The AI Bubble and How to Stay Out of the Bath

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Will the AI bubble burst? Is there even an AI bubble? Are bubbles good or bad for early-stage tech investors? Why can you no longer buy bubble bath in a bottle shaped like a sailor called Matey?

We get a lot of questions asked of us at the HPQC Fund. We do try to answer them all.

We operate in a market segment that is, to put it mildly, very hot right now. A quick look at the fundamentals gives you the answers – if you are investing in underlying compute infrastructure the bubbles do not matter.

All the highs and lows of public equities, and even the heady valuations of late-stage AI software companies are just the froth on top of a fundamental change in the way compute is delivered. You could get lucky (or smart in any lookback) and apply your risk capital to the right bubble in the ever-expanding universe of AI software and score big, or you could get unlucky (or wiser in any lookback) and watch your software project deflate before your eyes as Google launch a better competitor. At the HPQC Fund we stay out of that bath.

Why can we be so confident that compute infrastructure plays will, on average, deliver better over the next five years? Why do we focus on seemingly dull practicalities as switches, fabric, chip design, storage and space? Physics and fundamentals.

The demand curve for compute continues to trend away from the supply curve . The ability of the existing infrastructure equipment manufacturers to meet that demand is under severe stress. This is driving take up of new technologies that can deliver compute with greater efficiency (bandwidth, storage, power, footprint etc). Big Original Equipment Manufacturers (OEMs) are buying into small tech startups at Series C or earlier. The evidence is all around us. Let's look at a case study not from the USA or Taiwan, but from the oft neglected powerhouse of South Korea.

Every new large-language model demands an army of GPUs and a mountain of memory to feed them. In this new economy of processing power, the quiet workhorses of silicon—the high-bandwidth memory chips that ferry data between artificial-intelligence engines—have become a hot commodity. At the centre of this storm sits SK Hynix, a firm once dismissed as Samsung's lesser cousin, now basking in record profits and commanding unprecedented leverage over the global AI boom.

In its latest quarter, SK Hynix's operating profit surged **62%** year-on-year to **₩11.4 trillion (US $8 billion)**, while revenue climbed **39%** to **₩22.4 trillion**. Demand for its advanced **high-bandwidth memory (HBM)** chips, indispensable for AI data centres, is so fierce that the company has already sold out its **2025 production**, with customers now booking orders into 2026. Just think about that – a data point buried deep within the FT – one of the world's most critical suppliers of compute infrastructure has at least a **six month lag** to market because demand is so high. You cannot operate a 'JIT' compute business when you have to order at least 2 quarters ahead. That's a fundamental that will not burst any time soon – irrespective of which AI software player comes out on top, demand for the systems it runs on will continue to outpace supply.

SK Hynix

(KRX: 000660)

Source: Morningstar, October 2025

There are more signs of this **steepening demand curve** for compute infrastructure

SK Hynix and **Samsung Electronics** signed a **letter of intent with OpenAI** to supply semiconductors for the ChatGPT-maker's colossal "**Stargate**" project—a planned **US $500 billion network of AI data centres** capable of consuming more power than ten nuclear reactors. SK Hynix's parent company announced it would establish a system to deliver up to **900,000 DRAM wafers per month** for the venture—**more than double today's global HBM capacity**.

The market has rewarded such audacity.

SK Hynix's shares have **tripled in 2025**, rising over 430% since early 2023, as investors bet on the company's HBM dominance—**more than 50%** global share, compared with Samsung's 25% and Micron's distant third. Its **HBM3E** chips can move data equivalent to **200 feature-length films each second**. Analysts now forecast that the HBM market will reach US **$43 billion by 2027**, delivering windfall margins to memory makers who just two years ago languished in 'cyclical decline.'

SK Hynix's success is more than a matter of timing. It reflects a structural shift: AI workloads have transformed memory from a commodity into a bottleneck. Each new generation of Nvidia accelerator or custom AI chip demands faster, stacked memory with tighter integration. That dependence gives SK Hynix a strategic perch in the global supply chain—one it is eager to defend as **Samsung** redoubles investment across the logic and foundry space.

Samsung meanwhile is hardly standing idle. Its engineers are racing to match Hynix's HBM3E yields while exploring "**floating data centres**"—off-shore facilities meant to ease land scarcity and cooling costs. The two chaebols' competition has become as much about geopolitics as market share: South Korea's government, fearful of over-reliance on American and Taiwanese suppliers, is keen to nurture a **self-sufficient AI-chip ecosystem**.

Samsung Electronics

(KRX: 005930)

Source: Morningstar, October 2025

So where does the early stage compute infrastructure investor hunt in this market.

