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AMD: Stop The Wishful Thinking And Face The Reality

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Summary

- Many bullish investors have recently argued that Advanced Micro Devices, Inc. is a stock worth buying given its cheap valuation, although the shares are rightfully trading at a discounted valuation.
- The bearish risks against AMD have continued to compound, with its technology continuing to lag Nvidia's offerings, while we simultaneously witness the rise of the 'custom silicon' wave.
- Amid the 'custom silicon' wave just getting started, investors could allocate more capital to stocks like Broadcom and Marvell Technologies instead, while Nvidia trades at an attractive valuation too.

Justin Sullivan

At the beginning of this AI revolution, market participants were headstrong that **Advanced Micro Devices, Inc.** (NASDAQ:AMD) would be the “Number 2” AI winner, particularly those investors who had missed out on the Nvidia (NVDA) rally. However, this narrative had already been falling flat throughout last year, with the stock closing out 2024 in bear market territory. AMD becoming the “Number 2” AI winner has become wishful thinking, with Broadcom (AVGO) taking the spot instead.

In the previous article, we had downgraded AMD shares to a ‘hold’ rating, arguing that investors shouldn’t buy the stock just because of its cheap valuation. We covered just how behind the company is relative to Nvidia, given that the broader tech industry is moving onto the “agentic AI” phase. AMD’s executives haven’t even mentioned the word “agent” on earnings calls, given the inadequacy of its technology offerings for such complex workloads.

During the month of December 2024, things only got worse for AMD. The major data center customers are increasingly turning to Broadcom and Marvell Technologies (MRVL) to design custom chips and clusters, and Amazon's (AMZN) executive shunned AMD's GPUs in favor of their in-house silicon at the AWS re:Invent conference. We will be covering these compounding risks in this article. AMD stock remains a "hold."

The "custom silicon" wave

Broadcom's earnings report and analyst call on December 12th 2024 sent the stock soaring, as it became evident to the market that AVGO is the "Number 2" AI winner, given the race among tech giants to have their own custom chips and systems.

Both AMD and NVDA saw notable share price pullbacks last month. Amazon's AWS, Microsoft (MSFT) Azure, Google (GOOGL) (GOOG) Cloud and Meta Platforms (META) all are partnering with either Broadcom or Marvell Technologies for more tailored, integrated technology infrastructure in their data centers to reap price-performance advantages.

> Broadcom and Marvell… will make you a custom chip that's 20% cheaper, 20-30% faster, takes up 25% less power… Each have cost $400 million to $500 million to make. They're not making chips for a 5,000 unit orders. They're making the chips for 250,000 to 400,000 unit orders.
>
> - Harsh Kumar, Managing Director and Senior Research Analyst at Piper Sandler, in a CNBC interview.

Given how much capital is required to pursue such "custom chip" endeavors, it will be in the best interest of these tech behemoths to order larger and larger batches of these ASICs once they are designed. This is to achieve maximum economies of scale through wide-scale deployment across their data centers.

Hence, as these customers dedicate more server racks to their custom chips, it subsequently means less expenditure on AMD's GPUs, undermining future revenue and profit growth.

Moreover, investors were already disappointed by CEO Lisa Su's $5 billion sales revenue projection for its AI GPUs in 2024, which was provided on the third quarter earnings call back in October. And now as we approach AMD's fourth quarter earnings results on January 28th, AMD's actual sales revenue is unlikely to excite investors. Even if they end up beating the $5 billion number, the focus will be on the forward revenue projections, which are likely to be underwhelming as the major tech firms prioritize custom silicon deployments over the coming years.

AWS snubs AMD to prioritize own chips

As the largest cloud service provider, AWS is already moving forward with prioritizing their own custom chips across their data centers. In fact, at the re:Invent conference last month, a director at Amazon said that demand for AMD GPUs among their cloud customers had been sparse:

> AWS is not seeing the type of huge customer demand that would lead to selling AMD's AI chips via its cloud service, according to Gadi Hutt, senior director for customer and product engineering at Amazon's chip unit, Annapurna Labs.
>
> "We follow customer demand. If customers have strong indications that those are needed, then there's no reason not to deploy," Hutt told Business Insider at AWS's re:Invent conference this week.
>
> AWS is "not yet" seeing that high demand for AMD's AI chips, he added. – Business Insider.

It is important to note that AWS is essentially using a very similar strategy to AMD when it comes to competitively differentiating their AI chips from Nvidia's superior GPUs. This is by adding more memory onto the silicon to try to counterbalance the processing power difference.

