EXHIBIT 32

IN THE UNITED STATES DISTRICT COURT

FOR THE SOUTHERN DISTRICT OF FLORIDA

IN RE JANUARY 2021 SHORT SQUEEZE TRADING LITIGATION

No. 1:21-MD-2989-CMA

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DEPOSITION OF STEVEN GRENADIER, PH.D.

Remote Zoom Proceedings

Menlo Park, California

Wednesday, April 19, 2023

REPORTED BY:

LESLIE ROCKWOOD ROSAS, RPR, CSR 3462

Q. And what type of investment strategies have you used in the past?

A. So I am basically an index person. So I have a very well-diversified portfolio, and I mean diversified across countries, asset classes, all that kind of stuff. So I'm very much -- very diversified. I would say I -- my only -- only idiosyncratic nature is I'm probably less risk -- more risk averse than the average person so I generally keep a higher component of my money in low risk fixed income than -- than most people do.

Q. Like corporate fixed income or government fixed income?

A. Generally government fixed income. So of that, of course, is for tax reasons, I hold a lot of California municipal bonds, but I also own a lot of relatively short-term treasury bonds.

Q. Do you -- do you ever trade on momentum?

A. I do not.

Q. Do you ever make short-term trades in equities?

A. I never have.

Q. What is the fundamental value of a stock?

A. So generally, so that's -- that's not a -- that term can be defined different ways by different people. Let me try to give you my best understanding of a sort of umbrella meaning to that.

Fundamental value of a stock is the present value of all future cash flows that you will receive by holding stock.

Now that might sound sort of definitional, but it's actually a very important concept. We hold stocks -- they're not like widgets. We hold stocks for a particular reason, and that's because we want earnings from them. We want cash flows from them.

And so given that basic idea, anything that determines those underlying cash flows is what we would consider a fundamental value. So, for example, type of things that influence those future earnings would be expectation -- excuse me, cash flows, would be expectations of things like revenues, profits, competition, and of course, underlying riskiness.

So it's these company-specific characteristics that would drive a fundamental value as opposed to non-fundamental things such as frenzies and bubbles and madness of crowds, that kind of stuff.

Q. Is there -- do you know how to derive the fundamental value of a stock?

A. Unfortunately, there is no one fundamental value of a stock. We try our best to get a good estimate of it, but it's -- it's a -- something we try to approach. But I don't believe there is a known fundamental value.

In a metaphysical sense, maybe there is one that's known to some sort of deity, but in general, all we can do is estimate it.

So I've never thought that there is a fundamental value that I can grab onto, but we try very hard to estimate it.

Q. You've done damages analyses in securities class actions before; is that right?

A. Yes.

Q. All right. Now have you ever used the term "true value" in connection with a securities class action damages analysis?

A. I don't know. It's possible. It's not the type of term that falls right out of my lips. So it's possible. It's not the normal term I use, but it is possible I've used that in some report.

Q. Okay. So, you know, in the typical Section 10(b) securities class actions, you know, stock drop case, how would you measure per-share damages? What's the simple calculation you would typically use to measure?

A. So generally in most of these cases, there's something I would call conceptual, which is the difference between an actual value at a time, you know, in the real world, versus a but-for value, which is a

been announced at $8 versus $10. You were trying to figure out as best you can what the stock would have traded for in that but-for world.

Q. And is it -- is it necessarily true there the but-for value is equal to its fundamental value?

MR. RYAN: Objection to form.

THE WITNESS: So, again, I don't normally think of the fundamental value there. I don't know. I would normally think of it -- I think the best way I convey it is the but-for price would have been an economist's best estimate of what the price would have been in the actual world had the circumstance -- circumstances had been what is described in the but-for world, what the price would have been in that world.

Q. BY MR. ROSEN: Do you have any sense of what portion of the volume of trading on the NYSE and NASDAQ that is represented by investors who buy primarily based on their view of the fundamental value?

A. I don't know the answer to that question.

Q. Okay. So, well, you know, is it true that there's a quite a lot of people or there are many people who -- who are considered -- who consider themselves value investors or value investing is sort of a strategy, an investment strategy that people use, some people use.

Is that fair?

A. It is fair. But I would add that what one person called a value investor is very different than others. I -- I teach a class that's primarily on value investing. And even people who are real-world value investors, they have very different views of what value investing is. It's sort of a constant shock to me.

But value investing as a term is used all the time among certain kinds of investors.

Q. Have you ever heard of the investment strategy called technical analysis?

A. I have.

Q. And what do you understand that to be?

A. So, again, with the caveat that that's a very broad term, technical analysis is -- technical analysis is generally used by investors who focus more on what I would call trends and timing issues.

