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Spoofing: Ineffective Regulation Increases Market Inefficiency

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SPOOFING: INEFFECTIVE REGULATION INCREASES MARKET INEFFICIENCY

INTRODUCTION

In an attempt to define how efficient financial markets operate, world-renowned economist Milton Friedman famously said, "[t]he most important single central fact about a free market is that no exchange takes place unless both parties benefit."[1] This theory no longer applies to the derivatives markets as increased manipulation has led to transactions whereby only one party benefits and inefficiencies abound.[2]

Trading derivatives has occurred in the United States since the mid-1800s.[3] Recently the futures market has played host to an increasingly complex regulatory scheme. The changing rules and regulations provide traders and officials with the opportunity to issue guidance to achieve enforcement goals.[4] The financial products in this market cover everything from wheat, soybeans, oil, natural gas, and gold.[5] Thus, the futures market plays an increasingly large role in the economic wellbeing of the United States. The diversified United States futures market has expanded trading opportunities and is currently valued at $30 trillion.[6] The substantial size of the market has incen-

1. Interview with Milton Friedman, PBS: COMMANDING HEIGHTS (Oct. 1, 2000), https://www.pbs.org/wgbh/commandingheights/shared/minitext/int_miltonfriedman.html (last visited Nov. 7, 2016).

2. George S. Canellos et al., *The Law Surrounding Spoofing in the Derivatives and Securities Markets*, MILBANK, TWEED, HADLEY & MCCLOY LLP (2016), https://www.milbank.com/images/content/2/2/22241/Spoofing-in-the-Derivatives-and-Securitites-Markets-Nov-2015.pdf.

3. International Business Times, *Commodity Trading – Chapter 1: History of Commodity Trading*, NASDAQ (Feb. 2, 2012), http://www.nasdaq.com/article/commodity-trading-chapter-1-history-of-commodity-trading-cm118267. "A derivative is a contract between two or more parties whose value is based on an agreed-upon underlying financial asset, index, or security." Jean Folger, *What is a Derivative?*, INVESTOPEDIA (Apr. 4, 2017), http://www.investopedia.com/ask/answers/12/derivative.asp. Futures contracts are a common type of derivative, and the two terms are used interchangeably throughout this Comment. *Id*.

4. *See generally* Commodity Exchange Act, 7 U.S.C. § 1 (2012); Commodity and Security Exchanges, 17 C.F.R § 1 (2017).

5. Brian Perry, *Beginner's Guide to Trading Futures: The Basic Structure of the Futures Market*, INVESTOPEDIA, https://www.investopedia.com/university/beginners-guide-to-trading-futures/basic-structure-futures-market.asp (last visited Nov. 12, 2016).

6. Matthew Leising, *U.S. Questions Whether Futures Markets Can Police Themselves*, STANDARD-EXAMINER, June 28, 2016, http://www.standard.net/Business/2016/06/28/U-S-questions-whether-futures-markets-can-police-themselves.

tivized informed traders to utilize futures contracts to hedge trades held in other financial markets or to simply make a profit.[7]

The increase in traders on the futures market and the implementation of high frequency trading programs has allowed sophisticated investors to take advantage of the unique nature of the futures market.[8] Specifically, traders have been utilizing a market manipulation method known as "spoofing," whereby a high frequency trader using algorithmic trading software (ATS) can fool the market into thinking prices are rising or falling.[9] The trader can repeatedly capture small profits as a result of these manipulated changes that can add up to a large gain.[10] While the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) made this practice illegal,[11] traders continue to implement this method because enforcement has proven difficult. Spoofing has the potential to drastically alter the futures market to the detriment of unwitting participants. However, the statute as written and guidance from the Commodity Futures Trading Commission (CFTC) has not defined exactly what actions constitute spoofing.[12] The anti-spoofing statute contained within the the Dodd-Frank Act is not an effective tool for monitoring and prosecuting high frequency traders in the derivatives markets.[13] This Comment argues spoofing can be mitigated by decentralizing the

7. A hedge is an investment to reduce risk of adverse price movements in an asset. Normally, a hedge consists of taking an offsetting position in a security, such as by utilizing a futures contract. If the price of the security falls, the futures contract limits the loss by partially offsetting the loss. U.S. COMMODITY FUTURES TRADING COMM'N, CFTC GLOSSARY, http://www.cftc.gov/ConsumerProtection/EducationCenter/CFTCGlossary/index.htm#A (last visited Jan. 20, 2017) [hereinafter CFTC GLOSSARY].

8. SEC. AND EXCHANGE COMM'N, *Request for Comments: Concept Release on Equity Market Structure*, 45 (Jan. 14, 2010), https://www.sec.gov/rules/concept/2010/34-61358.pdf [hereinafter *Concept Release on Equity Market Structure*]. In the securities market, a trader can purchase a security from a brokerage, bank, or directly from the issuing company. In the derivatives market, however, a trader who wishes to purchase or sell derivative contracts with another trader, either via an exchange or directly. Kristina Zucchi, *Derivatives 101*, INVESTOPEDIA, http://www.investopedia.com/articles/optioninvestor/10/derivatives-101.asp (last visited Nov. 3, 2017).

9. Larry Schneider, *"Spoofing" and Disruptive Futures Trading Practices*, N.Y. INST. OF FIN., https://www.nyif.com/articles/disruptive-futures-trading-practices-spoofing (last visited Feb. 2, 2017).

10. John Montgomery, *Spoofing, Market Manipulation, and the Limit-Order Book*, NAVIGANT (May 3, 2016), https://www.navigant.com/-/media/www/site/insights/economics/2016/econ_spoofingmarketmanipulation_tl_0516.pdf.

11. 12 U.S.C. § 5301 (2012); Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010).

12. Andrew Verstein, *Legal Confusion as to Spoofing*, HUFFINGTON POST: THE BLOG (May 12, 2016), https://www.huffingtonpost.com/andrew-verstein/legal-confusion-as-to-spo_b_7268518.html.

13. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010).

regulatory scheme and granting partial enforcement power to the futures market exchanges.

Part II of this Comment discusses the background of the United States derivatives markets, the relevant regulatory agencies, the implementation of high frequency trading, the impact of the Dodd-Frank Act, and recent spoofing litigation. Part III analyzes how the current anti-spoofing statute is ill-equipped to deal with modern high frequency traders. Part III also discusses the relative failure of the Dodd-Frank Act to curb manipulation in the derivatives markets. Next, this Comment argues that current anti-spoofing statutes can lead to market inefficiencies in high frequency trading-dominated markets by forcing traders to make compliant, economically unsound trades, lest they risk enforcement actions by the CFTC. It then proposes a new regulatory scheme that modifies and transfers existing enforcement powers allowing for high frequency trader compliance, while still encouraging the highest level of market participation and efficiency. More specifically, Part III proposes a decentralization of the current regulatory scheme by giving the exchanges that handle derivatives trading increased authority to detect and prosecute spoofing. Finally, Part IV examines the impact of the proposed decentralization by examining how it will increase market efficiency and how the new regulatory scheme will benefit the CFTC by making enforcement more straightforward.

II. Background

This Part begins with the history and evolution of the derivatives markets in the United States. It discusses the creation and expansion of the CFTC. This Part then explains the proliferation of high frequency trading in the applicable markets and discusses how high frequency traders use algorithmic trading software to manipulate the markets, namely through a technique called spoofing. Next, this Part discusses the passage and implementation of the Dodd-Frank Act, which increased the enforcement mechanisms available to the CFTC to prosecute alleged spoofing violations. Finally, this Part discusses post Dodd-Frank spoofing litigation including *United States v. Coscia*, *CFTC v. Oystacher*, and *CFTC v. Sarao.*

A. The United States Derivatives Markets and the CFTC

Prior to established market exchanges, commodities such as corn and wheat were informally exchanged between farmers and dealers.[14] As a result of the inefficiencies of this rudimentary system the Board of Trade of the City of Chicago (CBOT) was established in 1848 to provide a formal and effective exchange whereby farmers and dealers could contract for the future sale of agricultural products.[15] While early regulation was scarce, by the 1930s it was clear that divergent regulatory schemes required consolidation under discrete legislation. Enacted in 1936 the Commodity Exchange Act (CEA) extended federal regulation to a list of enumerated commodities including, *inter alia*, "cotton, rice, mill feeds, butter, eggs, and Irish potatoes, as well as grains."[16] The CEA was administered and enforced by the U.S. Department of Agriculture (USADA).[17] In 1968 Congress amended the CEA bringing livestock and related products under the jurisdiction of the USADA.[18]

In 1974 Congress passed the Commodity Futures Trading Commission Act (CFTC Act) to bring increased oversight to the ever-expanding commodities market.[19] The CFTC Act gave exclusive jurisdiction to the newly formed CFTC, an independent federal regulator with greater powers than its predecessor at the USADA.[20] The CFTC was given the power to approve new futures contracts and quickly respond to changes in the futures market.[21] The CFTC Act also gave the CFTC the authority to enter contract markets and halt trading when it believed contract prices were unstable, such as during times of market manipulation.[22] Through the remainder of the twentieth century the CFTC gained regulatory authority over a greater, more diverse set of futures contracts, including government bonds, options, and swaps.[23]

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14. Joseph Santos, *A History of Futures Trading in the United States*, ECON. HIST. ASS'N (Mar. 16, 2008), http://eh.net/encyclopedia/a-history-of-futures-trading-in-the-united-states/.

