IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	No. 18 CR 00035
	)	
v.	)	Judge John J. Tharp, Jr.
	)	
JAMES VORLEY and	)	
CEDRIC CHANU,	)	
	)	
Defendants.	)	

MEMORANDUM OPINION AND ORDER

James Vorley and Cedric Chanu were charged in a superseding indictment with conspiracy to commit wire fraud affecting a financial institution, in violation of 18 U.S.C. § 1349, and, collectively, sixteen substantive counts of wire fraud affecting a financial institution, in violation of 18 U.S.C. §§ 1343 and 2. *See* Superseding Indictment, ECF No. 127. Following a two-week jury trial, each defendant was found guilty on several substantive wire fraud counts—Vorley on three, and Chanu on seven—but acquitted as to the conspiracy and remaining wire fraud charges. Both defendants have moved for a judgment of acquittal or, in the alternative, a new trial. Their challenges range from insufficiency of the evidence, to the wire fraud statute's unconstitutionality as-applied in this case, to various errors in the jury instructions and evidentiary objections, to juror coercion during deliberations owing to the COVID-19 pandemic. The evidence was sufficient to support the jury's verdicts, however, and none of the defendants' arguments for a new trial are meritorious, so their Rule 29 and Rule 33 motions [350], [355], [354], and [361] are denied.

BACKGROUND

Defendants James Vorley and Cedric Chanu are former Deutsche Bank precious metals traders. Vorley worked in the Bank's London offices between May 2007 and March 2015; Chanu

worked in both London (March 2008 to May 2011) and Singapore (May 2011 to December 2013). The superseding indictment[1] charged that from March 2008 through approximately June 2013, Vorley and Chanu knowingly and intentionally devised a scheme to defraud other precious metals futures traders on the Chicago Mercantile Exchange ("CME")'s Commodity Exchange, Inc. ("COMEX"). Superseding Indictment ¶ 1. Their alleged scheme involved placing so-called "Fraudulent Orders" or "spoof" orders in the COMEX order book via the electronic trading system "Globex"—these orders were wire communications for the purpose of the statute. *Id.* These orders were fraudulent, the government alleged, because the entry of an order on the exchange carries with it an implicit representation that the party placing the order intended for the order to be executed. The prosecution's theory was that Vorley and Chanu instead intended to cancel the trades before they were executed and, in doing so, aimed to create a false impression of supply and demand in the market and induce other traders to execute on the defendants' opposite-side "Primary Orders" at "prices, quantities, or times that they otherwise would not have." *Id.* ¶¶ 4-5, 21.

The government alleges the scheme worked as follows: if Vorley or Chanu wanted to *buy* gold futures at a price lower than the prevailing market price, he would place large spoof orders to *sell* gold futures at above-market prices; as other market participants reacted to the arrival of large sell orders, the prevailing price of the contract at issue would fall and the defendant's primary buy orders would be filled at an artificially low price. If Vorley or Chanu wanted to sell gold futures at a price above the market, on the other hand, he would place large, visible spoof orders on the buy side; the market would climb toward his primary sell order and that order would be filled at an artificially high price. In either scenario, the defendant would cancel the large spoof orders if

[1] All references to the indictment are to the superseding indictment.

his primary order was executed on or if the market got too close that he risked "getting given"—having an unwanted fill of the visible buy or sell order.[2] The defendants' primary orders generally were "iceberg" orders[3] that revealed only a portion of the defendants' full trading interest to the market, while the "spoof" orders took the form of either a single, large visible order, often for one hundred contracts or more, or groups of visible ten-lot orders, layered at slightly different price points.

The government alleged that the defendants variously executed this scheme individually, together, and, at times, in coordination with other Deutsche Bank precious metals traders, including David Liew, who worked for the bank in Singapore from December 2009 until February 2012, pled guilty to participating in the scheme, and testified at trial. At the center of the prosecution's presentation at trial were sixty-one trading episodes—each of which, it alleged, involved at least one of the defendants placing "spoofing" orders on the opposite side of the market of a smaller "iceberg" order, on their own or in coordination with another Deutsche Bank trader, in order to fill the iceberg orders at a better price than the price at which the market had previously been trading.

Over the course of six days of evidence presentation, the jury heard from a variety of witnesses during the government's case: John Scheerer, a senior director in CME Group's Global Command Center; David Liew, the defendants' former Deutsche Bank colleague and alleged coconspirator in the charged conduct; Professor Kumar Venkataraman, a professor of finance at

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[2] *See, e.g.*, Tr. 717:12-718:1 (David Liew explaining that when he warned Chanu not to "get given," he was "warn[ing] him that his bids were fairly close to the market and some of that might get executed" which Liew knew Chanu did not want to happen).

[3] The evidence established that "iceberg" orders are orders in which only a portion of the bid or offer (the tip of the iceberg) is visible to other traders, with the balance (like the submerged mass of an iceberg) hidden from view. The evidence established that iceberg orders were permitted by the CME's rules. Tr. 376:8-377:2.

Southern Methodist University and an expert on financial markets; Anand Twells, of Citadel Securities; Travis Varner, of Quantlab Financial; Michael Koplowitz, a Deutsche Bank compliance officer; Special Agent Jonathan Luca, the FBI case agent who led the FBI's investigation in this case and who is himself a former futures trader; Maria Garibotti, a consultant with Analysis Group, the group that designed the government's charts and performed the underlying analysis of the defendants' trading data; and Charles Graf, a graphics design professional who created one of the government's demonstrative exhibits. The defendants called no witnesses.

The trial took place in a courtroom modified to permit the observance of strict COVID-19 protocols. However, on the morning of September 22, the last day of evidence presentation, a juror was hospitalized with symptoms consistent with COVID-19.[4] He was excused from jury service, and, with the agreement of the parties, the Court anonymously polled the remaining jurors to determine whether they would like an opportunity to consult that day with a medical professional about potential COVID-19 exposure. Two jurors indicated that they would like the opportunity to do so, while the remaining eleven responded that they did not need to consult with a medical professional and would like to proceed with the trial. Tr. 1997:23-1998:3; Tr. 2001:15-2002:1. The parties then stipulated to proceed with an eleven-member jury, and the two jurors who wanted to see a medical professional were excused. At the end of the government's case later that day, both defendants moved for a Rule 29 judgment of acquittal; those motions were taken under advisement. The case went to the jury in the late afternoon on September 22. After three days of deliberations, the jury returned their verdicts on September 25. Mr. Vorley was found guilty of Counts 2, 8, and 10, and Mr. Chanu was found guilty of Counts 3, 9, 11, 12, 14, 15, and 16. The

[4] As it turned out, the juror had not contracted COVID-19, but was suffering from a collapsed lung.

defendants were found not guilty of the remaining charges, including the conspiracy charged in Count 1.

The defendants have now briefed Rule 29 and Rule 33 motions for judgments of acquittal or, alternatively, a new trial. *See* Defs.' Joint Rule 29 Mot., ECF No. 355; Chanu Suppl. Memo., ECF No. 356; Vorley Suppl. Memo., ECF No. 357; Defs.' Joint Rule 33 Mot., ECF No. 354; Defs.' Suppl. Rule 33 Mot., ECF No. 361. They argue that the evidence was insufficient as to each element of the substantive wire fraud offense for a rational jury to conclude, beyond a reasonable doubt, that the defendants were guilty of the charged conduct; that the defendants did not participate in a "scheme to defraud" as a matter of law; and that the wire fraud statute is unconstitutionally vague as applied to the defendants' conduct. They also allege various errors throughout the trial that, they argue, warrant a new trial, should the Court consider the government's evidence sufficient under the Rule 29 standard.

DISCUSSION

I. Rule 29 Motion for a Judgment of Acquittal

In considering a Rule 29 motion, this Court views the evidence in the light most favorable to the government, and the verdict will be overturned only if no rational trier of fact could have found beyond a reasonable doubt that the defendants committed the essential elements of the crime. *See Jackson v. Virginia*, 443 U.S. 307, 319 (1979); *United States v. Genova,* 333 F.3d 750, 757 (7th Cir. 2003) ("Rule 29(c) does not authorize the judge to play thirteenth juror."). After a jury's guilty verdict, a criminal defendant seeking a judgment of acquittal under Rule 29 faces a hurdle that the Seventh Circuit has deemed "nearly insurmountable." *See United States v. Jones*, 713 F.3d 336, 339 (7th Cir. 2013); *see also United States v. Garcia*, 919 F.3d 489, 497-98 (7th Cir. 2019) (observing that successful Rule 29 motions are "relatively rare" in modern federal practice); *United States v. Weimert*, 819 F.3d 351, 354 (7th Cir. 2016) ("Given our deference to

jury determinations on evidentiary matters, we rarely reverse a conviction for mail or wire fraud due to insufficient evidence."). Nevertheless, because the government bears the burden of proof, the Rule 29 standard is not wholly insurmountable, and "the height of the hurdle depends directly on the strength of the government's evidence." *Jones*, 713 F.3d at 339. If the evidence is insufficient to sustain the conviction, this Court must grant a motion for judgment of acquittal. *See id*. at 339-40.

A. The Government Presented Sufficient Evidence for a Reasonable Jury to Convict Each Defendant of Wire Fraud Affecting a Financial Institution.

In challenging their convictions on the substantive wire fraud counts, the defendants maintain that the prosecution failed to present sufficient evidence to prove any of the elements of wire fraud as to any of the counts of conviction. They contend that the evidence presented at trial was insufficient to prove beyond a reasonable doubt that Vorley and Chanu knowingly misrepresented their intent to trade, that their intent was material to other market participants, or that the defendants had the specific intent to defraud; that, as a matter of law, the evidence did not establish a "scheme to defraud" within the meaning of the wire fraud statute; and that the implied misrepresentation theory underpinning the prosecution renders the wire fraud statute unconstitutional as applied to the defendants. *See* Defs.' Joint Rule 29 Mot. at 1-4. Each of these arguments fails when the evidence adduced at trial is viewed in the light most favorable to the prosecution.

1. There Was Sufficient Evidence for a Jury to Conclude that the Defendants' "Spoof" Orders Implicitly Misrepresented their Intent to Trade to Other Exchange Participants.

The defendants first attack the sufficiency of the evidence establishing that they made misrepresentations to other COMEX precious metals futures traders. The indictment contended that the defendants' spoof orders were "material misrepresentations" that "falsely and

fraudulently" represented to the other traders in the marketplace that the defendants were "intending to trade the Fraudulent orders when, in fact, they were not" because, at the time they were placed, the defendants intended to cancel those orders before they were executed. Superseding Indictment ¶ 11. As this Court observed in its order on the defendants' motion to dismiss the indictment, whether their spoof orders implicitly misrepresented to other market participants the defendants' intention to trade is "the central fact question in this case." Order at 28, ECF No. 119. Vorley and Chanu argue that the evidence failed to establish that their bids and offers made any representations to other traders other than the basic terms on which those orders could be executed—price, quantity, and type of metal. Defs.' Joint Rule 29 Mot. at 9. Moreover, the defendants contend that certain features of the COMEX exchange, including traders' ability to make bids and offers anonymously, to place orders on both sides of the market simultaneously, to leave orders on the market for any period of time they deemed fit, and to place orders that obscure the traders' full trading interest (such as "immediate or cancel" and iceberg orders, or orders pre-set to cancel after a certain amount of time elapsed), taken together, preclude the conclusion that "a trader impliedly was representing to the market the full extent of his buying or selling interest in a particular commodity." Defs.' Joint Mot. at 10-11. But the jury heard testimony from several witnesses—specifically, John Scheerer, David Liew, Dr. Venkataraman, Anand Twells, and Travis Varner—from which they could have rationally concluded that orders on the COMEX do, in fact, implicitly represent to other market participants a genuine intent to trade according to the express terms of the order, "and, thus, orders placed by the defendants *without* that intent constituted an implied misrepresentation." Gov't Resp. Opp'n 7, ECF No. 363 (emphasis in original).

First, John Scheerer, a senior director in CME Group's Global Command Center, told the jury that throughout his time in the Global Command Center (dating back to 2009), the CME's

rules have required that all traders' orders be entered for the purpose of executing a bona fide transaction, *i.e.*, an order that the trader is not just willing to trade if hit, but an order that the trader "actually intend[s] and want[s] to" trade on. Tr. 387:7-19. Scheerer testified unequivocally: "It has always been against the CME rules to place an order with the intent not to trade it." Tr. 406:14-16. This testimony, even standing alone, would be sufficient to support a jury's conclusion that orders therefore carried an implied representation that the order reflected a bona fide interest in executing the trade on the stated terms; it would not be irrational for a jury to conclude that traders expected that their counterparties placed and executed orders in compliance with the rules of the exchange on which they were trading.

In any event, Mr. Scheerer's testimony did not stand alone. David Liew, who pled guilty to conspiracy to commit wire fraud and spoofing based on the same type of trading at issue here, testified that spoof orders conveyed false information about his and the defendants' intention to trade. Tr. 577:23-579:19 (Q: As part of the scheme you described, did you transmit false information? A: Yes. Q: What false information did you transmit? A: I gave false signals that I wanted to execute the orders that I sent to the exchange, but in reality I had the intention to cancel them. . . . Q: Do you see anybody in the courtroom today who participated in the trading that you've described? A: Yes. [identifying Chanu and Vorley]). And though he acknowledged that the spoof orders were "real" in the sense that other market participants could execute against them, Liew explained that the orders were simultaneously "fake in the sense of the intention" behind them, and that his goal was for the orders to "give the appearance that they would be things that [he] would like to get executed." Tr. 637:11-638:10; Tr. 639:1-5 ("[T]he intention of the sell orders is to show the market – or, rather, deceive the market into thinking that there's more supply in this case."). *See Weimert*, 819 F.3d at 355 (noting that the concept of a misrepresentation under the

wire fraud statute is broad, "reaching not only false statements of fact but also misleading half-truths" and also omissions or concealment of material information "if the omission was intended to induce a false belief and action" to the schemer's advantage); *see also United States v. Allen*, 160 F. Supp. 3d 698, 701-02 (S.D.N.Y. 2016) (in a wire fraud prosecution, the "relevant issue was not the accuracy or inaccuracy of defendants' LIBOR submissions, but the intent with which those submissions were made" because the prosecution's theory of misrepresentation was that "each LIBOR submission made the implicit statement that the number was calculated according to the [BBA] definition" when, in reality, the defendants' LIBOR submissions were calculated to make money at the expense of their counterparties) (citations omitted).

Moreover, Liew identified certain characteristics of the spoof orders that were designed to disguise the fact that the orders had been entered without a genuine intent to trade. For example, he told the jury that using a layering technique, where groups of spoof orders are stacked at slightly different price levels, made the spoof orders look "more real" and "more genuine" than one large one-hundred or two-hundred lot order. Tr. 687:5-16. He explained that from other market participants' point of view, watching smaller groups of ten to fifty buy orders "slowly being added to the market" looks "more natural" and like the trader placing those orders "actually want[s] to trade." Tr. 687:16-24. Liew also testified that the price levels spoof orders were placed at reinforced the implicit representation that they were genuine orders. Tr. 657:8-658:1 (explaining that if spoof orders were set too far from the market mid-price level, "people would not believe [his spoof orders] to be genuine").

The defendants, to be sure, vigorously challenged Liew's credibility, but it was of course for the jury to weigh Liew's testimony. It was not irrational for the jury to credit it, particularly when, on this point (and others) his testimony was corroborated. Liew's testimony about his

spoofing trades, for example, was buttressed by Professor Venkataraman's analysis, which established that the defendants' trading patterns closely resembled Liew's. Tr. 1480:24-1481:2. Professor Venkataraman, the government's principal expert witness, told the jury that orders to buy and sell implicitly convey a trader's "interest in participating in the market" under the terms and conditions of the order. Tr. 1402:3-14 (noting that this information about "interest in participating" is sent in addition to and apart from explicit information about whether the offeror wants to buy or sell, which metal, what the price is, how many contracts, etc.). Venkataraman testified that each order also "communicate[s] something about the liquidity in the market" to other traders; because orders implicitly carry a representation that the trader is "available to support the market at the price that it stated in their order, under the conditions of the order," Venkataraman explained, "the arrival of an order implicitly conveys the arrival of an interested buyer in the market." Tr. 1402:10-1403:12; *compare United States v. Dial*, 757 F.2d 163, 170 (7th Cir. 1985) (observing that the defendants "confused the market by signaling the presence of big buyers who had not in fact put up any money"). He opined that the implicit information conveyed by orders on the exchange is "well recognized by market participants" and that the "well-established set of results" observed in financial markets following an influx of buying or selling interest is "related to some of the implicit information that is conveyed in an order." Tr. 1402:19-20; Tr. 1403:13-16; *see also* Tr. 656:1-11 (Liew corroborated Professor Venkataraman's opinion, noting that spoof orders create a false impression of buying or selling interest in the market, and traders anticipate that prices will react accordingly).

Professor Venkataraman's opinion that futures orders carry with them an implied representation that the order was placed with an intent to execute it was also consistent with the testimony of counterparties who were trading in the same market. The government presented the

testimony of two such counterparties—traders from two hedge funds, Citadel and Quantlab Financial—from which the jury could infer that the defendants' counterparties in the market understood COMEX orders as implicitly signaling the offeror's genuine intent to trade. Anand Twells told the jury that Citadel's trading strategies "take bids and offers in the order book as orders that are intended to trade," and that live orders are "indications of supply and demand" that inform market participants' fair market value determinations for futures contracts—an approach to valuation that is only reasonable if the orders are bona fide and thereby signal an actual shift in the buying or selling interest in the market. Tr. 1619:5-19. Travis Varner of Quantlab similarly testified that bids and offers in the top five levels are important factors in the firm's trading strategy's fair market value calculation. Tr. 1673:19-25; Tr. 1728:21-24.

