AMD Holdings (AMD)

February 7, 2025

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Company Brief & Thesis

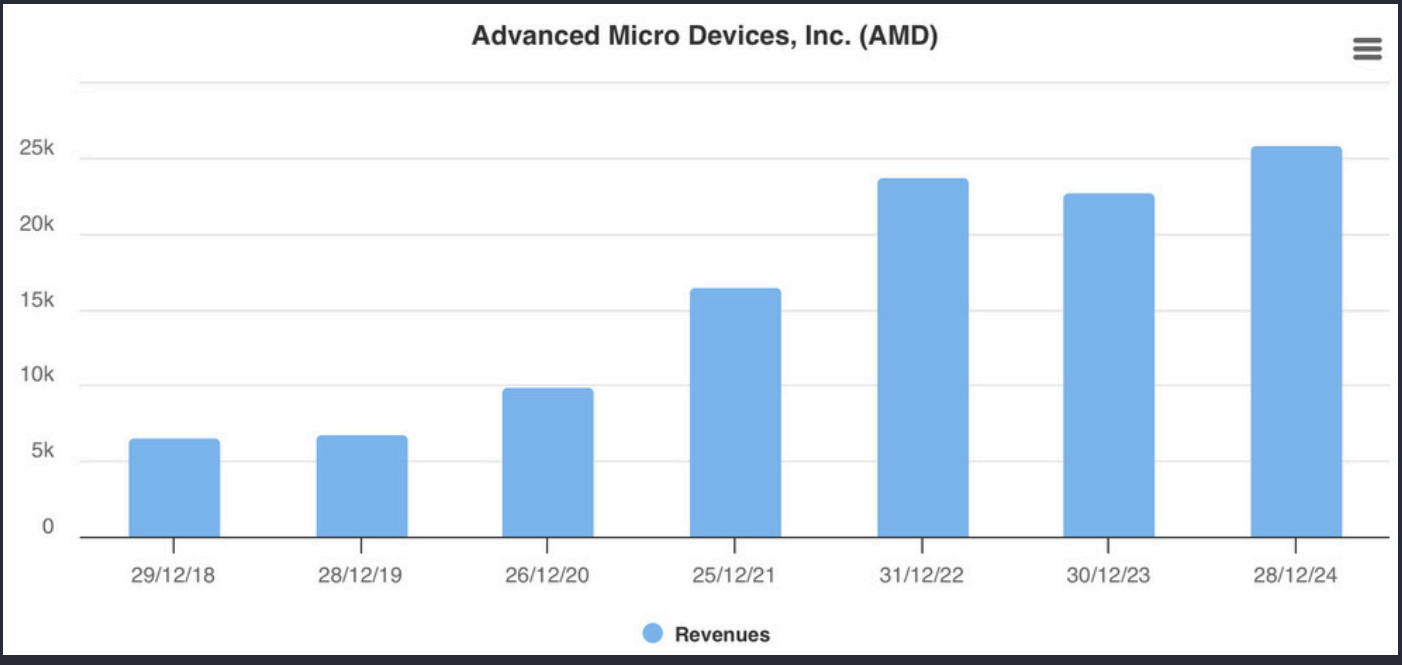
Advanced Micro Devices (AMD) is a semiconductor company specializing in high-performance computing, graphics, and visualization technologies (CPUs and GPUs), serving consumers, business, and enterprises. The company's Ryzen CPUs and Radeon GPUs offer competitive performance at attractive price points, which has helped the company stand their ground in terms of market share. AMD's success stems from its technological know-how, partnerships, and investments in research and development. AMD follows a fabless model, outsourcing production to companies like TSMC, helping with agility and cost efficiency. Its recent acquisitions, such as Xilinx (for adaptive computing) and Pensando (for cloud networking), are helping positioning AMD as a key player in the future of computing, particularly in AI, cloud computing, and gaming markets

Thesis: AMD's already established presence in the CPU space, where it has a basically duopoly with the failing Intel, which will allow them to be more dominant in the sleeper, yet key industry for AI. In the GPU space they trail behind Nvidia but offer better performance-price offers and are slowly closing the performance gap. With a great dominance in a great sector, their stock decline in the past 12 months offer a great upside opportunity

Company Dive In

AMD's CPU segment accounted for around 60% of their revenue in 2024. The company's Ryzen has disrupted Intel's dominance in the consumer market, offering strong multi-core performance, energy efficiency, and competitive pricing. Also, AMD's EPYC processors have gained traction in the server space, where enterprises and cloud providers seek higher core counts and better performance-per-watt and per dollar

The broader CPU industry is dominated by Intel and AMD. AMD has successfully gained market share against Intel in recent years, particularly in data centers, where EPYC processors have proven to be more efficient and cost-effective. It is estimated they AMD has around 24% of the market but gaining ground against Intel as their competitor is scrambling financially and in management. The industry is expected to grow 10% per year in the next 5 years



