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MARKETS

Cryptocurrency Companies Are Leaving China in 'Great Mining Migration'

Miners face high costs, other hurdles in removing their machines after Chinese crackdown

By Caitlin Ostroff in London and Elaine Yu in Hong Kong | Photographs by Terry A. Ratzlaff for The Wall Street Journal
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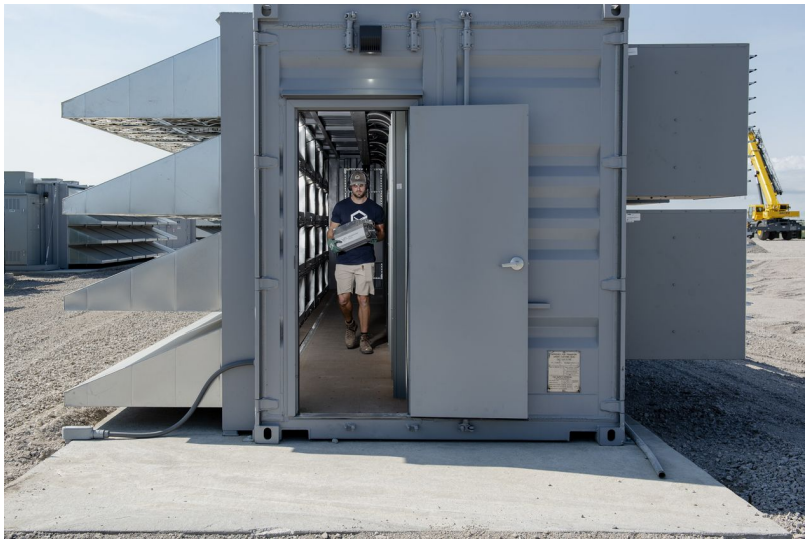
When China vowed to crack down on cryptocurrency mining early this summer, Nasdaq-listed Bit Digital Inc. ramped up efforts to get its more than 20,000 computers out of the country.

The machines are the heart of the New York-based company, which makes money by plugging the high-powered computers into cheap electricity sources so they can work through mathematical problems to unlock new bitcoin. The process, called mining, has gone from something any individual with a PC could do a decade ago, to a massive industry that uses numerous computers and lots of electricity.

Bit Digital and other cryptocurrency mining companies now face many hurdles as they move their machines out of a country that previously used two-thirds of the global energy dedicated to harvesting bitcoin. The machines are prone to damage if shaken, which makes packing and shipping them internationally an arduous task. A single new computer can cost about $12,000.

Companies have had to decide whether to move their computers by air or sea, factoring in the cost and the length of transportation. Bit Digital said it still had 9,484 mining machines—or almost a third of its computers—in China's Sichuan province as of June 30. The company has hired large international logistics companies to help move the hardware and hopes they will all be in North America by the end of September, said Samir Tabar, Bit Digital's chief strategy officer. The company is sending machines to locations in Nebraska, Georgia, Texas and Alberta, Canada.



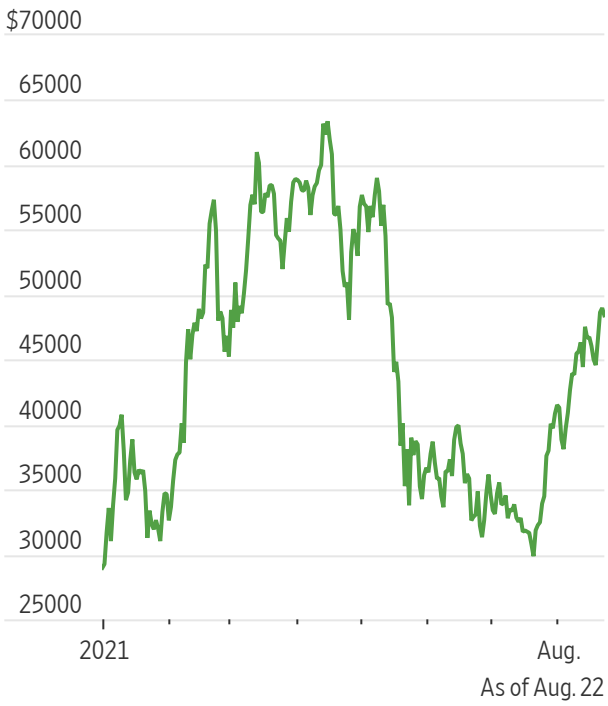
Companies like Compute North are providing infrastructure to house bitcoin mining rigs.

The whole process can cost millions of dollars. Oil prices have risen in recent months and shipping bottlenecks created by the coronavirus pandemic have caused freight costs to skyrocket. Computers from China entering the U.S. are also subject to a 25% tariff. Aside from figuring out how to pack and ship the machines carefully, companies need to find facilities with ample power to move them to.