So, the defendants' contention that the government presented "*no evidence* of any industry standard, consensus, or literature supporting its novel theory that an order implicitly communicates an 'intent to trade,'" *id.* at 9 (emphasis in original), is simply wrong. Market participants, including Liew, who traded for Deutsche Bank, and counterparties who traded with the defendants, a financial markets expert, and a representative from the exchange itself all testified to the same effect: markets, in general, work the way they do because orders implicitly convey a trader's genuine interest in participating in the market; bids and offers on COMEX, specifically, were required to represent a bona fide intent to trade by the CME's rules; Liew and the defendants, from whom Liew learned to spoof, took steps to foster the impression that their spoof orders were bona fide; and because of those implicit representations, the defendants' counterparties took orders in the visible order book as indications of legitimate changes in supply and demand and reacted accordingly.

The defendants insist that all of this evidence should be disregarded because the CME's rules allowed traders to cancel orders at any time for any reason and to engage in other deceptive conduct. That means, they contend, that no trader could rationally understand an order to carry with it an implicit statement about the trader's desire to execute that trade. But in addition to glossing over contrary evidence presented at trial, *see, e.g.*, Tr. 418:3-5 (Q: Can a trader enter an order to try to manipulate or deceive? A (Scheerer): No.), this argument depends on drawing inferences in the defendants' favor, rather than the government's, and the jury was free to recognize—and reject—the false equivalencies on which the defendants' argument is based. In arguing that "fill or kill" orders and iceberg orders allow traders to deceive other market participants, the defendants ignore the "fundamental distinction" the Seventh Circuit drew in *Coscia* between those permitted practices and spoofing: those types of "legal trades are cancelled only following a condition subsequent to placing the order, whereas orders placed in a spoofing scheme are never intended to be filled at all." 866 F.3d at 795; *see also id*. at 800 (fill or kill orders and iceberg orders are different than spoofing orders "because they are designed to be executed under certain conditions, whereas Mr. Coscia's large orders were designed to *evade* execution") (emphasis in original). The life span of a fill or kill order may be measured in milliseconds, but however ephemeral, the intent to execute the trade at the stated price distinguishes it from a spoofing order that is never intended to be executed at all but was placed as part of a scheme to manipulate the market. Similarly, an iceberg order allows a trader to understate the depth of their buying or selling interest, but not to advertise such interest where none exists.

Moreover, even if one accepts the defendants' characterizations of these permitted practices as deceptive, that the CME allows some forms of deception does not compel the conclusion that it allows all forms—particularly where, as here, the conduct at issue is not only

deceptive but manipulative. The evidence at trial permitted the reasonable inference that the CME drew the line at deception about an offeror's intent to trade when an order is placed, so as to distinguish between deceptive practices that allow a trader to "trade quietly"[5] to minimize market reaction to a change in supply or demand and deceptive practices, like spoofing, designed to manipulate market prices. *See* Tr. 1413:23-1414:7 (Q: Would you agree that the purpose of an iceberg is *not* to move prices? A (Venkataraman): Yes. The purpose of the iceberg order is to limit the price impact . . . to move the prices as less as possible, that's correct. Q: And in that sense, would you agree that it is not manipulative? A: That's correct.) (emphasis added). The permissibility of iceberg orders or fill or kill orders, which facilitate trades at the offerors' chosen price level for those orders, does not suggest that traders believed they had license to place spoof orders, which they had had no intent to execute and which artificially inflated or deflated prices for opposite-side orders, nor does it otherwise undermine the affirmative evidence that traders understood orders to carry an implicit representation of an intent to trade at the stated terms. So, although there is no minimum amount of time that an order is required to stay on the market, nor a requirement that traders tell the market how long an order will be held open, nor a penalty for cancelling an order because a trader has "change[d] their minds," "because they wanted to get a sandwich," or "because they needed a bathroom break," Tr. 393:13-394:22, the jury was entitled to credit Scheerer's testimony that the CME's rules do not permit traders to cancel an order if their purpose for doing so is to manipulate or deceive other traders in the marketplace, Tr. 417:22-418:5, and the testimony of the other witnesses discussed above who explained that market participants

[5] *See* Tr. 1870:5-10 (Agent Luca testified that "trading quietly" might involve "using icebergs or a lot of small orders to not tip off the market to your actual trading position so that you don't have an instance where the market moves away and you have potential slippage or a worse price on average for your fill").

understand orders in the exchange to reflect a bona fide intent to trade, even when orders did not convey the totality of an offeror's trading interest. Viewed in the light most favorable to the prosecution, the evidence was sufficient to support a finding by the jury that the defendants' orders implicitly and falsely represented that they intended to execute the "spoofing" orders placed as part of the alleged scheme to defraud.

2. There Was Sufficient Evidence for a Jury to Conclude that the Defendants' Misrepresentation of Their Intent to Trade Was Material.

Next, the defendants challenge the evidence regarding the materiality of their misrepresentations. A false statement is material if it has a "natural tendency to influence, or [is] capable of influencing, the decision of the decisionmaking body to which it was addressed." *Neder v. United States*, 527 U.S. 1, 16 (1999) (citation omitted); *see also Weimert*, 819 F.3d at 357 (noting that the federal mail and wire fraud statutes reach misrepresentations "that are likely to affect the decisions of a party on the other side of the deal"). The "decisionmaking bodies" at issue here were the defendants' counterparties in the market, and as in *Coscia*, "[t]he evidence at trial showed that [Vorley and Chanu's] course of action was not only reasonably calculated to deceive but also that actual investors *did* find [their] actions important in making a decision." 866 F.3d at 800 (emphasis in original) (internal quotations omitted).[6]

First, the jury could infer materiality directly from the trading data presented. In the charts depicting the government's sixty-one selected trading episodes, a clear pattern emerged: after

[6] The defendants argue that *Coscia* is irrelevant because it was not a wire fraud case. Defs.' Reply at 8 n.3, ECF No. 365. In so arguing, they continue to deny (as they did in their motion to dismiss) *Coscia*'s substantial overlap with this case. That *Coscia* involved a violation of the commodities fraud statute, § 1348(1), which does not require a misrepresentation, does not change the fact that a "scheme to defraud" under § 1348(1) is subject to the same materiality requirement as a scheme to defraud under the wire fraud statute—which is why the Seventh Circuit expressly approved in *Coscia* the district court's use of the materiality instruction included in the Circuit's pattern instruction for mail and wire fraud. 866 F.3d at 799.

placing large, visible orders on the opposite side of the market, the mid-market price moved, and the defendants very quickly filled their primary iceberg orders. Count Two, for example, targets a trading episode by Vorley on February 12, 2010. Unable to complete an iceberg purchase of fifteen gold contracts when the market price exceeded his bid on the last four remaining contracts, Vorley placed eleven 10-lot visible orders, comprising 58.8% of the visible order book, to sell gold contracts at above market prices; as soon as Vorley began layering these sell orders, the market mid-price dropped from roughly $1,088.45 to $1,088.30 and the rest of Vorley's iceberg buy orders were almost immediately filled at the lower price. GX 1. A similar pattern jumps out from the chart depicting Chanu's trading on April 20, 2011, which is the basis for Count Nine; after Chanu layered sixteen 10-lot buy side orders at below market prices, the mid-market price climbed from approximately $1,501.75 to approximately $1,501.85 for a period of seconds, just long enough for Chanu to fill the final nineteen contracts in the iceberg sell order he had placed before entering the buy orders. GX 1. While Chanu's spoof orders were active, they constituted 62.7% of the visible order book. *Id.* That other COMEX traders repeatedly filled the defendants' iceberg orders shortly after a sudden influx of seemingly genuine buying or selling interest supports an inference that the defendants' spoof orders were material.

Professor Venkataraman's overarching analysis of the defendants' trading established that these episodes were not anomalistic; economic theory would expect the defendants' large orders to move the market for the defendants' benefit. Professor Venkataraman explained that, in general, market participants respond "to information that is made available to the market" and that "when [a] visible order is submitted, the market can see the size of the order and . . . the perception of the demand and supply of the commodity changes in the eyes of the market participants," given counterparties' belief that the orders are bona fide. Tr. 1412:6-14. The defendants' trading was no

exception. Professor Venkataraman explained that, across the sixty-one trial episodes, the market was generally balanced between visible-side and iceberg-side orders in the moments before Vorley and Chanu began spoofing. Tr. 1467:11-13 (there were, on average, forty-five visible-side contracts and forty-two iceberg-side contracts); GX 74. By the time the defendants had placed their single, large visible order, or finished layering groups of 10-lot visible orders, however, the visible depth in the order book on the side of the defendants' spoof orders had changed considerably—by 132 contracts, according to Professor Venkataraman's analysis. Tr. 1466:8-24 (creating an imbalance between 168 visible-side contracts, on average, and 41 iceberg-side orders). A change of that magnitude is certainly "consistent with the visible orders moving market prices," Tr. 1466:19-22, and is the type of "significant imbalance" between the buy and sell sides and "shock that the market experiences which results in other participants reacting to the arrival of this large buyer or seller, and, therefore, moving the price." Tr. 1467:18-21; Tr. 1482:3-21 (from April 2008 to July 2013, there were, on average, 43 visible contracts in the top five levels of the book in the market; in the same time period, when Vorley placed 10-lot groups opposite iceberg orders, the average volume increased to 91 visible contracts, and when Chanu traded in the same manner, the average visible volume was 163 contracts);.

And the evidence showed that the impact of the defendants' spoofing orders was not just theoretically expected, but actually observed: the scheme worked. Across the government's sixty-one episodes presented at trial, the defendants' primary iceberg orders were active for a total of three hours and thirty minutes; roughly one-third of the total value of those iceberg orders was filled in just the ten minutes that the spoof orders were active opposite the iceberg orders. Tr. 1469:6-25. Professor Venkataraman explained that the defendants' iceberg orders were filled about ten times faster when the defendants had visible orders opposite them than when the iceberg

orders were in the market alone. Tr. 1470:13-16. He confirmed that this data is "consistent with the visible orders actually helping to fill the iceberg orders." Tr. 1470:17-19.

The defendants argue, however, that the prosecution's theory of materiality was "entirely dependent on a sleight of hand"—the evidence at trial may have "fool[ed] the jury" into believing that if an order in the visible order book was capable of influencing other traders' decisions then materiality was established, they object, but it "is not the order but the alleged *misrepresentation* that must be material." Defs.' Joint Mot. at 13 (emphasis in original). But this argument ignores the evidence from which the jury could reasonably conclude that, had the defendants' orders accurately represented that they did not actually intend to execute the order—thereby permitting counterparties to conclude that the purpose of the orders was to manipulate the market rather than to address a bona fide commercial purpose to execute the contracts at issue—the orders would not have been filled. It was not irrational for the jury to conclude that knowledge that the defendants' orders were placed as part of a scheme to manipulate the price of gold futures was capable of influencing the actions taken (or not taken) by potential counterparties when those orders were placed.

Indeed, the jury heard testimony that the large, visible spoof orders were effective only because the defendants' counterparties believed that the orders were placed with a genuine intent to trade. David Liew explained to the jury that, when he spoofed, he would "choose price levels close to where [his] genuine order is being [placed] at" to maximize the impact the spoof orders had on other market participants' trading decisions. Tr. 657:8-23. And Liew reinforced the notion that the express terms of the order itself and the perceived intent behind the order are inextricable, noting that if he had chosen price levels further away from mid-market, "people would not believe [his spoof orders] to be genuine" and those orders would therefore be ineffective. *Id.*; Tr. 658:11-

14 (observing that "there's a fine line between being close enough to have some kind of impact" and "lowering the risk that those [spoof] orders would be executed on"). He told the jury that if other traders in the market knew that his orders were placed with the intent to cancel them, they would not react to the change in buying or selling interest in the visible order book. Tr. 656:20-657:1.

Other COMEX market participants confirmed that they found the defendants' intent material. Anand Twells testified that Citadel's trading strategies treat bids and offers in the order book as bona fide, which Twells understood as "order[s] with the intent to trade" Tr. 1619:1-9. He explained that the trading strategies use live bids and offers as "indications of supply and demand," which the algorithms rely on to "make a determination of fair market value." Tr. 1619:15-19. Travis Varner similarly testified that orders in the first few levels of the order book were capable of influencing Quantlab's trading decisions and that larger orders would have been more capable of influencing those decisions than smaller ones. Tr. 1760:17-24. Moreover, the defendants' contention that "[t]here was no evidence" that Citadel or Quantlab would have traded differently had they known that the defendants did not intend to trade their visible orders, Defs.' Joint Rule 29 Mot. at 14, is simply wrong. Varner testified that Quantlab's trading models "depend[] on the data from the exchange" and so, if the data was "not real"—defined by him as not reflecting "true supply and demand"—it would be difficult for the firm's algorithms to trade successfully. Tr. 1760:17-1761:12; Tr. 1762:22-25. *See also United States v. Reliant Energy Servs., Inc.*, 420 F. Supp. 2d 1043, 1058 (N.D. Cal. 2006) ("Fraud and deceit are not legitimate market forces. Fundamentally, markets are information processing systems. The market price is only as 'real' as the data that inform the process of price discovery. By the same token, the market price is 'artificial' when the market is misinformed."). In fact, Varner indicated that Quantlab would not

want to trade on the CME at all if orders in the exchange routinely misrepresented an offeror's genuine interest in executing or trading. Tr. 1763:1-4; *see also Coscia*, 866 F.3d at 800 (finding sufficient evidence of materiality, in part, because certain traders testified that the defendant's trading induced them to leave the market altogether).[7] In short, the implicit representation that the defendants' orders reflected a genuine intent to trade was material—that is, capable of influencing trading decisions.

This evidence also answers the defendants' argument that the trading algorithms used by Citadel and Quantlab did not account for the trader's intent to execute a trade but instead made their trades solely on the basis of the objective factors discernible from the order: commodity, quantity, price, and type of transaction (buy or sell). Because the algorithms did not take intent to trade into account, the defendants maintain, that intent could not have been material. But the argument ignores the evidence establishing that, in seeing trades as just "orders in the book," Tr. 1791:18-20, Citadel and Quantlab understood that all "orders in the book" carried with them an implicit representation that they had been placed with an intent to execute them on the stated terms. And, as noted above, that representation was "capable of influencing"—that is, material to—at least some traders' participation in the market.

The defendants contend this evidence is insufficient for two additional reasons:[8] first, because neither Varner nor Twells "testified that they were even trading" during some of the

[7] In arguing that there was no evidence that anyone complained about the defendants' trading, much less left the market because of it, the defendants turn the test of materiality inside out; the test is whether knowledge of the misrepresentation was capable of influencing the victim's decisionmaking if known, not whether the victim discovered the fraud and therefore altered its conduct. Were that the test of materiality, no successful scheme to defraud would ever be actionable.

[8] The defendants also argue that the prosecution used "intent to trade" as a proxy for the length of time that an order was likely to remain on the market before the trader cancelled it and go on to argue that neither Vorley nor Chanu made any implicit representation about how long

trading episodes at issue, Chanu Suppl. Memo. at 6-7 (neither testified that their fund was trading on six of the seven days corresponding to Chanu's counts of conviction), Vorley Suppl. Memo. at 13 (same, for two out of three counts); and second, that the traders' testimony failed to establish that the defendants' visible orders "had any material effect on Citadel's and Quantlab's algorithms' trading." Chanu Suppl. Memo. at 6-7 (arguing that, as to Count Three, the firms "were trading in the same way regardless of whether Mr. Chanu had open visible orders on the market"); Vorley Suppl. Memo. at 13, 15 (alleging a lack of evidence "that [Quantlab or Citadel's] trading decisions could have been affected" by Vorley's spoof orders). Neither objection is persuasive.

First, Twells' and Varner's testimony was sufficient for the jury to infer that the defendants' misrepresentations about their intent to trade were material to the defendants' counterparties in the market generally. Nothing about their testimony that order book pressure (meaning "the number of people who want to buy and sell") was important to their algorithms' fair market value calculations and trading decisions, *see* Tr. 1752:5-21; Tr. 1673:19-25, suggested that this was unique to Quantlab and Citadel. To the contrary—Twells explained that "the best price at which buyers are willing to pay and the cheapest price which sellers are willing to sell," *i.e.*, the top five levels in the order book, is "just basic information for determining fair market value by most professional traders." Tr. 1728:16-1729:6.

That observation was corroborated by Professor Venkataraman and David Liew, each of whom testified that this approach to valuation was common across market participants. *See, e.g.*, Tr. 1403:4-16 (Professor Venkatraman stated that it is a "well-established set of results" that the

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they intended to leave any of their visible orders out on the market. Defs.' Joint Rule 29 Mot. at 14-15. This is a straw man that mischaracterizes the government's argument. The government's theory is that the spoofing scheme was fraudulent because the defendants never intended to execute the spoofing orders, not because they did not intend to trade them for a sufficient duration.

arrival of an order moves the price on average due, in part, to the implicit information conveyed in an order); Tr. 640:16-641:7 (Liew explained that, as a trader, when he sees a change in the volume of interest on one side of the market, he is inclined to think that the market is going to move because he believes those are "real" orders). In each charged episode, traders executed against the primary iceberg orders after defendants' large, visible spoof orders flooded the market; even if those counterparties were not Quantlab or Citadel, the evidence was such that a rational jury could infer that the defendants' misrepresentation of their intent to trade their spoof orders was at least capable of influencing those traders' decisions to execute against the defendants' primary orders.