15. *Id.*; U.S. COMMODITY FUTURES TRADING COMM'N, *History of the CFTC: U.S. Futures Trading and Regulation Before the Creation of the CFTC*, http://www.cftc.gov/About/HistoryoftheCFTC/index.htm (last visited Nov. 2, 2016) [hereinafter *History of the CFTC*].

16. *History of the CFTC*, *supra* note 15.

17. *Id.*

18. *Id.*; Commodity Exchange Act of 1968, Pub. L. No. 90-258, 82 Stat. 26 § 1 (codified as amended at 7 U.S.C. § 1a(4) (2012)).

19. 7 U.S.C. § 1 (2012); Commodity Futures Trading Commission Act of 1974, Pub. L. No. 93-463, 88 Stat. 1389 § 201 [hereinafter CFTC Act].

20. *History of the CFTC*, *supra* note 15.

21. 7 U.S.C. § 1; CFTC Act, *supra* note 19, § 210.

22. 7 U.S.C. § 1; CFTC Act, *supra* note 19, § 215.

23. *History of the CFTC*, *supra* note 15.

B. High Frequency Trading and Market Manipulation

High frequency trading is a type of transaction that utilizes supercomputers able to execute orders within "microseconds or milliseconds."[24] While the term "high frequency trading" is often used as a catchall with no precise definition, a detailed description is found in a 2010 Securities and Exchange Commission (SEC) concept release on market structure.[25] The release states high frequency trading is "[o]ne of the most significant market structure developments in recent years."[26] According to the SEC, "the term is relatively new and is not yet clearly defined."[27] The term is often used when "professional traders act[ ] in a proprietary capacity" (i.e., trading personal or firm funds and not those of a client), and engage in computerized trading strategies that "generate a large number of trades on a daily basis."[28] Other defining characteristics of proprietary firms using high frequency trading include:

> (1) the use of extraordinarily high-speed and sophisticated computer programs for generating, routing, and executing orders; (2) use of colocation services and individual data feeds offered by exchanges and others to minimize network and other types of latencies; (3) very short time-frames for establishing and liquidating positions in the market; (4) the submission of numerous orders to an exchange that are cancelled shortly after submission; and (5) ending the trading day in as close to a flat position as possible (that is, not carrying significant, unhedged positions over night).[29]

Though high frequency trading strategies began with the introduction of supercomputers in the 1970s and 1980s, the platform drastically expanded in the 1990s with the introduction of Electronic Communications Networks (ECNs).[30] The ECN systems allowed traders to place orders outside of common exchanges such as NASDAQ, NYSE, CBOT, and CME, where trades had to be placed manually.[31] Traders quickly saw the benefits of ECNs and increasingly invested in the platform because of the "greater speed and efficiency, lower costs, and

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24. RENA S. MILLER & GARY SHORTER, CONG. RESEARCH SERV., R44443, HIGH FREQUENCY TRADING: OVERVIEW OF RECENT DEVELOPMENTS 2 (2016), https://www.fas.org/sgp/crs/misc/R44443.pdf.

25. *Concept Release on Equity Market Structure*, *supra* note 8, at 45.

26. *Id.*

27. *Id.*

28. *Id.*

29. *Id.*

30. Anuj Agarwal, *High Frequency Trading: Evolution and the Future*, CAPGEMINI, Feb. 29, 2012, at 4, https://www.capgemini.com/wp-content/uploads/2017/07/High_Frequency_Trading__Evolution_and_the_Future.pdf.

31. *Id.*

fewer manual errors."[32] While high frequency trading was at first mainly used in the equity markets, data from the Congressional Research Service shows the expansion of algorithmic trading systems in the derivatives markets.[33] The CFTC found that from October 2012 to October 2014 ATS was present on at least one side in nearly eighty percent of foreign exchange futures trading volume, sixty-seven percent of interest rate futures volume, sixty-two percent of equity futures volume, forty-seven percent of metals and energy futures volume, and thirty-eight percent of agricultural product futures volume. ATS has also risen to about sixty-seven percent of trading in ten-year Treasury futures and sixty-four percent of Eurodollar futures contracts.[34] As shown by the data, ATS now plays a predominant role in modern financial markets.

C. Spoofing

Spoofing, a type of market manipulation, is most easily defined as "bidding or offering with the intent to cancel the bid or offer before execution."[35] A "bid" is an offer to buy a specific commodity at the stated price.[36] An "offer" is defined as an "indication of willingness" to sell the commodity at a certain price.[37] The price level of the "offer" is the "ask."[38] Trades are often quoted in terms of the "bid-ask spread," or the difference between the bidding price and the asking price.[39] When a trader's bid price equals another trader's offer price for a given quantity of a given contract the trade is said to be "hit," which means the order goes through and the contract is "traded" from the seller to the buyer.[40]

Spoofing occurs when a trader places a large bid or offer order at a price slightly above or below what the contract is currently trading for.[41] The spoofing trader fools the market into thinking the price for

32. *Id.*
33. MILLER & SHORTER, *supra* note 24, at 1.
34. *Id.*
35. *Id*. at 7.
36. CFTC GLOSSARY, *supra* note 7.
37. *Id.*
38. *Id.*
39. *Id.*
40. *Id.*
41. An example of spoofing occurs when one trader holds 1,000 shares of a company that is actively trading at $10. MILLER & SHORTER, *supra* note 24, at 9. The trader then places a bid to buy 100 shares of the company at $10.01. *Id.* High frequency trading algorithms automatically respond by raising their own bids on the company's stock to $10.01. *Id*. Before any of the bids are matched by a countering offer, the original spoofer cancels his bid and instead offers his original 1,000 shares at the new price of $10.01. *Id*. His offers are hit by high frequency trading

the contract is rising and then takes advantage of this change in price before other market participants can react.[42] Before the proliferation of high frequency trading this style of market manipulation would have been nearly impossible, as other market participants would see the spoofer had cancelled his original bids and lowered their prices accordingly.[43] However, recognizing spoofing today is increasingly difficult because ATS allows the entire sequence to occur instantaneously.[44] Additionally, because these trades are automated and the act of legitimately cancelling bids or offers occurs thousands of times a day, it can be difficult to ascertain when market activity amounts to spoofing.[45] Indeed, high frequency traders ultimately cancel about 90% of their orders.[46] Therefore, there is no bright line standard regulators can apply to delineate between lawful and fraudulent trade cancellations.

D. High Frequency Trading Regulation in Modern Markets

While laws created in the 1920s and 1930s continue to regulate financial markets generally,[47] the Dodd-Frank Act was the first regulatory statute to specifically mention high frequency trading.[48] Before implementation of the Dodd-Frank Act, market regulations and prohibitions only dealt with trading behavior without explicit mention of actual trading techniques.[49] Passed in 2010, the Dodd-Frank Act is a product of the Great Recession[50] of the late 2000s and has the general purpose of preventing another collapse of major financial institutions.[51] Additionally, two sections of the Dodd-Frank Act deal

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algorithms that had raised their bids to $10.01, and the spoofer makes ten more dollars than he would have had he sold his 100 shares at the original price of $10. *Id.*

42. MILLER & SHORTER, *supra* note 24, at 7.

43. *Id.*

44. *Id.*

45. *Id.*

46. Simone Foxman, *96.8% of Trades Placed in the US Stock Market Are Cancelled*, QUARTZ (Oct. 9, 2013), https://qz.com/133695/96-8-of-trades-placed-in-the-us-stock-market-are-cancelled/.

47. *See* Securities Act of 1933, 15 U.S.C. § 77a (2012); Securities Exchange Act of 1934, 15 U.S.C § 78a (2012); Commodity Exchange Act, 7 U.S.C. § 1 (2012).

48. 12 U.S.C. § 5301; Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, 124 Stat. 1376 (2010).

49. *Getting Up to Speed on High-Frequency Trading*, FIN. INDUS. REGULATORY AUTH. (Nov. 25, 2015), http://www.finra.org/investors/getting-speed-high-frequency-trading.

50. Robert Rich, *The Great Recession*, FED. RESERVE HIST. (Nov. 22, 2013), https://www.federalreservehistory.org/essays/great_recession_of_200709.

51. Mark Koba, *Dodd-Frank Act: CNBC Explains*, CNBC: CNBC EXPLAINS (Apr. 30, 2013), http://www.cnbc.com/id/47075854. In addition to the addition of anti-spoofing rules to the CEA, Dodd-Frank was also enacted, in part, to regulate systemically important financial institutions ("SIFIs") that are deemed "too big to fail" and are therefore integral to the economic health of

exclusively with high frequency trading.[52] The first is section 747, which amended section 4c(a)(5) of the CEA to also cover disruptive trading in the derivatives markets.[53] The second is section 967, which allowed the SEC to conduct a study to examine the effects high frequency trading had on the market.[54] Bills have also been introduced in the Senate and House addressing high frequency trading.[55] While the bills have not been enacted, the post-recession emphasis on regulating high frequency trading and the use of ATS will surely lead to future regulations.

