, for quite a long time in figure 1.

- Each year is specifying the revenue figure in the 10-K, so 2013 represents Nvidia's revenues for the 12 months leading up to January 31, 2013, as reported in the 2013 10-K. The whole company earned $4.28 billion in revenues during that period, and then during the 12 months leading up to January 31, 2024, the whole company earned $60.92 billion: more than a simple 10 times increase. We also see exponential shape to the growth.
- While the total revenue on the income statement is a standardized accounting field, companies have the flexibility to denote different sources of that revenue based on the stories that they want to portray related to their business. Over time, the way these categorizations are made can change. We found that Nvidia denoted a "Compute and Networking" segment of revenues from 2021 onwards. This segment is comprised of Nvidia's Data Center accelerated computing platforms and end-to-end networking platforms. The focus on Nvidia in 2024 lies in the demand for its AI accelerator chips for data centers, so there is value in looking at this particular segment of revenues.

Figure 1: Nvidia's Annual Revenues over Time



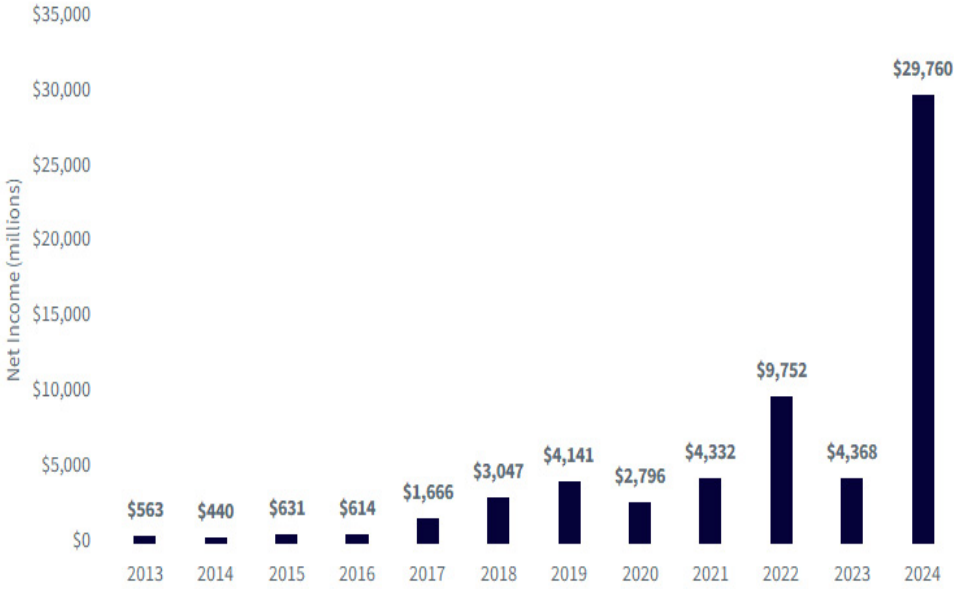
Source: Nvidia's Securities and Exchanges Commission (SEC) filings, specifically the annual 10-K reports for each of the specified years. For the period 1/31/13–1/31/24. Past performance is not indicative of future results.

What about Earnings?

Now, revenues are not profits. However, the growth story of Nvidia's net income is even more impressive than the revenue growth component, as we see in figure 2:

- For the 12 months to January 31, 2013, we see Nvidia's net income was $563 million. For the 12 months leading up to January 31, 2024, we see this figure jumped to almost $30 billion.
- Most of this growth, by far, was again based on being well positioned for the massive, unprecedented build-out of compute infrastructure kicked off by ChatGPT and generative AI. In the 12 months to January 31, 2023, net income was roughly $4.4 billion—significant growth from $563 million, but nothing close to the near $30 billion seen over the next year.

Figure 2: Nvidia's Profits over Time



Source: Nvidia's Securities and Exchanges Commission (SEC) filings, specifically the annual 10-K reports for each of the specified years. For the period 1/31/13–1/31/24. Past performance is not indicative of future results.

Who Are Nvidia's Customers?