The defendants' second objection conflates materiality and reliance—because a false statement is material so long as the falsehood "has a natural tendency to influence or [is] capable of influencing" the victim, "[a] scheme to defraud can exist even when . . . *no one* relied on any misrepresentation." *United States v. Corrigan*, 912 F.3d 422, 430 (7th Cir. 2019) (emphasis in original) (internal quotations and citation omitted); Tr. 2202:22-25 (jury was instructed that it is "not necessary" that the misrepresentation "actually have that influence or be relied on by the alleged victim as long as it is capable of doing so"); *see also Neder*, 527 U.S. at 25 (citing favorably a case that held, under the analogous mail fraud statute, "the government does not have to prove actual reliance upon the defendant's misrepresentations"). Twells' and Varner's testimony about the materiality of the defendants' implicit representation that their trading was bona fide easily suffices to support the jury's finding that the misrepresentation of their intent to trade was "capable of influencing" the trading decisions of counterparties in the market when the orders were placed. No more was required.

The defendants' argument that, because Quantlab and Citadel traded contracts at the same price or better at other times on the days in question, a jury could not find that the defendants' spoof orders were material to the algorithms during a particular trading episode itself, is a complete non-sequitur. As the defendants repeatedly noted while cross-examining the government's witnesses, the futures markets move quickly and react to a steady stream of information external to the order book—a good price at one moment may be a terrible deal just minutes later. As a result, in the fast-paced environment the defendants described, it is hardly irrational, in measuring the impact of a spoof order, to compare a counterparty's trading decisions in the minutes, seconds, or even milliseconds on either side of a trade. *See* Tr. 1693:11-24 (Q (Katz): And the algorithm calculates that fair market value on a constant basis, millisecond by millisecond, correct? A (Twells): I don't know if the time frame of milliseconds is accurate, but it does I would say constantly calculate it, yes.). The defendants had ample opportunity to, and did, challenge the government's focus as too narrow and argue that it had "cherry picked" the trading sequences it presented, but the jury could reasonably infer from the trading data that the defendants' seemingly bona fide, large, visible orders influenced their counterparties' assessment of the fair market value of gold or silver futures contracts during the moments those orders were active, and could reasonably disregard as irrelevant trading decisions minutes or hours before or after the trades at issue.

In sum, the jury heard evidence that 1) the defendants' scheme would theoretically be expected to influence other market participants' trading decisions; 2) the defendants' iceberg orders were filled about ten times faster when defendants placed large, visible orders on the opposite side of the market; 3) spoof orders are effective only if other traders believe them to be genuine, and Liew and the defendants priced them accordingly; and 4) the defendants'

counterparties made price determinations based on the belief that the defendants' orders, and all orders in the exchange, were bona fide. Taken together with examination of the trading data itself, a rational jury could conclude, beyond a reasonable doubt, that the defendants' misrepresentations were material to their counterparties in the market.

3. There Was Sufficient Evidence for a Jury to Conclude that the Defendants Acted Knowingly and with the Specific Intent to Defraud.

To convict the defendants on the wire fraud charges, the jury had to conclude that Vorley and Chanu acted both knowingly, meaning the defendant "realize[d] what he [was] doing and [was] aware of the nature of his conduct and [did] not act through ignorance, mistake or accident," Tr. 2200:9-13, and with the intent to defraud, *i.e.*, "with the intent to deceive or cheat [their COMEX counterparties] in order to cause a gain of money or property to the defendant or another." Tr. 2203:1-4; *see, e.g.*, *United States v. Faruki*, 803 F.3d 847, 853 (7th Cir. 2015). The jury heard some evidence to suggest that the defendants' trading, on some occasions, could have been accidental, and Vorley and Chanu vigorously dispute the sufficiency of the evidence establishing that they had the intent to defraud other COMEX participants. When the evidence is viewed in the light most favorable to the prosecution, however, neither of these challenges prevails.

a. A Rational Juror Could Conclude the Defendants Acted Knowingly.

The evidence adduced at trial was more than sufficient for the jury to conclude that the defendants acted knowingly. Both the defendants' trading data, itself, and Professor Venkataraman's analyses of that data established that the defendants repeatedly and successfully traded according to the same pattern—a primary iceberg on one side of the market, and a group of large, visible orders on the opposite side that were quickly cancelled once the iceberg was filled—throughout the charged period. From August 2009 through July 2013, Vorley placed 1,616 groups of ten-lot orders opposite iceberg orders, and Chanu placed 1,191 groups of ten-lot order opposite

icebergs. GX 75; Tr. 1475:14-25 (Vorley, nearly 14,103 10-lot orders total); Tr. 1478:25-1480:3 (Chanu, nearly 19,000 10-lot orders total). The differences in median duration and fill ratio between the defendants' iceberg and opposite-side visible orders were stark: Vorley's icebergs had a 60% fill ratio and median duration of 51.78 seconds, versus a 1.8% fill ratio and median duration of 1.29 seconds for the groups of 10-lot visible orders; Chanu's icebergs had a 57.9% fill ratio and median duration of 74.68 seconds, versus a 0.4% fill ratio and median duration of 2.99 seconds for his groups of 10-lot orders. GX 75.

The strength of the observable trading patterns and overarching statistical evidence was not undermined by the limited evidence suggesting Vorley may have accidentally placed and cancelled orders on one or more occasions. The jury heard audio clips from Vorley's Deutsche Bank disciplinary interview regarding his trading on March 16, 2011. During those clips, Vorley avers that he was confused; that his reference to spoofing was a lighthearted attempt to deflect criticism, after Adam Farthing pinged Vorley to alert him he had "made an error"; that Vorley "clearly . . . didn't know" that he was supposed to be selling during the episode at issue and had "clearly messed up"; and that his repeated placement and subsequent cancellation of large chunks of orders "could've been a fat finger itself." Tr. 1906:12-1907:7; GX 143, 144, 145. But the jury was not required to credit Vorley's explanation for his trades that day; nor were jurors required to extrapolate from Vorley's shaky justification for one uncharged trading episode that every time Vorley appeared to be spoofing, he was, in actuality, placing and cancelling orders because he misunderstood directions from his supervisors or was otherwise mis-entering his intended orders.

b. A Rational Juror Could Conclude that the Defendants Had the Specific Intent to Defraud.

But proving that the defendants' conduct was purposeful is not enough. Wire fraud is a specific intent crime; to establish the defendants' guilt, the government also had to produce

evidence that Vorley and Chanu specifically intended to defraud others—that is, to deceive or cheat others to obtain money or property. Moreover, in the context of this case, the government had to prove that the defendants' deception and cheating involved a knowing misrepresentation—in essence, a lie. The defendants argue that the government did not prove intent to defraud because a rational jury could not have concluded from the government's evidence that "either Mr. Vorley or Mr. Chanu had the intent to cheat or harm their counterparties" when they placed visible orders opposite their primary iceberg orders. Defs.' Joint Rule 29 Mot. at 17. That is because, they say, their trading took place "openly, in the presence of supervisors and compliance officers, for five years"; because "[e]ach element of the alleged scheme—iceberg orders, opposite side visible orders, and cancellations—was permitted on the COMEX exchange"; and because "no one from the bank or from the CME ever told [the defendants] they were doing anything improper." *Id.* Moreover, because Deutsche Bank did not train its traders on Dodd-Frank's anti-spoofing provision until September 28, 2012, the defendants contend that it would be impossible for a juror to rationally conclude that "placing and cancelling visible orders opposite iceberg orders was improper, much less that they intended to defraud their counterparties, before that date." *Id.* at 17-18.

Not so. Though "[d]irect evidence of an intent to defraud is rare," a defendant's specific intent to defraud may be shown "by circumstantial evidence and inferences drawn from the scheme itself." *United States v. Sloan*, 492 F.3d 884, 891 (7th Cir. 2007). As already discussed, the evidence presented at trial is sufficient to prove that a COMEX order carries with it an implicit representation that the offeror has a genuine intent to trade. It is therefore perfectly reasonable for jury to conclude that Vorley and Chanu knew they were making a misrepresentation—*i.e.*, lying—about their intent to trade when they repeatedly placed orders they intended to cancel after those

orders had served their price-distorting purpose and before other traders could execute against them, and, therefore, that they had the specific intent to defraud. *See, e.g.*, *United States v. Yoon*, 128 F.3d 515, 524 (7th Cir. 1997) ("[T]he execution of the scheme, in itself, may be relevant to establishing the defendant's specific intent to defraud.")

But the jury did not have to rely on that evidence alone. David Liew offered direct and circumstantial evidence that Vorley and Chanu acted with the intent to deceive their counterparties for their own, and Deutsche Bank's, financial gain. For example, Liew explained that, when he spoofed, the "intention of this act was to trick other market participants"—in placing visible orders opposite his iceberg orders, Liew's "intent was to have those offers deceive other market participants into thinking that there was more selling [or buying] than there actually was" in the hopes that he would "get a better price on [his] original order." Tr. 633:12-23; Tr. 656:12-19 (explaining that he intended for the spoof orders to communicate the false intent that he wanted to execute those orders and believed he was successful in communicating that intent on at least some occasions); *compare Coscia*, 866 F.3d at 797 (citing as evidence supporting the jury's finding of fraudulent intent that Coscia's trading "was intended to create the *illusion* of market movement" through a "system that used large orders to inflate or deflate prices") (emphasis in original). Liew confirmed that, if successful, the scheme would "help Deutsche Bank, and it hurts other market participants" including "other banks, hedge funds, [and] retail customers." Tr. 634:1-6.

And Liew, the jury could reasonably conclude, did not devise this technique on his own—he testified that he learned how to spoof from Vorley and Chanu, Tr. 641:8-16, and he told the jury that he contemporaneously watched the defendants spoof in the market with this same intent. Tr. 641:17-643:3; Tr. 646:12-25 (explaining that he observed Chanu and Vorley "place buy orders as [he's] working [his] sell order" and that he "kn[e]w that the intention of those buy orders are to,

again, try to trick the market to holding the price a bit higher and to assist me to clear my selling"); Tr. 693:15-702:13 (Count Eight, trading opposite Vorley and Chanu); Tr. 714:4-715:6 (Count Twelve, trading opposite Chanu). Liew also reviewed a number of the defendants' solo trading episodes for the jury, and confirmed that, even in episodes where he was not involved in the trading, Vorley or Chanu used the same techniques Liew used when he spoofed. *See, e.g.*, Tr. 686:13-689:17 (reviewing Vorley's trading on February 9, 2010, and concluding that the episode displayed techniques that Liew himself used when he was spoofing); Tr. 703:23-704:15 (reviewing Chanu's April 20, 2011, trading episode that was the predicate for Count Nine).

Finally, Liew explained that the practice on the precious metals desk was to designate "one person at any one time to be the active trader in the market," so as to prevent confusion and minimize the risk of Deutsche Bank traders undermining their colleagues' trading activity. Tr. 648:21-649:5. In light of this standard practice, the jury could have inferred, as Liew himself did, that when Vorley or Chanu were trading opposite Liew or each other—as they were in Counts Eight, Twelve, and Fourteen—that "if those were genuine orders, they would have communicated it" to each other to "square off" positions, "rather than to go direct to the market."[9] Tr. 650:2-651:5. Because they did not, it was relatively straightforward for Liew, and the jury, to "infer that those . . . orders were to assist [Liew] in trying to clear [his] primary order" at a better price than the market would otherwise support. Tr. 651:6-8; Tr. 654:11-23.

The jurors could also infer intent to defraud from the defendants' reliance on an otherwise economically unsound trading strategy for roughly five years across thousands of trades. Professor Venkataraman opined that a "persistent strategy of sending in an order and cancelling it

[9] To "square off" positions means to net the bank's orders before going to the market for the balance of the contracts needed. Tr. 649-650.

immediately upon submission is just not economically rational" or "consistent with the strategy where the trader is trying to get the orders filled." Tr. 1406:14-17; *see also* Tr. 1478:9-17 (a strategy of quickly cancelling visible orders is "associated with outcomes that are really not good because the fill ratios tend to be so small"). Yet that was exactly how the defendants traded. GX 74; Tr. 1464:11-1465:11 (across the government's sixty-one episodes, the defendants' primary iceberg orders had a fill ratio of nearly 90 percent, while the fill ratio of their visible orders was roughly .2 percent—less than 50 contracts were executed of nearly 21,000 visible orders placed); GX 75; Tr. 1477:14-1478:2 (over tens of thousands of Vorley's trades between August 2009 and July 2013, same imbalance in fill ratio between ten-lot group visible orders opposite iceberg orders and iceberg orders); Tr. 1479:17-1480:3 (similar analysis for Chanu). *Compare Coscia*, 866 F.3d at 797 (fact that Coscia's trading program "facilitated the consummation of small orders and actively avoided the completion of large orders," even if not totally successful, was evidence of fraudulent intent).

So, the jury could reasonably infer that the defendants' large spoof orders were being placed for some purpose other than to be filled. And that their "economically irrational" trading was not a one-off, but a trusted strategy that the defendants turned to over and over again lends itself, instead, to two inferences supporting intent to defraud: first, that the defendants kept spoofing because it benefitted them financially to do so, despite the low fill ratios on their large, visible orders; and second, that the defendants either knew from the outset, or came to understand, that spoofing worked, even given the sophistication of their COMEX counterparties, and even in a fast-moving, information-rich environment, because it involved deception above and beyond what other traders expected to encounter in this competitive marketplace.

Both inferences are supported by evidence in the record. Though he agreed that it was facially economically irrational,[10] Liew testified that, on the sell side, he "would spoof in order to move prices higher so that [he] could sell at a better price"; as a result "spoofing helped either to increase [his] profits or to decrease [his] losses, and either way, that helps to build [his] PnL."[11] Tr. 763:4-8; Tr. 723:18-21 (Liew describing spoofing as a tool that he and the defendants "employed to help get a better price, and with a better price, we get better profits"). Where a defendant benefits financially from his actions in this way, and the benefit is contemporaneous with the defendant's misdeeds or misrepresentations, the evidence establishes the intent to defraud. *See United States v. Britton*, 289 F.3d 976, 982 (7th Cir. 2002); *United States v. Paneras*, 222 F.3d 406, 410 (7th Cir. 2000) (describing evidence that the defendant "benefitted financially . . . and that these benefits were contemporaneous with his misrepresentations" as "more than adequate to establish the defendant's intent to defraud beyond a reasonable doubt"); *see also United States v. Meyer*, 359 F.2d 837, 839-40 (7th Cir. 1966) ("The success of a scheme to defraud is not an element of the crime, although it may reflect the defendant's fraudulent intent.").

And the defendants' own chats establish that they knew that their trading strategy involved tricking, "triggering," or otherwise manipulating their COMEX counterparties, especially the high-speed algorithmic traders. In one chat, for example, Chanu exclaimed to Edward Bases that Bases had "tricked a[ll] the algorithm[s]" and asked Bases to "teatch [sic] [him] that pls," after

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[10] *See, e.g.*, Tr. 723:13-16 (Liew explaining that spoofing might mean risking $50,000 to try to make $5,000).

[11] "PnL" refers to a trader's net total profit and loss. Tr. 747:4-13. The jury heard testimony that Deutsche Bank traders' performance bonuses were tied to their individual PnLs in a given calendar year. Tr. 747:22-748:3. Moreover, an individual trader's PnL was "capable of influencing the bonuses of other traders on the desk"; Liew testified that each trader's PnL would roll up to the trading desk's collective PnL, the "pie" to be divided among the group. Tr. 748:4-13. As a result, each trader's individual performance determined, to some extent, other traders' bonuses as well.

Bases spoofed to move the market to Chanu's target price for a trade. GX 85; Tr. 1860:25-1862:7 (Bases also explained to Chanu that the episode "show[s] you how easy it is to manipulate [the market] sometimes," that he "f..k[s] the mkt around a lot" and that he "know[s] how to 'game' this stuff"). The very next day, Deutsche Bank trader Teng Kong Ong asked Chanu whether Chanu was "flashing bids to help [him] get done"; in other words, whether Chanu was very quickly placing and cancelling bids opposite Ong's sell order to help Ong get a good deal. GX 183; Tr. 1865-1867. Chanu confirmed that he was—"just to trigger [the] algorithm." Tr. 1865:17. In another chat, from August 2012—over a year after Dodd-Frank became effective, though shortly before Deutsche Bank circulated the training presentation featured at trial—Chanu writes that he had "skewed the quote to the left" and gotten "[p]eople scared," and that he would "spoof it." GX 189; Tr. 1872:12-25 (Agent Luca explained that to "skew the quote to the left," Chanu was "heavy on orders to the bid side of the market" to "influence the quote").