Prior to Dodd-Frank, the CFTC administered two rules that only tangentially applied to spoofing. Under section 4c(a)(2)(B) of the CEA, it was unlawful to "offer to enter into, enter into, or confirm the execution of a transaction" that "is used to cause any price to be reported, registered, or recorded that is not a true and bona-fide price."[56] Section 9(a)(2) prohibited "caus[ing] to be delivered for transmission . . . false or misleading or knowingly inaccurate reports concerning crop or market information or conditions that affect or tend to affect the price of any commodity in interstate commerce."[57] Under these pre-Dodd-Frank rules, the CFTC was not able to punish spoofing directly.[58] Instead, the Commission was only able to punish traders via some of the effects of spoofing.[59] However, Title VII of

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the United States. *Id.* Under this rule, if any financial institution is deemed a SIFI, the Federal Reserve ("the Fed"), which can impose reserve requirements that necessitate the use of a bank, can require them to increase its cash on hand (cash not being used in bank business) that it can use for liquidity in a time of economic crisis. *Id.* The Fed can also require the banks to have a plan in place for the effective shutdown of all bank business in the event that the bank becomes insolvent. *Id.* Another major aspect of Dodd-Frank is the Volker Rule, which prohibits banks from owning, investing, or sponsoring any hedge funds, private equity funds, or any proprietary trading operations for their own profit. *Id.*

52. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, § 747, 124 Stat. 1376, 1739 (2010) (codified as amended at 7 U.S.C. § 6c(a)(5)(C) (2012)); Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, § 967, 124 Stat. 1376, 1913 (2010) (codified as amended at 7 U.S.C. § 6c(a)(5)(C) (2012))

53. 12 U.S.C. § 5301; Dodd-Frank, at § 747, 123 Stat. 1376, 1739 (2010).

54. Dodd-Frank, at § 967, 124 Stat. 1376, 1913 (2010).

55. *See, e.g.*, Customer Protection and End-User Relief Act, H.R. 4413, 113th Cong. (2d Sess. 2014); Wall Street Trading and Speculators Tax Act, S. 410, 113th Cong. (1st Sess. 2013); Wall Street Trading and Speculators Tax Act, H.R. 880, 113th Cong. (1st Sess. 2013); Protection from Rogue Oil Traders Engaging in Computerized Trading Act, H.R. 2292, 113th Cong. (1st Sess. 2013).

56. 7 U.S.C. § 6c(a)(2)(B) (2012).

57. 7 U.S.C. § 13(a)(2) (2012).

58. D. Deniz Aktas, *Developments in Banking and Financial Law*, 33 REV. BANKING & FIN. L. 52, 91 (2013).

59. Matthew Kluchenek & Jacob L. Kahn, *Deterring Disruption in the Derivatives Market: A Review of the CFTC's New Authority Over Disruptive Trading Practices*, 3 HARV. BUS. L. REV. 120, 130 (2013).

the Dodd-Frank Act amended the CEA and provided a completely new "regulatory framework for swaps and security-based swaps."[60] Section 747 of the Dodd-Frank Act amended the CEA to expressly prohibit certain "disruptive trading" practices, including conduct that violates legitimate bids or offers and willful and intentional spoofing.[61] The updated CEA section 4c(a)(5) states that it is "unlawful for any person to engage in any trading, practice, or conduct on or subject to the rules of a registered entity that . . . is of the character of, or is commonly known to the trade as, 'spoofing.'"[62]

In response to the CEA amendments the CFTC issued guidance stating that it "does not interpret reckless trading, practices, or conduct as constituting a 'spoofing' violation," nor does it interpret the prohibition as "reaching accidental or negligent trading, practices, or conduct."[63] Rather, the agency must prove the trader intended to cancel the bid before execution.[64] However, the CFTC does not need to prove that the trader intended to move the market.[65] The guidance states a violation of section 4c(a)(5)(C) does not "requir[e] a pattern of activity"; rather, "even a single instance of trading activity" can be a violation if it is coupled with the prohibited intent.[66] To determine whether a trader has violated the anti-spoofing statute the CFTC must look at the individual facts and circumstances.[67] This circumstantial evidence includes the market context, the pattern of trading activity on the day of the alleged conduct, relevant communications, and the ATS employed by the trader and related code.[68] The CFTC will also look at the specific trading data, such as "the number of orders submitted, duration of the orders before cancellation, [and] the relationship between cancelled and executed orders."[69]

CFTC regulators have also expressed the need for increased scrutiny of other types of market manipulation involving high frequency trading.[70] One such concern surrounds "wash trades," which are bids

60. Antidisruptive Practices Authority, 76 Fed. Reg. 14,943, 14,944 (proposed Mar. 18, 2011).

61. 12 U.S.C. § 5301; *see* Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, § 747, 124 Stat. 1376, 1739 (codified as amended at 7 U.S.C. § 6c(a)(5)(C) (2012)).

62. *Id.*

63. Antidisruptive Practices Authority, 78 Fed. Reg. 31,890, 31,896 (May 28, 2013).

64. *Id.*

65. *Id.* at 31,892.

66. *Id.*

67. Antidisruptive Practices Authority, 78 Fed. Reg. at 31,891.

68. *Id.* at 31,896; Canellos et al., *supra* note 2, at 5.

69. Canellos et al., *supra* note 2, at 5.

70. Scott Patterson et al., *Wash Trades Scrutinized*, WALL ST. J., Mar. 17, 2013, http://online.wsj.com/article/SB10001424127887323639604578366491497070204.html.

and offers created by the same market participant that result in providing unwitting participants with a false sense of increased market activity.[71] ATS can exacerbate this issue because high frequency traders can flood the market with false offers or bids to influence prices or increase trading volumes.[72] High frequency trading can also directly affect market stability. For example, Knight Capital Group lost over $440 million in less than an hour when an ATS glitch accidentally showered the market with faulty trades.[73] Accordingly, a simple computer problem could potentially destroy market stability and consumer confidence.

E. Spoofing Litigation

The first case brought under the new anti-spoofing statute was *United States v. Coscia*.[74] As is common practice in spoofing schemes, Coscia employed a computer programmer to create two sets of ATS in order to carry out his trades in milliseconds.[75] Coscia was indicted on six counts of spoofing and six counts of commodities fraud.[76] Coscia's main defense argued the spoofing statute in the Dodd-Frank Act was unconstitutionally vague.[77] Coscia argued the spoofing provision did not offer an "ascertainable standard that separate[d]" illegal spoofing from common, legal practices such as "partial-fill orders" and "stop-loss orders."[78] A court will find a statute is impermissibly vague and violates the Due Process Clause if it "fails to provide a person of ordinary intelligence fair notice of what is prohibited, or is so standardless that it authorizes or encourages seriously discriminatory enforcement."[79]

The court examined interpretive guidance the CFTC published while implementing the spoofing statute.[80] According to the proposed guidance, "orders, modifications, or cancellations" would not be con-

71. The CFTC defines wash trading as "entering into, or purporting to enter into, transactions to give the appearance that purchases and sales have been made, without incurring market risk or changing the trader's market position." CFTC GLOSSARY, *supra* note 7.

72. Patterson et al., *supra* note 70.

73. Nina Mehta, *Knight $440 Million Loss Sealed by Rules on Canceling Trades*, BLOOMBERG (Aug. 14, 2012), http://www.bloomberg.com/news/2012-08-14/knight-440-million-loss-sealed-by-new-rules-on-cancelingtrades.html.

74. United States v. Coscia, 100 F. Supp. 3d 653, 655 (N.D. Ill. 2015).

75. *Id.*

76. *Id*. at 656.

77. *Id.*

78. *Id.* Partial-fill orders are orders that are intentionally larger than necessary and entered to insure a sufficient quantity is obtained. Stop-loss orders are orders that are programmed to execute only when the market reaches a certain price. *Id.*

79. *Coscia*, 100 F. Supp. 3d at 656 (citing United States v. Williams, 553 U.S. 285, 304 (2008)).

