

Two Factor Capital Management

**We Remain Short Quantum
Computing Stocks**

NASDAQ: RGTI, NASDAQ: QUBT, NYSE: IONQ

March 2025

Introduction

The last time we wrote about Quantum Computing stocks, we covered only one: Quantum Computing Inc (QUBT). Our report published in December 2024 described a company with a gross overvaluation, a product that won't be useful for many years, and a stock price driven by retail investors who don't actually know what they're buying; see Quantum Corp stock (QMCO), which also experienced a rally of 2000%+ despite being a data storage and protection company, not at all related to quantum computing (it just has 'quantum' in the name).

Since the last report, we wish to acknowledge that we have broadened our horizons; Two Factor is now short multiple quantum computing stocks, and believe the evident bubble is not limited to a single stock, but rather an entire sector. Stocks such as Rigetti Computing (RGTI) and IonQ (IONQ) currently command delusional premiums relative to their actual value and are short in the portfolio.

One may be forgiven for thinking the quantum computing bubble was finally ending after Jensen Huang, CEO of Nvidia, opined that quantum computing wouldn't have practical applications for 'at least' 15 years, more like 20. After these remarks, quantum computing stocks (including our first coverage, QUBT) tumbled 50-70%. We thought the trade was done and closed our positions; after all, the CEO of arguably the most important technology company in the world just said QC machines won't be useful for decades, and the stocks reacted accordingly.

To our surprise, quantum computing stocks bounced back from the dead and rallied as much as 77% immediately after in the case of QUBT. This gives us a rare opportunity, to short the same thing into the metaphorical ground twice, and this commentary will explain why.

“Just when I thought I was out, they pull me back in.”

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*Michael Corleone, and investors shorting quantum computing stocks,
probably.*

NASDAQ: QUBT

Quantum Computing Inc was the first stock we covered in the quantum computing space; this is because it was the most obviously worthless company. Recalling back to our December 2024 report, QUBT used to be a beverage company in receivership, before making a completely nonsensical pivot into quantum computing, generating \$311,111 in revenue for the 3 quarters of 2024, whilst commanding a near billion-dollar valuation.

Currently, the stock trades at around \$5/share, marking a significant decline from its January rally highs of \$11.55/share. Nothing about the fundamentals or future of the company have changed since our last report, apart from law firm Bronstein, Gewirtz, and Grossman leading a class action lawsuit against the company for ‘materially false and misleading statements regarding the business, operations, and prospects [of the company]’. Below is an excerpt from the case details:

“Defendants made materially false and misleading statements regarding the Company's business, operations, and prospects. Specifically, the Complaint alleges that Defendants made false and/or misleading statements and/or failed to disclose that: (1) Defendants overstated the capabilities of QCI's quantum computing technologies, products, and/or services; (2) Defendants overstated the scope and nature of QCI's relationship with NASA, as well as the scope and nature of QCI's NASA-related contracts and/or subcontracts; (3) Defendants overstated QCI's progress in developing a TFLN foundry, the scale of the purported TFLN foundry, and orders for the Company's TFLN chips; (4) QCI's business dealings with Quad M and millionways both qualified as related party transactions; (v) accordingly, QCI's revenues relied, at least in part, on undisclosed related party transactions; (5) all the foregoing, once revealed, was likely to have a significant negative impact on QCI's business and reputation; and (6) as a result, Defendants' public statements were materially false and misleading at all relevant times.”

The future is not looking bright for QUBT. The company has received one more order for its TFLN photonic chip foundry from a research group in Canada, to ‘support research efforts on quantum photonics’, once again proving the company unable to generate any broad or meaningful commercial application interest in its products. Quantum computing will remain, for the foreseeable future, limited to academic and research applications, or extremely niche commercial applications.

A good way to tell the strength of a bubble is its trading volume; in late February 20 million shares of QUBT were changing hands daily, while the past 3 days of volume (March 10, 7, 6) have averaged less than half of that.