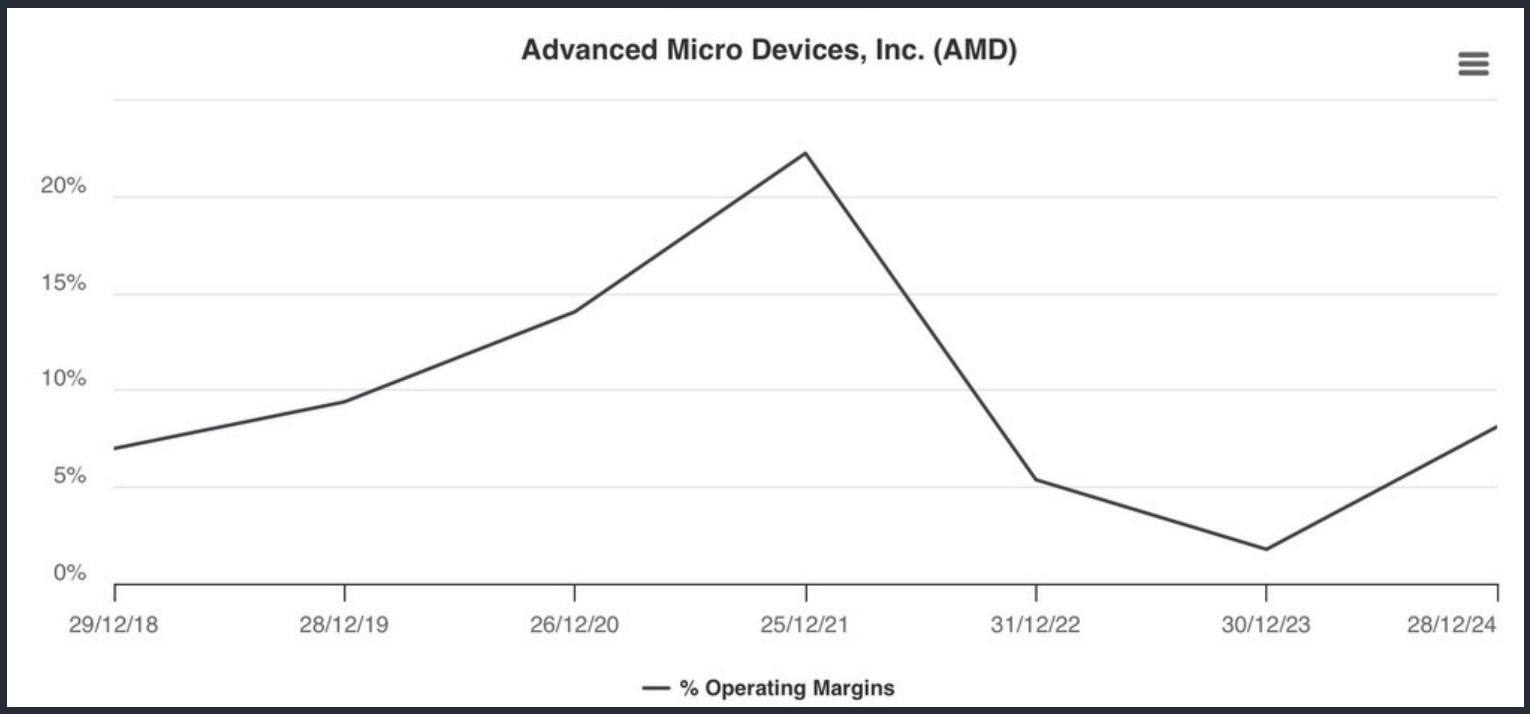
Company Dive In

AMD's GPU segment, accounting for around 30% of their business in 2024, under the Radeon brand competes with NVIDIA's GeForce lineup in the gaming sector, offering great performance, though less than NVDA's, at lower price points, making them a popular choice. AMD's Instinct GPUs target AI, machine learning, and HPC applications, directly competing with NVIDIA's dominant CUDA ecosystem. Despite advancements, AMD has struggled to establish a strong foothold in AI acceleration, where NVIDIA remains the preferred choice due to superior software support and widespread industry adoption.

The GPU industry is largely a duopoly between AMD and NVIDIA, with Intel making underwhelming efforts to enter the market. The AI boom has solidified NVIDIA's dominance with its CUDA ecosystem. For AMD to improve its positioning, it must invest heavily, and it is, in AI-focused GPUs, expand its software support, and leverage new adaptive computing technologies (as explained below) to carve out a niche in AI acceleration. More on that below The industry is expected to grow 28% per year in the next 5 years

Company Dive In

AMD has made 2 main acquisitions to improve its capabilities on the race against Nvidia. The $50 billion acquisition of Xilinx brought AMD cutting-edge FPGA and SoCS. FPGAs can be easily reprogrammed and have their architecture reconfigured dynamically after manufacturing to perform specific computing tasks, making them highly versatile and powerful. SoCs integrate multiple processing units—including CPUs, GPUs, and AI accelerators—onto a single chip, boosting efficiency and improving power consumption. Similarly, AMD's $4.9 billion acquisition of ZT Systems strengthens its presence in powerful data centers and AI computing infrastructure. ZT Systems specializes in designing server solutions optimized for AI workloads, which is crucial as AMD pushes its Instinct MI300 AI accelerators to challenge NVIDIA's H100 GPUs in the AI and cloud computing markets.