The same is true for Vorley, who complained about spoofing by others in chats with traders at other banks but was far more approving of the strategy in conversations with other Deutsche Bank traders. In 2007, Vorley wrote to a trader at another bank that "UBS and the spoofing is annoying [him]" because "it's illegal, for a start." GX 80; Tr. 1897:22-1898:7. In another chat, a trader asks Vorley whether he is a "seller" in the market, which Vorley denies, responding "I told you I'm offer up here." The trader later asks Vorley whether a particular Globex order is Vorley's "spoofed 200-lots bid," which Vorley strenuously denies, responding, "F-k no. I'm not an asshole." GX 81; Tr. 1899:4-19. But when talking in-house, Vorley agreed with Edward Bases that traders can "def manipulate [the market] if you are aggressive." GX 184; Tr. 1903:13-19. Vorley demonstrated what he described as a "classic" example of the technique when, referring to the price of gold futures, he crowed ("Wooooooooooo") to Liew that he had "bi[d] it up" and

"jam[med] it" while helping Liew clear his position (*i.e.,* sell). GX 20; Tr. 700:8-701:7. And in his March 16, 2011, chats with Adam Farthing, which were the subject of Deutsche Bank's 2015 disciplinary investigation against him, Vorley's tone is far more tongue-in-cheek when he tells Farthing that he is "spoofing it up, ahem ahem" to explain why he is placing buy orders when Farthing gave him gold to sell. GX 94; Tr. 1905:11-22. Though the defense vociferously argued that Vorley's references to "spoofing" or "illegal" conduct are not what they appear, the jury was not obligated to accept the defense characterization of these chats.

Finally, the jury heard evidence that spoofing violated CME and Deutsche Bank rules throughout the charged time period. Michael Koplowitz, a Deutsche Bank compliance officer, testified that even before Dodd-Frank specifically criminalized "spoofing," Deutsche Bank made clear to traders that "market manipulation"—defined as "any transaction or order to trade which gives or is likely to give a false or misleading impression as the supply, demand for, or price of one or more investments," as spoofing does—was prohibited. Tr. 1190:23-1191:7; GX 176. Deutsche Bank warned traders that "[m]arket [m]anipulation is illegal," not just against bank policy, and that such conduct had the potential to lead to criminal or civil penalties. GX 176. Vorley and Chanu were both trained on that policy in 2009, Tr. 1186:24-1187:14; GX 181, 180, 176, and that same market conduct policy was cited in Deutsche Bank's letter to Vorley inviting him to a disciplinary meeting based on his alleged spoofing on March 16, 2011. GX 131 (noting, as well, that the relevant section of the 2011 market conduct policy was "the same in all material respects as Section 3.2 of the current [2014] market conduct policy," which added spoofing as an example of a prohibited trading strategy); GX 133, 134. This policy was consistent with the CME's rules, as well. Tr. 386-387 (Scheerer testimony that the CME rules do not permit deception and prohibit traders from placing orders that they intend to cancel before execution).

The defendants counter that even if Deutsche Bank's 2010 and 2011 market manipulation policies prohibited defendants' spoofing and the defendants were trained on those policies, there was no evidence that they understood their trading to violate that policy. *See* Vorley Suppl. Memo. at 6; Chanu Suppl. Memo at 9. But that's not true. All of the evidence recounted above points to the reasonable conclusion that the scheme in which the defendants engaged was a market manipulation scheme, designed and intended to move the market price so that the defendants could execute trades at more favorable prices. The jury was hardly unreasonable in concluding that, having been trained that the bank's policies prohibited market manipulation, the defendants knew that placing orders they did not intend to trade was not a permissible trading technique.[12]

Vorley's conduct during his 2015 disciplinary review is particularly noteworthy in this regard. As noted, in his 2015 disciplinary interview, Vorley did not defend himself by arguing that his trading did not violate Deutsche Bank's market manipulation policy, nor did he claim to misunderstand or be unaware of the policy; instead, he tried over and over to explain away his trading by reference to "fat fingers," misunderstandings, and general floundering. GX 141-46, 150-153. Of similar import is Chanu's reaction when Edward Bases told Chanu that he liked to "f**k the markets around a lot"; the jury would have been irrational only had it concluded that Chanu's response—teach me how to do it—reflected a belief that there is some distinction that permits conduct to "f**k" the market around while prohibiting market manipulation.

The defendants' focus on what Deutsche Bank traders knew about Dodd-Frank's anti-spoofing provision and when they knew it is similarly off-target. *See, e.g.*, Chanu Suppl. Memo at 8 (arguing that there is no evidence Chanu, a French citizen, was or should have been independently aware of Dodd-Frank's anti-spoofing provision); Vorley Suppl. Memo. at 7-8.

[12] *See also infra* Section II.A.

Specific intent to defraud does not require knowledge that conduct is prohibited by a statute or rule; rather, it requires an intent to lie to someone in an effort to obtain their money or property. Lying to cheat others out of money is frowned upon in France, England, and Singapore too, and the jury was not irrational in concluding that the evidence proved, beyond reasonable doubt, that Vorley and Chanu did just that. It does not matter that Dodd-Frank was not effective during the period comprising the defendants' guilty counts—in fact, it would not matter if Dodd-Frank had never been enacted at all. As they repeatedly argued to the jury, Vorley and Chanu were charged with wire fraud, not violations of Dodd-Frank. If, as the jury concluded, they intentionally deceived or cheated other market participants out of money by telling material lies, then they are guilty of the charged conduct.

Moreover, the inference the defendants draw based on the claim that when, in September 2012, they were "told to stop . . . they did stop"—that until then they did not know their conduct was prohibited—is compelled by neither the evidence nor logic. *See* Vorley Suppl. Memo at 8 & n.7. As an evidentiary matter, the government presented trading data from episodes on October 4, 5, and 25, 2012, and January 28, June 2, and July 9, 2013, all of which post-date the Deutsche Bank presentation. Two of these episodes involved Vorley, and the other four involved Chanu. Only the first of these involved layering 10-lot visible orders, and the rest involve one of the defendants placing single, very large visible orders opposite the primary iceberg. *See, e.g.*, GX 1 (Vorley trading on January 28, 2013, with a visible sell order for 110 contracts opposite his iceberg order); GX 1 (Chanu trading on June 2, 2013, with a visible buy order for 100 contracts opposite his sell side iceberg). The defendants reject the notion that these episodes involve spoofing and highlight that Vorley was acquitted of the single post-training count in the indictment. Vorley Suppl. Memo at 8 n.7. That result does not, however, necessarily reflect an absence of evidence

that the defendants continued spoofing after the September 2012 presentation; Professor Venkataraman's testimony was enough to permit the inference that 100-lot orders operated in much the same way as layered 10-lot orders. *See, e.g.*, Tr. 1421:17-1422:1; *see also* Tr. 680:24-681:10 (Liew testifying that he was spoofing in an episode in which he placed 100-lot buy orders to "clear some of his selling in the market"). And even if the evidence had demonstrated that the defendants' spoofing ended after they received the training presentation, it would be just as reasonable for a jury to infer that the defendants abandoned the practice because it was more likely to be discovered as it would be to infer that the training prompted an epiphany that their conduct was fraudulent.

Finally, Vorley and Chanu each argue that it would be "*irrational* to conclude that he was openly engaged in market manipulation and fraud in front of his colleagues, including supervisors and the bank's compliance officers, but simply never got caught." Vorley Suppl. Memo. at 11 (emphasis in original). In support, the defendants note that their trading took place in the open, under the supervision of managers and compliance officers; that each element of the scheme was permitted on the COMEX exchange,[13] as were other types of orders that masked the full extent of a trader's buying or selling interest; and that no one from Deutsche Bank or the CME informed either defendant that they were doing anything improper. Defs.' Joint Rule 29 Mot. at 17-18; *see also* Vorley Suppl. Memo. at 6. These arguments, too, are unpersuasive.

[13] This contention completely ignores Scheerer's unambiguous testimony that orders placed with the intent to cancel were not permitted on the exchange, whether they took the form of icebergs, visible resting orders, or any other type of otherwise permissible order. Tr. 387:3-6 (Q: So at least since the time that you've been in the Global Command Center, was it always a violation of the rules for someone to place orders they intended to cancel? A: Yes, it's always been a rule against that.).

The so-called "deafening silence" from Deutsche Bank, the CME, and the defendants' counterparties provides weak support, at best, for the defendants' argument that until the September 2012 Dodd-Frank training, Vorley and Chanu "simply believed that [they] were engaged in a sharp, albeit permissible, trading strategy," Chanu Suppl. Memo. at 10; Vorley Suppl. Memo. at 8. And the jury was entitled to credit contrary evidence that the silence regarding the defendants' conduct is better explained by the fact that the risk of detection was small. The jury heard David Liew's testimony, for instance, that he thought spoofing was only "okay" in the sense that he "thought [he] wouldn't get caught" because spoofing "felt commonplace" on the precious metals desk, which had an attitude that "if spoofing helps you to achieve your goal, which is to make money, you should do it." Tr. 672:21-673:1; Tr. 674:15-675:13. Both John Scheerer and Michael Koplowitz testified that spoofing was difficult to detect, even for diligent compliance professionals. Koplowitz explained that Deutsche Bank's compliance officers could not watch traders' activity in real time from their own computers, Tr. 1237:6-14, and that even though compliance officers could, in theory, stand behind traders to monitor their trades, "it's very hard to stand behind a trader and understand . . . exactly what they're doing." Tr. 1235:13-1236:10. Liew corroborated this; he testified that compliance would have trouble figuring out whether he was spoofing while casually watching his screen because to "anyone that was walking past, without much context, it would just appear that it looks like you're busy." Tr. 673:19-674:14. Scheerer similarly acknowledged that it would be possible for a trader to violate the CME rules in a manner such that the CME would be unable to detect it. Tr. 416:3-5. And, given that even full-time compliance officials had difficulty detecting spoofing, the defendants' contention that silence from their counterparties suggests the strategy was permitted is particularly weak. *See* Vorley Suppl. Memo. at 9. Other COMEX traders were in an even worse position to "say something" than

the CME or Deutsche Bank itself—Twells confirmed that spoofing is "extremely difficult to catch at [the traders'] level when we don't know the counterparties' specifics." Tr. 1731:16-21.

Taken as a whole and viewed in the light most favorable to the prosecution, there is ample evidence in the record supporting the jury's conclusion that Vorley and Chanu repeatedly and purposefully engaged in a pattern of placing large, visible spoof orders opposite their primary, iceberg orders, and that their intent in doing so was to falsely signal to other market participants the arrival of a significant buying or selling interest and induce other traders to execute against their iceberg orders at more favorable prices. With the evidence in the record, the jury could reasonably disregard the defendants' alternative explanation—that the defendants merely got lucky and stumbled upon a "sharp" but innocent trading strategy that routinely paid off in the hyper-competitive environment the defendants described at trial. The evidence further supports the inference that, Dodd-Frank aside, Vorley and Chanu understood that their conduct was both intrinsically fraudulent and also violative of CME rules and Deutsche Bank's market manipulation policies. As such, the defendants' assault on the sufficiency of the evidence regarding knowledge and intent to defraud fail.

B. The Evidence Was Sufficient for a Rational Jury to Conclude that the Charged Episodes Involved Spoofing.

In their supplemental memoranda, both defendants argue that the prosecution failed to prove that the charged trading episodes were, in fact, part of a spoofing scheme. Chanu Suppl. Memo. at 2-6; Vorley Suppl. Memo. at 11-15. Both defendants cite various evidence that, in their view, contradicts or undermines the government's theory that the defendants were spoofing during the episodes corresponding to their respective counts of conviction. *See, e.g.*, Vorley Suppl. Memo. at 12-13 (rehashing perceived weaknesses in government witnesses' testimony and alternative justifications for Vorley's trading decisions on February 12, 2010, and May 5, 2011); Chanu Suppl.

Memo. at 3-6 (lamenting the government's selection of "arbitrary time frames of between 15 seconds and 15 minutes" and urging that a rational jury could only have concluded that the visible orders placed during the "government-defined episode[s]" were "simply a continuation of an innocuous trading pattern").

As an initial matter, that there was potentially inconsistent testimony or hypothetically innocent explanations for a defendant's conduct does not mean the record was devoid of evidence supporting the jury's guilty verdicts. And the Rule 29 standard demands that courts "give[] full play to the responsibility of the trier of fact fairly to resolve conflicts in the testimony, to weigh the evidence, and to draw reasonable inferences from basic facts to ultimate facts." *Jackson v. Virginia*, 443 U.S. 307, 319 (1979). For the reasons already discussed, there was sufficient evidence from which a rational jury could conclude, beyond a reasonable doubt, that the defendants were spoofing in the government's charged episodes; the jurors heard the defendants' present arguments through their thorough, extensive cross-examination of the government's witnesses and still exercised their role "as weigher[s] of the evidence" to conclude that the defendants were, on at least some occasions, guilty of wire fraud.[14] *Id.* The Court cannot disturb that conclusion by reweighing the evidence at this stage.

A common refrain in these arguments nevertheless bears noting. The defendants argue that "given the many possible alternative explanations for placing and cancelling the visible orders," and the fact that Vorley and Chanu "placed similar orders tens of thousands of times with no iceberg orders on the opposite side," the evidence did not support a finding beyond a reasonable

[14] Surprisingly, given their Rule 29 motion, the defendants did not address in their closing arguments the adequacy of the evidence to support a finding that any specific trading episode involved spoofing, with the exception of Count 17 on July 9, 2013, of which Mr. Vorley was acquitted.

doubt that they engaged in spoofing (*i.e.,* that they misrepresented their intent to trade). *See* Vorley Suppl. Memo. at 2; Chanu Suppl. Memo. at 3 (in view of cancellations when no iceberg orders were pending, "the jury had no rational way to conclude beyond a reasonable doubt that Mr. Chanu's placement and cancellation of visible orders opposite iceberg orders was 'spoofing,' as opposed to coincidental"). The premise of the argument is that the defendants "traded in the exact same way" in periods outside of those episodes depicted on the government's charts, and that what the government depicted as spoofing was "simply a continuation of an innocuous trading pattern" engaged in throughout the rest of the day. Chanu Suppl. Memo. at 4; *see also*, *e.g.*, Tr. 2093-94 (counsel for Vorley) ("75 percent of the time he's trading exactly the same way, placing and quickly cancelling orders, and there's no iceberg on the other side. They just left that off the charts. They didn't want you to know that that's what he does all day long. That's what normal trading looks like.").

The comparison, however, is fallacious. It mischaracterizes the scheme by ignoring the probative import of the iceberg orders, which as alleged and argued by the government, were an integral part of the scheme. The government's theory was not that all large visible orders were fraudulent; it was that the defendants' scheme involved the placement of large visible orders on the opposite side of the market from open iceberg orders that were priced above (for offers) or below (for bids) the prevailing market price. There was ample evidence from which the jury could conclude that transactions that fit that pattern were part of a scheme to defraud rather than the product of "coincidence." That the defendants frequently placed and canceled visible orders when they did ***not*** have open iceberg orders pending on the opposite side of the market says nothing

about their intent when placing and canceling such orders while trying to fill open iceberg orders at better prices than the market was offering.[15]

C. The Evidence Established a Scheme to Defraud Within the Meaning of the Wire Fraud Statute.

The defendants also contend even if Vorley and Chanu used large, visible orders to induce third parties to enter into economic transactions they may have otherwise avoided, "[n]ot all deceit or deception about something that would be relevant to another party constitutes fraud." Defs.' Joint Mot. at 18. They argue that, under the Second and Eleventh Circuits' approach, the defendants' conduct falls outside the reach of the wire fraud statute because their scheme did not involve a false representation regarding the "essential elements of the bargain." *Id.*, *citing United States v. Shellef*, 507 F.3d 82 (2d Cir. 2007), *United States v. Takhalov*, 827 F.3d 1307 (11th Cir. 2016). Vorley and Chanu acknowledge that the Seventh Circuit has not endorsed this approach,

[15] The jury's mixed verdicts suggest that they considered the evidence relating to each defendant and each charge separately and carefully. Chanu speculates, however, that the jury's verdicts can be explained simply by reference to whether the government's charts showed that "there was more than one visible order opposite an iceberg." Chanu Suppl. Memo. at 6. Chanu also acknowledges, however, that the "rule" he posits does not in fact explain the jury's verdict on Count Four.

There is, of course, no evidentiary support for Chanu's claim (*see* Fed. R. Evid. 606(b) and LCrR31.1) and, in any event, it is not at all clear why a conclusion that episodes in which the defendants layered multiple 10-lot orders opposite open iceberg orders involved spoofing, while those that included only a single, large visible order did not, would be irrational. Indeed, the same distinction was suggested by Vorley's counsel in his closing argument when he contrasted trades involving single 100-lot orders from those involving multiple 10-lot orders and argued that placement of a single, large visible order is an inadequate basis to infer a spoofing scheme. Tr. 2102:16-2103:4 ("What do we have here? July 9, 2013, one 100-lot red dot. There are no groups of ten-lot orders, the thing the prosecutors say were the spoofing fingerprint at this time. There's a single red dot. . . . There's no way you can know why James placed a single red dot for one second, more than seven years ago, with no information other than this chart."). Implicit in that argument is what the jury could have understood as an acknowledgement that placement of multiple layered 10-lot orders is different and more probative of participation in spoofing.

but assert that the Circuit's decisions in *Weimert* and *Coscia* "fully align[]" with a narrower construction of the statute's reach. *Id.* at 20.