So an example of a technical analysis put to work would be somebody who believes in what you asked me earlier about momentum. They may believe over certain time horizons stocks that went up are more likely to go up again.

There are also technical analysts who do the exact opposite, and they try to find stocks that moved up recently, and they think they're going to go back down.

So for any sort of drawing I could do on a

chalkboard of a price path of a stock, I could find analysts that see all different -- technical analysts that see all sort of things. But in general, technical analysis is focused on trends and pattern spotting.

Q. And are there -- are there investment funds that use technical analysis as an investment strategy?

A. I'm sure there are.

Q. What about high-frequency trading? Could -- what exactly is this?

A. Sure.

It -- a lot of high-frequency trading would fit into technical analysis. So high-frequency trading, very generally, is doing some sort of pattern recognition, but as the name implies, over very short frequencies, sometimes fractions of a second.

And generally nowadays, they're computer driven, and the competition in that world has gotten down to who has the fastest connection to the trading platform. And so they compete over large amounts of investments in some sort of wire or wireless technology to trade as fast as possible, seeking profits from very short-term trading patterns.

Q. Now I've heard the term "program trading" in the past. Is that -- is that a broader -- is -- is high-frequency trading a subset of program trading?

A. I would say so because they're both often -- obviously for high frequency, they're computer generated, there's not an individual that's thinking in split seconds. They're both computer driven.

But there's a large body of trading that's program trading that's very different. So an example might be a strategy that uses a computer to formulate hedges.

So an institution might use computer trading that would invest in an equity that the computer figured out how to get an insurance like put option on it at the same time to get rid of some of downside.

And that's not necessarily the same thing as high-frequency trading.

Q. And earlier the term "momentum trading," I don't know if I mentioned it or you mentioned it. Could you explain what "momentum trading" is?

A. Sure.

Let's just be generic for the moment and just say there is a horizon, which could be a week or a month or a day. And momentum generally believes that what we call there is positive auto-correlation. That is a rise in a security's price over a particular period of time is more highly to be followed by a subsequent rise.

So that's a particular pattern, and momentum

traders sometimes believe there are such patterns over these split seconds that we previously spoke about. But they also believe that it may also be true over longer periods like weeks or months.

I am not aware of a momentum trader that believes they last for many years. In fact, generally people believe the opposite over longer periods of time.

Q. What about the investment strategy called trend following? Is that separate from momentum trading?

A. I would put -- so that's not a term that I use. I would view trend following as a -- as an analogous term for technical analysis.

Q. Okay. So what about "swing trading"? Do you know what "swing trading" is?

A. I don't.

Q. How about the investment strategy called "moving average crossover"?

A. I know what a moving average is. That's sort of a -- you know, if you have a list of data, you can calculate an average, and then every day that data shifts forward another day, and you can calculate another average. And you can track those averages over time.

That's all -- I know what a moving average is. The strategy you're talking about conveys that it uses the moving average, which sounds like technical analysis,

but I do not know that particular strategy you mentioned.

Q. Okay. And you mentioned index investing. That's another separate strategy; is that correct?

A. I would say so. In my view, yes, it is.

Q. And what about growth investing? Is that separate from value investing?

A. It is. With the same caveat. Some people say growth investing sounds just like someone else's value. But in general, growth investing is what it sounds like. You're trying to find stocks that are going to grow faster than others in the future.

Q. What about socially responsible investing; is that a separate investment strategy?

A. So I would mostly say yes. I'm not 100 percent sure I would call it wholly an investment strategy. It could also be a more broad strategy of what people view as something that's good for society as opposed to what's good for their portfolio. They get enmeshed.

But social investment strategy is a strategy where investors take into account things other than financial values, and you can come up with your own list of what they're looking at, but it could be whatever they think is good for society, they may take that as an attribute and something that makes them want to invest more in it.

Q. What about the investment strategy called "events-driven investing"? Have you heard that term?

A. I believe so.

Q. And that's, for example, mergers or investing when a merger is announced? Is that an example of events?

A. That would be my understanding. There's a hedge fund strategy that they will call events driven, and sometimes it's things that are even broader in a macro context. Like I think of a George Soros as doing this kind of thing. About sort of like large events dealing with monetary policy and things like that. So I'm familiar with events, not just corporate events, but also macro events, too.

Q. Now we -- your -- your -- your report mentions, it uses the term "short squeeze," and you understand what that -- you have a general idea of what a short squeeze is supposed to be; right?

A. I think that you put it correctly. I have a general idea. It's a bit of a term of art. As I think I convey in my report, the definitions vary, but we all agree on some basic principles of a short squeeze.

Q. Do you -- do you think it would be fair to characterize investing because you believe there is a short squeeze to be a form of event-driven investing?

