WALL STREET

Don't Panic! Market Fragmentation Will Save You!

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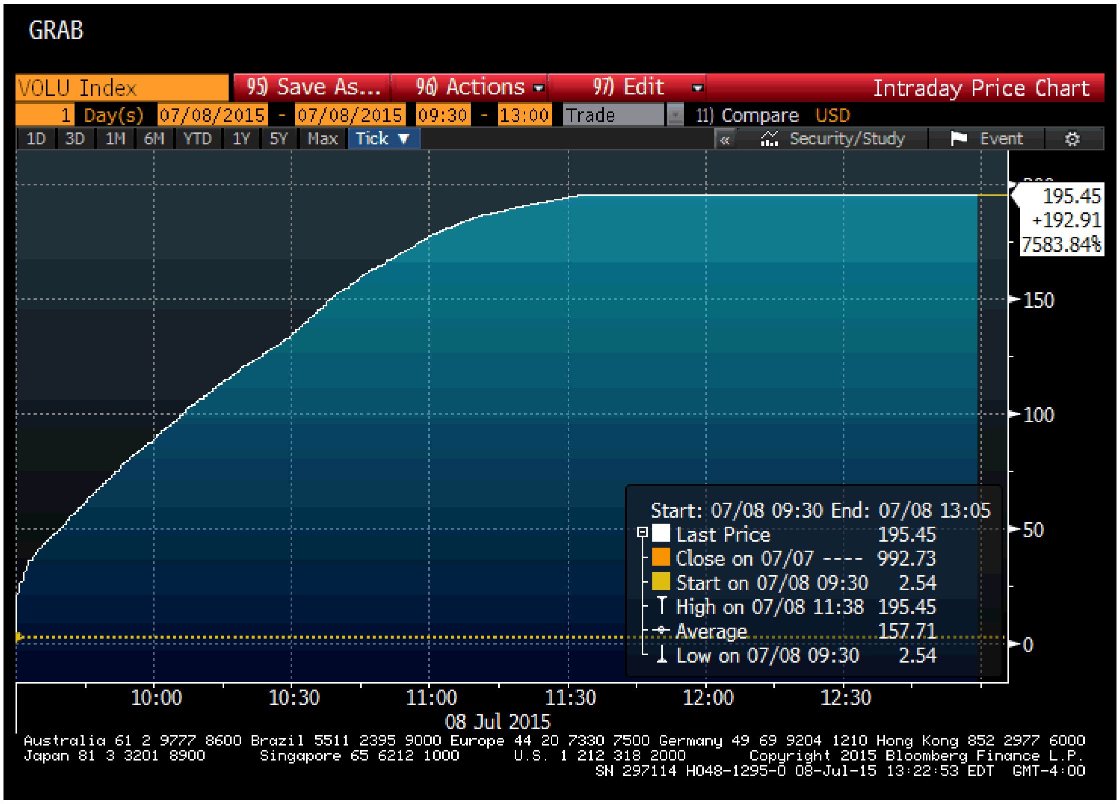
By Matt Levine

Okay, here's how you do stocks:

1. A bunch of electronic trading firms post bids to buy shares, and offers to sell them, at the New York Stock Exchange, Nasdaq, the two BATS exchanges, seven other exchanges and like 40 dark pools.
2. You go to your broker and are like, "I want to buy some stock."
3. He looks at all the offers at all the places and sees which is the cheapest.
4. Then he buys the stock for you from that place.

This is wrong in many details -- if *you* go to a broker, he will send your order to a wholesaler, and it will never get within a mile of an exchange -- but it's right enough. If one of the 11 exchanges that displays quotes stops displaying quotes, as the New York Stock Exchange did at 11:32 a.m. today, then you pick the cheapest offer on the other 10 exchanges. There are still 10 of them! It's fine. Here is a chart of cumulative volume on the NYSE as of 1 p.m. today (in millions of shares):



Notice: There's a lot of trading at the open, then a steady amount of trading during the morning, and then at 11:32 it goes dead. Here is a chart of total volume in U.S. stocks as of the same time:

Notice: It keeps going steadily up. Nothing looks interesting about 11:32 on this chart. This is not a story of people finding that they were unable to trade on the NYSE, freaking out and eventually switching to their backup systems. This is a story of computers constantly trading stocks on 11 different exchanges and then at 11:32 those computers switching to trading stocks on 10 different exchanges, barely noticing that one exchange went dark. Those computers are not sweating it. "For the most part the system is muddling along, relatively normally," says a guy, and presumably if you asked a computer it would be even more chill.