> It gives you the most HBM capacity per dollar and most HBM memory bandwidth per dollar of any chip on the market and therefore it actually makes sense for certain applications to use. And so this is like a real-real shift like "hey we maybe can't design as well as Nvidia but we can put more memory on the package"
>
> – Dylan Patel, Founder of SemiAnalysis, talking about Amazon's latest Trainium chips on the BG2 podcast.

For context HBM stands for "High Bandwidth Memory."

Adding more memory on the chip was AMD's key differentiating competitive strategy against Nvidia's high-performance GPUs. It was essentially a low-hanging fruit. But now major cloud providers with their own custom silicon projects are also adopting a similar approach, undermining AMD's ability to gain market share using this strategy.

Mega chip clusters

Aside from its line of AI chips, AMD had also been striving to enhance the value proposition of its technology by working to build out rack-scale systems that constitute of multiple GPUs in one supercomputer. To catch up against Nvidia's HGX supercomputers, AMD had made some key acquisitions in 2024, including ZT Systems and Silo AI, in order to kickstart their system design and architecture work.

The market had already been skeptical of these moves being sufficient to justify buying into the stock. This is given that it could take years before AMD would actually have its own rack-scale server to start shipping out to data center customers. And whether these systems will be commensurately competitive against Nvidia's technology offerings is another factor adding to the uncertainty.

These doubts around AMD's ability to catch up in the AI race have now compounded amid the major tech giants turning to Broadcom for its networking solutions as well. This is to build massive chip clusters composed of the ASICs that Broadcom is already designing for them.

> we currently have three hyper-scale customers who have developed their own multi-generational AI XPU roadmap to be deployed at varying rates over the next three years. In 2027, we believe each of them plans to deploy 1 million XPU clusters across a single fabric. – CEO Hock Tan, Broadcom Q4 2024 earnings call.

So while AMD strives to catch up at building large-scale computing systems over the coming years, the hyper-scalers are all aiming to build their own clusters as well, subduing the growth opportunities for AMD on this front.

In fact, there have already been reports that Amazon's AWS is seeking to reduce reliance on ZT Systems for server networking going forward.

> AWS is scaling down its spending with ZT Systems, an AI-infrastructure company that AMD agreed this year to acquire

> …
>
> The document said some of AWS's "server and networking racks" were "transitioning" to a custom hardware approach where it designs this equipment itself." – Business Insider.

The acquisition of ZT Systems was supposed to bolster AMD's ability to penetrate the data center "rack-scale systems" market, given that many data center operators already work with the company on building up such computing systems.

However, given that the main tech giants are fostering deeper ties with Broadcom and Marvell Technologies instead, it undermines AMD's endeavors in this space as well.

Bullish factors to consider

Now despite the hype around the "custom silicon" wave, note that only a limited number of companies can afford such endeavors, as it has cost the major tech giants between $400 and $500 million to design and develop these chips.

While the market is rightfully concerned about the cloud service providers increasingly promoting in-house silicon to their customers over standardized chips from AMD and Nvidia, keep in mind that 85-90% of computing workloads remain on-premises. They haven't yet migrated to the cloud.

A certain portion of these firms are likely to stay reluctant to migrate to the cloud, due to data security requirements or industry-specific regulations. Not all of these companies can afford to have their own customized chips designed for them, and so many of them are still likely to opt for ready-made solutions from AMD and Nvidia.

Furthermore, amid the rising preference for open-source AI models among enterprises, both AMD and Nvidia have been working to optimize their chips for running the most popular open-source model out there, Meta's Llama series. This is to sustain the value proposition of their GPUs, as well as counteract the competitive threat from CSPs' custom silicon efforts.

> what we're seeing is that as Llama gets adopted more, you're seeing folks like NVIDIA and AMD and optimize their chips more to run Llama specifically well"
>
> – CEO Mark Zuckerberg, Meta Platforms Q3 2024 earnings call.