80. *Id.*

sidered spoofing if "submitted as part of a legitimate, good-faith attempt to consummate a trade."[81] The proposed guidance also provided three precise examples of spoofing: "(1) submitting or cancelling bids to overload the quotation system of a registered entity; (2) submitting or cancelling bids or offers to delay another person's execution of trades; and (3) submitting or cancelling multiple bids or offers to create an appearance of false market depth."[82] Responding to questions from market participants, the CFTC provided an additional example of spoofing: submitting or cancelling bids or offers with intent to create artificial price movements upwards or downwards.[83]

The government alleged Coscia "entered into large-volume orders that he intended to immediately cancel before they could be filled by other traders."[84] Because Coscia's conduct was intended to create a false impression regarding the number of contracts available in the market, the court held the conduct tracked the language of the spoofing statute and the CFTC's example regarding the intent to cancel the bid or offer before execution.[85] The court held the statute's "intent to cancel" requirement was significant.[86] Ultimately, the court reasoned that Coscia's "alleged 'intent to cancel' set[ ] his conduct apart from [other] legitimate trading practices" and held the spoofing provision was not unconstitutionally vague.[87] Coscia was convicted of spoofing on the CME and ICE Futures Europe exchanges, which resulted in over $1.5 million in profits.[88] Coscia was sentenced to three years in prison, making him the first person sentenced under the Dodd-Frank spoofing regime.[89]

More recently, Chicago futures trader Igor Oystacher was accused of engaging in spoofing and market manipulation on at least fifty-one trading days over a two-year period.[90] The CFTC claimed that Oystacher engaged in spoofing by placing large, passive orders[91] to create

81. Antidisruptive Practices Authority, 76 Fed. Reg. 14,943, 14,947 (proposed Mar. 18, 2011).
82. *Id.*
83. Antidisruptive Practices Authority, 78 Fed. Reg. 31,890, 31,896 (May 28, 2013).
84. *Coscia*, 100 F. Supp. 3d at 658.
85. *Id.*
86. *Id.* at 659.
87. *Id.*
88. *Id.* at 655.
89. Janan Hanna & Bryan Louis, *First Trader Convicted of Spoofing Gets 3-Year Prison Term*, BLOOMBERG (July 13, 2016), http://www.bloomberg.com/news/articles/2016-07-13/first-trader-convicted-of-spoofing-gets-three-year-prison-term.
90. Complaint at 1–2, CFTC v. Oystacher, 203 F. Supp. 3d 934 (N.D. Ill. Aug. 23, 2016) (No. 1:15-cv-09196).
91. *Id.* at 2–3, 15. A "passive order" is defined by the CFTC as "one that is at the same or worse price than either the lowest existing sell order or the highest existing buy order at the time of entry." *Id*. at 8. Passive orders are said to "rest" in the book and will only result in a trade if

false market depth on at least five futures products.[92] The CFTC market data showed Oystacher was a massive trader in the aforementioned markets.[93] The CFTC alleged Oystacher utilized a platform with a function called "avoid orders that cross."[94] This function ensured that Oystacher's orders would never match one another by simultaneously cancelling orders on the opposite side of the market when new orders were placed.[95] This enabled Oystacher to never hit his own orders further perpetuating his spoofing scheme.[96] Oystacher allegedly reaped millions of dollars in profits from this spoofing scheme.[97]

In October 2016, the CFTC settled its claims against Oystacher.[98] Oystacher and his trading firm agreed to pay a $2.5 million civil penalty and allowed the firm to be monitored by an outside third party for three years.[99] The settlement required the employment of certain compliance tools regarding Oystacher's futures trading on U.S. exchanges for eighteen months.[100] The settlement also "permanently prohibit[ed] Oystacher and 3Red from spoofing and employ[ing] . . . manipulative or deceptive devices while trading futures contracts, in-

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an aggressive order from another trader matches with the order. *Id*. An "aggressive order" is "one that crosses the bid-ask spread at the time of entry." *Id*. "In other words, an aggressive buy order will be priced at or above the lowest priced sell order [ ] in the book and an aggressive order will be immediately executed, at least in part, and fully executed if enough contracts are posted on the Order Book at that price or better, to fill the order." *Id*.

92. Complaint at 2–3, CFTC v. Oystacher, 203 F. Supp. 3d 934 (N.D. Ill. Aug. 23, 2016) (No. 1:15-cv-09196). These products included the Commodity Exchange Inc.'s (COMEX) March 2012 copper futures contract; the New York Mercantile Exchange's (NYMEX) spot crude oil futures contract; the NYMEX spot month natural gas contract; the CBOE Futures Exchange's (CFE) March 2013 volatility index futures contract (VIX); and the Chicago Mercantile Exchange's (CME) spot month E-Mini S&P 500 futures contract. *Id.*

93. *Id*. at 3. Oystacher was the largest trader "in the respective contracts for copper, natural gas, VIX, and E-Mini S&P 500 futures, and the third largest trader in the spot-month contract for crude oil futures . . . during these alleged spoofing periods, despite the presence of thousands of other traders in these markets." *Id.*

94. *Id.* at 15.

95. *Id.*

96. Complaint at 15, CFTC v. Oystacher, 203 F. Supp. 3d 934 (N.D. Ill. Aug. 23, 2016) (No. 1:15-cv-09196).

97. Matthew Leising, *The Man Accused of Spoofing Some of the World's Biggest Futures Exchanges*, BLOOMBERG (Oct. 19, 2015), http://www.bloomberg.com/news/articles/2015-10-19/before-u-s-called-igor-oystacher-a-spoofer-he-was-known-as-990.

98. Janan Hanna, *CFTC Settling Suit Against 3Red's Accused Spoofer Oystacher*, BLOOMBERG (Oct. 19, 2016), https://www.bloomberg.com/news/articles/2016-10-19/cftc-reaches-settlement-with-3red-s-accused-spoofer-oystacher.

99. Dave Michaels, *Head Of 3Red Trading Settles CFTC Claims He Engaged in Spoofing*, WALL ST. J. (Dec. 21, 2016), http://www.wsj.com/articles/head-of-3red-trading-settles-cftc-claims-he-engaged-in-spoofing-1482278089.

100. *Id.*

cluding entering bids or offers with the intent to cancel before execution."[101]

Another spoofing case involved London-based trader Navinder Sarao who allegedly manipulated the E-mini S&P 500 near month futures contracts.[102] According to the CFTC, from 2009 until the complaint was filed in 2015 Sarao developed and implemented an ATS to place, modify, and cancel several hundred thousand orders with no intention of executing them.[103] This period of trading included May 6, 2010, when the prices of the E-mini S&P and the general equities markets quickly crashed and regained their previous levels within a matter of minutes.[104] Almost $1 trillion in market value was briefly lost during the crash.[105]

Sarao utilized two different spoofing techniques to manipulate the market: the "Layering Algorithm" and "Flash Spoofing."[106] Sarao's Layering Algorithm was custom designed by a computer programmer and allowed him to rapidly place, modify, and cancel orders within the E-mini S&P market.[107] Sarao used the Algorithm to place four to six massive sell orders into the E-mini S&P Order Book, "each one tick from the next, generally beginning at least three or four ticks from the best asking price."[108] As the market moved in response to the sell

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101. Press Release, U.S. Commodity Futures Trading Comm'n, Federal Court Orders Chicago Trader Igor B. Oystacher and 3Red Trading LLC to Pay $2.5 Million Penalty for Spoofing and Employment of a Manipulative and Deceptive Device, while Trading Futures Contracts on Multiple Futures Exchanges (Dec. 20, 2016) (available at http://www.cftc.gov/PressRoom/PressReleases/pr7504-16).

102. Complaint at 1, CFTC v. Nav Sarao Futures Ltd. PLC, No. 15-cv-03398 (N.D. Ill. Apr. 17, 2015).

103. *Id*. at 1–2.

104. The "Flash Crash," as May 6, 2010 became to be known, was at least partially caused by a significant imbalance in the E-mini S&P 500 market:

> Between 1:41 and 1:44 pm CT, the E-mini S&P market price suffered a sharp decline of 3%. Then, at 1:45 pm CT, in a matter of 15 seconds, the E-mini S&P market price dropped another 1.7%. The price crash in the E-mini S&P market quickly spread to major U.S. equities indices, which suffered precipitous declines in value of approximately 5 to 6%.

Id. at 2, 8. Just a few minutes after the drop occurred, prices across all markets rebounded to at or near their original price levels. The CFTC and SEC investigated and concluded that a "significant imbalance between sell orders and buy orders contributed to a sudden loss of liquidity in the E-mini S&P market. This loss of liquidity, in conjunction with other market events, directly contributed to the E-mini S&P price crash." *Id*.

105. Ben Rooney, *Trading Program Sparked May 'Flash Crash'*, CNN MONEY (Oct. 1, 2010), http://money.cnn.com/2010/10/01/markets/SEC_CFTC_flash_crash/.

106. Complaint at 11, CFTC v. Nav Sarao Futures Ltd. PLC, No. 15-cv-03398 (N.D. Ill. Apr. 17, 2015).

107. *Id*. at 12.

108. *Id.* at 13. "Tick sizes dictate the minimum standards at which the price of a particular contract can move. If a contract had a tick size of $0.50 and a current price of $20, the associated

orders the Layering Algorithm instantaneously modified the large sell-side order prices.[109] This meant the new orders would always stay at least three to four ticks from the best asking price on the Order Book, ensuring they would never be hit.[110] This process would occur hundreds of times in a given trading day.[111] Additionally, Sarao's order modifications on these days accounted for at least sixty percent of all sell-side order modifications, meaning his trading pattern accounted for over half of the cancelled trades on the E-mini S&P market.[112] Additionally, Sarao manually "flashed" large orders in the E-mini S&P Order Book that were quickly cancelled with no intention of resulting in trades.[113]

In November 2016, Sarao pled guilty to one count of spoofing and one count of wire fraud in a criminal case related to the CFTC's civil case.[114] On the same day as the guilty plea the CFTC proposed a Consent Order that would effectively resolve its case against Sarao.[115] According to the Order, Sarao would admit that he: "successfully manipulated the E-Mini S&P on at least 12 days" including the day of the Flash Crash, "attempted to manipulate the E-Mini S&P tens of thousands of times" over a five year period, "placed tens of thousands of bids and offers that he intended to cancel before execution" over a four year period, and that he "employed or attempted to employ a manipulative device, scheme, or artifice to defraud in connection with his spoof orders."[116] Finally, the Consent Order sought to impose more than $38 million in monetary sanctions, trading bans, and permanent prohibitions against future violations of the CEA.[117] Per the

price can move to $20.50, but cannot move to $20.25." *Tick Size*, INVESTOPEDIA, http://www.investopedia.com/terms/t/tick-size.asp (last visited Feb. 3, 2017).