Company Dive In

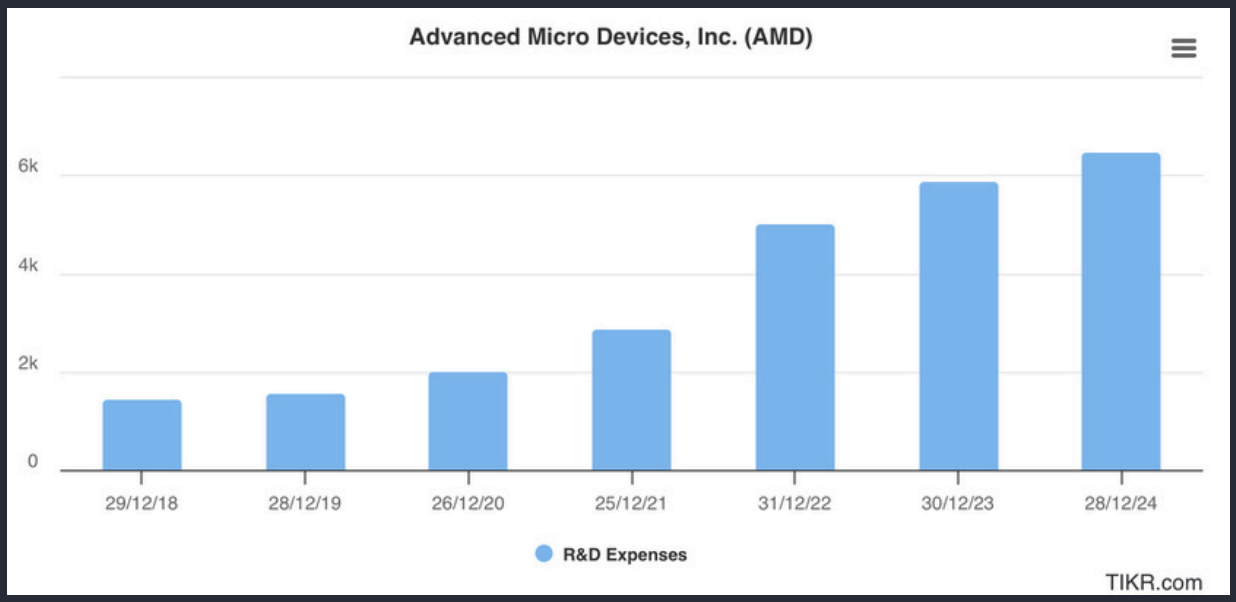
In 2024, AMD reported strong financial growth, with revenue reaching $25.8 billion, a 14% increase from $22.7 billionin 2023. Operating income climbed from 4.9 billion to 6.1 billion and net income nearly doubled, rising 92% YoY to $1.6 billion, compared to $854 million in 2023, signaling improved profitability. Gross margin also improved from 46% to 49%. However, operating expenses rose 8% YoY to $10.9 billion, up from $10.1 billion, as AMD continued investing in R&D and AI-driven technologiesto strengthen its competitive position.

The Data Center's Annual revenue nearly doubled, reaching a record $12.6 billion—an impressive +94% YoY. This surge was primarily driven by accelerated adoption of EPYC processors and over $5 billion in AMD Instinct accelerator revenue. In the fourth quarter alone, Data Center revenue was $3.9 billion, up 69% year-over-year, fueled by the strong ramp of AMD Instinct GPU shipments and growth in EPYC CPU sales.

The Client segment also demonstrated robust performance, achieving record annual revenue of $7.1 billion in 2024, marking a 52% increase from the previous year. This growth was attributed to strong demand for AMD Ryzen processors in both desktop and mobile markets. In Q4 2024, the Client segment reported revenue of $2.3 billion, up 58% year-over-year, primarily driven by strong demand for AMD Ryzen processors.