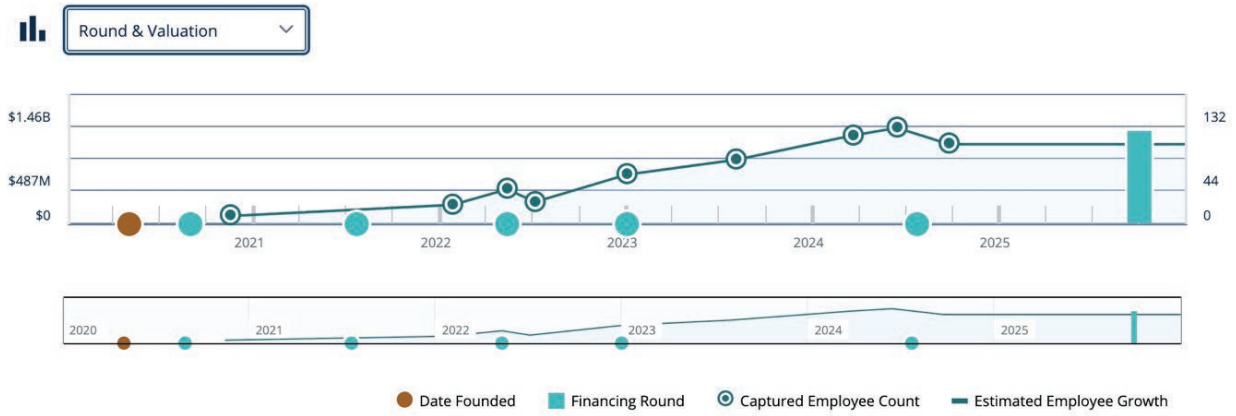
Where would the HPQC Fund have invested if it was in business two ago? If we'd been able to get into the Series A at Rebellions we'd have been very happy. **Rebellions**, a young Seoul-based startup that has inadvertently become the flashpoint of the rivalry between Samsung and SK Hynix.

Rebellions cofounder and CEO Sunghyun Park.
JAE-HYUN KIM FOR FORBES ASIA

Rebellions

Founded in 2020, Rebellions designs **inference-optimised AI accelerators**—compact, power-efficient processors tailored for running large models rather than training them. In a world enthralled by Nvidia's energy-hungry GPUs, Rebellions' approach promises localised, cheaper compute. Its merger with **Sapeon Korea** (an SK Telecom venture) last year turned it into South Korea's first "AI-chip unicorn," wedged neatly between Samsung's foundries and SK Hynix's memory lines. If you were an early stage investor in Rebellions Series A in 2021 at a valuation of sub $100M USD you would be happy with the current September 2025 valuation of $1.36B USD in September of 2025 (Source: Pitchbook).

Rebellions Valuation Trajectory



Source: Morningstar, October 2025

For **Samsung**, Rebellions provides a showcase client for its advanced 4-nanometre fabrication process—a domestic poster-child in its contest with Taiwan's TSMC.

For **SK Hynix**, the partnership is even more consequential: Rebellions' chips depend heavily on stacked HBM and 3D packaging, fields in which Hynix leads globally. By weaving Rebellions into its orbit, SK Hynix can ensure that Korea's emerging AI-chip standards are optimised around its own memory formats.

The result is an elegant, if uneasy, triangle: Samsung wants Rebellions' production to bolster its foundry prestige; SK Hynix wants its chips to gulp more HBM; and Rebellions wants to remain neutral enough to survive both courtships. The Ministry of Science and ICT has backed this delicate balancing act with **₩800 billion (US $570 million)** earmarked for domestic AI-semiconductor projects through 2030.

Behind the rivalry lies a broader truth: the scarcity of compute is now the master variable of global growth.

As AI seeps into every industry, nations and corporations alike are scrambling for capacity—data centres, power, and, most of all, memory. SK Hynix's ascent from cyclical manufacturer to strategic linchpin exemplifies that shift.

Its challenge now is to turn windfall into resilience. To stay ahead of Samsung, it must invest not only in fabs but also in the startups, packaging firms and design houses that define the next generation of architectures. The company's decision to "substantially increase" capital expenditure is as much about protecting its ecosystem as expanding production. At HPQC we find the start-ups like Rebellions who are ready for main stage and will, within five years, get scooped up by major players such as Samsung and SK Hynix.

So how do you mitigate the risks associated with over exposure to AI hype? Irrespective of whether, when, or how large the AI boom may crash, the demand for the underlying high-bandwidth high-speed infrastructure that delivers all aspects of next-generation compute (not just AI training data centres) is not going away. By investing in well sourced, carefully curated next generation switch, storage, cooling and chip providers, you can sit on the sidelines happy in the knowledge that you will profit no matter which AI mega brand or hyperscaler wins the market.

Sources & Further Reading

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