109. *Id.*

110. Complaint at 13, CFTC v. Nav Sarao Futures Ltd. PLC, No. 15-cv-03398 (N.D. Ill. Apr. 17, 2015).

111. *Id.*

112. *Id.* at 14.

113. *Id.* at 17. "Specifically, [Sarao] manually placed 1,728 sell-side orders in lot sizes of 188 and 289 with an approximate notional value of $26.5 billion." *Id.* Sarao then cancelled approximately 95% of the 188 and 289 sell orders priors to any execution. Complaint at 17, CFTC v. Nav Sarao Futures Ltd. PLC, No. 15-cv-03398 (N.D. Ill. Apr. 17, 2015).

114. Press Release, U.S. Commodity Futures Trading Comm'n, CFTC Submits Proposed Consent Order to Federal Court in Chicago That Would Resolve the CFTC's Price Manipulation and Spoofing Action Against U.K. Resident Navinder Singh Sarao (Nov. 9, 2016) (available at http://www.cftc.gov/PressRoom/PressReleases/pr7480-16).

115. *Id.*

116. *Id.*

117. *Id.*

proposed Order the court required Sarao "to pay a $25,743,174.52 civil monetary penalty and $12,871,587.26 in disgorgement."[118]

The three cases described above, while all resulting in successful prosecutions, demonstrate the immense challenges faced by regulators when they pursue a spoofing charge. These are the only cases that have been brought since the enactment of the anti-spoofing statute in the Dodd-Frank Act. This demonstrates that monitoring and regulating spoofing is an uphill battle for those charged with enforcing the rules of the derivatives market.

III. Analysis

This Part begins by examining how the CFTC and exchange groups have regulated spoofing after the Dodd-Frank Act was enacted. This Part then argues current spoofing regulations create market inefficiencies due to lack of enforcement, which leads to an absence of credible information available to market participants. Additionally, lax enforcement also leads to market illiquidity as traders are often forced to stay on the sidelines because the spoofed prices do not reflect actual market conditions or the trader does not want to cancel trades for fear of running afoul of the anti-spoofing laws. Finally, this Part contends that by decentralizing the regulatory scheme and increasing the spoofing penalties available to the CFTC and market exchanges, spoofing can be properly controlled and markets can return to their efficient, liquid state.

A. Private Companies Take On Spoofing Enforcement

While the CFTC has secured enforcement actions under the Dodd-Frank Act, the spoofing statute is still ill-equipped to deal with modern high frequency trading systems. Because no one knows how widespread spoofing really is[119] the CFTC's three successful spoofing cases are likely a drop in the bucket.[120] Additionally, buying and selling in derivatives markets and equities markets is functionally different. Bids and asks can go back and forth for some time before settling on a

118. Press Release, U.S. Commodity Futures Trading Comm'n, Federal Court in Chicago Orders U.K. Resident Navinder Singh Sarao to Pay More Than $38 Million in Monetary Sanctions for Price Manipulation and Spoofing, (Nov. 17, 2016) (available at http://www.cftc.gov/PressRoom/PressReleases/pr7486-16).

119. Matthew Leising, *Spoofing Went Mainstream In 2015*, Bloomberg (Dec. 21, 2015), https://www.bloomberg.com/news/articles/2015-12-22/nabbing-the-rogue-algo-inside-the-year-spoofing-went-mainstream.

120. Andrew Harris & Matthew Leising, *Market Manipulation Complaints are Common but Prosecutions Rare*, Bloomberg (Apr. 23, 2015), https://www.bloomberg.com/news/articles/2015-04-23/market-manipulation-complaints-are-common-but-prosecutions-rare.

price, leading to contract prices that often move quickly and unpredictably.[121] Further, far more orders per day are legitimately cancelled than are ultimately filled, forcing regulators to sift through millions of cancelled trades per day to deduce whether spoofing has occurred.[122] This shows why it is nearly impossible to prove spoofing.

Spoofing is hard to detect, therefore proper regulation and enforcement are critical to maintaining competitive markets.[123] In fact, increased CFTC enforcement after the Dodd-Frank Act likely boosts confidence in the market along with overall market participation. Thus, parties who previously left a certain contract market would be more likely to re-enter if manipulation is no longer occurring.[124] However, the CFTC does not have access to real time market data, leaving it largely reliant on exchanges and market participants to open cases or file complaints.[125] Thus exchanges, because they have access to that information, are currently in the best position to detect spoofing, take action, and report the suspect activity to the CFTC.

Indeed, the CFTC recently stated CME Group[126] needs to do more to identify spoofing and quickly bring enforcement actions.[127] In response to the CFTC's statements CME Group released a market regulation advisory notice in August 2014.[128] The notice incorporated section 747 of Dodd-Frank into the new CME Rule 575, prohibiting certain disruptive practices including spoofing.[129] The new CME

121. Gregory Meyer et al., *Regulators Step Up Efforts to Stop Spoofing*, FIN. TIMES, Nov. 5, 2015, https://www.ft.com/content/f0aa13bc-839d-11e5-8e80-1574112844fd.

122. MILLER & SHORTER, *supra* note 24, at 7.

123. Elise Fleischaker, *How Spoofing Works & Why It Is Illegal*, NEURENSIC (Oct. 17, 2016), http://neurensic.com/spoofing-works-illegal/.

124. *How These Chicago Firms Took on Spoofing*, CRAIN'S CHI. BUS., Dec. 28, 2015, http://www.chicagobusiness.com/article/20151228/NEWS01/151229912/how-these-chicago-firms-took-on-spoofing. One large trading firm reported losses of $60,000 per day during a period when spoofing was particularly bad, and Citadel, one of the world's largest alternative assets managers, said the lost business from pulling back from trades involving spoofing cost the firm millions of dollars. *Id.*

125. Roy Strom, *To Catch a Spoofer*, CHI. LAWYER, Apr. 1, 2016, http://www.chicagolawyermagazine.com/Archives/2016/04/spoofing-April16.aspx.

126. The CME Group is a financial market company operating the world's largest options and futures exchange. *See CME Group Overview*, CME GROUP (2016), at 1–2, http://www.cmegroup.com/company/history/.

127. Bradley Hope, *As 'Spoof' Trading Persists, Regulators Clamp Down*, WALL ST. J. (Feb. 22, 2015), http://www.wsj.com/articles/how-spoofing-traders-dupe-markets-1424662202; Matthew Leising, *Spoofing*, BLOOMBERG: QUICKTAKE (Nov. 10, 2016), https://www.bloomberg.com/quicktake/spoofing.

128. *Market Regulation Advisory Notice*, CME GROUP (Aug. 29, 2014), http://www.cmegroup.com/tools-information/lookups/advisories/market-regulation/files/RA1405-5.pdf.

129. *Id.*; CME Rule 575 Subparagraph 5 provides in part:

> (5) DISRUPTIVE PRACTICES – It shall be unlawful for any person to engage in any trading, practice, or conduct on or subject to the rules of a registered entity that –

Group rule requires proof of intent, a key component of CFTC enforcement, and states it may be found outside of situations where participants explicitly state their intent.[130] For the CME Group to prove intent it must show it was more likely than not the actions were intended to produce a prohibited disruptive consequence.[131] In contrast, the CFTC must prove that the trader intended to create an "artificial price."[132] The difference between these two standards frustrates the ability of the two entities to work together to police spoofing, as the CME Group's standard for intent is easier to prove in comparison to the CFTC's standard for intent.[133]

From a modern market perspective, the current detection methods are arguably inadequate considering the prevalence of high frequency trading and the vast number of trades that occur each day. Before digital trading, face-to-face interactions made it easier to detect spoofing.[134] However, trades are now commonly conducted by ATS so the layer of security that came from human interaction is lost. To combat this issue companies have devised ways to efficiently sift through market data to spot suspicious trading activity and alert regulators. Vertex Analytics, a Chicago-based analytics firm, can graph every order and transaction on CME Group's markets.[135] Vertex bills itself as a superior compliance tool capable of easily spotting spoofing patterns in the futures market.[136] With Vertex's software, compliance officials

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(A) violates bids or offers;
(B) demonstrates intentional or reckless disregard for the orderly execution of transactions during the closing period; or
(C) is, is of the character of, or is commonly known to the trade as, "spoofing" (bidding or offering with the intent to cancel the bid or offer before execution).

Id.