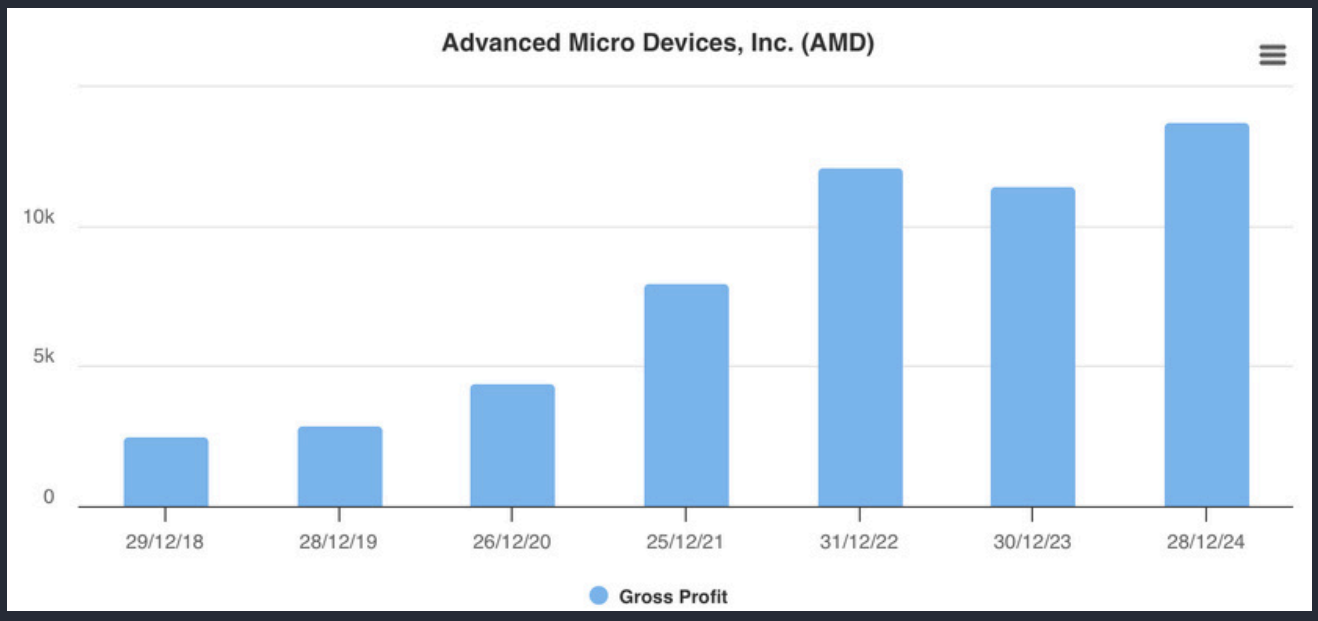
Opportunities

AMD can gain ground in the GPU and data center segments. The launch of its Instinct MI300 series GPUs offers a competitive alternative to NVIDIA's chips, and AMD has secured partnerships with major cloud providers like Microsoft Azure, Google Cloud, and AWS for AI workloads. Additionally, AMD's acquisitions of Xilinx and ZT Systems bolster its capabilities in AI and data center solutions. Xilinx provides advanced FPGA technology, which enhances AMD's adaptability and performance for these powerful tasks, while ZT Systems deliver systems directly to enterprise customers. By implementing these powerful and cheaper CPUs, or straight up offering the MI300 that has both CPU and GPU embedded in it, AMD is positioning itself as a strong competitor in AI-driven computing. Their robust M&A and R&D spending over the last few years will start to payoff as these new technologies start to roll out and gain market share



