Are the computer systems that run the world economy any more stable than the world economy?

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It's no secret that the world's economy is in a stressful position at the moment. But how stable are the computer systems at the heart of the financial services industry?

Wall Street has been busy lately. Bernard Donefer is associate director of the Subotnick Financial Services Center, part of Baruch College and City University of New York. He says, "Over the last couple of trading days, we have seen trading volumes in the 10 billion trade and up range, which is just phenomenal. If you take a look at something like options, which trade on the basis of prices in stock market, we're seeing volumes of around a million and a quarter to a million and a half updates per second. A million and a half updates per second peak. So we're talking about huge amounts of volume going through system right now."
If you’ve been listening to our show or reading our blog in recent months, you know that reported incidents of malicious hacking are way up. So if you take the hacking, add it to what could be overtaxed computer networks, and then add in a fragile economy, it’s enough to make you pretty nervous.

But Andrew Lo says maybe it’s not time to panic just yet. He directs the Laboratory for Financial Engineering at MIT and says companies invest big in stability and security. "Just to give you an idea," he says, "JPMorgan, one of the largest financial institutions in world, spends $4.6 billion on tech and IT infrastructure, and one of the reasons spending on IT is so high is not to construct systems that will work, but systems that can withstand stress just like what we’re seeing over the last few days. So these kinds of resilient features are built into the system."

"Nevertheless," he cautions, "there are periods of time where we go into uncharted waters, where there’s just so much trading volume, so much activity that the system can be overwhelmed for a short period of time."

One way financial services companies try to keep systems stable and secure is by walling off the network experience from the rest of the Internet, says Donefer. "We use private networks, secure networks, very low-latency high-capacity networks, not the public Internet, to make sure we have the capacity to do the trading and transactions that are necessary."

"There is a valve that goes out to the rest of the world, but that’s basically to get retail customers’ transactions into system. Once the retail customer’s transaction is accepted by a financial institution, then it’s on private networks. When institutions trade -- pension funds, mutual funds, hedge funds -- they use systems using private networks. They don't use the internet cause with high frequency trading, you can't trust the Internet to be reliable and fast enough."