

EXHIBIT A

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

| | | |
|--------------------------------|---|---------------------------|
| UNITED STATES OF AMERICA |) | |
| |) | |
| |) | |
| |) | No. 18 Cr. 35 (Tharp, J.) |
| v. |) | |
| |) | |
| JAMES VORLEY and CEDRIC CHANU, |) | |
| |) | |
| Defendants. |) | |

AFFIDAVIT OF DAPHNE CHEN, PH.D.

I, Daphne Chen, hereby certify under penalty of perjury that the following is true and correct:

1. I am a Managing Director at Vega Economics, a company that provides consulting services on various economic issues. On April 5, 2021, I submitted an affidavit that included observations about Professor Venkataraman’s declaration, including observations on the loss calculation, the trading activity relied upon, and the adjustments to the loss calculation.

2. I have also reviewed the United States’ sentencing memorandum, dated May 21, 2021, which includes responses to certain of my observations of Professor Venkataraman’s analysis.

3. Based on my review, I understand that the United States has agreed with several of my observations, including that: (i) Professor Venkataraman has included episodes that violated the United States’ initial identification criteria; (ii) Professor Venkataraman has not accounted for market participants, including the alleged victims themselves, who may have benefitted from the purported price impact of the alleged spoofs;

(iii) Professor Venkataraman did not use a standard approach to measure trading gains or losses which is to compare the price at which a trade is executed to an estimated value of the underlying security; and (iv) Professor Venkataraman did not control for the differences in quantities between the control period and the spoof period.

4. Moreover, as explained below, the United States appears to misunderstand certain of my observations. First, I observed that Professor Venkataraman failed to account for the fact that the alleged victims or other market participants may also have benefitted from the purported price impact of the alleged spoofs. As noted above, the United States agreed that market participants may have benefitted, but responded that as a legal matter, losses to one party are not offset by gains to another party. This misses the point, as any alleged victim may have transacted on *both* the spoof side and on the opposite side within any episode. Additionally, an alleged victim may have transacted on the spoof side in one episode but on the opposing side in another episode. Professor Venkataraman only included losses on the spoof side but failed to offset the losses by any gains on the opposite side *for the same party*. Professor Venkataraman's method will therefore overstate losses to the alleged victims.

5. Second, in his so-called "event study," Professor Venkataraman compared trades while the alleged spoof orders are on the market with a "control period" of the same length immediately prior to the alleged spoofs. The United States responded that by doing so, Professor Venkataraman in fact controlled for other factors that may have affected the price. However, Professor Venkataraman did not include or study any factors that may have impacted price movements in the absence of spoofs and thus cannot claim to have isolated the price movements in the spoof period as attributable solely to spoofs. For instance,

if the market was trending upward or downward during the spoof period, Professor Venkataraman would incorrectly attribute this overall trend in prices as alleged misconduct.

6. Moreover, Professor Venkataraman did not control for any difference in quantities between the control period and spoof period, thereby attributing all the differences in quantities to the alleged misconduct, even though all or some of the differences in quantity could have been driven by other external factors.

7. Finally, the United States did not respond to certain of my observations. Specifically, I observed that Professor Venkataraman applied a uniform rate adjustment for all the alleged spoof episodes, regardless of the actual rate of spread-crossing for each alleged spoof episode. Even if the rate of spread-crossing in a spoof period was *lower* than the rate of spread-crossing in the corresponding control period, Professor Venkataraman would apply the same discount for his calculated harm for this episode.

Executed on this 9th day of June, 2021.



Daphne Chen, Ph.D.