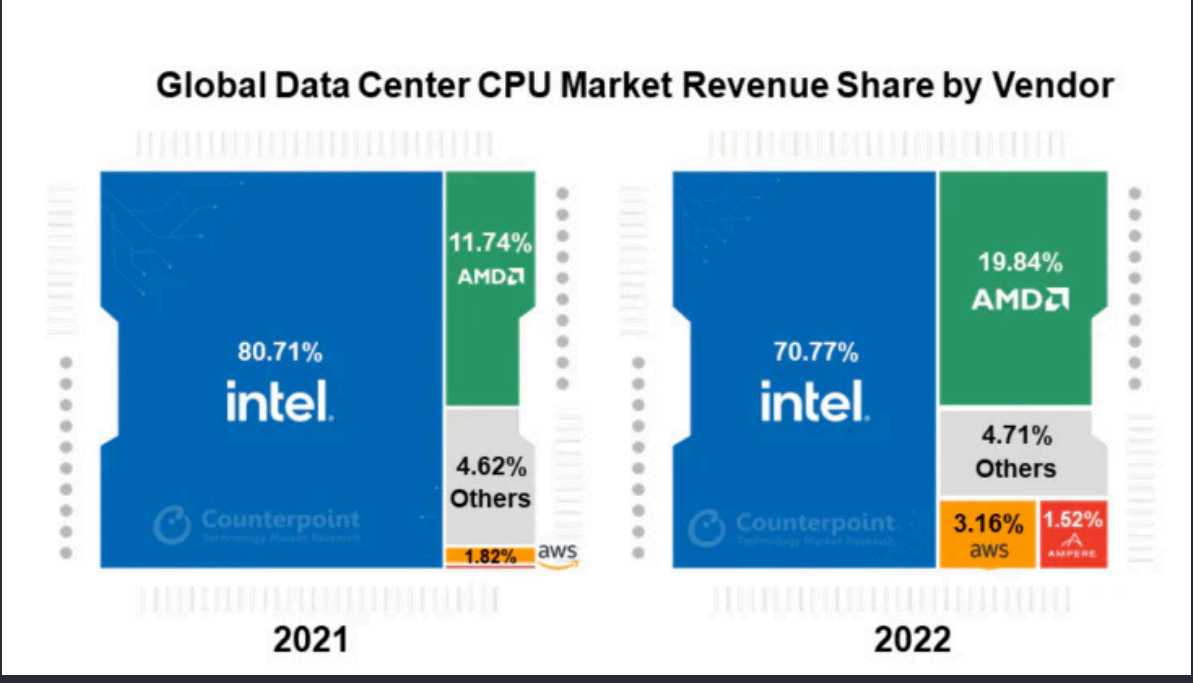
Opportunities

AMD’s competitive advantage lies in price-performance improvements. As the AI, and cloud computing industry grows to broader audiences, cost-effective hardware becomes increasingly valuable. AMD has consistently undercut competitors like Intel and NVIDIA by offering better performance per dollar, making its products more attractive to both enterprise and consumer markets. In AI, NVIDIA's GPUs remain expensive and in short supply, giving AMD an opening to provide cost-effective AI accelerators that are almost as powerful. The MI300 GPU trades for about 10,000-15,000 USD per unit, while Nvidia’s GPU trades at about 25,000-30,000 USD. In the CPU market, AMD’s EPYC Genoa and Bergamo processors outperform Intel’s Xeon chips in both efficiency and price, making them the preferred choice for cloud service providers and enterprise applications. By maintaining its aggressive pricing strategy while improving performance, AMD can fight for further market dominance



Opportunities

Lastly, AMD has the opportunity to solidify its dominance in the CPU market, which remains a crucial component in AI and computing. Despite GPUs handling most AI computations, CPUs are still essential for managing orchestration, preprocessing data, and general-purpose computing. This gives AMD a strategic advantage, as its EPYC CPUs are increasingly being paired with both AMD Instinct GPUs and NVIDIA GPUs in AI and high-performance computing infrastructures. Now that their main competitor, Intel, has had some financial and engineering troubles that severely crippled the company, AMD has a golden shot of aggressively expanding their CPU market share. AMD's leadership in this space means that even if its AI GPU adoption lags behind NVIDIA, it can still profit from the expanding AI industry by supplying the CPUs that AI workloads rely on.