130. Nicole M. Kuchera & Joseph M. Mannon, *New CME Rule 575 on Disruptive Trading Practices – Chicago Mercantile Exchange, Chicago Board of Trade, New York Mercantile Exchange, and Commodity Exchange, Inc.*, NAT'L L. REV. (Sept. 15, 2014), http://www.natlawreview.com/article/new-cme-rule-575-disruptive-trading-practices-chicago-mercantile-exchange-chicago-bo.

131. *Id.*

132. Paul M. Architzel et al., *The Manipulation Standard and a Setback for CFTC*, LAW360, (Oct. 21, 2016), https://www.law360.com/articles/853970/the-manipulation-standard-and-a-setback-for-cftc.

133. *Id.* The CFTC is the federal regulator charged with overseeing the derivatives markets. The CFTC often relies on the exchanges to monitor market activities and to enforce the exchanges' own rules. *U.S. Futures Regulator in Spotlight After Latest Scandal*, REUTERS (July 10, 2012), http://www.reuters.com/article/cftc-pfg/u-s-futures-regulator-in-spotlight-after-latest-scandal-idUSL2E8IAELI20120711.

134. Leising, *supra* note 119.

135. *Id.* For more information on Vertex Analytics, *see generally* VERTEX ANALYTICS, http://www.vertex-analytics.com (last visited Nov. 7, 2017).

136. *Compliance Officers: Mitigate Your Failure to Supervise*, VERTEX, http://www.vertex-analytics.com/compliance (last visited Dec. 28, 2016).

no longer have to manually review documents to identify specific instances of spoofing.[137]

Another Chicago-based technology consulting firm, Neurensic, Inc., develops market surveillance software to help firms identify spoofing.[138] Neurensic employs artificial intelligence software to analyze the trading data of firms and exchanges to identify "clusters" of data that may signal spoofing.[139] Neurensic's machine-learning software can effectively teach itself, incorporating years of data obtained from exchanges, trading firms, and regulators to better identify suspicious activity within the market.[140] However, even with Neurensic's advanced software, CEO David Widerhorn still believes spoofing is more prevalent than many traders and regulators believe, noting his customer base is growing "rapidly" in response to high frequency spoofers.[141]

While companies such as Vertex and Neurensic have created software to detect spoofing patterns, enforcement remains an issue. Firms want to detect spoofing in order to avoid losses, such as when Citadel lost millions by pulling out of trades in a market with an active spoofer.[142] Exchanges want to detect spoofing to protect market participants and comply with CFTC mandates.[143] While trading firms may be willing to report suspicious activity to regulators they find with compliance software, the main goal of any trading firm is to be profitable.[144] New tools to identify spoofing are rapidly entering the market, but trading firms primarily employ this software for their own financial protection.[145] Because profit, not enforcement, is the priority at these firms, it is unlikely they will act to curb this behavior.

137. Leising, *supra* note 119.

138. Lucy Ren, *High Profile 'Spoofing' Case Put Traders on Edge*, MEDILL (May 22, 2015), http://news.medill.northwestern.edu/chicago/high-profile-spoofing-cases-put-traders-on-edge/. Neurensic, Inc. is formerly known as David Widerhorn Consulting. For more information on Neurensic, Inc., *see generally* NEURENSIC, http://www.neurensic.com (last visited Nov. 7, 2017).

139. *Id.*

140. Lynne Marek, *Inside One Chicago Startup's Plan to Target Spoofers*, CRAIN'S CHI. BUS., Dec. 9, 2015, http://www.chicagobusiness.com/article/20151209/NEWS01/151209759/inside-one-chicago-startups-plan-to-target-spoofers.

141. Ren, *supra* note 138.

142. Leising, *supra* note 119.

143. Bloomberg Markets, *CME's Duffy: We Don't Allow Spoofing on Our Exchange*, BLOOMBERG (June 9, 2016), https://www.bloomberg.com/news/videos/2016-06-09/cme-s-duffy-we-don-t-allow-spoofing-on-our-exchange.

144. Steve Denning, *Is The Goal of a Corporation to Make Money?*, FORBES (Sept. 26, 2011), http://www.forbes.com/sites/stevedenning/2011/09/26/is-the-goal-of-a-corporation-to-make-money/#6fa98d537658.

145. Ren, *supra* note 138.

Thus, traders are inadequately deterred from spoofing because of its pervasiveness in the market and the CFTC's lack of enforcement.

Accordingly, the anti-spoofing statute is an ineffective tool for monitoring and prosecuting spoofing because federal regulators are forced to rely on profit-seeking corporations. Unfortunately for proponents of increased regulation, the CFTC lacks the ability to effectively track daily market activity.[146] Currently, innovative tools that identify spoofing are used mostly by trading firms to ensure they do not lose money in a manipulated market.[147] With millions of orders and bids placed and cancelled daily, current CFTC enforcement techniques are ineffective at identifying sophisticated spoofers. The exchanges are better positioned to regulate spoofing because of their proximity to the derivatives market and access to resources.

B. Spoofing Regulation Creates Market Inefficiencies

What makes spoofing identification difficult is the fact that traders utilizing ATS in liquid markets often legitimately cancel far more trades per day than they execute.[148] The "intent to cancel" requirement is nearly impossible to prove because it is difficult to decipher whether or not cancelled trades were intended to manipulate the market.[149] Conversely, traders must comply with CFTC regulations when cancelling orders, which has led traders to shift trading tactics in order to remain compliant and profitable. Some traders have been forced to shift to contracts with longer time horizons, focusing on analysis rather than speed.[150] However, forced trading shifts often lead to market inefficiencies.[151]

An efficient market is based on the assumption that prices within the market reflect all available and relevant information.[152] However, spoofing combined with the aforementioned forced trading shifts indicate the derivatives market prices do not reflect all available and relevant information. When one spoofer places a large number of fraudulent offers or bids it creates an order imbalance and ATS often

146. Mark Melin, *CFTC Does Not Have Regular Access to Flash Crash "Spoofing" Data*, ValueWalk (Apr. 24, 2015), http://www.valuewalk.com/2015/04/cftc-flash-crash/.

147. Vertex, *supra* note 135.

148. Miller & Shorter, *supra* note 24, at 7.

149. United States v. Coscia, 100 F.Supp.3d 653, 659 (N.D. Ill. 2015).

150. Ren, *supra* note 139. Time horizons are defined as "the length of time over which an investment is made or held before it is liquidated." *Time Horizon*, Investopedia, http://www.investopedia.com/terms/t/timehorizon.asp (last visited Dec. 28, 2016).

151. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111–203, 124 Stat. 1376 (2010).

152. *Market Efficiency*, Investopedia, http://www.investopedia.com/terms/m/marketefficiency.asp (last visited Dec. 28, 2016).

automatically responds by piggybacking upon those bids or offers, which results in an even larger imbalance.[153] This cyclical process occurs in a matter of seconds and creates a lack of reliable information on which traders, or their trading algorithms, can act.[154] Given the prevalence of spoofing, the derivatives markets often suffer from a lack of information and are therefore inefficient at times.[155]

If traders are constantly worried about governmental action they will likely alter trading algorithms to slow down trade times or cancel fewer trades. As it is unlikely that traders will exit the market altogether, this will have the effect of forcing traders to execute trades they would have otherwise cancelled, damaging profits and diminishing efficiency.[156] Dennis Dick, a proprietary trader and head of markets structure at Bright Trading claimed "[t]here is always a risk that [regulators] might prosecute someone innocent, especially those traders that change their mind frequently."[157] The increase in analytical tools that spot spoofing makes it possible that, should regulators employ these tools in the future, traders or firms simply responding to a change in market conditions could be identified as spoofers. While the CTFC must still prove intent, risk averse traders would likely change their behavior to avoid this situation altogether, leading to further inefficiencies.

Market illiquidity can also exacerbate market inefficiency.[158] When a spoofer places offers or bids never intended for execution, the bid-ask spread of the contract never narrows to the point at which the bid or offer is hit.[159] The spoofing artificially alters the price of a given contract, leading to illiquidity because some traders may not be willing to buy or sell at the new, fraudulent price.[160] This illiquidity arguably slows down the market because traders must either take a step back to wait for the contract price to return to its original position or decide whether they want to enter the market at the new, manipulated price. The lack of an accurate price illustrates how spoofing causes illiquidity and furthers market inefficiency.

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153. Rooney, *supra* note 105.

154. *Id*.

155. *Id.*

156. *Id.*

157. Ren, *supra* note 138.

158. Market liquidity refers to "the degree to which an asset or security can be quickly bought or sold in the market without affecting the asset's price." *Market Liquidity*, INVESTOPEDIA, http://www.investopedia.com/terms/l/liquidity.asp (last visited Dec. 28, 2016). In the derivatives market, when the bid-ask spread is relatively narrow, the market is more liquid. *Id.* However, a larger bid-ask spread can lead to illiquidity. *Id.*

159. CFTC GLOSSARY, *supra* note 7.

160. Montgomery, *supra* note 10.

C. A New Way Forward

To address enforcement difficulties in spoofing, section 747 of the Dodd-Frank Act should be amended to decentralize the CFTC's enforcement power. The exchanges and market participants closer to the problem could better wield this enforcement power. Next, the CEA should be amended to provide harsher penalties for traders convicted of spoofing. Only once spoofing can be effectively monitored and enforced with significant penalties and incarceration can government regulators begin to remedy the dangerous manipulation of the derivatives markets.