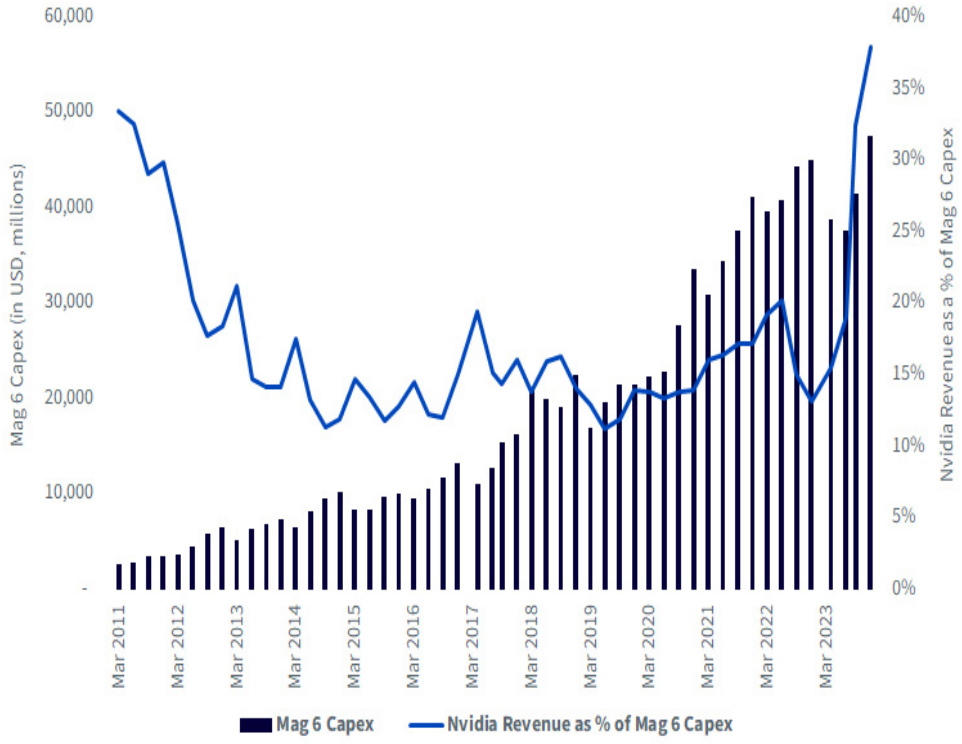
The Nvidia A100, H100 and soon B100 AI accelerator chips are really systems and not chips that individuals would buy. The value lies more in building a network of these systems—usually thousands or tens of thousands of them—versus just buying a couple. Meta Platforms CEO Mark Zuckerberg indicated Meta would, by the end of 2024, have 350,000 Nvidia H100s—which could represent $9 billion.[5] That does not feel like type of regular purchase, but we shall see.

The Magnificent 7, excluding Nvidia (the so-called Mag 6) represent a large chunk of the customers that are currently spending the money to support Nvidia's ongoing, blockbuster results.

Microsoft, Amazon.com and Alphabet are running the world's three largest public cloud infrastructure platforms. If the customers want to train and run models on Nvidia chips, these firms need to buy Nvidia chips. If one provider slows down, it creates an opportunity at the others.

The Mag 6 have been increasing their capital expenditures. If we compare the level of reported capital expenditures at these firms and the overall level of revenues that Nvidia has reported, blunt analysis indicates almost 40% of the total capex could be represented by Nvidia's revenues. We do not know what each of these companies is spending at Nvidia, although anecdotal evidence abounds that companies need to keep ordering from Nvidia for risk of being shut out of future production runs if they slow down.

Figure 3: A Significant Amount of Nvidia's Revenue Could Be Mag 6 Capex



Source: Bloomberg, for the period March 2011–February 2024. Mag 6 refers to Tesla, Microsoft, Amazon.com, Alphabet, Apple and Meta Platforms. Past performance is not indicative of future results.

Conclusion: Megatrends & the Power Law

Nvidia's results are so remarkable that it is difficult for any company to compare. When considering thematic investments, similar to venture capital, there can be a power law at work, in which, instead of all companies delivering a result close to average, we should likely see a small number of firms delivering astronomical results and other companies with terrible results. Fortunately, the astronomical results can cancel out the terrible results over time.

For strategies focused on AI, Nvidia is clearly an essential company but the success will not move forward based on a single company. The semiconductor value chain is complex, and we advocate thinking about the relationships exemplified within it—for instance, the fact that Taiwan Semiconductor Manufacturing Co. (TSMC) is fabricating Nvidia's advanced chips. Nvidia is not, currently, making the physical chips.

When considering different AI strategies, we note that it is more important to look under the hood and simply understand—what is the Nvidia exposure? What is the Magnificent 7 exposure? There are not correct and incorrect

answers, but it's important to make sure the degree of exposure to these different kinds of things is monitored over time and fits the view the investor is looking to implement.

[1] Dan McCrum, "Nvidia Is Nuts, When's the Crash?" *Financial Times*, 2/16/24.

[2] Nvidia's market cap on 2/18/23 was roughly $532 billion, while on 2/2/24 it was around $1.9 trillion. Source: https://companiesmarketcap.com/nvidia/marketcap/

[3] Source: "Investor FAQs," Nvidia.com. https://investor.nvidia.com/investor-resources/faqs/default.aspx#:~:text=back%20to%20top-,When%20was%20NVIDIA's%20initial%20public%20offering%20and%20what%20was%20the,%2C%201999%20at%20%2412%2Fshare.

[4] Source: "AlexNet and ImageNet: The Birth of Deep Learning," Pinecone.io. https://www.pinecone.io/learn/series/image-search/imagenet/

[5] Source: Asa Fitch, "Nvidia Hits $2 Trillion on Insatiable AI Chip Demand," Wall Street Journal, 2/23/23.

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Semiconductor : A semiconductor is a material product usually comprised of silicon, which conducts electricity more than an insulator, such as glass, but less than a pure conductor, such as copper or aluminum. Their conductivity and other properties can be altered with the introduction of impurities, called doping, to meet the specific needs of the electronic component in which it resides.

Artificial intelligence : machine analysis and decision-making.

Magnificent 7 : Refers to a group of high-performing U.S. stocks including Microsoft (MSFT), Amazon (AMZN), Meta (META), Apple (AAPL), Google parent Alphabet (GOOGL), Nvidia (NVDA), and Tesla (TSLA)