Date	Close/Last	Volume	Open	High	Low
02/21/2025	\$7.49	16,057,320	\$7.92	\$8.64	\$7.47
02/20/2025	\$8.09	21,476,230	\$8.52	\$8.65	\$7.9332
02/19/2025	\$7.96	24,737,380	\$7.38	\$8.40	\$7.17

February volume

Date	Close/Last	Volume	Open	High	Low
03/07/2025	\$5.03	7,910,639	\$4.85	\$5.1795	\$4.75
03/06/2025	\$4.87	9,666,929	\$5.02	\$5.235	\$4.71
03/05/2025	\$5.28	9,617,532	\$5.29	\$5.395	\$5.015

March Volume *Nasdaq, 2025*

As we can see, there has been a significant decrease in volume for QUBT. Interest in these highly speculative stocks tends to decline when the broader market and macroeconomic climate declines; anyone with a cursory following of the market would have seen the impact of tariffs and recession fears on investor sentiment, with a broad de-risking being observable in the market too. Investors decrease their speculative positions and shift into more protective bets; this is one of the worst environments possible for a speculative bet like quantum stocks, as the average investor shifts from being someone allocating small amounts to QC, seeking to capture an unlikely technological breakthrough, to die-hard quantum bulls and investors who have fallen victim to the sunk cost fallacy.

Nothing about our fundamental short thesis of Quantum Computing Inc has changed, and we foresee further downside from the current price of \$5.

NASDAQ: RGTI

Rigetti Computing, when compared to QUBT, is a ‘real’ quantum computing company. Rigetti was founded in 2013 by the eponymous Chad Rigetti and has spent around \$400 million since its founding. The company was likely generating little to no revenue in its near decade of private operation, and in 2021, was reborn through a SPAC deal with Supernova Partners Acquisition Company II. SPAC deals are notorious for being ‘scam-adjacent’, with the median six-month return of a SPAC being -23.8%, and the median twelve-month return being -65.3%, as found by a paper published by Stanford Law prof. Michael Klausner and NYU Law prof. Michael Ohlorge.

worse. By six and twelve months post-merger, SPACs have mean returns of negative 12.3% and negative 34.9%, respectively. Median returns are even worse, as are returns compared to the IPO index.

Table 6: Post-Merger SPAC Returns – 2019-2020 Merger Cohort

	Three-Month			Six-Month			Twelve-Month		
	All	HQ	Non-HQ	All	HQ	Non-HQ	All	HQ	Non-HQ
Mean Return	-2.9%	31.5%	-38.8%	-12.3%	15.8%	-37.6%	-34.9%	-6.0%	-57.3%
Median Return	-14.5%	-4.6%	-46.9%	-23.8%	-15.9%	-43.0%	-65.3%	-34.6%	-66.3%
Mean Return (Excess over IPO Index)	-13.1%	25.1%	-53.0%	-33.0%	0.4%	-63.1%	-47.1%	-11.8%	-74.6%
Median Return (Excess over IPO Index)	-32.8%	7.1%	-52.1%	-43.2%	-31.0%	-56.3%	-56.5%	-54.8%	-89.9%
Mean Return (Excess over Russell 2000)	-1.3%	37.5%	-41.9%	-10.9%	22.5%	-41.0%	-21.5%	9.7%	-45.7%
Median Return (Excess over Russell 2000)	-16.1%	16.9%	-47.2%	-17.5%	-2.4%	-57.0%	-44.9%	-36.3%	-55.0%
N SPACs	47	24	23	38	18	20	16	7	9

After the SPAC, Chad Rigetti left Rigetti, which was only worth around \$300 million at the time, and the company sold stock at \$1.53 and \$2.00 to keep operations afloat.

Regardless, Rigetti does make actual quantum computers, with the company announcing their ‘Ankaa-3’ system in December 2024. This system has 84 qubits, compared to IBM’s flagship Condor chip, with 1,121 qubits.