1. Decentralizing the Regulatory Scheme

Currently, both the CFTC and exchanges can enforce monetary penalties on traders that have spoofed the market.[161] However, only the exchanges and market participants have access to real-time market data crucial to identifying market manipulation without undue delay.[162] Additionally, unlike the CFTC, these exchanges have the financial capability to better monitor the markets daily. While the CFTC has not grown in size in the past twenty years, the size of the derivatives markets during the same period has increased by over 500%.[163] The CFTC's size and perpetual underfunding has led to selective enforcement—the CFTC only prosecutes the largest and most egregious spoofing cases.[164]

In response to CFTC requests, CME Group has hired more investigators and increased funding to detect spoofing.[165] More power should be ceded to the exchanges for enforcement to have real impact. Exchanges already have the best access to market data and better access to new software, which would allow for automated enforcement.[166] Additionally, better analytic tools could help to prevent false identification, leading to market efficiency and liquidity. If traders knew rules and regulations were being properly enforced, con-

161. Anne M. Termine et al., *CME Implements Significant Penalty Increases for Futures and Swaps Trading Violations*, COVINGTON (Dec. 20, 2016), https://www.covfinancialservices.com/2016/12/cme-implements-significant-penalty-increases-for-futures-and-swaps-trading-violations/.

162. Strom, *supra* note 125.

163. Kobi Kastiel, *The Changing Landscape of the CFTC's Enforcement Actions*, HARV. L. SCH. F. ON CORP. GOVERNANCE & FIN. REG. (May 4, 2013), https://corpgov.law.harvard.edu/2013/05/04/the-changing-landscape-of-the-cftcs-enforcement-actions/.

164. *Id*.

165. Sarah N. Lynch, *CFTC Says CME Directed to Beef Up 'Spoofing' Enforcement*, REUTERS (May 14, 2015), http://www.reuters.com/article/us-cftc-cme-group-spoofing-idUSKBN0NZ1LW20150514.

166. CME GROUP, *supra* note 126.

cerns over whether legitimately cancelled trades could be mistaken for spoofing would diminish.[167]

Decentralizing the regulatory scheme away from the CFTC and towards the exchanges also allows for better prosecution of spoofing. Exchanges are in the best position to prosecute spoofers who make little profit or run their spoofing algorithm a limited number of times. For example, CME Group recently fined and permanently barred two such traders for spoofing the gold and silver futures market.[168] Generally, exchanges have the ability to effectively deter all spoofing offenses and ensure spoofers are not able to manipulate derivatives markets.[169]

Even though the exchanges would have this oversight, the CFTC would maintain control over egregious spoofing offenses and be able to better use its limited resources. The exchanges, or other market participants, would still funnel egregious spoofing conduct, like the spoofing in the *Oystacher* and *Sarao* cases, to the CFTC. The CFTC could then better utilize its limited budget because it would only prosecute the most serious spoofing. In fact, this is how the CFTC currently operates, flagging only the largest examples of spoofing because it does not receive alerts of less serious conduct or have the resources to identify and prosecute them.[170]

Finally, decentralization will prove regulators are serious about protecting market participants. Until 2010, trading laws did not even explicitly ban the practice of spoofing.[171] Currently, most traders are probably aware that the vast majority of spoofing violations go undetected.[172] If a new regulatory scheme allowed all spoofers to be prosecuted potential spoofers might be deterred from engaging in market manipulation. This could lead traders to conclude the likelihood of detection and prosecution far outweighs the benefits of spoofing, deterring the undesired activity.

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167. Ren, *supra* note 138.

168. Tom Polansek, *CME Group Fines, Bars Two UAE Futures Traders Over 'Spoofing,'* REUTERS (Apr. 28, 2016), http://www.reuters.com/article/us-cme-group-spoofing-metals-id USKCN0XP2TE.

169. Tom Polansek, *CME Group Urgently Suspends Trader for Spoofing*, REUTERS (Aug. 22, 2016), http://www.reuters.com/article/us-cme-group-trader-spoofing-idUSKCN10Y01Z.

170. Kastiel, *supra* note 163.

171. *See* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010).

172. Suzanne Barlyn, *U.S. Regulator Says 'Flash Crash' Manipulation Hard to Detect*, REUTERS (Apr. 24, 2015), http://www.reuters.com/article/flashcrash-trader-finra-ketchum-id USL1N0XL28W20150424.

2. *Increasing Penalties to Reflect Harm Done to the Market*

Current penalties for spoofing are inadequate to properly deter this type of market manipulation. Under CFTC regulations, the maximum penalty is triple the monetary gain from each violation or $140,000, whichever is greater.[173] If the Department of Justice decides to bring criminal charges, as they did in the *Sarao* case, a convicted defendant can face up to one million dollars in fines and ten years in prison per count.[174] Additionally, the CME Group recently proposed an increase to its maximum fines from $1 million to $5 million to further deter spoofing.[175]

Calculating the correct punishment for spoofers involves considering who, or what, is actually harmed by the manipulative conduct. Some experts argue that spoofing actually *creates* market efficiency because spoofing programs typically only run for seconds at a time.[176] According to this belief, the only market participants harmed by spoofing are high frequency trading "front runners,"[177] not individual investors. This is because individual investors do not react to the market in milliseconds or microseconds; only ATS employed by large, institutional investors can react.[178] In effect, front running can be

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173. A person who is found liable for spoofing in an administrative proceeding can be barred from trading on an exchange, have his CFTC registration suspended or revoked, and be forced to pay a penalty and restitution. The penalty may not exceed the greater of $140,000 or triple the monetary gain to the person for each violation. A violator may also be ordered to cease and desist. *See* 7 U.S.C. §§ 9(4), 9(10), 13b (2012). A person found liable for spoofing in federal district court can be subject to an injunction, and forced to pay disgorgement, restitution, and a penalty. The penalty may not exceed the greater of $140,000 or triple the monetary gain to the person for each violation. *See* 7 U.S.C. § 13a-1 (2012); 17 C.F.R. § 143.8 (2012) (adjusting statutory penalty amount for inflation).

174. Indictment at 1, United States v. Sarao, No. 15-cr-00075 (N.D. Ill. Sept. 2, 2015). The DOJ can bring criminal charges against a defendant who "knowingly" violates Section 4c(a)(5)(C). *See* 7 U.S.C. § 13(a)(2) (2012). If criminally convicted of spoofing, a defendant can face up to $1 million in fines and 10 years in prison per count. *Id.*

175. Tom Polansek, *Rule Breakers Face Bigger Possible Fines From CME Group*, REUTERS (Dec. 1, 2016), http://www.reuters.com/article/us-cme-group-crime-fines-idUSKBN13Q5ZB.

176. John D. Arnold, *Spoofers Keep Markets Honest*, BLOOMBERG: VIEW (Jan. 23, 2015), https://www.bloomberg.com/view/articles/2015-01-23/high-frequency-trading-spoofers-and-front-running.

177. "Front running" is the unethical and illegal practice by which a trader obtains profits by stepping in front of orders placed or about to be placed by others to gain a price advantage. For example, a broker may receive a client order to purchase 100,000 shares of a given company. Such a large purchase will surely drive the price of the company's stock up. Before the broker places the client order, he "front runs" the order by placing a small order for the same company in a personal account at the original, lower price. Once the broker subsequently places the large client order, he takes advantage of the price jump by selling at the higher price. *See Front Running*, INVESTOPEDIA, http://www.investopedia.com/terms/f/frontrunning.asp (last visited Dec. 29, 2016); Arnold, *supra* note 176.

178. Arnold, *supra* note 176.

eliminated by spoofing because when a front running high frequency trader moves in front of a spoofer's "order," "the front runner is fooled and loses money."[179] However, some argue a spoofed order book becomes inefficient and uninformative because it no longer reflects accurate market information.[180] While an uninformative order book may benefit institutional investors who may want to disguise large orders, it also harms retail investors, high frequency traders, and index funds who need order books to reflect "maximally and instantaneously efficient" prices.[181] The central question is who to protect when enforcing, or not enforcing, spoofing laws.

Even though high frequency trading is the prominent way derivatives are traded, spoofing laws need to favor retail investors and index funds over front running high frequency traders. The argument that illegal spoofing is desirable because it cancels out illegal front running is unpersuasive. Allowing high frequency traders to police the market by employing illegal trading tactics will encourage traders to utilize illegal, manipulative practices leading to greater market inefficiency. This policy could make it difficult for regular investors to enter the market, as it is unlikely these investors have the financial capability or expertise to compete with the high frequency traders. This fact could potentially lead to a market solely consisting of high frequency trading. Accordingly, retail investors and the index funds must be protected to ensure their access to the market. To this end, penalties must be imposed that adequately deter future spoofing violations.