Neither *Weimert* nor *Coscia* support the defendants' argument. The Seventh Circuit's conclusion in *Weimert* that "[d]eception about negotiating positions—about reserve prices and other terms and their relative importance—should not be considered material for purposes of mail and wire fraud statutes" did not narrow the wire fraud statute's scope so as to exclude the defendants' conduct from its reach. 819 F.3d at 358. In explaining that not all deceit is material, the court observed that, in the type of arms-length commercial negotiation at issue in that case, "parties . . . do not expect complete candor about negotiating positions" from their counterparties, and analogized deception about a party's negotiating position to "statements about a party's opinions, preferences, priorities, and bottom lines," which have generally been treated as immaterial to a transaction. *Id.* (differentiating also between representations of fact "where the maker has definite knowledge" from statements of opinion, where opinions "may be expected to differ"). But in deeming one category of misleading statements immaterial, the Seventh Circuit did not categorically exclude as material all misrepresentations that "induce a third party to enter into an economic transaction that it might otherwise have avoided." Defs.' Joint Rule 29 Mot. at 18. In fact, the court held firm that "[s]ome deceptions in commercial negotiations certainly can support a mail or wire fraud prosecution"—and gave, as paradigmatic examples, factual misrepresentations that would induce a counterparty's participation in a deal at a seemingly competitive price that is, in actuality, out of sync with the asset's actual value. *See Weimert*, 819 F.3d at 356 (giving examples of misrepresentations of material facts that would, *e.g.*, lead a buyer to "purchase a property worth far less than she was led to believe," lead an investor to "believe that he was investing in a valuable asset that was actually worthless," or obscure "information

[that] would be material to the price buyers . . . are willing to pay"). The court's examples illustrate that material misrepresentations are not limited to just misstatements about price, quantity, or other basic terms of the deal—what the defendants seem to implicitly urge are the only "essential elements of the bargain." *Id.* (describing misrepresentations as to the possibility of future remediation costs of a property's environmental issues; as to the likelihood of patent protection for a company's intellectual property; or as to the magnitude of investors' expected loss, none of which misstate the price or object of a deal); *see also United States v. Binday*, 804 F.3d 558, 575-76 (2d Cir. 2015) (rejecting the defendants' argument that victim life insurance companies got "exactly what they bargained for: legally transferable contracts on the lives of individuals of a specific age and overall health," because there is no reason why a jury would be compelled to conclude those are the only "essential elements" in determining life expectancy and, in turn, the value of the insurance contract). Rather, *Weimert* reaffirmed that the wire fraud statute reaches a wide, though not exhaustive, range of "deliberate misrepresentation[s] of facts or false promises that are likely to affect the decisions of a party on the other side of the deal." 819 F.3d at 357. And as discussed above, *supra* Section I.A.2, the misrepresentation of a trade intended to manipulate the market as one entered with a bona fide intent to execute it is most assuredly one that is likely to affect the party on the other side of the deal.

Vorley and Chanu treat "negotiating position" and "intent to trade" as interchangeable but that is a false equivalency. The government's theory was not that Vorley and Chanu merely misled other market participants about their own private valuation of a given futures contract or bluffed about their willingness to trade at a certain price level; either type of deception would arguably fall within *Weimert*'s ambit. Instead, the prosecution alleged that the defendants' misrepresentations impacted other traders' valuations of the contracts at issue such that the defendants' genuine bids

or offers were more economically attractive. That the misrepresentation concerned the defendants' internal intent, rather than outside information about the world, makes it no less objectively or demonstrably false. *Compare id.* at 356 (material misrepresentations might concern facts outside of a party's control, like a property's history of environmental problems or a piece of intellectual property's potential patent protection, or facts within the party's control, like a company's deliberate understatement of its own approximation of investors' expected losses). And, unlike in *Weimert*, where the negotiating parties did not expect complete candor regarding bargaining positions, the defendants and their counterparties were trading against the backdrop of the CME's rules. The exchange may not have demanded "complete candor," but, as already highlighted, it did prohibit the non-bona fide orders integral to the defendants' scheme. In sum, the evidence adduced at trial established that Vorley and Chanu's misrepresentations of their intent to trade were not just a sharp negotiating tactic, but material falsehoods likely to affect other market participants' trading decisions. Under *Weimert*, that is wire fraud.

As for *Coscia*, the defendants' attempt to argue that it supports their "benefit of the bargain" argument stretches the boundaries of credibility; their argument about the scope of a scheme to defraud simply cannot be squared with the Seventh Circuit's opinion. Coscia, like Vorley and Chanu, schemed to "pump or deflate the market through the use of large orders that were *specifically designed* to be cancelled if they ever risked actually being filled." *Coscia*, 866 F.3d at 794 (emphasis in original). And, like the defendants, Coscia urged that his large orders were not fraudulent because "they were left open in the market long enough that other traders could—and often did—trade against them, leading to thousands of completed transactions." *Id.* at 797. The Seventh Circuit was clear, however, that occasional fills notwithstanding, Coscia's trading scheme "was deceitful because, at the time he placed the large orders, he intended to cancel the

orders . . . and thus sought to manipulate the market for his own financial gain." *Id.* (internal quotations omitted). That the counterparties to Coscia's small, primary orders received the agreed-on quantity of copper futures contracts at the agreed-on price was beside the point.

As a result, the defendants' efforts to distinguish their conduct from Coscia's trading are unavailing. Like Coscia's algorithmic orders, Vorley and Chanu's manual spoof orders were effectively "equivalent to truly fake, riskless orders" that had the sole purpose of creating an illusion of market movement. Defs.' Joint Rule 29 Mot. at 20. That Coscia's algorithmic programs cancelled his large visible orders in a matter of milliseconds with a fill ratio of .08%, while the defendants' visible orders had a median duration of 2.93 seconds and a fill ratio of .2%, are distinctions without a difference. *Coscia*, 866 F.3d at 797; Tr. 1463:22-1464:1 (median duration across government's sixty-one trial episodes); Tr. 1464:11-17 (fill ratio across sixty-one episodes). The fraudulent scheme was the same: "to create the illusion of artificial market movement that included the use of large orders to inflate [or deflate] the price." *Coscia*, 866 F.3d at 797 n.64. By definition, the defendants' counterparties, like Coscia's, did not get the benefit of their bargain, because the agreed-on price was an artifice of the defendants' making.

There is, in any event, substantial reason to question the defendants' contention that had the defendants been tried in the Second or Eleventh Circuit, "they clearly would be entitled to a judgment of acquittal on the indictment's wire fraud charges." Defs.' Joint Rule 29 Mot. at 19. As the Second Circuit has clarified, deceit that "deprive[s] the victim of potentially valuable economic information," such that "the deceit affected the victim's economic calculus or the benefits and burdens of the agreement," is actionable under the wire fraud statute. *Binday*, 804 F.3d at 570-71, 579 (for a finding of fraudulent intent, "it suffices that a defendant intend that his misrepresentations induce a counterparty to enter a transaction without the relevant facts necessary

to make an informed economic decision"); *see also United States v. Mittelstaedt*, 31 F.3d 1208, 1217 (2d Cir. 1994) (explaining, in a mail fraud prosecution, that the government could have established that information withheld was material by demonstrating that the victim "could have negotiated a better deal for itself if it had not been deceived"). So, too, the Eleventh Circuit acknowledged in *Takhalov* that "misrepresentation [that] goes to the value of the bargain" is fraud. 827 F.3d at 1313.[16]

Such is the case here. Several witnesses testified in support of the proposition that the defendants' spoofing worked because their large, visible orders implicitly misrepresented that Vorley and Chanu had a genuine intent to trade; that misrepresentation signaled a shift in supply and demand in the market which, in turn, affected other market participants' evaluation of the fair market value of futures contracts. So yes, the defendants' counterparties got what they paid for: a certain quantity of precious metals futures contracts, at a price they agreed to. But market participants were deceived by the defendants' spoof orders in a way that affected their economic calculus and assessment of the value of those contracts, as evidenced by the fact that the defendants' iceberg orders often sat unfulfilled for, in this context, relatively lengthy periods of time, until the defendants placed large spoof orders to push the mid-market price in the direction of their primary orders. In this regard, this case is a variation on the familiar trope of an auction house that employs sham bidders to drive up the price of an item up for sale. No one would

[16] *Takhalov* has been the subject of criticism within the Eleventh Circuit. Chief Judge William Pryor, in a concurring opinion, described the court's *Takhalov* opinion as "puzzling," with "no obvious basis in the common law of fraud," and opined that "[n]othing about the common-law test limits materiality to misrepresentations about 'the price,' 'the characteristics of the good,' or even 'the nature of the bargain itself.'" *United States v. Feldman*, 931 F.3d 1245, 1265, 1272 (11th Cir. 2019) (Pryor, J., concurring). He further warned that "depending on how our opinion is interpreted, its analysis may well be at odds with both the common law and binding precedent" and encouraged "the bench and bar" to exercise "due care" in interpreting and applying the opinion in future wire fraud prosecutions. *Id.* at 1265, 1273.

maintain that the high bidder got the benefit of its bargain in that scenario, even though it was willing to pay the higher price. Because the defendants' scheme was premised on depriving their counterparties of economically valuable information—that their orders did not actually correspond to the arrival of new buyers or sellers or a shift in supply and demand for futures contracts—the defendants' conduct falls within the wire fraud statute's definition of a "scheme to defraud" under either approach.

D. The Prosecution's Implied Misrepresentation Theory Did Not Render the Wire Fraud Statute Unconstitutional as Applied to the Defendants.

Finally, the defendants renew their due process challenge, and argue that nothing in the wire fraud statute put them on notice that placing large, visible orders on the COMEX implied an intent to trade, such that their conduct could be prosecuted as a violation of that statute. *See* Defs.' Joint Rule 29 Mot. at 21-23. This argument was addressed and rejected in this Court's opinion on the defendants' motion to dismiss the indictment. Order at 33-37, ECF No. 119. And, as there, the defendants' underlying argument that the evidence was insufficient to prove that their orders carried implied misrepresentations "is no more persuasive when presented in the context of a vagueness challenge." *Id.* at 34. As relevant here, the wire fraud statute makes criminal schemes intended to cheat others of money by making materially false representations. The defendants' vagueness argument is simply that the statute does not make sufficiently clear that the statute covers implied, as well as express, misrepresentations. But, as the Court explained in its ruling denying the defendants' motion to dismiss, the wire fraud statute has long encompassed implied misrepresentations and its application here does not, as the defendants maintain, represent a radical expansion in the statute's reach. Repackaged post-trial, the defendants' vagueness argument is simply that the government failed to present sufficient evidence to prove that the defendants knowingly made material misrepresentations when they placed orders on the futures markets that

they did not intend to trade. Defs.' Reply, at 13-14 ("***the trial evidence*** showed that [the defendants] had no notice that placing visible orders opposite iceberg orders could be construed as giving a false impression of supply or demand based on the intent to cancel the orders") (emphasis in original). But the jury concluded that ***the trial evidence*** showed that the defendants knowingly made material misrepresentations about their intent to execute various trades in furtherance of a scheme to defraud by spoofing and it was not irrational in reaching that determination. Accordingly, the defendants' vagueness challenge fails. Again.

II. Rule 33 Motion for a New Trial

Alternatively, the defendants move under Rule 33 for a new trial. Defs.' Joint Rule 33 Mot., ECF No. 354; Defs.' Suppl. Rule 33 Mot., ECF No. 361. Under Rule 33, a court may grant the defendants a new trial "if the interest of justice so requires." Fed. R. Crim. P. 33(a); *United States v. Reed*, 875 F.2d 107, 113 (7th Cir. 1989) ("The decision to grant or deny a motion for new trial rests within the sound discretion of the trial court."). Courts have interpreted the Rule 33 standard "to require a new trial in a variety of situations in which trial errors or omissions have jeopardized the defendant's substantial rights." *United States v. Reed*, 986 F.2d 191, 192 (7th Cir. 1993). However, a jury verdict in a criminal case is "not to be overturned lightly." *United States v. Santos*, 20 F.3d 280, 285 (7th Cir. 1994) (citation omitted). A new trial is warranted only in "rare cases in which consideration of the evidence leaves a strong doubt as to the defendant's guilt of the charged offense." *United States v. Peterson*, 823 F.3d 1113, 1122 (7th Cir. 2016) (citation omitted).

The defendants raise a number of issues that, in their view, warrant vacating the their convictions: first, that the Court erred by declining to instruct the jury on the defendants' "permissible trading strategy" defense; second, that the Court erred by declining to instruct the jury that misrepresentations do not constitute a scheme to defraud if they do not go to the "essential elements of the bargain"; third, that FBI Special Agent Johnathan Luca gave improper and

prejudicial "legal opinion" testimony regarding one of Vorley's electronic chat messages; fourth, that Special Agent Luca's dual-role testimony prejudicially blurred the line between his lay and opinion testimony; fifth, that the Court's orders to the jury to continue deliberations were unduly coercive in the context of the COVID-19 pandemic; and sixth, that Professor Venkataraman's spreadsheet of 5,902 "spoofing sequences"—prepared at the government's behest for sentencing, and disclosed to the defense on November 24, 2020, two months after the trial concluded—constitutes newly discovered exculpatory evidence that likely would have led to acquittal on at least some counts. None of these alleged errors warrant setting aside the defendants' convictions and ordering a new trial.

A. The Defendants Were Not Entitled to the Proposed "Permissible Trading Strategy" Defense Jury Instruction.

The defendants contend that it was error for the Court not to instruct the jury that "if the defendant honestly believed that his trading strategy was not fraudulent—that is . . . that his trading strategy was permitted by the applicable marketplace rules and/or did not involve the use of false representations to the market regarding his intent—then he acted in good faith and without the intent to defraud." Defs.' Joint Rule 33 Mot. at 2; *see also* Defs.' Request for Good Faith Instruction, ECF No. 333. Vorley and Chanu argue that this instruction was necessary to "convey at least two of their principal theories of defense": first, that the COMEX rules permitted various trading strategies that were designed to disguise a trader's full selling or buying interest, and, as a result, the defendants in good faith believed that their trading strategies were within COMEX rules; and second, that the defendants had a good faith belief that their COMEX orders did not include any false representations. Defs.' Joint Rule 33 Mot. at 3.

"Defendants are not automatically entitled to any particular theory-of-defense jury instruction." *United States v. Cruse*, 805 F.3d 795, 814 (7th Cir. 2015) (citation omitted). Rather,

> a defendant is . . . entitled to a jury instruction that encompasses a theory of the defense if (1) the instruction represents an accurate statement of the law; (2) the instruction reflects a theory that is supported by the evidence; (3) the instruction reflects a theory which is not already part of the charge; and (4) the failure to include the instruction would deny the defendant a fair trial.

Id. (internal alterations omitted). Vorley and Chanu maintain that the evidence presented at trial supports their proposed instruction and that the Court's instruction regarding intent to defraud was insufficient, as "not all forms of commercial deception are *fraudulent*." Defs.' Joint Rule 33 Mot. at 4-5 (emphasis in original), *citing Weimert*, 819 F.3d at 357. Moreover, the defendants argued that the Court's instructions "erroneously conveyed to the jury that it could find the defendants guilty *regardless* of whether the defendants believed in good faith that their trading strategy, though deceptive, was permitted by the applicable marketplace rules." *Id.* at 5 (emphasis in original).

Not so. The defendants' proffered instruction was effectively already part of the charge; it was entirely redundant with the instructions that told the jury that to find the defendants guilty of wire fraud, it had to find that Vorley and Chanu acted knowingly and with the specific intent to defraud—that is, to deceive or cheat another—out of money or property by means of a materially false representation. This instruction, which tracks the Seventh Circuit pattern instructions for wire fraud,[17] made clear that to convict the defendants of wire fraud, the jury was required to find that they had acted in bad faith. As the Court observed at trial, the defendants' proposed good faith instruction was "inconsistent with Seventh Circuit case law, the upshot of which is that no good faith instruction is needed or appropriate in a fraud case because you have to find bad faith to be guilty of fraud." Tr. 1344:7-1345:1. For that reason, in both *United States v. Johnson*, 874 F.3d

[17] See SEVENTH CIRCUIT PATTERN CRIMINAL JURY INSTRUCTIONS, 18 U.S.C. §§ 1341 & 1343 Mail/Wire/Carrier Fraud—Elements, p. 538; 18 U.S.C. §§ 1341 & 1343 Definition of "Intent to Defraud," p. 548 (2020 Ed.).

990, 1002 (7th Cir. 2017), and *United States v. Lunn*, 860 F.3d 574, 579-80 (7th Cir. 2017), the Seventh Circuit held that defendants charged with wire fraud and bank fraud, respectively, were not entitled to a good faith instruction.[18]

The Seventh Circuit's reasoning applies with equal force here. To convict Vorley and Chanu on the substantive wire fraud counts, the jury was required "to find bad faith, and specifically the intent to commit fraud." *Johnson*, 874 F.3d at 1002. And because "it is impossible to intend to deceive while simultaneously acting in good faith," the defendants' proposed good faith instruction "would have been at best redundant." *Lunn*, 860 F.3d at 580, *quoting United States v. Mutuc*, 349 F.3d 930, 936 (7th Cir. 2003). And, at worst, it would have utterly confused the jury, leaving it to ponder how a defendant who engaged in conduct with the specific intent to cheat others out of money could simultaneously be acting in "good faith."

The defendants' attempts to distinguish their proposed good faith instruction from the instructions requested in *Johnson* and *Lunn* are unpersuasive. To illustrate their point that not all deceptive conduct is fraudulent, they offer the analogy of a poker game, in which a successful bluffer is not guilty of fraud because the rules of the game permit the making of false statements about what cards one holds. That's a fair description of poker (as far as it goes), but the analogy is flawed. That the rules of poker permit some deception does not, of course, mean that they permit all deception. To make the defendants' poker analogy apt, we have to focus on the representation used to deceive. Instead of false representations about the cards one holds, which are permitted by the rules, consider that the rules nevertheless require players to use only the cards they were dealt.

