

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

UNITED STATES OF AMERICA,)	
)	
)	No. 1:19-CR-00669-1, 2
)	
v.)	
)	Judge Edmond E. Chang
)	
)	
GREGG SMITH and MICHAEL NOWAK)	
)	

ORDER

This Order explains the loss-amount calculations under Sentencing Guideline § 2B1.1(b)(1).

Scope of the Jointly Undertaken Activity

On deliberation of the arguments discussed at the initial sentencing hearing, and based on the trial evidence and testimony, the Court concludes (as previewed during the hearing) that each Defendant is responsible for only the loss amounts arising out of their individual spoofing sequences. Although the question is very, very close, the government has not shown by a preponderance of the evidence that each Defendants’ and each cooperators’ conduct was part of “jointly undertaken criminal activity.” Guideline § 1B1.3(a)(1)(B)(i).

The government argues, certainly with some basis, that Defendants Gregg Smith and Michael Nowak, along with John Edmonds and Christian Trunz (two co-operators, jointly undertook the spoofing on the JPMorgan Precious Metals Desk, so all are responsible for each other’s spoofing. It is most certainly true that the government proved a *conspiracy* amongst those four to spoof. The Court credits (as apparently did the jury) the testimony of John Edmonds and (especially) Christian Trunz in establishing that they learned how to spoof from Smith (and Edmonds also learned from watching Nowak), and even that the expectation was to spoof when Smith was away from his station. Plus, the four had a joint motive for the Precious Metals Desk to succeed for their clients.

But application note 1 to Guideline § 1B1.3 explains that the “principles and limits of sentencing accountability under this guideline are not always the same as the principles and limits of criminal liability.” § 1B1.3, appl. n.1. The scope of jointly undertaken criminal activity is “not necessarily” the same as the scope of an entire conspiracy. *Id.*, appl. n.3(B). When assigning vicarious responsibility in this context, “the focus is on the *specific* acts and omissions” for which the defendant is proposed to be responsible, “rather than on whether the defendant is criminally liable as a ... conspirator.” *Id.*, appl. n.1 (emphasis added).

It is one thing to conspire; the Defendants and the coconspirators here did that. It is another thing to jointly undertake every spoof on the Precious Metals Desk. The proof fell short on showing that. It is much easier to find that a criminal undertaking covers all of the Defendants (and all of the misconduct) in a case when the *entirety* (or nearly all of it) of the undertaking is criminal in *nature*. For example, acts in furtherance of a drug-dealing conspiracy or a Ponzi fraud scheme are much more readily attributed to all defendants because that is the nature of the undertaking: to commit crimes. The same cannot be said of the Precious Metals Desk. As frequently as each of the Defendants and cooperators committed spoofing over the years, the Desk was not merely a vehicle to commit crimes (and the jury sensibly rejected the RICO conspiracy charge, which would have required deeming the Desk as a criminal enterprise). So, yes the evidence proved a conspiracy, but no the evidence falls short of attributing every spoof to every Defendant or cooperator. The loss amounts shall be individually calculated.

Loss-Amount Methodology

To determine the Guidelines actual-loss amount, the task is to find the “reasonably foreseeable pecuniary harm that resulted from the offense.” Guideline § 2B1.1, appl. n.(A)(i). The government of course bears the burden of proving the loss amount by a preponderance of the evidence, “but a reasonable estimate will suffice.” *United States v. Gumila*, 879 F.3d 831, 834 (7th Cir. 2018).

Here, the government’s proposed loss-calculation methodology, as fashioned by expert witness Professor Kumar Venkataraman, is generally sound and provides a reasonable estimate. As this Order explains, there are specific reasons to reduce the ultimate loss calculation, but the *overall* approach is reasonable in the first instance. Venkataraman’s overall approach is designed to remove the usual effects of non-spoofed market movement. Of the two methodologies that Venkataraman set forth in

his declarations, the government proposed the more conservative (that is, the methodology that generates the lower loss amount). R. 856 at 19. The label attached to the more-conservative methodology is the “Alternative Adjusted Market Loss.” Venkataraman Initial Decl. at 24 ¶ 39; *see id.* ¶¶ 40-47.