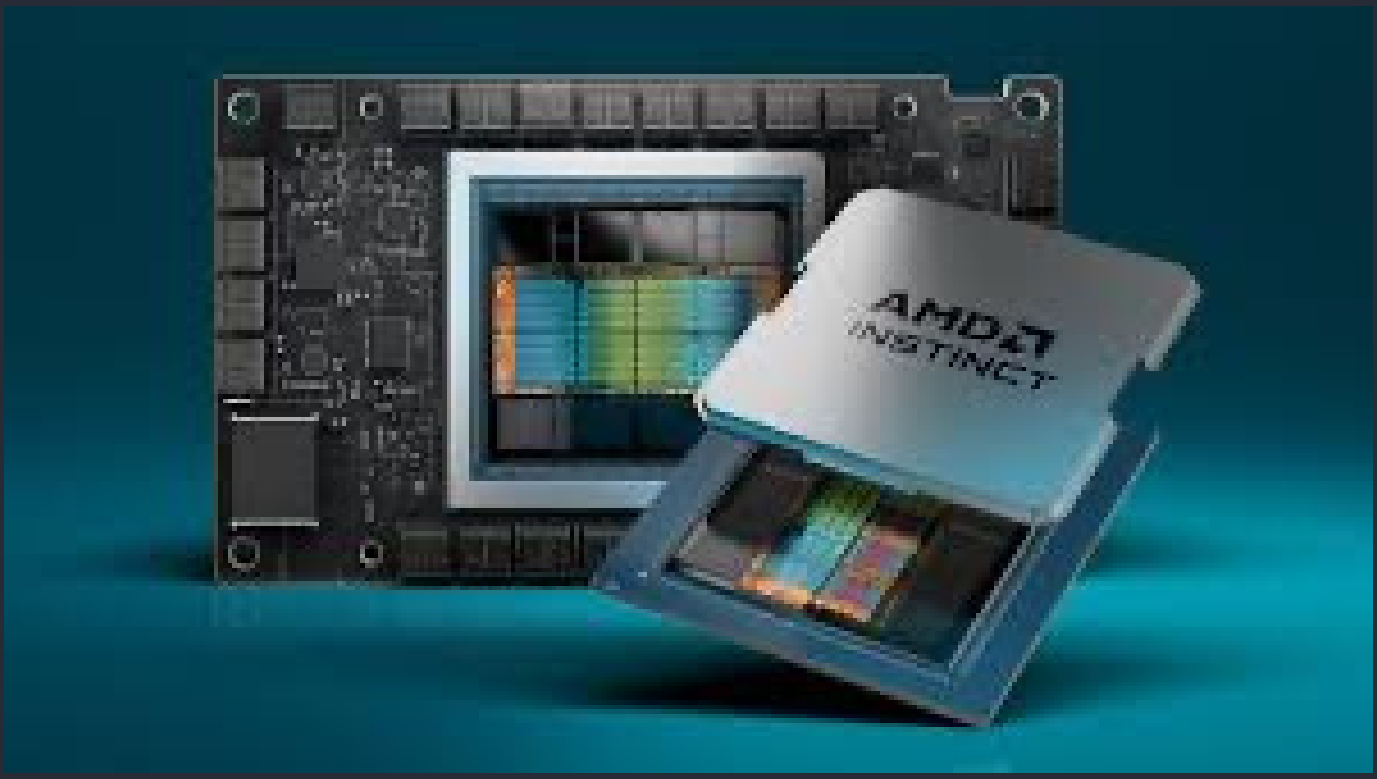
Risks

Unlike Intel, which manufactures its own chips, AMD depends entirely on TSMC's advanced process nodes for producing its high-performance CPUs and GPUs. This reliance makes AMD vulnerable to supply chain disruptions, geopolitical tensions between Taiwan and China, and TSMC's prioritization of other customers like Apple and NVIDIA. If TSMC faces production delays or allocates more resources to its higher-paying customers, AMD could struggle to meet demand, leading to lost market share.

Another major risk is intensifying competition in the CPU market, particularly from emerging players and Intel. While AMD has gained significant market share with its EPYC and Ryzen processors, Intel is aggressively working to regain dominance through architectural improvements and increased manufacturing capacity. Additionally, competition from Arm-based processors, such as those from Apple, Amazon, and NVIDIA, could reduce AMD's influence in the cloud and enterprise sectors. If AMD fails to maintain a strong price-performance advantage, it risks losing ground in both consumer and enterprise CPU markets.