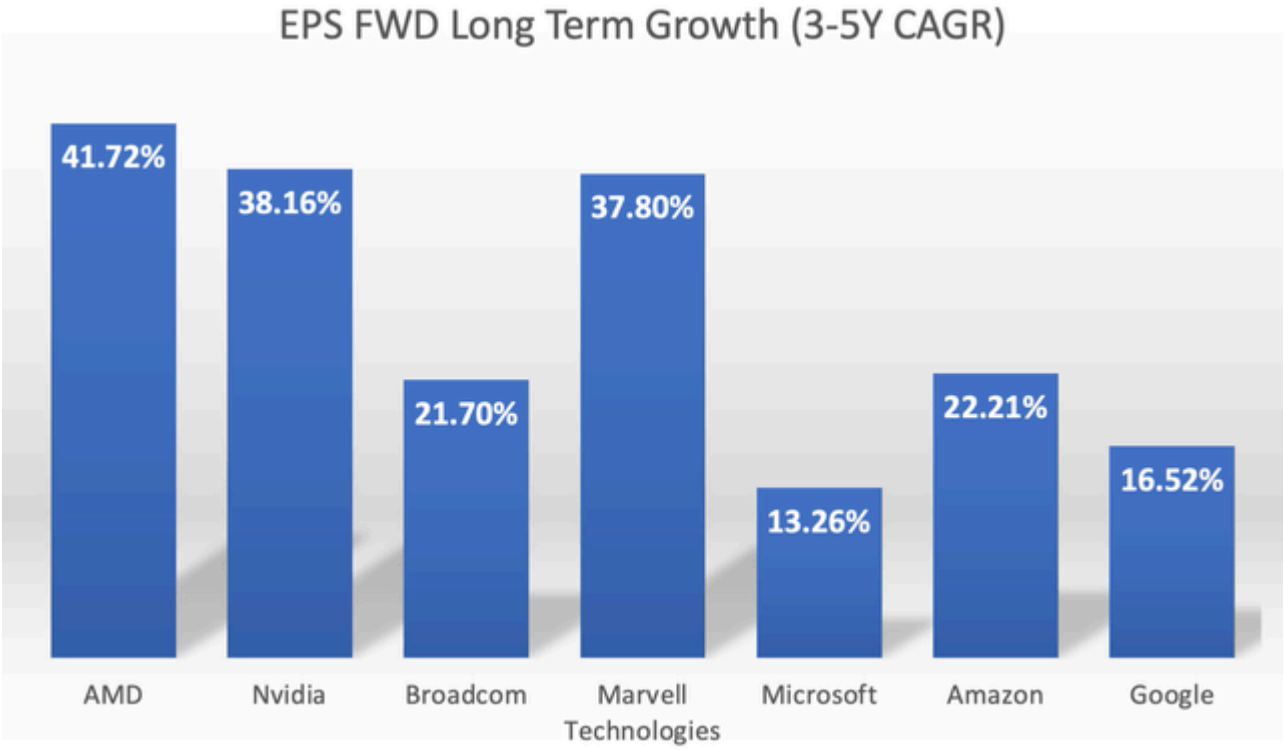
This strategy could help maintain demand for AMD's technology, whether that is in on-prem or cloud environments.

That being said, AMD continues to face immense competition from Nvidia, which is not only deploying similar strategies to sustain the relevance of its GPUs, but also continues to widely outpace AMD in terms of offering industry-leading AI solutions. As touched upon earlier in the article, amid the broader tech industry moves onto the "agentic" phase of this revolution, AMD is yet to offer integrated hardware-software technology that is fit to run such complex workloads.

AMD shares remain a "hold"

The prime reason bullish analysts have been recommending to buy AMD stock is due to its "cheap" valuation. It is currently trading at 36-37x forward earnings. While this is below its 5-year average Forward PE ratio of 42x, the current multiple isn't enticingly cheap either.

