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ARM, Like Some Tech Stocks, Has a DeepSeek Problem

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British semiconductor major Arm Holdings plc (ticker: ARM) holds an interesting niche in the chipmaking space: rather than designing and manufacturing chips directly or indirectly via a third-party fab facility, it creates and licenses its technology as intellectual property (IP) to other semiconductor companies. Chief among them – and proudly mentioned in its latest earnings report for its 3rd quarter for FY 2025 (released on the 5th of February) – is Nvidia (ticker: NVDA), which recently unveiled Project DIGITS that combines the Arm-based Grace CPU and the Blackwell GPU into the GB10 Superchip that powers the world's smallest AI supercomputer.

Nvidia isn't its only partner: it has strategic relationships with Microsoft, Oracle and OpenAI as well. Its IP is present in nearly every major smartphone in the world. It – via its majority owner SoftBank – joined the Stargate Project recently unveiled by President Trump, which aims to spend $500 billion over the course of his term to build cloud AI infrastructure for OpenAI in the U.S.

While the stock had been mildly bullish in the days leading up to the earnings release (with a solid 6.8% rise on the 5th), it fell by nearly the same amount in late trading the same day and pre-trading the next. On the 6th, trading closed with the stock down another 3.34%. The reasons for an early bearish outlook are somewhat complicated.

Trend Analysis

In terms of trends, the company's net income from continuing operations seems in line towards making a massive turnaround from the doldrums of the past two years.

	9M FY25, % of FY24	FY 24 vs FY 23	FY 23 vs FY 22
Total Revenue	**86%**	**21%**	**-1%**
- External Customers	86%	**24%**	**-9%**
- Related Parties	83%	**11%**	**35%**
Research & Development	77%	75%	14%
Total Operating Expense	**76%**	56%	-2%
Operating Income	**379%**	**-83%**	**6%**
Net Income	**190%**	**-42%**	**-5%**
Net Income (from continuing operations) **Per Share**	**190%**	**-43%**	**-23%**

Source: Company Financials; Themes ETFs analysis, as of February 7, 2025

If current trends were to continue, total revenue would potentially grow 14% in FY25 ("Fiscal Year 2025") relative to the past FY, while operating expenses will only grow 1%. As a result, operating income is trending to grow a staggering 406% while net income per share would potentially grow a 153%. By most accounts, this is a staggering success at the back of two dismal years for the bottom line.

While FY24 did see a 21% growth in revenue over that in FY23, skyrocketing research & development ("R&D") costs hobbled the operating income down to deliver a near-halving of net income relative to FY23. In FY23, a 14% increase in R&D coupled with near-flat revenue growth at -1% reduced net income per share by a quarter relative to the previous FY's.

In the past FY, ARM's "related parties' – which include the likes of Apple, to whom they supply software services – drove 22% of all revenue. Chipmakers – who constitute the bulk of its "external customers" – brought in the rest. This trend remains present over the past three quarters ("9M FY25").

	9M FY25	FY24	FY23	FY22
Revenue Share from:				
External Customers	78%	78%	76%	82%
Related Parties	22%	22%	24%	18%
R&D Share of Operating Expenses	68%	67%	60%	51%
Operating Margin	**15%**	**3%**	**25%**	**23%**
Net Profit Margin	**21%**	**9%**	**20%**	**20%**

Source: Company Financials; Themes ETFs analysis, as of February 7, 2025

R&D's share of operating expenses has grown ever-larger as the company expends vast amounts of capital in delivering AI-compatible solutions across the board. Nonetheless, the company's operating margin is set to limp back to the 20+% levels that were seen in FY22 and FY23.

Meanwhile, net profit margin has already regained the levels seen in these FYs. A lot of this pass-through efficiency between net income and revenue comes from the company steadily raising licensing fees for its IP and royalties for each chip its customers sell.

Despite such success, a rationalization narrative is being imputed on the stock, and a lot of these might be implied from the lessons learned from DeepSeek's reported performance.

DeepSeek and the Value of Optimization

DeepSeek is a Chinese AI software company owned and funded by Chinese hedge fund High-Flyer. The company's DeepSeek-R1 model essentially shook up the industry recently after ostensibly matching OpenAI-level performance standards despite utilizing the likes of the NVIDIA H800, a chipset that is well behind in terms of complexity when compared to the likes of H100 used by American tech leaders.

In its stated current form, DeepSeek is a highly viable alternative to the costs incurred by most companies looking for entry- to mid-level chatbot applications. Given that it's a fairly new entrant, third-party support is scarce but the likes of GitHub are rapidly fulling up with solutions that can be added as a "layer" to will streamline usage.

Now, DeepSeek is repeatedly stated in media sources as being "open-source". However, this doesn't mean that anyone can download the training code, i.e. the part of the algorithm that does the computational/logical analysis. Instead, it's open-weight[1] – which means that it makes the inner workings leading to the arrival at a response/conclusion visible to the end user without making the engine itself visible. Despite that, this is potentially an enormous learning advantage for startups all over the world looking to enter the commercial AI model space: it is entirely conceivable that the gap between OpenAI and, say, India's Krutrim might have been reduced from (possibly) a decade to a matter of a couple of years. The AI model space is potentially poised to witness explosive growth.

Overall consensus among analysts is that infrastructure buildouts are far in excess of computation requirements. DeepSeek ostensibly asserts that its relatively-par performance, despite lower-capability architecture, was achieved via low-level code optimizations[2]. This has enormous repercussions for the industry: for most clients, DeepSeek's success implies that "less" might be enough. In other words, success isn't bound by a "hardware" problem but a "coding" problem.

If so, why should datacenters continue to allocate budgets for the next generation of chipsets when current capacity can be increased simply via "better" code? Also, what does this mean for the forward outlook of companies dependent on buy-ins of cutting-edge computation infrastructure?

In Conclusion

In the course of its earnings release, the company did narrow its revenue guidance to a range of $3.94 billion to $4.04 billion from $3.8 billion to $4.1 billion for the full year. This lent weight to speculations that datacenters already at excess capacity are likely starting to pull back from spending.

There are early signs of a rationalization afoot in tech stocks' valuations, which isn't all too surprising. While the DeepSeek story stands to be scrutinized even more carefully, the reframing of the problem statement, i.e. from "hardware" to code, is a sobering realization. If the open-source community in the AI space continues to grow, the industry will essentially "democratize" much faster. This doesn't bode well for lofty forward valuations.

The fundamentals indicate that ARM is once again a highly-profitable company with solid industry connections and revenue channels. While the shift of focus to "code" over hardware might dampen forward outlook, the fact remains that chipsets are still fundamental. In this particular part of the semiconductor industry, ARM is well-positioned.

Incidentally, U.S.-based investors with a more tactical bent on investing can consider the recently-launched ARMG, the Leverage Shares 2X Long ARM Daily ETF which is designed to deliver magnified returns in the event the stock snaps back into "bullish and rising" territory.

Footnotes:

[1] Oracle, To pare AI costs and hold data close, businesses turn to more transparent models, as of July 11, 2024

[2] Tom's Hardware, DeepSeek's AI breakthrough bypasses industry-standard CUDA for some functions, uses Nvidia's assembly-like PTX programming instead, as of January 28, 2025

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