A qubit, (short for quantum bit) is a fundamental unit of information. Unlike classical bits, however, qubits can exist in a ‘superposition’ of a state between 0 and 1 simultaneously, compared with a classical bit, which can only exist as 0 or 1. This is useful, as it allows QCs to perform certain calculations much faster than classical computers. This description of qubits is a logical qubit. However, Rigetti is describing a machine with a physical qubit count – it could take up to 1000 physical qubits to create one error-free logical qubit, and thousands of logical qubits to actually do meaningful calculations. With Rigetti’s current computer, one cannot do any meaningful calculations as there are not enough logical qubits to apply to a problem.

The application of quantum computing in the commercial space is limited, with most of the prospective clients being limited to government agencies interested in national security applications, or research institutions seeking QCs for niche calculations. In Q4 of 2024, Rigetti had decreasing revenue of \$2.24 million, a 32.6% YoY decrease, and net income of -\$152.96 million, a decrease of 1116.7% YoY; Rigetti has \$217.2 million cash/equivalents left. The company is rapidly burning cash trying to make a device that will not have commercial applications for decades, and even then, the market value of these applications will be in the low tens of billions, split between fierce competition from Rigetti rivals. It seems highly unlikely the company will survive until 2030, let alone 2040+ trying to develop a quantum computer; the company will run out of cash before QC can even be moderately commercialised.

Major companies like Microsoft, Google, IBM, and even IonQ (below) are all trying to develop quantum machines, spending significantly more, and showing better results. Rigetti currently trades at \$8/share, with a market capitalisation of around \$2 billion. This is a gross overvaluation and does not accurately reflect the extreme risk the company faces. Like QUBT, we see significant downside for RGTI from its current price and remain short.

NYSE: IONQ

IonQ is both a larger and more substantial company than both Rigetti and QUBT. The company was founded in 2015 by professors Chris Monroe and Jungsang Kim, after a combined 25-year stint of academic research at the University of Maryland and Duke University. IonQ develops quantum computers using trapped ion technology, which literally traps ions to store quantum information, unlike the superconducting transmon circuits that are currently used by competitors (IBM, Google, Rigetti). The industry consensus of ion trapping technology is that ion traps are too sensitive to be useful, as they must be put in extremely low-pressure vacuums and contained by lasers to have almost zero energy. IonQ has created a machine called 'Tempo', which is a 100-qubit computer, though once again, this is not comparable to something like IBM's 1100-qubit machine.

IonQ has more revenue than the previously mentioned stocks, with Q4 2023 revenue of \$11.7 million, up 91% YoY, and net income of \$-202 million, down \$382% YoY. Most of this revenue is derived from IonQ's Air Force contract, a \$21.1 million project to create 'secure quantum networking'. IonQ currently only has a 36-qubit machine (Forte 1) available for public use, running around \$7000/hour, and is prone to unscheduled maintenance periods that last up to a week. There are very few available quantum stocks for retail investors to be exposed to, and there is no reason to buy a stock like Google or Microsoft for their quantum research - they are functionally pet projects of these giants. The best quantum companies like Quantinuum or PsiQuantum are private, and the only companies that remain are ones like IonQ, Rigetti, or QUBT, all of which are far behind their private competition and the research divisions of Google, IBM, and Microsoft.

Conclusion

We remain short quantum computing stocks. Stocks like Rigetti have a retail ownership verging on 75%, QUBT's retail ownership is 84%, and IonQs is around 60%. These stocks are being held, almost entirely by retail investors, which has historically been a sign of overvaluation in speculative tech trades (see the SPAC boom). These investors likely know very little about quantum computing; with this said, I am not a quantum computing expert, though I do know how to spot a bubble.

With the upcoming macro climate of tariffs, derisking, and high volatility, we expect the retail 'hype' around quantum computing to decline significantly as investors shift from speculative stocks into more conservative names.

The key misunderstanding of quantum computing retail investors is that they believe QC will revolutionise computing; you, me, and everyone else will have a quantum computer! This is obviously not the case, and no one will be running Windows and playing games on their quantum computer. QC will be limited to niche academic and commercial applications, such as cryptography and data collation.

We remain short quantum computing stocks (QUBT, RGTI, IONQ) and believe in significant downside from current valuations. These stocks may not have commercially viable products for decades, and their valuations are supported almost entirely by retail investors looking for 'the next big thing'.

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