



The Weekly Hash, 7/5/21: Target Hashrate Down 28% on Weekend Reset

China's mining ban is playing out, resulting in target Hashrate falling to ~103 EH/s. Observed Hashrate currently resides at 88 EH/s; we expect another 10%+ drop in target Hashrate at the next reset. We recently lowered our year-end target Hashrate estimate to ~145EH/s (see [here](#)), with an upward bias if electrical infrastructure bottlenecks prove more transient than we model.

The market has shifted from being semiconductor constrained to being power / infrastructure constrained. Given the long lead times on the infrastructure side, we assess it will take several quarters for the infrastructure deployment to be complete. As a result, Hashrate will likely be below our prior forecasts for the next ~10 quarters.

The key driver of China's actions is capital control – and control more generally, in our view. Mining allows Chinese players to convert RMB into BTC, and consequently into currencies outside governmental control. It therefore follows that *miners may not be permitted to relocate their equipment out of China*, which would not only reduce future capital control evasion but also give a pass on prior evasion or compounded growth in external capital from that prior evasion.

Bitcoin rose 2.5% week-on-week to \$35,356 as of 7/4 midnight UTC. Despite only a slight price increase, miner economics are improving because of the higher Bitcoin flow per PH/s. Furthermore, we assess equipment prices should fall significantly

over the next few months, given the shortage of sites into which to plug future deliveries; this should also accelerate an upgrade cycle of still-profitable S9 or S17 equipment to latest-generation rigs.

Total BTC earnings per PH/s are ~9.28 mBTC, up from ~6.77 mBTC / PH/s last week. (1mBTC or milliBTC = 1/1000 BTC.) Saturday's reset saw blocks counts normalizing, coupled with low network Hashrate driving increased PH/s earnings. Transaction fees fell 126 bps WoW to 5.6% of miner rewards, or 0.52 BTC per block, with low congestion levels in the "Mempool".

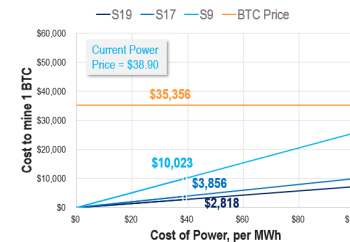
Bitcoin mining revenue rose to \$328 / PH/s per day and \$488/MWh as price remained stagnant and improved BTC flow / PH/s from the ongoing China mining ban, which eliminated a large portion of the network. This will continue to improve in the short term as the market adjusts to the falling Hashrate.

The BitOoda North American Hash Spread™ nearly doubled (99.6% WoW) from \$225 to \$449. We define the BitOoda Hash Spread™ as the difference between the cost of power per MWh and the Bitcoin mining revenue per MWh. This gives miners a quick sense of the surplus generated by their business to cover personnel, overhead, depreciation, and profit. The weighted average around the clock U.S. wholesale industrial power price (5 markets) of \$38.90 / MWh leads to an aggregate spread of \$449.

Older-gen S9-class devices saw their Hash Spread™ up ~135% to \$98/MWh. S17-class devices, the bulk of the installed base, saw a hash spread of about \$318 / MWh.

	S9 Class	S17 Class	S19 Class
Hash Spread	\$98.33	\$317.81	\$449.15
Week on Week	134.8%	103.1%	99.6%

The 72.4 MWh required to mine 1 BTC with S19-class rigs translates into \$2,818 in power expense. It costs \$10,023 using S9 rigs, a 70%+ margin, excluding labor.



Takeaways

- Mining economics have improved significantly following the weekend reset
- The big story right now is the continuing Hashrate decline due to Chinese regulatory actions and crypto bans
- Chinese miners are seeking sites to which to direct future equipment deliveries, but infrastructure bottlenecks will lead to 2+ years of better mining economics relative to our prior estimates
- We assess this presents an opportunity for US-based miners to gain share and acquire rigs and new hosting customers at attractive terms

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Key Takeaways

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BitOoda Hash™ Dashboard

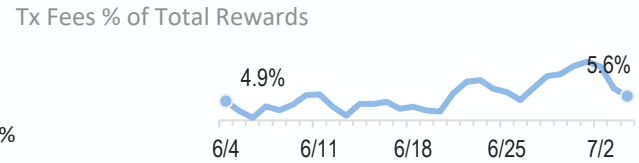
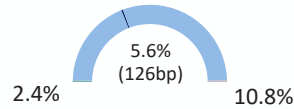
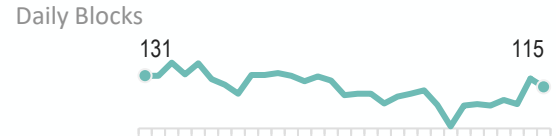
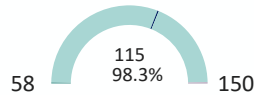
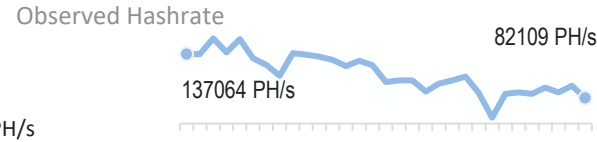
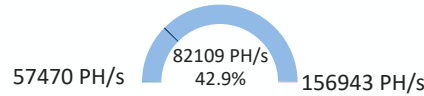
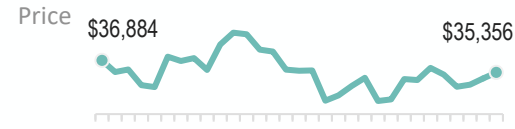
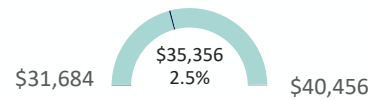
July 5, 2021