Before getting to the “adjusted” part of the Alternative Adjusted Market Loss methodology, the first step of the computation is almost the same as the methodology approved by the district courts in *United States v. Bases*, 18-CR-0048 (Lee, J.), and *United States v. Vorley*, 18-CR-0035 (Tharp, J.). (The “almost” caveat is explained in a moment.) The government’s expert examined “Spoofing Sequences” committed by the Defendants, with those sequences defined by the following:

- ▶ a resting, fully displayed group of orders (where “group” comprises orders of the same lot size on the same side of the market placed within one second of each other), with a smaller limit order (or orders) on the opposite side of the market. The resting orders are the Spoof Orders, and the opposite-side orders were labelled the Opposite Orders.

- ▶ Spoof Orders are confined to those that the Defendant placed in groups within the Top 10 levels of the order book and for the same lot sizes placed by the Defendant for the trial-evidence orders. The Top 10-placement is in contrast to *Vorley* and *Bases*, where the Spoof Orders were confined to the Top 5 levels of the order book.

- ▶ Opposite Orders are confined to those that the Defendants placed in the Top 10 levels of the order book.

- ▶ Sequences were deemed as Spoofing Sequences even if limit orders were on both sides of the market so long as the large-side aggregate quantity was at least twice as large as the small-side aggregate quantity.

R. 856-1, Venkataraman Initial Decl. at 9 ¶ 16. In the Venkataraman’s *updated* calculation, Spoof Orders were confined (or, from the defense’s perspective, allowed) to those that were left open for no more than 36.165 seconds for Defendant Smith and 34.875 seconds for Defendant Nowak. R. 873-1, Venkataraman Reply Decl. at 22–23 ¶ 27. Those respective maxima were based on the longest-open orders presented at trial to the jury.

As a first step, this is all a reasonable way to start calculating the loss caused by the Defendants' spoofing. As the evidence at trial demonstrated repeatedly, when the Defendants placed large, visible orders that created an imbalance with the opposite of the market, frequently the price was pushed to the opposite side—thus filling the orders that the Defendants wanted to fill. The Defendants then cancelled (almost always successfully) the large-side orders. The jury found beyond a reasonable doubt (and the Court agrees with the finding) that the large-side orders were in reality placed with the unconditional intent to cancel them, because the Defendants entered the orders to trick the market into believing that there was a genuine supply or demand represented by the orders—that is, the spoof orders. Some of the defense objections continue to resist what was established at trial, such as that the Spoof Orders could have been placed to discover price or liquidity, but the persistent pattern of trading showed otherwise, and the generalized, legitimate trading stratagems do not provide a rational, economic reason for what the Defendants did.

It is true, as the defense argues, that the bulk of the trial evidence presented much faster cancellations—that is, shorter durations—for which the spoof orders were open in the market, when compared to the maximum durations that Venkataraman allowed to qualify as a Spoof Order. But as noted above, Venkataraman did rely on the trial evidence to set the maxima, using the longest durations that the respective Defendants left open in the trial-evidence sequences. R. 873-1, Venkataraman Reply Decl. at 22–23 ¶ 27 (36.165 seconds for Smith and 34.875 seconds for Nowak). Yes, those maximum durations are significantly longer than what would result from the super-fast-cancellation clicking that formed the core (and the most colorful part) of the trial evidence of Spoof Orders. But that does not alter the fact, certainly proven by a preponderance, that even the half-minute or so cancellations represented cancellations that would otherwise make no economic sense and did not incorporate anything that happened post-placement that the Defendants were taking into account. The market moved very, very fast but the lightning-fast *algorithms* pushed the pace to milliseconds placements and cancellations; nothing other than spoofing persuasively explains what the Defendants were doing even at the 34-second or 36-second durations. No doubt that human traders can process information very quickly, and even five seconds might very well be enough time—in the ordinary course—to make a decision to cancel. But even with the longer durations as a parameter, the *median* orders (across the Defendants and cooperators (and admitted-spoofers) Christian Trunz and John Edmonds) were open for only 1.5 seconds, compared to 12.8 seconds for Opposite Orders. R. 856-1, Venkataraman Initial Decl. at 12 ¶ 20. And the other key features (discussed next) of spoofing in the Spoofing Sequences

support the reliance on the maximum durations proposed by Venkataraman (in his updated calculations). In light of these circumstances, the defense's proposed alternatives of much shorter durations for the Spoofing Sequences is rejected.

