



Bitcast Brief 025 - Synth (Subnet 50)

Supporting Document

☀️ How Synth Brings Quant Tools to Everyone

For years, hedge funds have had exclusive access to advanced quant models that predict market movements with high accuracy. These tools gave them a huge edge over retail traders and even most institutions.

Synth changes that.

Running on Subnet 50 on Bittensor, Synth decentralizes financial predictive intelligence and makes it openly available on-chain. Now, anyone – individual traders, DeFi protocols, and even autonomous AI agents – can use hedge fund-level tools directly.



200+ Data Scientists Competing Daily

At the heart of Synth is a decentralized competition. Every day, **over 200 independent data scientists (miners)** submit probabilistic forecasts for crypto and other assets. Each miner are asked to submit 100 path predictions for each asset every hour, totaling 160M data points per asset per day for Synth to produce and process.

- The competition means the system gets better every day, as the best forecasters rise to the top. Since the launch in January this year, Synth has significantly reduced the error rate of GBM model, **citing 33% average improvement** in September. (analysis: <https://x.com/SynthdataCo/status/1971258930711158986>)

- Forecasts aren't just a single price guess – they're full probability curves that reflect uncertainty, volatility, tailness, and risk.
 - Submissions are scored scientifically using **CRPS (Continuous Ranked Probability Score)**, which rewards models that are accurate, consistent, and well-calibrated.
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Predicting Across 4 Financial Assets

Currently, data scientists compete to consistently provide accurate probabilistic distribution forecasts on **4 key assets** – BTC, ETH, SOL, and gold (XAU). These forecasts process more than **160 million data points per asset daily**, creating insights that are not available anywhere else.

This is just the beginning: with the plan to add one asset per month, Synth's roadmap is to expand to **the top 75 tokens**, covering the majority of the crypto market.



What is probabilistic distribution forecasting?

A probabilistic distribution forecast is a type of prediction that doesn't just give a single outcome - it shows the range of possible outcomes and how likely each one is.

Here's a simple breakdown:

- A traditional forecast might say: "Bitcoin will be \$70,000 next week."
- A probabilistic distribution forecast instead says:
"There's a 60% chance Bitcoin will be between \$68,000–\$72,000, a 25% chance it'll drop below \$68,000, and a 15% chance it'll rise above \$72,000."

In other words, it provides a distribution of probabilities across different outcomes rather than a single fixed estimate.

This approach gives traders, analysts, and models a richer picture of risk and uncertainty, helping them make more informed decisions - especially in volatile markets like crypto or commodities.

⚡ Real Use Cases

Synth data already has direct applications in crypto and DeFi:

- **Prediction Markets (Polymarket, Kalshi):** Bootstrapping liquidity with real-time price probability distributions. Using Synth probability prediction power to
 - **DeFi Perps Trading:** Smarter leverage management and liquidation avoidance on perp dex, 24 hours into the future. E.g. if volatility is expected to be high - liquidations are a higher risk.
 - **Options:** Fair premiums pricing for advanced products like 0DTE options. Traders can leverage the difference to make more profitable trades.
 - **Liquidity Providers (CLAMMs):** Better LP range setting for higher and more stable yields.
 - **Treasury Management:** Volatility forecasting for protocols managing their native tokens.
 - **Data driven chains:** The agent layer that turns network data into automated decisions for users and protocols.
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⚡ Synth Trading: 110% Polymarket Profit to Synth

Over the past four weeks, using Synth's probabilistic price forecasts, using a \$2,000 test account on Polymarket, Synth executed ~12,000 trades with \$500,000 in volume and generated a 110% return.

Following on from this successful public test, they are now developing Synth HFT, a higher-frequency dataset designed for real-time market use.

Further information: <https://x.com/SynthdataCo/status/1975625639417028908>

Total Addressable Market potential

Narrow market definition consists of alpha/signals & alt-data for investors. Data and model outputs purchased primarily by hedge funds, asset managers, prop firms, and traders to forecast prices, flows, and events. Investment managers spent at least \$2.5B on alternative data in 2024. [Source 1](#) / [Source 2](#)

Another broader definition of the market is market data used for prediction: the broader pool of real-time and historical market data feeds that quants use as inputs to models. This market is around \$44B. [Source](#)

Both markets are growing rapidly – the narrow segment at a double-digit CAGR, and the broader market at around 6–7% [Source](#)

The Agentic Economy

A new wave of on-chain **AI agents** is emerging – autonomous bots that trade, manage risk, and interact with DeFi protocols. These agents need reliable, probabilistic forecasts to act intelligently.

Synth is becoming **the predictive intelligence layer for the agentic economy**, positioning itself as the backbone for the next generation of automated on-chain trading.

Why It Matters

- Synth democratizes tools that were once locked behind hedge fund walls.
- It harnesses decentralized competition to continually improve predictions. The Synth output significantly outcompetes traditional pricing models.
- It has already proven traction with 4 assets live, and ecosystem integrations.
- It is product first, with real use cases built to improve major DeFi verticals, benefiting the end users.
- It is building toward broad coverage (top 75 tokens) and mass adoption.

Bottom line: Synth turns Wall Street-level quant tools into an open, decentralized, onchain resource, empowering everyone from individual traders, networks, DeFi protocols to AI agents. It brings predictive data intelligence to onchain applications.

Supporting links

Website: <https://www.synthdata.co/>

On the nav bar, the **Dashboards** tab displays real-time Synth insights, using probabilistic outcomes to support trading strategies such as CLAMM LP range setting, Perps leverage and liquidation, 0DTE options pricing, and volatility forecasting for BTC, ETH, SOL, and XAU. The **API** tab outlines the data available to API users.

X: <https://x.com/SynthdataCo>

Github: <https://github.com/mode-network/synth-subnet>

Whitepaper:

<https://github.com/mode-network/synth-subnet/blob/main/Synth%20Whitepaper%20v1.pdf>

Taostats page: <https://taostats.io/subnets/50/metagraph>