[18] A conclusion in line with that of most other circuits. *See United States v. Chavis*, 461 F.3d 1201, 1209 n.1 (10th Cir. 2006) (collecting cases and concluding that "[t]he other circuits to address the matter have held, at least as a practical matter, that a district court is not required to give a separate good-faith-defense instruction in a fraud case because a finding of the intent to defraud, which is an element of the crime, . . . necessarily implies that there was no good faith").

A player who lays down four aces but fails to disclose that he had one of those aces up his sleeve before the deal is, of course, cheating—that is, deceiving the other players by means of an implicit misrepresentation concerning his bet—notwithstanding that the rules allow bluffing. The argument that the defendants advance—"I thought I could misrepresent my intention to execute these orders because iceberg orders and 'fill or kill' orders are permitted" is the functional equivalent of the card shark's claim, upon discovery of the ace up his sleeve, that "I thought I could add an ace to my hand because the rules allow bluffing." Neither is terribly convincing.

But the Court didn't refuse the defendants' proffered instruction because it was offered in support of a weak argument; the Court refused it because it was unnecessary. Because intent to defraud and good faith are polar opposites, good faith can be argued as the absence of intent to defraud (and vice versa). Since the defendants did not testify, any argument that they acted in good faith would necessarily have been made on the basis of circumstantial evidence, but any argument that the evidence supported an inference of good faith could easily be couched instead as an argument that the evidence showed that the defendants did not have the required intent to defraud. The Court explained the point at length at the final jury instruction conference:

> They are polar opposites, and what can be argued as good faith can also be argued as the absence of evidence sufficient to prove the defendants guilty of participating in a scheme to defraud, of intending to defraud, or making materially false or fraudulent statement or omission.
>
> So I don't see the need to set this up … as a theory of defense. The government has the burden of proving the charges beyond a reasonable doubt. In order to do so, it has to prove intent to defraud, materiality, participation in the scheme to defraud, and that's what I think it's proper to instruct the jury in, not … setting up as, you know, some kind of defense that the defendants had, … good faith belief that they could cancel an order at any time or that … the CME rules permitted deception without caveat.

> [Y]ou can make the arguments about those things and the tag line to that is that's how you know, ladies and gentlemen, that there was no intent to defraud here. We don't need to set up a stalking horse of they did this in good faith; therefore, they're not guilty. That's where I think the risk of jury confusion lies.

Tr. 2126. Even the defendants' proposed good faith instruction acknowledges the equivalence between good faith and the absence of intent to defraud: "If the defendant acted in good faith, then he necessarily lacked the intent to defraud . . . . The defendant does not have the burden of proving his good faith. Rather, the government must prove beyond a reasonable doubt that the defendant acted with the intent to defraud." Defs.' Request for Good Faith Instruction at 5.

Given this equivalence, it is not surprising to find that nowhere in their briefs do the defendants detail any argument they were unable to make in the absence of their good faith instruction. And the proof of the pudding is in the eating; review of the defendants' closing arguments shows that they had no difficulty couching arguments about their good faith understanding of what the rules permitted as arguments that they had no intent to defraud because they were doing what the CME and Deutsche Bank had always allowed. Vorley's counsel, for example, repeatedly argued that his conduct was consistent with CME and Deutsche Bank rules and was therefore not fraudulent. *See, e.g.*, Tr. 2086-87 ("What have you learned about trading on the CME? . . . You're trying to manipulate their impression of what's going to happen next. ***That's not fraud. It's allowed***."); Tr. 2103 ("All the traders were trying to disguise their strategies. And the prosecutors can't come in here years and years and years later and say the way they competed way back then was fraud."); Tr. 2103 ("He [Vorley] did the job the way he was taught and the way he thought he was supposed to do it. His supervisors never told him any different. Compliance never told him any different. The exchange never told him any different."). Chanu's attorney sounded the same notes. *See, e.g.*, Tr. 2133 (after describing highly competitive market place that

"allowed for all sorts of secrecy and deception," in which defendants were always "under the watchful eye" of compliance, "[t]he bottom line . . . is that there is absolutely no evidence that Cedric acted with any criminal intent, much less criminal intent to defraud").

The defendants nevertheless also insist that the proposed good faith instruction was needed to convey their theory that Vorley and Chanu did not think their COMEX orders included representations about their intent to trade, but the instructions given to the jury would not permit the jury to convict the defendants without proof beyond a reasonable doubt that they knew that their orders misrepresented their intent to trade. The jury was instructed that, to convict on the wire fraud counts, it must find that a defendant "knowingly devised or participated in the scheme to defraud" charged in the indictment. Tr. 2201:1-3. And the jury was instructed that a person acts "knowingly" if he "realizes what he is doing and is aware of the nature of his conduct and does not act through ignorance, mistake or accident." Tr. 2200:9-11. Based on this instruction, if the jury believed that Vorley and Chanu believed that their COMEX orders did not carry implied misrepresentations of their intent to trade, then it could not have found, beyond a reasonable doubt, that the defendants "knowingly" participated in the scheme to defraud—a scheme which, by definition, includes "a materially false or fraudulent pretense, representation or promise." Tr. 2201:6-7. As a result, the proposed "good faith" instruction was unnecessary as to this theory as well.

Simply put, there is no such thing as good faith fraud. Saying that the defendants placed orders they didn't intend to trade with a good faith belief that it was proper to do so is no different than saying that the defendants didn't intend to defraud anyone by placing orders they didn't want to trade because they believed it was proper to do so. The defendants' contention that one can deceive in good faith is, at bottom, an attempt at misdirection. They wanted the instruction to focus

the jury on deception that was permitted by the rules rather than the deception that was charged: misrepresenting their intent to execute orders at the time the orders were placed. But the defendants weren't charged with wire fraud for misrepresenting their true level of trading interest by placing iceberg orders; they were charged with committing wire fraud by falsely representing that they intended to execute orders that they did not, in fact, intend to execute. In the context of the defendants' poker analogy, they weren't charged with bluffing about the cards in their hands, but for failing to disclose the aces up their sleeves. And, again, they were permitted to argue that if they honestly believed that hiding the aces up their sleeves—*i.e.*, their intent not to execute orders—was permitted conduct, they did not have the requisite intent to defraud. Repeating the point by substituting "good faith" for lack of intent to defraud would have accomplished nothing other than confusing the jury about the distinction between good faith and lack of intent to defraud. The defendants' proffered good faith instruction was entirely unnecessary and its absence did not deprive the defendants of a fair trial.

Even if the defendants' proposed good faith instruction weren't redundant and therefore unnecessary and confusing, it was properly rejected because it misstates the law. The defendants' premise—that they acted in good faith and without the intent to defraud if they honestly believed that their trading strategy was permitted by the applicable marketplace rules—is wrong. The defendants' good faith belief that certain conduct is permitted by the CME, a private exchange not charged with interpreting or enforcing federal law and without the power to bless otherwise illegal conduct, is not equivalent to a good faith belief that an individual is not acting fraudulently vis-à-vis counterparties in the marketplace; unlike the latter, the former will not dictate a jury's finding that the defendants acted without the intent to defraud. *Compare Dial*, 757 F.2d at 167-68 (upholding the defendants' mail and wire fraud convictions though there was "no statute,

regulations, or Board of Trade rule that specifically forbid[] insider trading in commodity futures . . . , or block trading, or trading ahead" at the time of the defendants' conduct).

As the defendants themselves insisted throughout the trial, they were charged with wire fraud, not violating CME rules.[19] Even if the jury was convinced that the defendants believed that they were in compliance with CME rules while spoofing, that belief would not immunize them from a wire fraud charge. Devising a scheme to cheat others out of money or property by means of false representations is a federal crime, even if not prohibited by CME rules (or even if the rules purported to expressly permit such conduct). The CME might purport to allow dueling to settle disputed trades, but that would not provide a legal defense to the surviving dueler. A rule that purported to allow traders to make material misrepresentations to counterparties in order to deceive or cheat them out of money or property—that is, to commit wire fraud—would be equally ineffective. So, an instruction that says a defendant who "honestly believed that his trading strategy was permitted by the applicable marketplace rules" acted, ***as a matter of law***, in good faith and without the intent to defraud, is simply wrong.[20] Committing wire fraud is not a permissible trading strategy.

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[19] The defendants requested and received an instruction saying spoofing or violation of trading rules is not sufficient evidence, standing alone, to convict. The flip side of that coin is also true: compliance with CME rules, standing alone, does not establish innocence. *Cf. United States v. Brown*, 871 F.3d 532, 537 (7th Cir. 2017) ("[A] police officer's compliance with the rules of his department is neither sufficient nor necessary to satisfy the Fourth Amendment's reasonableness requirement. . . . [I]f compliance with departmental policy were the applicable legal standard, the police department itself would become the arbiter of Fourth Amendment reasonableness.")

[20] This is not to say that it was wholly irrelevant whether the defendants' trading violated the CME's rules; whether the CME permitted traders to place orders with the intent to cancel is probative in determining whether COMEX orders carried an implicit representation of the offeror's intent to trade and whether a trader's representations about their intent to trade were material to counterparties. And, again, the defendants were permitted to—and did—argue that the evidence failed to show that they intended to deceive or cheat counterparties because they believed that the rules permitted other types of deception.

B. The Defendants Were Not Entitled to the Proposed "Essential Elements of the Bargain" Jury Instruction.

The defendants also contend that it was error for the Court not to instruct the jury according to Second and Eleventh Circuit law on the scope of a "scheme to defraud." The defendants proposed to instruct the jury that "[t]he wire fraud statute is not violated where a defendant's conduct does no more than cause the alleged victim to enter into a transaction he or it may otherwise have avoided" and that the defendants' misrepresentations violated the wire fraud statute only if they went to "the nature or quality of the contract he was offering for sale or sold." Defs.' Redline of Court's Proposed Jury Instructions (Sept. 3, 2020); Tr. 1341:20-1342:22. Vorley and Chanu maintain that failure to give the instruction was prejudicial "because the Court's jury instructions defined 'scheme to defraud' in a manner that included a scheme to deceive through the use of *any* false representations." Defs.' Joint Rule 33 Mot. at 7.

The defendants' contention that "any" false representation was sufficient for conviction is flatly wrong; to convict, jurors had to conclude that the defendants' representations were not only false, but material, defined for the jury as "capable of influencing the decision of the persons to whom it was addressed." Tr. 2202:19-22 (Seventh Circuit pattern instruction on the definition of "material"). Further, and as just discussed, the instructions required the jury to find that the defendants made the alleged misrepresentations with the specific intent to defraud; that is, to deceive or cheat them out of money or property. And for the reasons already discussed in rejecting the defendants' argument that they should be acquitted because their scheme did not involve a false representation regarding the "essential elements of the bargain," *see supra* Section I.C, the proposed instruction was not necessary to adequately instruct the jury on the elements of the offense, nor was it consistent with the law of this circuit.

C. Special Agent Luca Did Not Offer "Legal Opinion" Testimony About an Electronic Chat Message, and the Chat Was Properly Admitted.

Next, the defendants argue that a portion of FBI Special Agent Luca's testimony was an improper and prejudicial legal opinion, and that the chat that was the subject of that testimony should not have been admitted in the first place. On October 2, 2007, Vorley wrote to a trader at another bank that "UBS and this spo[o]fing is annoying me / its illegal for a start." GX 80. This chat was admitted against Vorley, without questions about its substance, during the government's direct examination.[21] Tr. 1897:22-1898:9. The meaning of the statement was, however, addressed at length during the defense's cross-examination. Tr. 1929:12-1933:20. The cross-examination focused on two issues. First, that the "over-the-counter interbank callout" process, in which "one bank calls another bank and asks for a two-way price in certain defined quantities of gold and silver," was also known as spoofing. Tr. 1926:23-1927:5; Tr. 1928:23-1929:2. And second, that the phrase "just not cricket," which Vorley used in the same chat, could be understood to mean "something contrary to traditional standards of fairness." *See* Tr. 1930:10-12; Tr. 1933:8-12 (using a definition of the phrase from the Oxford English Dictionary). After pursuing these lines of questioning, the defense asked Agent Luca whether it was fair to say that, in the chat, "Mr. Vorley appears to be moaning about bluffing in the over-the-counter interbank callout process"—and Agent Luca agreed. Tr. 1933:17-20.

On redirect the next morning, the government showed Agent Luca the chat again, and then asked, without objection, whether he believed "that this discussion is talking about conduct, the same as what we've heard about during this trial," and he responded "Yes." Tr. 2016:16-19. After

[21] A limiting instruction, however, was given when the exhibit was admitted, advising the jury that the exhibit was admissible only against Mr. Vorley and that it was not admitted as evidence that spoofing was illegal when the statement was made (*i.e.,* for its truth), even though the statement was nonhearsay under Rule 801(d)(2)(A). Tr. 1897:22-25.

the Court *sua sponte* called for a sidebar to ensure that the government would properly segregate Agent Luca's opinion testimony, the Court cautioned the jury that Agent Luca was offering opinion testimony based on his specialized training, rather than his personal observations, and that the jury was not required to accept his opinion testimony as credible. Tr. 2018:8-2019:7. The government then asked, "And just looking at the first line here where Mr. Vorley says, 'UBS and this spoofing, it's annoying me,' and the next line, 'It's illegal for a start,' is it your understanding that Mr. Vorley is referring to something illegal?" Tr. 2019:22-2020:1. Agent Luca agreed, and when prompted for an explanation, he explained that in his opinion, the conduct Vorley was referring to as "illegal" was "the placing of non-bona fide orders in order to influence the decisions of the market." Tr. 2020:2-13. The defendants did not address this testimony in re-cross.

This testimony was properly admitted and did not deny the defendants a fair trial.[22] First, the chat was properly admitted against Vorley as a statement of a party opponent under Federal Rule of Evidence 801(d)(2)(A). The defendants contend that the statement should have been stricken because the government "utterly failed to lay [the] foundation" that the chat pertained to spoofing on the anonymous electronic exchange. Defs.' Joint Rule 33 Mot. at 8-9. But as the Court noted at the pre-trial conference, the government was not required to "prove that the statement means what the government says it means" in order to lay an adequate foundation for the statement's admission. Pre-Trial Conference Tr. 79:18-80:1, ECF No. 305. The chat, on its face, involved one of the defendants describing "spoofing" as "illegal," and the government presented opinion testimony from Agent Luca that, in the context of the entire exchange, "this discussion is talking about conduct, the same as what we've heard about during this trial," Tr. 2016:16-19, and

[22] As noted, the exhibit in question was admitted only against Vorley. Mr. Chanu claims nonetheless that he was the victim of spillover prejudice. *See* Defs.' Reply 9, ECF No. 366.

more specifically, that the conduct addressed in the chat was "the placing of non-bona fide orders in order to influence the decisions of the market," Tr. 2020:12-13. That testimony—on which the defendants did not cross-examine Agent Luca—was certainly sufficient to confirm the relevance of the chat. Whether the document referred to a (deceptive, and allegedly illegal) form of electronic trading, as the government contended, or to (legal, but unsportsmanlike) bluffing on the interbank exchange system, as defendant Vorley argued, was a question of fact properly left to the jury.[23]

Second, Agent Luca's testimony was not an improper legal opinion. FRE 702 permits an expert witness to offer opinion testimony if such testimony is both based on the expert's scientific, technical, or other specialized knowledge and helpful to the jury to understand evidence or determine a fact at issue. But it is jury's role to apply principles of law, as explained by the judge, to the facts in evidence, so "[a]s a general rule . . . an expert may not offer legal opinions." *Jimenez v. City of Chicago*, 732 F.3d 710, 721 (7th Cir. 2013). However, Agent Luca's testimony was not a "legal opinion" merely because the underlying chat used the term "illegal." Agent Luca testified that, in his opinion, based on his specialized training and experience reviewing chat messages in financial fraud investigations, Vorley used the term "spoofing" in this context to refer to "the placing of non-bona fide orders in order to influence the decisions of the market." Tr. 2020:12-13. This is no more a legal opinion than Professor Venkataraman's expert testimony that, in his opinion, the defendants' trading strategies were not economically rational or consistent with a desire to have their large, visible orders filled. Agent Luca did not draw a legal conclusion as to whether spoofing was illegal at the time of the conversation, nor did he opine, based on the chat,

[23] To the extent that the defendants maintain that Luca's testimony on redirect was inconsistent with his prior testimony agreeing that Vorley was "moaning about bluffing in the over-the-counter interbank callout process," it bears noting that it was, of course, the province of the jury to assess the credibility of the witnesses and that the defendants made no such argument at trial in any event.

that Vorley knew any of his own trading conduct was illegal. Moreover, the Court specifically instructed the jury that Vorley's chat was "not admitted as evidence that 'spoofing' was illegal when the statement was made"; that Agent Luca's opinions "should not be regarded . . . as having some special insight into the meaning" of chats based on his work in this case; and that the jury was not required to accept his opinion testimony at all. Tr. 1897:22-25; Tr. 1845:17-1846:2. That the chat may have been "prejudicial in the extreme" or "contrary to the defendants' principal trial defense," Defs.' Joint Rule 33 Mot. at 9, is due entirely to Vorley's seeming admission of the illegality of a form of trading that he, himself, engaged in, not to an impermissible "legal" opinion offered by Special Agent Luca. The opinion testimony was proper and a new trial is not warranted on this basis.