Indeed, the other key features of spoofing were incorporated into Venkataraman's methodology. The Spoofing Sequences need not fit *exactly* the trial-evidence sequences; instead, the *key* features should (and do) remain intact: the Defendants placed large, visible orders that imbalanced the market and were quickly cancelled after the filling of the small-side (genuine) orders, with no apparent (or unapparent) economic rationale for the quick placement-and-cancellation. Even at the Top 5 levels (more on this below), the Spoofing Orders created a substantial market imbalance, on average almost 2:1 when comparing the Spoof Side with the Opposite Side. *See* R. 873-1, Venkataraman Reply Decl. at 5 ¶ 14(ii), *see also* R. 856-1, Venkataraman Initial Decl. at 11 ¶ 19. And the methodology still displayed a low fill ratio for proposed Spoof Orders of 2.6%, compared to a 40.1% fill ration for Opposite Orders, R. 856-1, Venkataraman Initial Decl. at 12 ¶ 20. The set of overall parameters for Venkataraman's methodology is sound (again, with the exception of relying on the Top 10 levels rather than some part of the Top 5, as explained below).

The government (through Venkataraman) then further reduced the loss calculation by taking into account the fact that even *absent* Spoof Orders, market participants sometimes do cross the spread (the gap between the best offer and the best bid) in either direction. This reduction in the loss calculation thus tried to remove those trading costs that in effect would have been incurred anyway, even without Spoof Orders. Here again Venkataraman chose a reasonable method: he calculated the rate of spread-crossing for a matched (that is, the same time duration) control period immediately *leading up* to the Spoofing Sequence and compared it to the rate of spread-crossing *during* the Spoofing Sequence. R. 856-1, Venkataraman Initial Decl. at 25 ¶¶ 39–40, 42. This reduction rebuts the defense argument that Venkataraman's methodology measured correlation, rather than causation.

Although the overall methodology and overall set of parameters were sound, the defense experts (Dr. Mukkaram Attari and Mr. Jerry Cusimano) did pose valid objections to five specific subcategories of Spoof Orders that Venkataraman had included in his initial calculation. Venkataraman recalculated the loss amount to account for the five objections.

First, the experts objected that the government had included Opposite-Side Orders that were resting some 20 price levels away from Spoof Orders. In total, those represented around 6% of the Spoofing Sequences (the 6% equaled 7,949 sequences). R. 873-1, Venkataraman Reply Decl. at 44 ¶ 69. Venkataraman updated the calculation to remove those 20-level-plus sequences. *Id.*

Next, Dr. Attari noted a non-standard value in the trade data (the RAPID data set in particular), and when Venkataraman went back to exclude all sequences with that non-standard value, 60 more Spoofing Sequences were removed (around 0.05% of the total) from the calculations. R. 873-1, Venkataraman Reply Decl. at 45 ¶ 70.

Third, the defense experts pointed out that during some of the Spoofing Sequences, a convicted spoofer (Edward Bases, James Vorley, Cedric Chanu, or John Pacilio) had placed orders in the market at the same time. R. 873-1, Venkataraman Reply Decl. at 45 ¶ 71. So Venkataraman excluded the 2,956 sequences (around 2% of the total) in which another spoofer had placed orders. *Id.*

The fourth objection was the maximum duration of the Spoofing Sequences, which Venkataraman initially allowed to be as long as 82.3 seconds. R. 873-1, Venkataraman Reply Decl. at 45 ¶ 72. As explained above, the updated version limited the maximum durations based on the trial evidence and circumstances. R. 873-1, Venkataraman Reply Decl. at 22–23 ¶ 27 (36.165 seconds for Smith and 34.875 seconds for Nowak); *id.* ¶ 72. Reducing the maximum durations to the trial-based durations resulted in removing 3,009 Spoofing Sequences (around 2% of the total). *Id.*