"It's a pretty big financial impact on the miners in China," said Fred Thiel, chief executive of Las Vegas-based cryptocurrency mining company Marathon Digital Holdings Inc. "It's kind of like GM having to shut down a plant and build a new one elsewhere," he said, drawing an analogy to Detroit auto maker General Motors Co.

Miners earn fees from processing bitcoin transactions. In exchange, they also get the chance to take part in a lottery drawing where the machines generate random numbers in the hopes of getting the correct one to unlock fresh bitcoin. This makes it most profitable to mine bitcoin when the cryptocurrency's dollar value is rising. An earlier rise in bitcoin's price, which traded near $65,000 in mid-April at its peak, pushed up mining revenues, but the world's most popular cryptocurrency has since lost almost a quarter of its value.

Bitcoin's U.S. dollar value this year

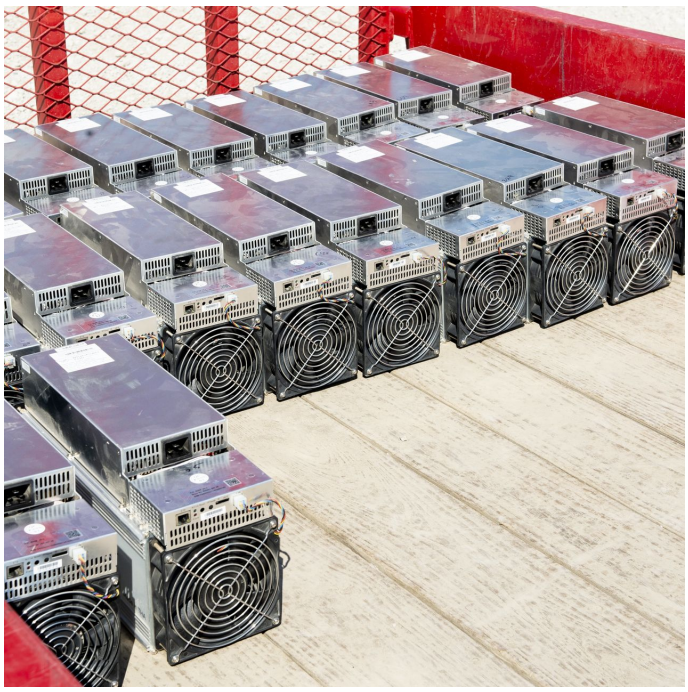


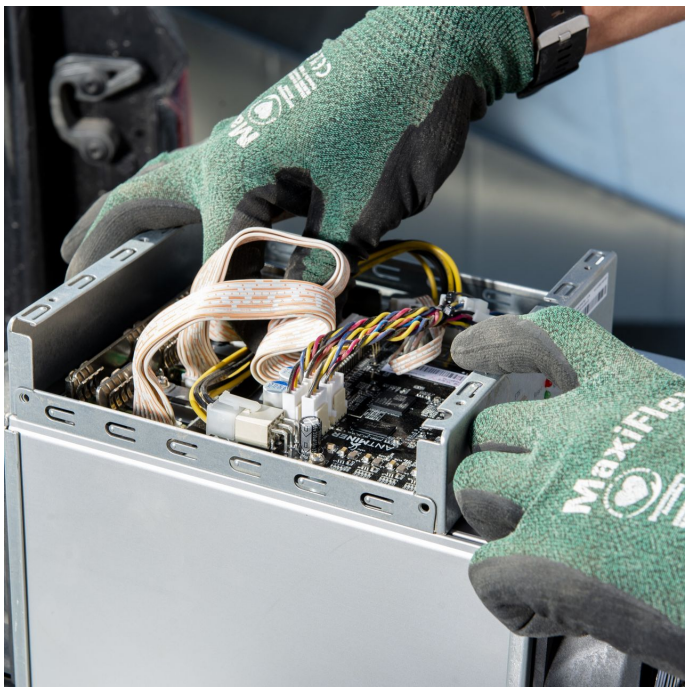
Source: CoinDesk

By design, bitcoin's network only releases new cryptocurrency every 10 minutes and the number of coins it releases is set to diminish in the future. This makes the competition to unlock fresh bitcoin energy-intensive because the only way to boost one's chance at figuring out that number is to put more machines online. At its peak in April, bitcoin miners brought in more than $70 million a day as a University of Cambridge index pegged the annual power consumption of bitcoin mining at about 130 terawatt hours—more than that of Argentina.

Despite a longstanding position against cryptocurrencies, China became a major market for bitcoin mining due to its cheap electricity, specifically in the coal-rich regions of Inner

Mongolia and Xinjiang and the hydropower hubs of Sichuan and Yunnan. While some like Bit Digital expected China could crack down on mining—and began moving their machines out at the end of 2020—Beijing's May pronouncement and subsequent local government responses caught others off guard.