D. Special Agent Luca's Dual-Role Testimony Was Permissible and Adequately Differentiated.

The defendants also challenge Agent Luca's dual-role lay and expert testimony on the basis that "the government deliberately blurred the lines in a way that caused unfair prejudice and jury confusion." Defs.' Joint Rule 33 Mot. at 10. They allege that the government "[led] Agent Luca in and out of fact and expert testimony such that a jury could not be reasonably expected to distinguish between the two" and that this "zig-zagging" meant that the jury "could not understand at any given moment whether Agent Luca was providing testimony as an expert or describing his observations as the case agent." *Id.* at 11-12.

The Seventh Circuit "allow[s] the practice of permitting case agents to testify as both fact and expert witnesses," but has "repeatedly warned of the 'inherent dangers' of such dual-role testimony." *United States v. Jett*, 908 F.3d 252, 267 (7th Cir. 2018). Among those dangers are that a jury "may unduly credit the opinion testimony" based on jurors' perception that a case agent was privy to facts not presented at trial; that a jury may be "smitten by an expert's 'aura of special

reliability'"; and, most importantly, that "dual-role testimony will confuse the jury." *Id.* (citations omitted). To that end, the Seventh Circuit has established best-practices for dual-role testimony by a case agent: the Court should encourage the government to present the expert and lay testimony separately; after the government has laid its foundation and established the agent's qualifications, the Court should instruct the jury that the testimony that follows is based on the witness's opinion based on training and experience, not firsthand knowledge; and the Court should include a jury instruction "aimed at curbing the risks of dual-role testimony." *Id.* at 269-70.

Each of the precautions outlined in *Jett* was taken to minimize the risk that Agent Luca's testimony would either confuse, or be deemed especially reliable by, the jurors. In its order denying the defendants' motion in limine to preclude Agent Luca's testimony, the Court stated that it would "require the government to segregate Agent Luca's lay and expert testimony entirely" and "elicit any opinion evidence from Agent Luca in a single session of testimony," noting that the government would not be permitted to recall Agent Luca for the purpose of providing additional opinion testimony once he had been called for that purpose once. Order at 1-2, ECF No. 314. Those instructions were reiterated to the government in a sidebar shortly after Agent Luca was sworn in and after his qualifications were established, *see* Tr. 1815:9-22, and the Court inquired with the government as to how the testimony would be structured, so the Court could instruct the jury accordingly, Tr. 1815:23-1816:13. The government indicated it would begin with fact testimony, so the Court instructed the jury that the testimony it was about to hear was "based on [Agent Luca's] personal knowledge and his perceptions as a fact witness," and that, until the Court indicated otherwise, Agent Luca's testimony would not draw on his experience as an FBI agent or any other specialized training. Tr. 1816:22-1817:6.

Later in Agent Luca's testimony, the government signaled that it was going to pivot to expert opinion testimony, explaining to the witness that there were going to be some "questions now based on [his] training and experience as an agent" to interpret some of the phrases used in the defendants' chats. Tr. 1845:4-8. At that point, the Court interjected to instruct the jury that "the testimony you're about to hear is based or purports to be based on Agent Luca's specialized training and experience as an FBI agent investigating the types of cases that he's testified about." Tr. 1845:10-14. The Court explained that the testimony that followed would be "different from the testimony that he ha[d] offered up to this point, which [was] based – [was] testimony on facts, not Agent Luca's opinion." Tr. 1845:15-17. The Court also explained that the jury was not required to accept Agent Luca's opinion testimony, and that the jury should weigh it as it did opinion testimony from other witnesses; the Court reminded the jury that Agent Luca's opinions were "not based on his work as the case agent" in the defendants' case and "should not be regarded to you as having some special insight." Tr. 1845:15-1846:2. At the end of the opinion portion of Agent Luca's testimony, the Court interjected again to explain that the remainder of Agent Luca's testimony "will be as a fact witness, again, not as a witness with specialized knowledge or specialized training that he is drawing on." Tr. 1873:6-10.

The Court took a similarly cautious approach to the government's questioning on redirect. When the government began to elicit opinion testimony, the Court called a sidebar *sua sponte*, and warned the government that "opinion testimony from Agent Luca . . . needs to be clearly labeled as such," and that "any questions you have about opinion testimony need[] to come," because the Court was going to advise the jury again, at the end of Agent Luca's opinion testimony, that the remainder of his testimony would be fact-based. Tr. 2016:22-2017:8. At that point, the Court instructed the jury that "[w]e are in the portion of [Special Agent Luca's] examination where the

government will be eliciting further opinion testimony," and that the Court would "advise [the jury] when that portion of the testimony is complete." Tr. 2018:8-2019:6. After a brief round of questioning, the government's redirect examination concluded.

Finally, in addition to these warnings during Special Agent Luca's testimony, the Court issued, nearly verbatim, the dual-role testimony jury instruction initially approved by the Seventh Circuit in *United States v. Garrett*, 757 F.3d 560, 570 (7th Cir. 2014) and endorsed in *Jett.* 908 F.3d at 270 (concluding "[t]his formulation, or something similar, better informs the jury of its task—to weigh expert testimony and lay testimony separately, under their respective standards"); *see* Tr. 2198:1-15 (jury charge).

So, the defendants' version of events—that the Court "was forced to give ***four*** separate instructions to the jury in a belated attempt to clarify whether Agent Luca was wearing a fact or expert hat at any given time"—is, charitably characterized, misleading. Defs.' Rule 33 Mot. at 12 (emphasis in original). At the Court's instruction, the government aggregated Agent Luca's opinion testimony into a single section of its direct examination. After Agent Luca was qualified, the Court explained to the jury that he was going to testify as a fact witness; marked off the beginning and end of his opinion testimony with an explanation of how the jury should consider such testimony; and gave a similarly robust instruction when opinion testimony was elicited again on redirect, which was prompted by the defense's own cross-examination of the witness. When the government's questioning got too close to the line, the Court reined it in. *See* Tr. 1858:19-1859:3 (at a sidebar requested by the government to ensure its questioning was not "going beyond what the Court thought was appropriate"). The Court also refused the government's request to question Agent Luca using a demonstrative that superimposed the defendants' contemporaneous chats onto charts of the defendants' trading data, to ensure the jury would not be confused or

unduly influenced by that testimony. Tr. 1875:5-1876:6. In a trial chockful of technical information about the workings of the precious metals futures trading markets, trading data analyzed at the millisecond level, and sophisticated economic and statistical analysis, it is a discredit to the jury to suggest they were so hopelessly confused by the clearly demarcated shifts between Agent Luca's fact and opinion testimony as to require a new trial.

And, even where proper procedures are not followed, admission of dual-role testimony is harmless if there is other convincing evidence of guilt. *Jett*, 908 F.3d at 267, 270, *citing United States v. Stewart*, 902 F.3d 664, 683 (7th Cir. 2018) (the test for harmless error is "whether, in the mind of the average juror, the prosecution's case would have been significantly less persuasive had the improper evidence been excluded"). As in *Jett*, Special Agent Luca's expert testimony was fairly limited to the interpretation of certain words and phrases used in the defendants' chats, like "posi," "PnL," "bid it up," "got that up 2 bucks," "flashing bids," and "down to 6." *Compare Jett*, 908 F.3d at 266 (explaining that qualified case agents may explain terms with which their professional experience has given them "particular familiarity"). "Even disregarding Agent [Luca's] limited expert testimony," *id.* at 270, the jury saw and heard convincing evidence of the defendants' guilt, most notably the defendants' trading data itself, David Liew's testimony as a Deutsche Bank colleague who engaged in similar conduct, and Professor Venkataraman's analysis of the defendants' trading during the charged episodes and across several years of trading. Given the precautions taken, the admission of Special Agent Luca's limited interpretation of certain terms used by the defendants as they narrated their spoofing in real-time—none of which, outside of the defendants' challenge regarding his alleged "legal opinion," they substantively take issue with as "wrong, misleading, or disputable," *id.* at 267—does not warrant a new trial.

E. The Jury Was Not Unduly Coerced During its Deliberations.

The defendants next argue that the Court's instructions to the jury to keep deliberating after juror notes indicated that deliberations were deadlocked were unduly coercive given that the trial took place during the COVID-19 pandemic. Defs.' Joint Rule 33 Mot. at 13. Every criminal defendant "being tried by a jury is entitled to the uncoerced verdict of that body." *United States v. Banks*, 982 F.3d 1098, 1102 (7th Cir. 2020), *citing Lowenfield v. Phelps*, 484 U.S. 231, 241 (1988). A verdict is coerced "when jurors surrender their honest opinions for the mere purpose of returning a verdict." *Id.* (citation omitted). The risk of juror coercion is evaluated based on the totality of the circumstances from the juror's perspective. *Id.* The inquiry is "objective and focuses on the situation facing the juror." *Id.* If the totality of the circumstances suggests a "clear impermissible risk of juror coercion," courts will "presume that the error prejudiced the defendant and seriously affected the fairness of the proceedings." *Id.*

The case went to the jury late in the day on September 22, 2020; little, if any, deliberation could have occurred that afternoon. At 1:17 p.m. on Wednesday, September 23, the Court received a note indicating that the jurors were split, nine votes to two.[24] Tr. 2239:8-13. The note stated the two jurors in the minority would "not be persuaded [the] other way," and asked the Court "[w]here do we go from here." *Id.* The Court gave the parties time to confer; the government requested that the jury be instructed to continue its deliberations, and the defense, after just four hours of deliberations, asked the Court to declare a mistrial and hung jury. Tr. 2239:22-2240:18. The Court

[24] The vote breakdown was included despite the Court's clear instructions not to include such information in notes to the Court. *See* Tr. 2207:14-16 ("If you send me a message, do not, do not include the breakdown of any votes that you may have conducted."). The jury seemingly realized their mistake shortly thereafter and sent another note to the Court urging it to "[p]lease disregard the first letter" and reiterating "[w]e can't come to a unanimous decision." Tr. 2244:6-12.

observed that the jury had been "deliberating a little over four hours in a trial that continued past a week," which was "not a very long deliberation process," and denied the mistrial, concluding that the note did not indicate that the jury would be unable to reach a unanimous verdict if it continued to deliberate. Tr. 2241:1-13. The Court decided it would send a response to the jury that read, "Please continue your deliberations." Tr. 2241:22-24. At the time, the defense filled out its request for a mistrial by noting that the "pressures from the COVID circumstances and restrictions that they're operating under," along with the continuing uncertainty about whether the ill juror was suffering from COVID, was "impacting this environment as well." Tr. 2242:2-6.

The Court also received several notes indicating that the jury was having difficulty with the electronic evidence system during that first full day of deliberations. At approximately 9:30 a.m., the jury asked for a tech person to help them access the evidence. Tr. 2221:4-8. Shortly after 11 a.m., another note asked whether the Court could provide the jury with a demonstrative the government had used during its closing, which included a summary of the charged counts with "corresponding dates, defendants, and exhibits." Tr. 2224:14-17. At that point, the Court realized that the jury had not been provided with a copy of the redacted indictment, and copies were sent to the jury room with a note reminding the jury that the indictment is not evidence. Tr. 2225:5-2232:7. As the indictment issue was being resolved, the jury sent another note asking whether there was a list of exhibits and voice recordings and reiterating that they were having issues locating it on the screen being used to view the evidence. Tr. 2232:8-14. After conferring with the parties, the Court responded that the only "exhibit list" available is the list provided by the JERS system;[25] the Court told the jury that if it required technical assistance in locating that list, to send

[25] The Jury Evidence Recording System ("JERS") was used so that the jury could review the parties' evidence without paper copies. The jury room had a JERS computer, a touch-screen monitor for the jury to select an exhibit to display, and a wide-screen monitor.

another note and a technician would be sent to help. Tr. 2235:14-18. Finally, later in the afternoon, the Court received another note from the jury asking it to confirm that the jury had a complete list of exhibits submitted and noting that it did not have access to any recordings. Tr. 2247:2-8. A tech person was again sent back to the jury room to try to resolve these issues.

After the government and defense teams were informed that the jury was again having issues accessing the evidence, the parties inquired whether a representative might be allowed into the jury room to confirm that all of the evidence was properly loaded into the JERS system. Tr. 2250:4-2251:9. At the end of the day, the jury was called into the courtroom and reminded to avoid seeking out information or inadvertently learning information about the case from any source outside the court; the Court also told jurors it was working to resolve their technical difficulties. Tr. 2258:10-2259:15. After the jurors left the courthouse, IT employees accompanied representatives from each party and the Court into the jury room to investigate the technical issues and discovered that jurors had access to two copies of the defense exhibits, but none of the government's exhibits. Tr. 2263:18-24. The Court issued a curative instruction to the jury the next morning, Thursday, September 24, which advised jurors of the technical error, explained that the government's exhibits had not been among the materials they had viewed the day prior, and instructed them to resume their deliberations. Tr. 2271:6-21.

Around noon on September 24, Juror No. 12 informed the Court that she had travel planned from Friday, September 25, through Sunday, September 27, and inquired whether the jury collectively, or she individually, could be excused from deliberations the next day and return the following week. Tr. 2273:22-2274:15. The defense indicated its belief that "the best course here is to maybe have a day off tomorrow," Tr. 2275:3-23, citing apprehension that the juror's concern about losing money (or other jurors' concern for her, if they knew of her dilemma) might have a

coercive influence on deliberations. The Court declined the suggestion to take Friday off, noting that prolonging the deliberation schedule was just as likely to inconvenience jurors who had plans the following week and would be inconsistent with what the jurors had been instructed as to the schedule of deliberations (*i.e.*, that they would take place each weekday until concluded). Tr. 2276:2-23. Later that afternoon, the Court responded to the juror's note, informing her that it could not accommodate her request to change the schedule of jury deliberations. Tr. 2284:10-22.

At nearly 4 p.m. on September 24, the Court received another jury note that stated, "after deliberating for the last two days and after reviewing each count, the conclusion is not unanimous on any counts." Tr. 2282:5-7. The note also said that "[w]e, the jurors, do not see further deliberations resulting in any unanimous decisions." Tr. 2282:7-8. Again, the Court gave the parties time to confer. The government observed that, given the technical issues the day before, the jury had been deliberating with the benefit of the government's evidence and the indictment in front of it only since that morning; accordingly, the government asked the Court to deliver the *Silvern* instruction.[26] Tr. 2282:14-18. The defense renewed its motion for a mistrial. Tr. 2282:19-22. The Court agreed that it was appropriate to call the jury in and read the *Silvern* instruction before asking them to continue their deliberations and denied the defendants' mistrial motion. Tr. 2282:23-2283:6. When the jurors had reassembled in the courtroom, the Court acknowledged their note reporting that they had not reached a unanimous verdict and read the *Silvern* instruction.

[26] In *United States v. Silvern*, 484 F.2d 879, 883 (7th Cir. 1973), the Seventh Circuit set out the appropriate charge for deadlocked juries in both criminal and civil cases. The charge instructs jurors that the verdict "must represent the considered judgment of each juror" but must be unanimous; encourages jurors to "consult with one another and to deliberate with a view to reaching an agreement" and to "not hesitate to reexamine your own views and change your opinion if convinced it is erroneous"; and warns jurors not to "surrender your honest conviction as to the weight or effect of evidence solely because of the opinion of your fellow jurors, or for the mere purpose of returning a verdict."

Tr. 2285:16-2286:9. The jury then returned to the jury room at approximately 4:15 p.m. to resume its deliberations. Tr. 2286.

About forty-five minutes later, Juror No. 12 sent another note, writing, "It has been two days, and I know for sure that the outcome of this deliberation will not change. There is no moving of the minds that are already made up regarding their decisions. We have reviewed every piece, gone over notes . . . for memory and still the same results." Tr. 2286:24-2287:10. She also wrote that she wanted to finish her jury service, and assured the Court she would return on Monday, adding, "I know nothing will change." Tr. 2287:6-9. The defense again renewed its motion for a mistrial, asserting that "it's growing increasingly coercive in there." Tr. 2287:12-20. The motion was denied, and the Court responded by note that the juror's presence, and the presence of all the other jurors, was required the next day for deliberations to continue. Tr. 2289:16-20. No further notes were received until 3:52 p.m. the next day, Friday, September 25, when the Court was informed that the jury had reached its verdict. After the verdicts were announced, the Court polled the jury and each juror affirmed that the jury's verdict was his or her own verdict as well. Tr. 2295:14-2296:23.

Neither the content of the Court's two instructions to continue deliberations, nor the context in which those instructions were delivered, suggests jurors were coerced into returning a verdict. The jurors received standard written and verbal instructions to continue their deliberations that the Seventh Circuit has repeatedly held to be "neutral and not coercive." *United States v. Kramer*, 955 F.2d 479, 489 (7th Cir. 1992); *see also United States v. D'Antonio*, 801 F.2d 979, 983-84 (7th Cir. 1986) (holding that an instruction to "continue to deliberate" after a jury-declared impasse is "perfectly content-neutral and carrie[s] no plausible potential for coercing the jury to surrender their honest opinions for the mere purpose of returning a verdict") (internal quotations omitted).

And the Court's decisions to instruct the jury to continue deliberations, rather than to grant the defense's motions for mistrial, were reasonable in context: the first note declaring deadlock was sent after the jury had been "at most . . . deliberating a little over four hours in a trial that continued past a week," Tr. 2241:1-8, and the second note, which prompted the reissuance of the *Silvern* instruction, came only a few hours after the jury had resumed its deliberations with the government's evidence in front of it. Tr. 2282:4-2283:6.