(Notice also that, even before the NYSE shut down, it was a pretty small fraction of total trading! It averages around 13 percent of U.S. stock trading. That makes it one of the biggest of the 11 exchanges, but still just one of 11.)

Of course there are some reasons to sweat the NYSE closing. For one thing, when a major financial utility, a major airline, a major newspaper and a major Zero Hedge all shut down due to computer problems on the same day, I for one stock up on canned goods and ammunition, that is just common sense. (NYSE assures us it's a glitch, not hackers.)

For another, while you can still buy and sell stock pretty much as normal, the NYSE price of NYSE stocks matters for various secondary purposes. Most important, probably, is the closing auction: While other exchanges can sort of peter out until the end of the day, only the NYSE can do a closing auction for NYSE listed stocks. The closing auction serves two purposes. First, it gets you an official closing price for all the companies listed on NYSE, which will be listed in the newspaper and so forth. Second, it allows the people -- often mutual funds -- who want to trade at that closing price to do so. Instead of trying to buy stock a microsecond before the market closes, you use the auction to just buy stock at the closing price, knowing that lots of others will be selling it there. If there's no closing auction, no one can trade at the official closing price: All they can do is try to trade near the end of the 4 p.m. trading day. And their efforts to just do a ton of trading just before 4 p.m. will be ... awkward. Fortunately NYSE has some time until 4 p.m. It has said that it [plans to reopen] "by 2:45 or 3 p.m."

Another secondary problem is index calculation: The major indexes seem to use primary listing exchange prices, rather than composite prices, to do their calculations. ("Today's issue affected transactions on the company's main market and impacted indexes derived from prices generated by that venue," [reports Bloomberg].) The important index price is the one computed at the end of the day based on closing prices; the intraday index price doesn't seem to have much official importance. Just for fun, here is a chart of the S&P 500 index (orange) against the SPDR S&P 500 exchange-traded fund (white), as of 1 p.m.:

Notice that the ETF heads down shortly after 11:32, but the index remains relatively calm for almost 20 minutes before following the ETF precipitously down. Before and after those 20 minutes, they track each other closely. The ETF is an actual traded price, the result of computerized traders who are looking at the prices of stocks on all trading venues and adjusting their ETF prices accordingly. The index is a calculation, and it sure looks like it took the calculators 20 minutes to switch over to other venues after noticing that their NYSE prices weren't updating.

People have lots of complaints about modern equity market structure: There are too many computers! It's too fast! It's too fragmented! But look how well it worked today. The New York Stock Exchange is a place of great symbolism and many television sets, but the computers don't watch TV and don't care about symbolism. Or rather, their symbolism is much simpler and less emotional: To the computers, the New York Stock Exchange is a little letter "N" next to a quote. When they see fewer Ns and more Ts and Ys and Ks, they take it in stride. Trading proceeds as normal.

And because the market is so fragmented, it's easy for them to find lots of quotes to trade with in lots of other venues. That doesn't mean that criticism of market fragmentation is wrong, but fragmentation does have some benefits. If you centralize trading at one exchange, many things become easier and fairer and more transparent. But the exchange has to work! In our fragmented world, it's okay if it sometimes doesn't.

1. *Also like the broker can't look at all the orders in the dark pools, that's the point of them being dark pools.*

2. *I kid, a little: The routing systems are more complicated, regulated by Regulation NMS. Ordinarily an exchange couldn't execute a trade without making sure it's at a price at least as good as NYSE's price, but exchanges can "declare 'self help'" under Rule 611(b)(1) of Regulation NMS to get out of that obligation when NYSE goes down.*

3. *Of course Nasdaq does the closing auction for Nasdaq stocks. I wrote about it once, when some guys manipulated it amusingly. [***UPDATE:*** *Nasdaq actuallyruns its own closing cross for all nationally listed securities, not just Nasdaq listed ones, though it only has any official effect for Nasdaq ones.]*

4. *A related issue is that many equity derivatives are priced by reference to NYSE prices. If you had a derivative referencing the NYSE volume-weighted average price today, then your derivative is basically still on its lunch break. The intuition here is probably that if there's no NYSE price, there are likely to be liquidity issues, and the bank would rather not be trying to match VWAP while the market is in chaos. Even though, in the event, the market is not particularly in chaos today. You gotta plan for the worst.*

5. *I have some sympathy with the view that Regulation NMS and market information fees subsidize otherwise uneconomic small exchanges, and that a more free-market system in which exchanges had to earn their volume might be better. On the other hand, a world in which everyone was*

required to trade NYSE stocks on the NYSE -- our world not all **that** *long ago -- seems bad in general, and would be terrible today.*

6. *E.g. it's harder to front-run orders from one exchange by racing to another, heh heh.*

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