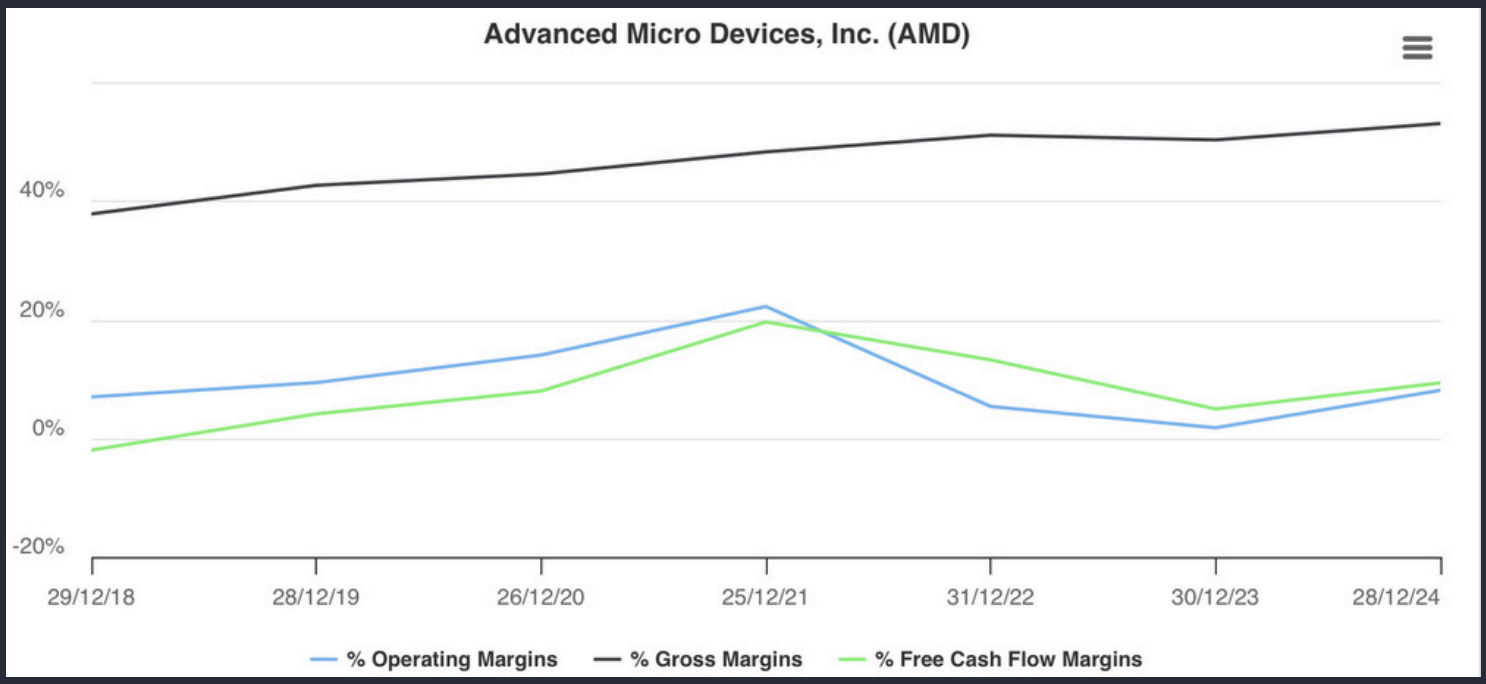
Risks

The most pressing challenge for AMD is its lag behind NVIDIA in the AI and GPU space. While AMD has made significant strides with the Instinct MI300 series, NVIDIA maintains a massive lead in AI acceleration due to its dominant CUDA ecosystem, Many companies remain locked into NVIDIA's ecosystem, making it difficult for AMD to gain significant market share despite offering competitive hardware. Additionally, NVIDIA's upcoming Blackwell series GPUs are expected to extend its AI leadership, making it harder for AMD to catch up and even worse for companies to risk switching costs from one to the other. However, AMD's contracts with big customers such as Amazon and Microsoft could be a great opportunity to penetrate the market and show off its power



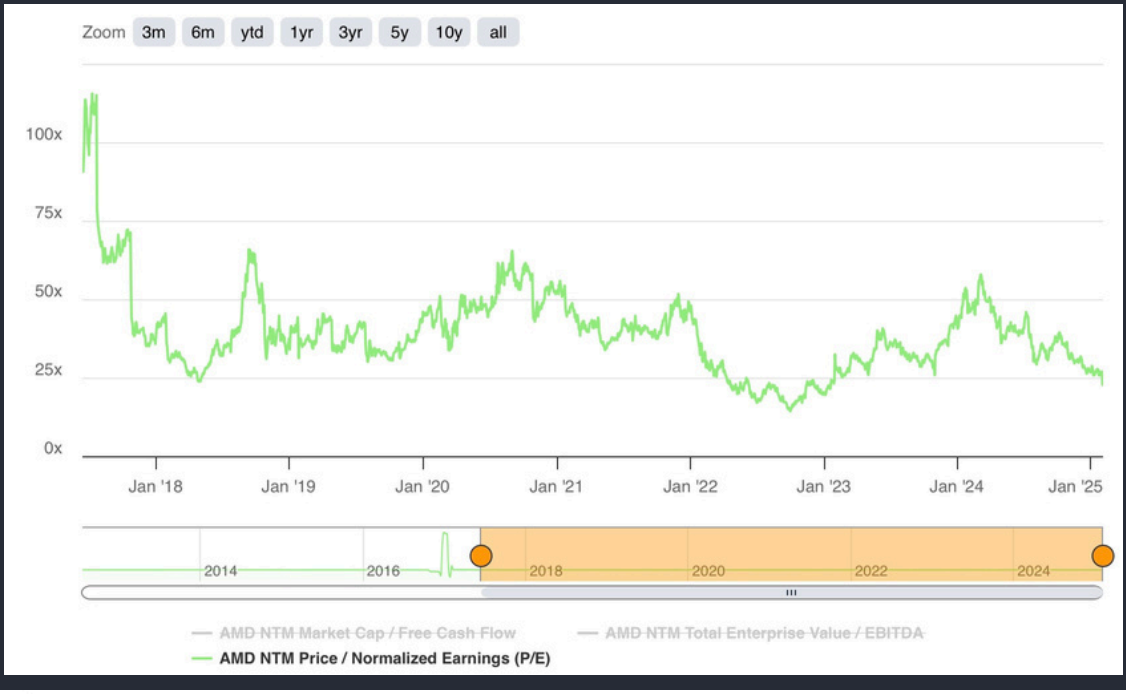
Multiples and Margins

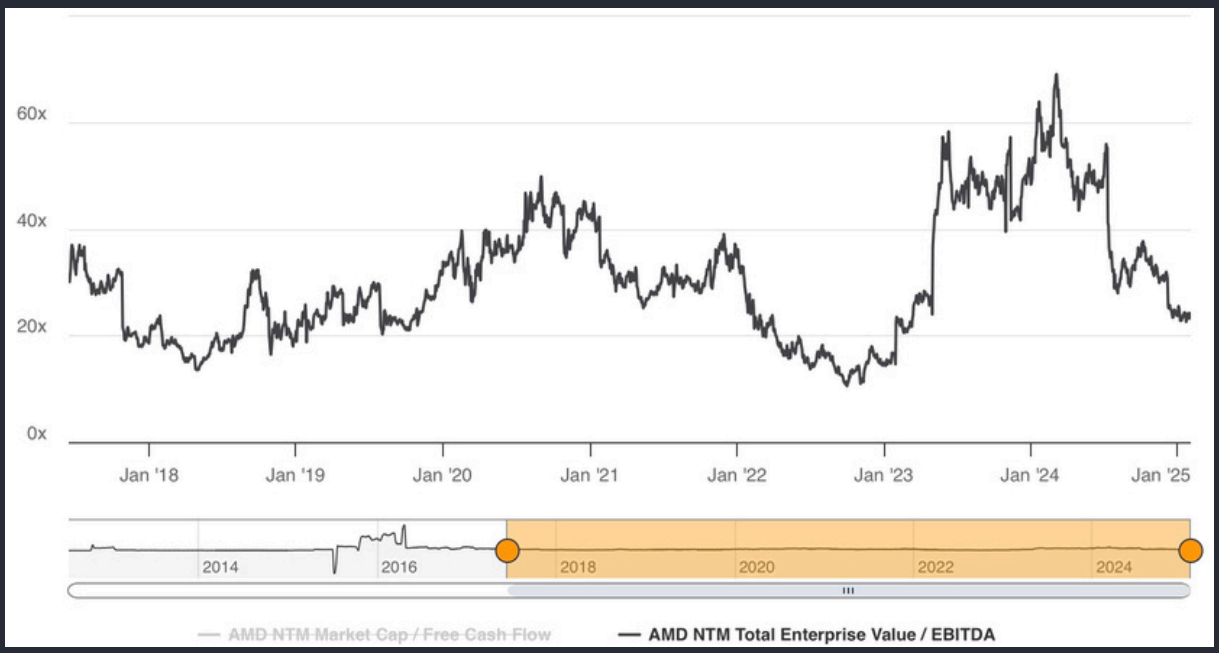
Gross Margin: 53%
Operating Margin: 8%
Net Income Margin: 6.4%
Free Cash Flow (FCF) Margin: 9.3%