That the Court was aware that the jury was split nine to two, at least at the time of the first note, did not make its instruction to continue deliberating per se coercive. *See Kramer*, 955 F.2d at 489 (that the district court knew there was one holdout juror when it instructed the jury to continue its deliberations did not make any difference as to the coerciveness of the *Silvern* instruction; the instruction "simply did not influence the jurors to find the [defendants] guilty or not guilty" and "the holdout juror remained free to persuade other jurors to acquit the [defendants]"). In fact, unlike in *Kramer*, the Court did not know whether the two "holdout" votes were to convict or acquit—and given that the jury was, at that point, deliberating without any of the government's evidence in front of it, it is just as plausible that the two "holdout" jurors were votes to convict. *Compare id.* at 488-89 (the district court received several notes that the vote remained "the same as the others, deadlocked, eleven guilty, one not guilty").

The jury, moreover, did not return a verdict until almost a full day after the Court reread the *Silvern* instruction, and it did not convict either defendant of all the counts he was charged with, "indicating that rereading of the instruction did not pressure jurors to 'surrender their honest opinions for the mere purpose of returning a verdict.'" *United States v. Cardena*, 842 F.3d 959, 975 (7th Cir. 2016) (citation omitted); *see also Banks*, 982 F.3d at 1105 (observing that, after a *Silvern* instruction, "longer deliberations indicate the jurors took time to reexamine their own

views and consult with one another," while "shorter deliberations may support an inference of a coercive effect of the majority running roughshod over the minority") (internal quotations and alterations omitted). And when the jury returned its verdicts, each of the jurors was polled and each confirmed that the jury's verdicts reflected their individual views as well. *See United States v. Polichemi*, 219 F.3d 698, 710-11 (7th Cir. 2000) (citing juror's response when polled in rejecting argument that juror's change in verdict at 4:30 p.m. on a Friday afternoon was coerced).

Vorley and Chanu concede that, "[i]n normal circumstances," the Court's instructions to the jury "might not have been coercive," but maintain that the specter of COVID-19 and the ongoing risk of infection as deliberations continued prompted jurors to compromise their honestly held beliefs and "agree[] to a split verdict at approximately 4:00 pm on a Friday so that they could return to the safety of their homes." Defs.' Joint Rule 33 Mot. at 13-15. But the defendants' argument as to this point is pure conjecture—there is absolutely nothing in the record to suggest that the jurors were gripped with concern that "each day that deliberations continued, they had to put their physical health at additional risk," or that any juror felt pressured with a "Hobson's choice" between maintaining their honestly held beliefs about the sufficiency of the evidence and prioritizing their own physical health. *Id.* at 14-15. And though the defendants confidently assert that "[t]he jurors' COVID-19 concerns clearly were heightened" after learning a juror was hospitalized with COVID-like symptoms, *id.* at 14, the record suggests just the opposite: the eleven jurors who retired for deliberations had affirmatively declined the opportunity to consult with a medical professional after learning of their potential COVID exposure from the hospitalized juror, though they had shared a jury room with him for more than a week. Not surprisingly, then, none of the notes the Court received reporting deadlock registered any concern about COVID exposure as a reason to end the deliberations. Moreover, the Court received myriad other notes throughout

the trial with juror concerns about missing out-of-state work commitments, Tr. 1633:11-16; medical appointments, Tr. 1977:8-1978:1 (asking for an accommodation to be made in order for the juror to attend a doctor's appointment on October 1, 2020, should evidence presentation or jury deliberations last that long, and noting the jury "had no way of knowing how long the case might last"); and pre-planned travel, but none indicating any discomfort regarding its COVID precautions or invoking COVID risk as a reason to be excused from the jury. To the contrary, and as discussed, Juror No. 12 informed the Court she had planned a cross-country trip for September 25 through September 27 but was willing and able to return to jury service the following Monday (after taking at least two commercial flights and staying in a hotel).

Finally, it also bears noting that the defendants took positions that belie their stated concerns, now, about jurors' preoccupation regarding their potential exposure to COVID. As an initial matter, of course, the defendants chose to go forward with the trial during the pandemic; surely they would not have done so if they believed that concerns about COVID exposure might influence the jury's deliberations in as little as four hours (the point at which they first began asserting that COVID concerns were coercing the jury and warranted a mistrial). And during the trial, on the day the case went to the jury, the defendants balked at precautions the Court suggested to allay juror concerns about potential COVID exposure upon learning that one of the jurors may have been infected. *See* Tr. 1981:1-1982:13 (arguing that it was "unnecessary" to adjourn for the day to allow jurors to get rapid COVID tests and for the courtroom and jury room to be cleaned, stating "I just can't believe that any time somebody experiences any symptoms of a cold or a flu, that that means that everything has to be shut down and, you know, cleaned"). Perhaps most tellingly, during the jury's deliberations, the defendants urged the Court to give the jury the day off from deliberations on Friday, September 25 (after having objected to a day's continuance to

permit all jurors to mitigate concerns about COVID-19 exposure) to accommodate the request of a juror (who had reported that the jury was hopelessly deadlocked) to fly half-way across the country and back over the weekend, a request that, if granted, would have exacerbated the risks of exposure to Juror No. 12 and to other jurors upon her return and would have ***extended*** the jury's deliberations into the following week. Tr. 2275:3-13. Whatever considerations may have animated the defendants to take these positions, they do not appear to have included concerns that COVID fears would coerce the jurors to render quick, compromised, verdicts.

In sum, the totality of the circumstances here—even taking into account the uniquely challenging circumstances created by the COVID-19 pandemic—did not create a risk of juror coercion. The jury received two neutrally-worded instructions to continue its deliberations after it indicated it was deadlocked, once by note and once by redelivery of the *Silvern* instruction; those instructions came after relatively short periods of deliberation, so a unanimous verdict still seemed possible; and the jury ultimately returned a mixed verdict nearly a day after receiving the *Silvern* charge. Neither the Court's knowledge of the vote breakdown when it delivered its initial instruction to continue deliberations, nor the (scant) evidence of jurors' concerns about the ongoing risk of COVID exposure create the presumption that the Court's instructions to continue deliberations seriously affected the fairness of the proceedings.

F. Professor Venkataraman's Spreadsheet of Spoofing Sequences Is Not Newly Discovered Evidence Under Rule 33(b)(1).

Finally, the defendants argue that the post-trial disclosure of a spreadsheet of 5,902 alleged "spoofing sequences" considered by Professor Venkataraman in calculating the loss caused by defendants' spoofing activity for use at sentencing warrants a new trial. They maintain that the loss calculation list is exculpatory evidence, first, because it does not include 13 of the government's 61 trading episodes that were presented at trial, and second, because it includes

"*almost no instances of alleged spoofing*" after September 28, 2012, the date that Deutsche Bank sent Vorley and Chanu a presentation on Dodd-Frank's anti-spoofing provision. Defs.' Suppl. Rule 33 Mot. 1-2, ECF No. 361 (emphasis in original). In the defendants' view, the omission of these episodes from Professor Venkataraman's loss calculation supports the defense theory that Vorley and Chanu believed that their trading strategy was a permissible tactic until Deutsche Bank informed them otherwise and undermines the prosecution's argument in summation that the defendants continued to spoof after that training. Had the defense had access to this spreadsheet during trial, they argue, the defendants likely would have been acquitted on the counts of conviction.

Motions for a new trial on the basis of newly discovered evidence "are not favored by the courts and are viewed with great caution." *United States v. Oliver*, 683 F.2d 224, 228 (7th Cir. 1982) (citation omitted). However, under Rule 33(b)(1), a new trial may be appropriate where "additional evidence (1) was discovered after trial, (2) could not have been discovered sooner through the exercise of due diligence, (3) is material and not merely impeaching or cumulative, and (4) probably would have led to acquittal." *United States v. O'Malley*, 833 F.3d 810, 813 (7th Cir. 2016). A Rule 33(b)(1) motion may also be used to raise "*Brady*, *Giglio*, and other constitutional claims." *Id.*

As an initial matter, Professor Venkataraman's list of "spoofing sequences" is not *Brady* material that the government was required to disclose before trial. *See* Defs.' Suppl. Rule 33 Mot. at 2. The discovery of undisclosed *Brady* material may warrant a new trial if the evidence in question was favorable, suppressed by the prosecution, and material to the case. *United States v. Ducato*, 968 F. Supp. 1310, 1314 (N.D. Ill. 1997). "[F]or purposes of the government's obligations under *Brady* and its progeny," however, "it is axiomatic that the government need not disclose

information that does not come into existence until after trial." *Id.* at 1315 (citation omitted); *see also United States v. Veras*, 860 F. Supp. 471, 479 (N.D. Ill. 1994) (noting that the "Seventh Circuit limits this court's *Brady* analysis to the effect of the allegations which the government knew and failed to disclose at trial"). The defense offers no evidence that the spreadsheet existed before trial, urging only that ***if*** it did, it should have been disclosed. Defs.' Suppl. Rule 33 Mot. at 2. As his affidavit establishes, however, Professor Venkataraman developed the spreadsheet in response to DOJ's post-trial, pre-sentencing request "to calculate the amount of loss suffered by other market participants" due to the defendants' spoofing. Venkataraman Aff. at 3, ECF No. 364-1. His analysis entirely "postdated the defendants' convictions." Gov't Resp. Opp'n at 26, ECF No. 364.

The defendants' contention that the government's loss calculation spreadsheet undermines its trial evidence is premised on a second erroneous assumption, namely that the spreadsheet "purports to identify all trading in the gold and silver futures markets by [the defendants and Liew] between March 2008 and July 2013 that the prosecution and its expert, Professor Venkataraman, consider to be part of the same course of conduct or common scheme or plan as the offenses of conviction." Defs.' Suppl. Rule 33 Mot. at 1. Neither the government nor Professor Venkataraman profess the spreadsheet to be an exhaustive listing of the defendants' fraudulent trading. Rather, the government explains that, in preparation for sentencing, it asked Professor Venkataraman to calculate the losses caused by the defendants' fraudulent trading but instructed Professor Venkataraman to exclude trades with certain attributes from his analysis. Specifically, the government instructed Dr. Venkataraman to exclude spoofing involving traders other than Vorley, Chanu, and David Liew, and for the data after late 2009, to exclude spoofing using any technique other than layering groups of 10-lot visible orders. Venkataraman Aff. at 5 (noting that he was instructed to limit his analysis to certain trading sequences with particular attributes); Gov't Resp.

Opp'n at 27-28. Omitting trades with those criteria excluded 13 of the 61 trial episodes from the list of "spoofing sequences" used for loss calculation purposes and eliminated most of the trades that post-dated the Deutsche Bank presentation from September 2012 first warning traders about Dodd-Franks' anti-spoofing measure.

Demonstrating that they can find fault with any action the government takes, the defendants construe the government's use of criteria that exclude trades from consideration at sentencing—***and therefore results in a lower loss calculation asserted against the defendants***—as evidence that undermines the evidence presented at trial. But the government has not changed its position on whether the sixty-one trial episodes involved spoofing, *see* Gov't Resp. Opp'n at 29 n.13 ("[T]he government's position remains firm that each and every one of the 61 Trial Episodes . . . involved fraudulent and manipulative trading."), and there is no basis to construe its decision to apply more conservative criteria at sentencing as an acknowledgment that the methodology it used to identify fraudulent trades at trial was flawed. The government notes many reasons it opted not to include the full universe of trades it deems fraudulent in its loss calculation, *id.* at 29, and these boil down to the entirely reasonable and permissible objectives of simplifying its evidentiary presentation at sentencing and mooting arguments that it anticipated the defense would make concerning the calculation of the loss attributable to fraudulent conduct by the defendants. The government's use of more narrow criteria at sentencing also demonstrates respect for the jury's mixed verdict, reflecting the jury's rejection of the conspiracy charge and recognizing that the jury acquitted the defendants on the counts (both pre- and post-September 28, 2012) where, instead of layering groups of 10-lot visible orders, Vorley or Chanu placed single, 50- or 100-lot visible orders opposite the primary, iceberg order. The government could, of course, continue to assert that notwithstanding the jury's verdict, the evidence established by a preponderance of the

evidence that a conspiracy involving traders other than the defendants and David Liew existed, or that the placement of 100-lot visible orders opposite iceberg orders is indicative of a spoofing trade, but its decision not to fight these battles in the context of a sentencing hearing is hardly a concession and in no way constitutes "exculpatory evidence."

That is because the prosecutors' reasons for not pursuing every possible penny of loss at sentencing (or at trial, for that matter) is not evidence of anything. Even if it could be shown that the prosecutors secretly agree that the defendants are not guilty (and the Court intends no suggestion that is the case), their subjective opinions about the innocence of the defendants would no more constitute exculpatory evidence than their opinions that the defendants are guilty would constitute incriminating evidence. The ***evidence*** implicated by the defendants' motion is not the prosecutors' opinions and arguments, but the trade data presented at trial and Dr. Venkataraman's opinions about that evidence. But the government's decision to narrow the universe of trades it would present at sentencing is certainly not evidence that Professor Venkataraman had any change of heart concerning his opinions at trial—the decision to narrow the criteria used to identify fraudulent trades was not his. Professor Venkataraman's spreadsheet was created by applying government-selected, sentencing-focused criteria to CME trading data used in the prosecution's case at trial. *See* Venkataraman Aff. at 5-10 (explaining how the universe of trading data was narrowed for purposes of loss calculation for sentencing). Nor has the trading data itself changed or been supplemented with new evidence of trading activity not previously disclosed. Its form is new, but the evidence itself—the defendants' trading data—is not.

And, as the government points out, "the underlying CME data on which the post-trial loss analysis was based existed and was produced to the defendants well in advance of trial (and used by them during trial)." Gov't Resp. Opp'n at 27 n.12. The defendants have always had the ability

to filter that same universe of data in any way they thought helpful to demonstrate the subjectivity or other flaws in the government's selected criteria for identifying spoofing—a line and method of questioning that, even without this spreadsheet, the defense pursued vigorously at trial. *See*, *e.g.*, Tr. 1492:20-1943:17 (Q: So let me just see if I get this straight. In order to be sure that you weren't cherry-picking, you looked more closely at the episodes that resembled what the prosecutors are charging?); Tr. 1508:6-1509:22 (defense pushing Professor Venkataraman as to whether trading episodes on June 2, 2013, and July 9, 2013, in which the defendants placed 100-lot visible orders, rather than groups of 10-lot visible orders, actually show the same trading pattern as the government's other charts); Tr. 1603:10-1612:10 (defense directed Professor Venkataraman to filter Chanu's trading data from May 11, 2011, in various ways to highlight other, allegedly similar, trading that same day that was not captured in government exhibits); Tr. 1605:15-17 (Q: So the first time you paid attention to this full day's trading record for Mr. Chanu was roughly two days ago, correct?).

Finally, because the spreadsheet is not an exhaustive list of the defendants' spoofing activity in the relevant time period, there is no reason to think its use by the defense would have led to acquittal on the counts of conviction. Based on the government's sixty-one episodes and the other evidence at trial, the jury rationally concluded that, in most of the charged counts before September 28, 2012, the defendants knowingly committed wire fraud. There is no reason to think the defense's use of the "spoofing sequence" spreadsheet during Professor Venkataraman's cross-examination or closing arguments would have changed that outcome. Even if the defense's hypothetical questioning with the spreadsheet led the jury to conclude that Vorley and Chanu stopped spoofing after the Deutsche Bank training in September 2012, it is unlikely that the jurors would uniformly or inevitably conclude, from that disputed fact, that the defendants' conduct

before that date was unknowing. Indeed, the jury convicted both defendants of fraudulent trading prior to the Deutsche Bank presentation despite the fact that 1) the government did not even charge Mr. Chanu with any post-presentation fraudulent trading; and 2) the jury acquitted Mr. Vorley on the only count with which he was charged based on fraudulent trading after that presentation. A juror could just as reasonably infer that after Vorley and Chanu were alerted that United States regulatory entities were taking Dodd-Frank's anti-spoofing provision seriously, the defendants' conduct slowed or stopped because they knew the odds of being caught were much higher and the potential consequences much greater. In any event, such an attenuated possibility that the jurors would evaluate the government's evidence differently falls well short of the showing needed to warrant a new trial. *See United States v. Reed*, 2 F.3d 1441, 1451 (7th Cir. 1993) ("[M]ere speculation or conjecture is insufficient to warrant a new trial."), *citing United States ex rel. Darcy v. Handy*, 351 U.S. 454, 462 (1956) (a defendant must demonstrate prejudice "not as a matter of speculation but as a demonstrable reality").

The defendants' argument, based on nothing more than a spreadsheet that repackages the same trading data presented at trial, that the jury "would probably have accepted their arguments" about the defendants' lack of knowledge and "acquitted them on all counts" is baseless speculation. Defs.' Suppl. Rule 33 Mot. at 8. It does not warrant this Court setting aside the jury's verdicts and ordering a new trial.

* * * *

This was a hard-fought trial, with charges presented by able and experienced prosecutors and defenses mounted by top-notch counsel. As the jury's mixed verdict reflects, convictions were not inevitable. For the reasons set forth, however, the Court easily concludes that the jury's verdict that the evidence showed that the defendants engaged in wire fraud was not irrational, but rather

was supported by evidence that proved the defendants' guilt beyond a reasonable doubt. That evidence was presented in a fair trial that gave the defendants every opportunity to present and argue their defenses. Accordingly, and for all the more specific reasons set forth above, the defendants' motions for acquittal and for a new trial are denied.

Date: March 18, 2021

John J. Tharp, Jr.
United States District Judge