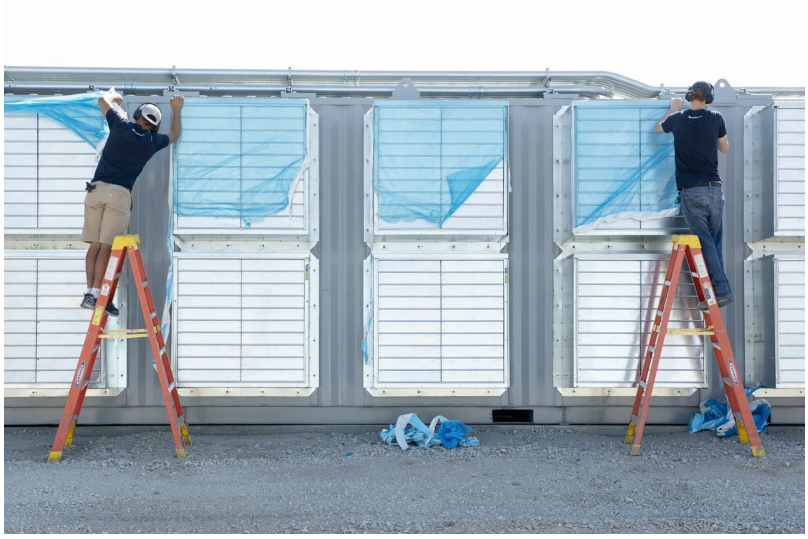


Bitcoin mining computers are prone to damage if shaken, which makes packing and shipping an arduous task.

"It was always in the back of our heads but it was never a pressing issue until now," said Alejandro De La Torre, vice president of Poolin, a cryptocurrency mining pool that has long operated in China. Mining pools allow groups of miners to combine computing power to increase their chances of unlocking bitcoin and then they split the profits.

Beijing's latest crackdown, which has triggered what some are calling the "great mining migration," came as its government set ambitious goals to reduce coal use and recast China as a climate champion. Aside from the U.S., Chinese mining companies are also moving machines to countries like Kazakhstan and Russia.

Mr. De La Torre said he has been scouting American locations where he can move some of their mining rigs from China and build a large data center.

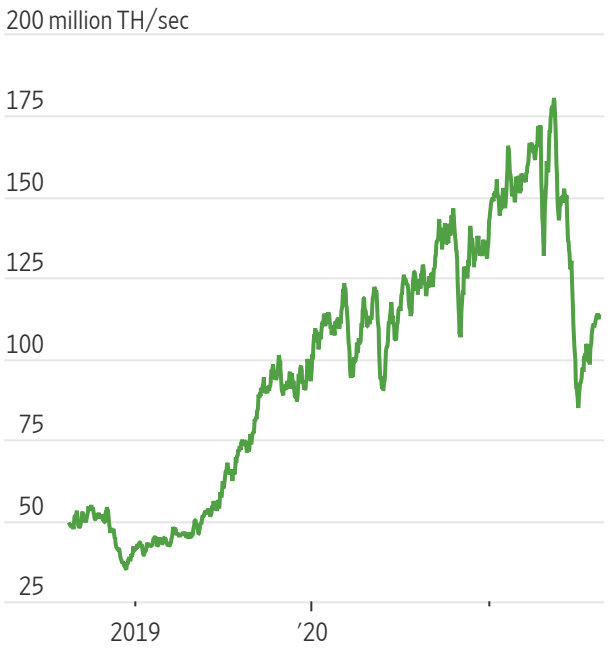


Compute North is developing new locations for miners amid surging demand.

Bit Digital is working with companies like Compute North to find homes for its remaining machines. Compute North, which provides infrastructure to house mining rigs in Texas, South Dakota and Nebraska, has seen such a strong surge in demand in recent months that it is developing five new locations to accommodate new miners. New sites are being developed in Texas and North Carolina.

Other businesses have sprung up to provide logistical services for those looking to relocate their delicate machines. Workers at a warehouse in the southern Chinese city of Shenzhen, operated by a company called Hash House, have been cleaning, testing, repairing and repackaging machines for mining farms before loading them onto airplanes in recent weeks. Coming from rural or industrial areas across China, the machines could be dirty and rusty, said Kirk Su, the owner of Hash House.

Total bitcoin hash rate*



*7 day average
Source: Blockchain.com

Dave Perrill, CEO of Compute North, said bigger players with access to resources and existing partnerships in the U.S.—such as Bit Digital—are much better positioned to weather the exodus. Compute North, which has partnered with utilities like the Nebraska Public Power District, helps guide the new arrivals through the complex process of sourcing reliable and affordable energy.

"Like any market, it's a bit of Darwinism," Mr. Perrill said. The company received more requests to host Chinese mining operations than its existing capacity allowed, he said.

There are signs that more miners are coming back online. A measure of how much computing power is dedicated to mining bitcoin hit its lowest level since September 2019 in early July, but has risen in recent weeks.

Proponents of cryptocurrencies say the mining migration will further decentralize bitcoin by making sure there is competition to unlock them and verify transactions world-wide.

New arrivals work with companies to locate affordable energy. Compute North's data facility in Kearney, Neb.

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