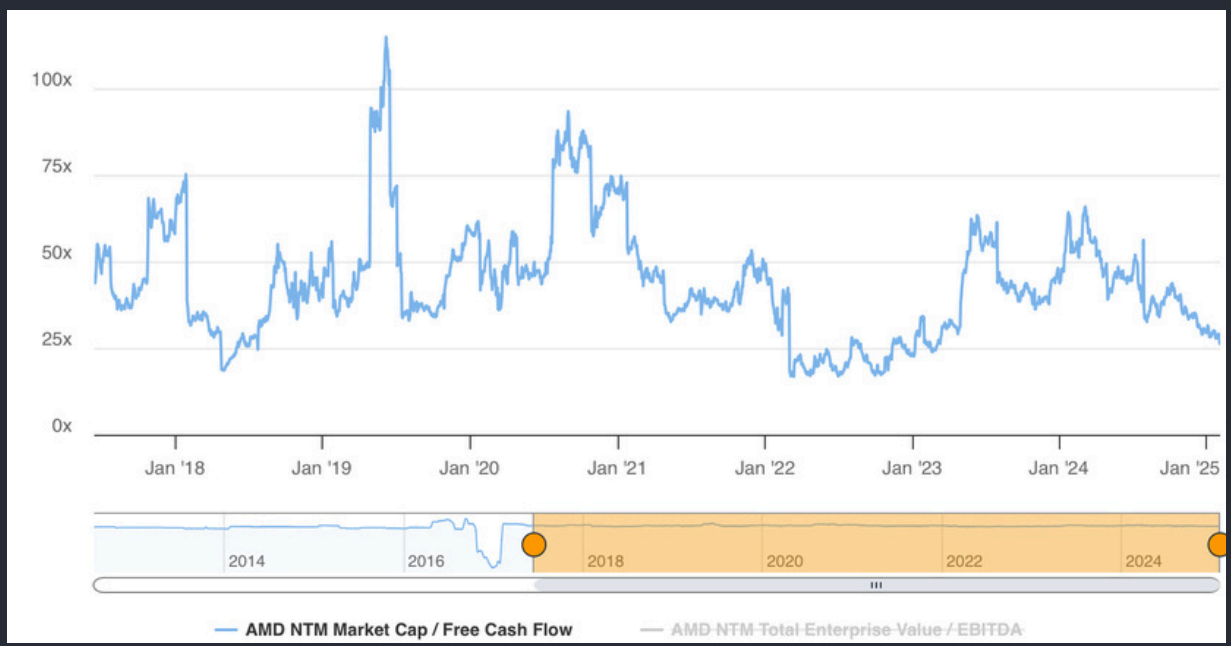


The company has strong and improving margins. FCF margins have dropped from their mid-10% highs but analysts are expecting it to come back up in 2025 and reach new heights as their GPU products reach markets and CPU products gain market share

Multiples and Margins







Fair Value

To calculate AMD's fair price:

Exp Growth CPU market (+-60% of revenue): 10%
Exp Growth GPU market (+-40% of revenue): 28%

Revenue Growth: 14%
Free Cash Flow Margin: 18%
P/FCF: 35x
Period: 5 Years

Revenue in 5 years: $50 Billion
Free Cash Flow in 5 Years: $9 Billion
Market Capitalization in 5 years: $342 Billion
Compounded annual return rate: 12.7%

AMD is a great company with the opportunity to grab CPU market share and get into GPU segment The stock has fallen significantly last year even though the company keeps posting great results and improvements YoY. This is a great buy chance, though not my favorite company in the portfolio due to its risks and its volatile margins