A. I -- I don't really have a good answer to that because I don't use the phrase "event-driven investing." I don't disagree with it. It's just -- it's not a phrase I would normally use so I'm not sure how to answer that one.

Q. Is that because the term "event driven" is so -- is very vague?

A. I wouldn't even go that far. I would just simply say event-driven investing isn't the kind of term I normally do. So I don't really want to venture out and offer an opinion on a phrase that I normally don't do.

Part of it's vagueness, but it's vagueness in my own mind. It's possible there are traders on Wall Street who would say, "I know exactly what you mean by that." But "event driven" to me is a very broad term. So I'm not really sure how I would convey that.

Q. What about "contrarian investing"? Is that a type of investment strategy that people use?

A. Yes, it is.

Q. And how does that work?

A. So --

Q. Or not work?

A. Sure.

As a general principle, a contrarian does what it sounds like. They try to make investments that are

currently out of favor with the idea that they think that things will turn around.

So I would view a contrarian strategy as being somewhat the opposite as a momentum trader.

Q. All right. So there are nine stocks that are the subject of this litigation that are listed in the Complaint. I'll name a couple of them. AMC, GameStop, Koss, Bed Bath & Beyond, Blackberry, et cetera.

You're familiar with those nine stocks; right?

A. I am.

Q. I'll just -- I'll just use the term "nine affected stocks" or the nine stocks if that is -- and if you don't understand my use of the term, let me know, but I'll -- rather than list all nine.

So do you -- is it your opinion that those nine stocks were overvalued as of close of trading on January 27, 2021?

A. So that is not part of my opinion. It's related -- the question is obviously related to my opinion that as of that period of time, I don't believe they traded in efficient markets. That's my opinion.

Now whether they were above or below some sort of value, I didn't form an opinion on that. I -- my opinion was whatever their value was, it wasn't tethered to value-relevant information.

THE REPORTER: Excuse me. Nicholas Lin is asking to join the deposition.

MR. RYAN: Yes, he is with Robinhood. He's an inhouse lawyer at Robinhood.

(Nicholas Lin enters deposition room.)

THE REPORTER: Thank you.

MR. RYAN: Thank you.

THE REPORTER: You can continue, Counsel.

Q. BY MR. ROSEN: Professor Grenadier, would you agree that price is typically the best estimate of value for publicly traded stock?

A. I'm sorry, I actually didn't hear the -- I didn't quite hear the end of your sentence. I don't hear everything crystal clear. I hear everything pretty darned good, but I didn't get that one.

MR. ROSEN: Let me close my window because it could be noise from the outside.

Q. Would you agree that typically price is the best estimate of value for publicly traded stocks?

A. So in the context -- if I believe for these stocks, they are traded in an efficient market, which is often the case, then yes, I would agree with you.

Q. Okay. And for stocks that are not traded in an efficient market, what is the best estimate of value if not price?

A. Then that's an almost impossible question to answer. Because if you can't rely on the price as the best estimate of value, in an efficient market, we're left to individual calculations. So I don't know what more I can say is investors would have to use other resources to value them, not necessarily silly resources, but sometimes very sophisticated resources to value them. In some grand scheme of things, the people with the best information and the best methods would probably come up with the best estimate of -- of, you know, true value or whatever you want to call it of a security, but there's no one thing that we would all rely on.

Q. And you didn't perform any tests to try to estimate the value of any of these nine affected stocks either in the pre-class period or the class period?

A. Let me make sure I understand your question.

So in terms of did I do any tests to try to value? Can you -- can you give me an example of what you might mean?

Q. Well, I don't know. Did you do a discounted cash flow analysis of any of the nine stocks?

A. I did not.

Q. Did you perform any other analyses in an effort to try to determine what their fundamental value was at any time during the pre-class or class period?

A. I did not. My focus was on the prices themselves, or more importantly, the movements of the prices themselves of the -- I think you call the affected stocks, and what was the value relevant information that was conveyed at those times. That, of course, was the substance of my report.

Q. Can you -- do you recall what the specific restrictions were that Robinhood imposed on these nine stocks on January 28th, 2021?

A. So I'm happy to answer that with a general conveyance of that information. Of course, there was a table with my specific understanding about literally which stocks, which time of day.

But my understanding is they changed over time, but there are these so-called PCO restrictions from Robinhood.

Quick question: My understanding is you said Robinhood restrictions; is that correct, in your question?

Q. Yeah, yeah. I was just asking about Robinhood.

A. That was my recollection, but before I went on and on, I wanted to make sure.

Yes. And those restrictions are essentially sell only, no buy. And then over time, they changed. But in general they weakened to things such as limits on