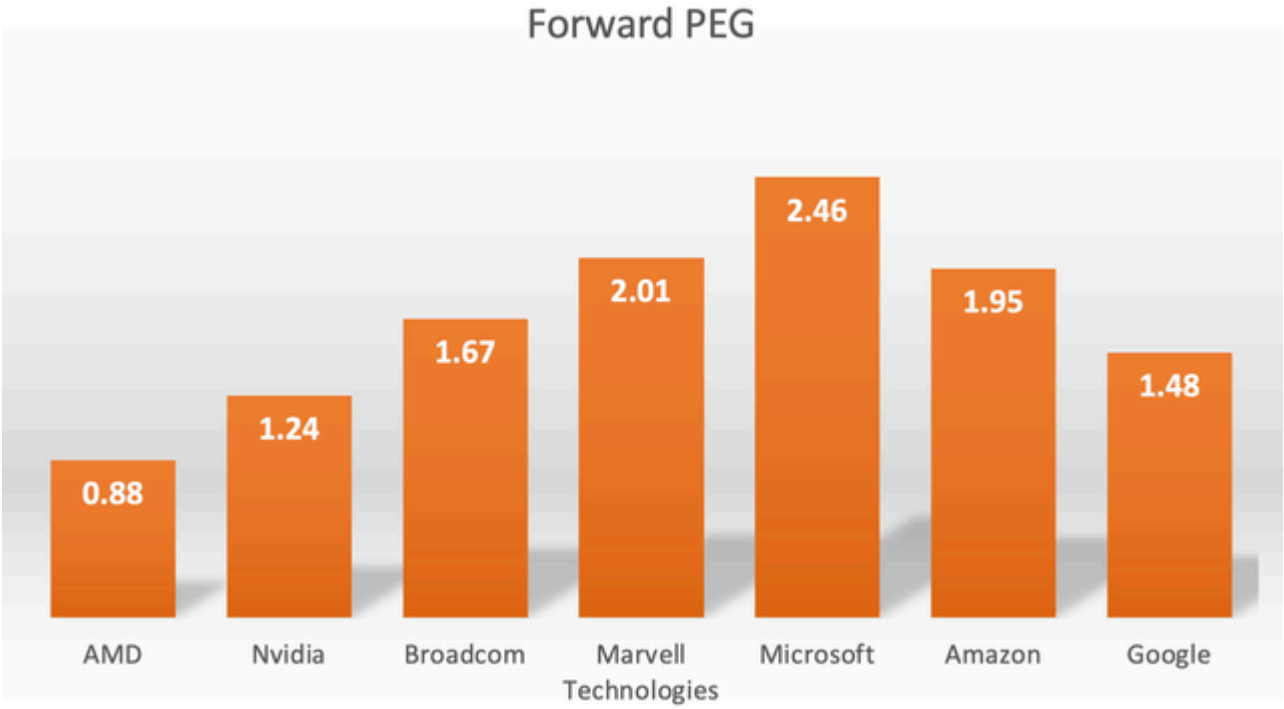
That being said, it is important to also consider a company's forward earnings growth rate when assessing valuations. So below we compare the EPS FWD Long Term Growth (3-5Y CAGR) of AMD versus its key semiconductor rivals and the major CSPs designing their own custom chips.



Nexus Research, data compiled from Seeking Alpha

AMD appears to have the highest EPS growth rate expectation relative to its competitors and the main AI players, at 41.27% CAGR. Although its key competitor Nvidia, which is considerably larger than AMD, offers almost the same level of EPS growth, while boasting a more dominant position in this AI revolution.

When we adjust each stock's Forward P/E ratios by their anticipated EPS growth rates, we obtain the following Forward PEG multiples.



Nexus Research, data compiled from Seeking Alpha

Low and behold, AMD is the cheapest stock out of the "picks and shovels" of this AI revolution on a Forward PEG basis.

For context, a Forward PEG of 1x would reflect that a stock is trading around its fair value.

Keeping this in mind, AMD is essentially trading well below its fair value. However, caution is required here to not just quickly jump to the conclusion that AMD stock is worth buying here given its extremely cheap valuation. There are important reasons as to why the market is discounting its valuation to such a degree.

As covered throughout the article, AMD's attempts to catch up in the AI race are being counteracted by key customers turning to Broadcom and Marvell for "custom silicon" and designing broader systems together. This undermines the outlook for AMD's revenue growth potential going forward. Additionally, AMD's technology remains inferior relative to Nvidia's offerings, particularly as we move towards "AI Agents."

Moreover, with NVDA stock trading at 1.24x Forward PEG, it is not too far away from its fair value, and in fact is valued more attractively than the other key AI stocks out there. So if investors could buy the "king of AI" at a multiple close to its fair value, AMD stock could continue struggling despite its supposedly cheap valuation.

Furthermore, the reason AMD could be trading at such a cheap valuation for such an extended period of time is that the market may not be confident AMD can achieve the EPS growth rate projected over the next 3–5 years. AMD is barely penetrating the data center opportunity with its AI GPUs given its underwhelming sales revenue projections, and the initial excitement around the potential for an 'AI PC' wave has also been moderating.

Hence, there is a risk that the expected EPS growth rate of 41.27% could be corrected downwards over the coming months. And as the growth rate projection comes down, it would subsequently push the Forward PEG multiple higher. So the stock may not be as cheap as appears at face value.

The overarching point is, AMD stock is not worth buying given its lagging position in the AI race. This has only gotten worse over the past month amid the "custom silicon" wave that has just begun, and in fact is likely to encourage investors to allocate more capital towards stocks like Broadcom and Marvell Technologies instead.

AMD stock remains a "hold."

This article was written by

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