Definitions

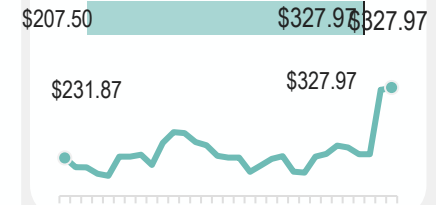
Hash Spread: the difference between the revenue per MWh from mining BTC and the weighted average cost of peak and off-peak power across 8 US zones. It is a quick measure of the profitability of US-based latest-generation mining rigs.

MWh: Megawatt hour
PH/s: Petahash per second
Tx Fees: Fees for BTC transactions

30 Day Range and 7-day % change



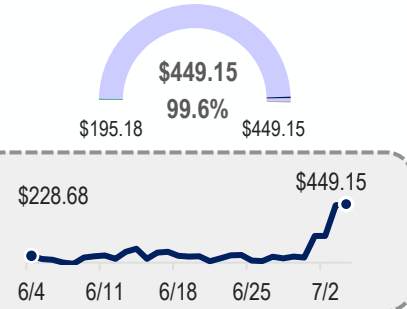
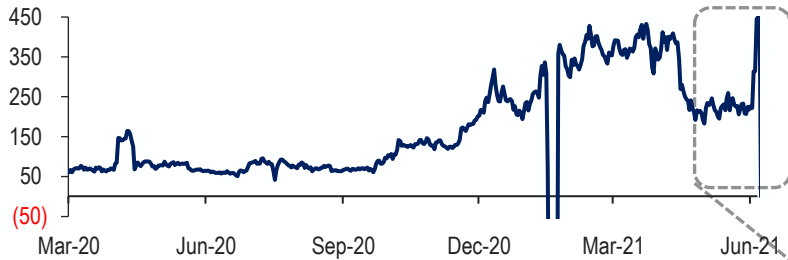
Daily Revenue per PH/s



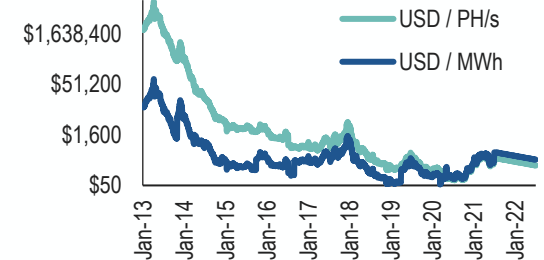
Revenue per MWh (\$19 Class)



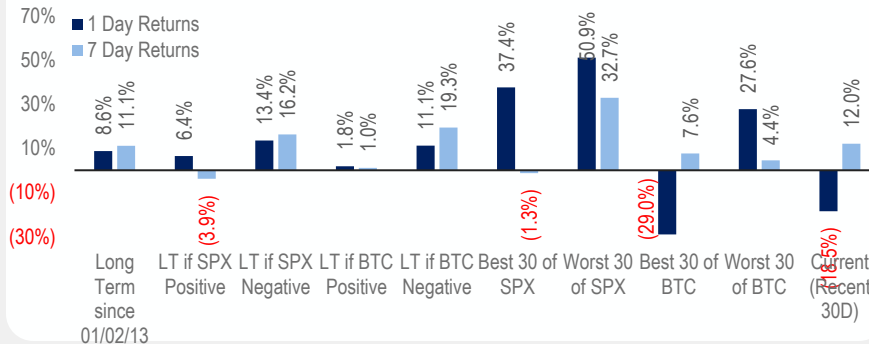
BitOoda North American Hash Spread™



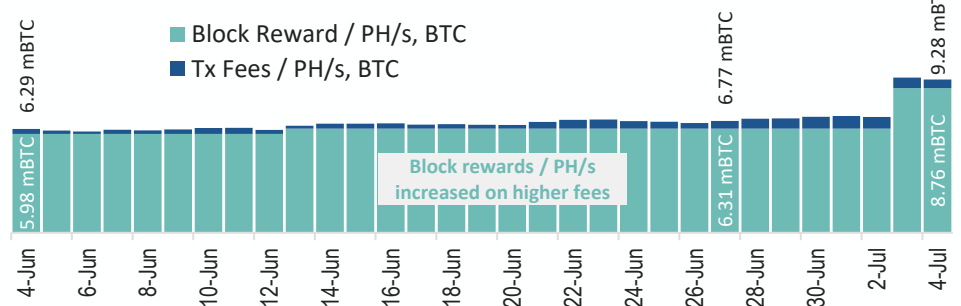
Revenue, since 2013



Historical BTC Correlation to S&P500



Daily Rewards per PH/s, in milliBTC (1/1000 BTC), last 30 days





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