Fifth and finally, Venkataraman updated the loss calculation to exclude those sequences in which there was a large, resting non-iceberg Opposite-Side order, specifically a resting Opposite-Side order that was greater than either half of the aggregate quantity on the Spoof-Order side (which varies depending on the commodity) or the largest non-iceberg Opposite-Side order placed by the particular Defendant based on the trial evidence. R. 873-1, Venkataraman Reply Decl. at 46–47 ¶ 73. That ended up excluding another 1,157 sequences (0.87% of the total). *Id.* at 46 ¶ 73. All told, the updated calculation removed 14,594 sequences, leaving 117,621 Spoofing Sequences (of which Smith accounted for 94,532 and Nowak committed 5,023). *Id.* at 48 ¶ 74. The Updated loss figure, using the spread-crossing methodology, assigned a loss of \$33,251,793 to Smith and \$2,329,944 to Nowak. *Id.* at 51 ¶ 80.

After accounting for those five specific objections, the defense's other critiques (including the additional quibbles set forth in the defense's supplemental declarations) do not undermine the fundamental reasonableness of Venkataraman's approach to arrive at a reasonable *estimate* (which, after all is the task at hand). But there is one exception. As forecast earlier, in *Bases*, Venkataraman limited the Spoof Orders to those that were placed in the Top 5 levels of the order book, whereas in this case he extended the Spoof Orders to cover those placed in the Top 10 levels. As the Court noted at the first sentencing session, Venkataraman testified at trial that the Top 5 levels tend to reflect the orders of the most interested market participants. And, not surprisingly, he also explained at trial that bids and offers placed in those levels are more likely to have an impact on the market. So, to the extent that Venkataraman included as layered Spoof Orders those orders that were not layered *at all* in the Top 5 levels, the proof falls short of considering those to be instances of spoofing.

Having said that, Venkataraman and the government are correct that the loss amount should include those sequences when the Defendants layered Spoof Orders with *at least one* of the layered orders being placed in the Top 5 levels. That is still consistent with the intended effect of falsely signaling to the most interested market participants that there is a genuine bid or offer, and particularly so given the other key features of spoofing are present. This is the right balance to be struck: so long as *one* of the layered Spoof Orders was placed in the Top 5 levels (as measured at time of placement), even if some other orders were played outside those levels, then the orders still qualify for a Spoofing Sequence.

The result is, then, that Smith's loss amount of \$33,251,793 is reduced by 72% to **\$9,310,502**. This reduction is based on the record evidence available, namely, Dr. Attari's calculation that "using the top 10 levels rather than the top 5 levels allows Dr. Venkataraman to increase his Unadjusted Market Loss by 72%." R. 879-2, Attari Suppl. Decl. at 10 ¶ 13. This figure might actually reduce the loss amount by too much if Attari was limiting the Spoofing Sequences to those that had orders *only* in Top 5 levels, but it is the best record evidence on hand. For Nowak, Mr. Cusimano calculated the loss (based on the criterion that only one layered order had to be in the Top 5 levels) at **\$2,288,940**, R. 907-1 at 2 ¶ 1 (which is not material different from the government's supplemental figure, R. 906-1).

Lastly, the only other defense objection (most thoroughly presented at the initial sentencing session) that gave the Court some pause was Cusimano's assertion that Venkataraman had mistakenly overstated the length of time that the Spoof

Orders could possibly have had a price impact. Cusimano contends that the rate of spread-crossing must be measured in both directions, not just one, and that accounting for both directions would show that the price impact of the Spoof Orders dissipated faster than what Venkataraman asserted. On deliberation, however, there is no record evidence to support a connection between the two directions of spread-crossing such that this factor must be accounted for. Just because, for example, a buyer crosses the spread *upward* in price to reach a seller, does not mean that sellers on the other side would be crossing the spread *downward* in price to reach buyers. This is not a flaw in Venkataraman's methodology.

It is worth saying here at the end of the loss analysis where this all started: the assignment to calculate the Guidelines loss amount is to arrive at a reasonable *estimate* of the loss by a preponderance of the evidence. The task is *not* to achieve precision of calculation to a certainty. The government has shown that Smith's loss amount is **\$9,310,502**, corresponding to an 18-level increase under the fraud-loss table, Guideline § 2B1.1(b)(1). Nowak's loss amount is **\$2,288,940**, which is a 16-level increase.

ENTERED:

s/Edmond E. Chang
Honorable Edmond E. Chang
United States District Judge

DATE: August 21, 2023