While many argue sufficient penalties have been imposed by pointing to the massive fine levied against Sarao or the three-year jail sentence for Coscia, these cases are outliers.[182] Moving forward, exchanges in the proposed role of primary regulator must impose fines on spoofers that exceed $1 million. Even if these fines turn out to be punitive or merely symbolic, they will deter future spoofing. The CEA should also be amended to fine and incarcerate spoofers commensurate with the actual harm they inflict on markets. As described above, spoofing can cause massive market inefficiencies and illiquidity in the derivatives markets. Without proper punishment, these harms will continue to perpetuate economic harm and market inefficiency.

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179. *Id*.

180. Matt Levine, *Why Is Spoofing Bad?*, BLOOMBERG: VIEW (Apr. 22, 2015), https://www.bloomberg.com/view/articles/2015-04-22/why-is-spoofing-bad-.

181. *Id*.

182. *Id.*; Hanna & Louis, *supra* note 89; Ren, *supra* note 138.

IV. Impact

This Part begins by analyzing the negative consequences of maintaining the status quo. This Part then explains the benefits of decentralizing the spoofing regulatory scheme and increasing punishment for convicted spoofers.

A. The Danger of Maintaining the Status Quo

When the CFTC gained increased regulatory authority through the passage of the Dodd-Frank Act, spoofing was one of the first issues the Commission chose to address.[183] The CFTC quickly indicted Coscia on spoofing charges in 2014.[184] In the first federal prosecution regarding spoofing, Coscia was convicted and sentenced to three years in prison.[185] If market participants and legal experts expected numerous spoofing cases to follow, they were sorely disappointed. Since, the CFTC and Department of Justice have only brought two major cases against alleged spoofers: *Oystacher* and *Sarao*.[186] Oystacher ultimately settled the claims, paying a $2.5 million civil monetary penalty and agreeing to have his trading monitored by an independent third party for three years.[187] Sarao pled guilty to the criminal charges and entered into a Consent Order with the CFTC, which required him to pay a $25,743,174.52 civil monetary penalty and $12,871,587.26 in disgorgement.[188]

It is evident from the lack of spoofing charges brought by the CFTC that it is ill-equipped to handle modern, high frequency spoofing. The lack of real time market data, the small size and budget of the CFTC, and the increased sophistication of traders practically ensure the Commission prosecutes only the most blatant spoofing.[189] Additionally,

183. Steve Quinlivan, *CFTC's Final Rule on Disruptive Trading Clarifies Disruptive Trading Practices, Including That "Strobing" is Prohibited "Spoofing,"* Dodd-Frank.com (May 24, 2013), http://dodd-frank.com/cftc-disruptive-trading-practices-strobing-and-spoofing/.

184. United States v. Coscia, 100 F. Supp. 3d 653 (N.D. Ill. 2015).

185. Hanna & Louis, *supra* note 89.

186. Complaint at 1, CFTC v. Oystacher, 203 F. Supp. 3d 934 (N.D. Ill. Aug. 23, 2016) (No. 15-CV-9196); Complaint at 1, CFTC v. Nav Sarao Futures Ltd. PLC, No. 15-cv-03398 (N.D. Ill. Apr. 17, 2015).

187. Press Release, U.S. Commodity Futures Trading Comm'n, Federal Court Orders Chicago Trader Igor B. Oystacher and 3Red Trading LLC to Pay $2.5 Million Penalty for Spoofing and Employment of a Manipulative and Deceptive Device, while Trading Futures Contracts on Multiple Futures Exchanges (Dec. 20, 2016) (available at http://www.cftc.gov/PressRoom/PressReleases/pr7504-16).

188. Press Release, U.S. Commodity Futures Trading Comm'n, CFTC Submits Proposed Consent Order to Federal Court in Chicago That Would Resolve the CFTC's Price Manipulation and Spoofing Action Against U.K. Resident Navinder Singh Sarao (Nov. 9, 2016) (available at http://www.cftc.gov/PressRoom/PressReleases/pr7480-16).

189. Strom, *supra* note 125.

the statute contained within the Dodd-Frank Act makes it difficult for the Commission to prosecute spoofing because of the difficulties in proving intent.[190]

The spoofing regulation status quo will be a continued drag on the market. First, the inability of the CFTC to secure regular, meaningful prosecutions will lead to major market inefficiencies. Efficient markets rely upon complete and accurate information. Therefore, unenforced spoofing regulations create inefficiencies because available information does not reflect the realities of the market.[191] In addition, many traders are now forced to slow down the pace of their trades or execute trades they otherwise would have cancelled to ensure they do not run afoul of the anti-spoofing statute.[192] This, when combined with the fact that these traders lack complete information, makes it obvious that major inefficiencies are occurring within the derivatives market. Finally, the lack of enforcement also leads to illiquidity in the market.[193] Spoofing creates a fraudulent price for a given contract, and also ensures the bid-ask spread never narrows to the point where a spoofer's bid or offer is hit.[194] This affects other traders because they must decide whether to wait for the price to return to its original level, or enter the market at the new, sham price.[195] Should these traders refuse to enter the manipulated market, there will be less bids and offers, ultimately leading to the execution of fewer trades. Therefore, finding a counterparty becomes increasingly difficult, cash exits the market, and market participants are forced to sell at a substantial loss.[196]

When viewed at a macroeconomic level it becomes clear that spoofing leads to major market inefficiencies. If the regulatory status quo is maintained, these problems will only worsen, leading to a derivatives market where no participant feels comfortable that the price for a given contract is accurate.

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190. MILLER & SHORTER, *supra* note 24, at 7.

191. *Market Efficiency*, INVESTOPEDIA, http://www.investopedia.com/terms/m/marketefficiency.asp (last visited Dec. 28, 2016).

192. Ren, *supra* note 138.

193. *Market Liquidity*, INVESTOPEDIA, http://www.investopedia.com/terms/l/liquidity.asp (last visited Dec. 28, 2016).

194. Rooney, *supra* note 105.

195. Montgomery, *supra* note 10.

196. Thijs Markwat et al., *The Ins and Outs of Investing in Illiquid Assets*, ROBECO (July 2015), at 3–4, https://www.robeco.com/media/8/a/5/8a530cd272408d86a2c552fd04909629_20150922-the-ins-and-outs-of-investing-in-illiquid-assets_tcm17-1887.pdf.

B. The Beneficial Impact of Regulatory Decentralization

Though the current regulatory scheme has failed to protect market participants, the derivatives market is not doomed to be full of fraudulent traders illegally creating fraudulent prices. The enforcement mechanisms necessary to properly identify and prosecute spoofers are already in place, but the appropriate authorities do not have the power to use these mechanisms.

Exchanges are currently in the best position to properly monitor the markets to ensure no manipulation is occurring. Exchanges have access to real-time market data the CFTC cannot currently obtain.[197] In addition, exchanges can implement cutting edge analytics software, such as the software programs created by Neurensic and Vertex.[198] These programs would allow the exchanges to largely automate enforcement. Exchanges can enforce their own trading regulations and have monetary penalties in place to properly deter spoofers. Accordingly, decentralizing the regulatory scheme is the best possible way to prevent spoofing.

The CFTC would also benefit from decentralization because it could focus its limited resources on the most egregious spoofing cases. Spoofing cases involving low gains could be handled by the exchanges, while major cases could be handled by the CFTC.[199] Additionally, this increased enforcement will also lead to enhanced market efficiency and liquidity, leading to a derivatives market in which participants know the information they are trading on is accurate. Informed investors trading in an efficient and liquid market is beneficial because efficiency results in proper asset valuations and deters asset bubbles.[200] Without efficiency, assets can become overvalued and lead to situations such as the dot-com bubble or housing market bubble.[201] As seen when those bubbles burst, financial institutions can fail, asset prices can slump, and investors can lose money. Accordingly, appropriate steps, such as decentralizing spoofing regulation, must be taken.

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197. *See CME Group Overview*, CME GROUP (2016), at 1–2, http://www.cmegroup.com/company/history/ (last visited Dec. 29, 2016).

198. VERTEX, *supra* note 136; NEURENSIC, *supra* note 139.

199. Complaint at 2, 8, CFTC v. Nav Sarao Futures Ltd. PLC, No. 15-cv-03398 (N.D. Ill. Apr. 17, 2015).

200. *What is an Efficient Market and How Does it Affect Individual Investors?*, INVESTOPEDIA, http://www.investopedia.com/ask/answers/05/marketefficiency.asp (last visited Mar. 4, 2017).

201. *Id.*

V. Conclusion

The anti-spoofing statute in Dodd-Frank is not an effective tool for monitoring and prosecuting high frequency traders in modern derivatives markets. Not only does the statute fail to provide the necessary tools to detect spoofing, but it also directly leads to inefficiency and illiquidity within the derivatives markets. Derivatives traders are often forced to enter into contracts while relying on incomplete or misleading information; some even step out of the market due to manipulated contract prices. However, there is a solution to these complex problems. The CFTC should decentralize its enforcement scheme, giving more power to the exchanges to properly detect and enforce spoofing occurrences. Given the exchanges' vastly superior access to market data and financial resources, exchanges are in the best position to police the markets and deter spoofers. Changing the way spoofing regulations are enforced will increase liquidity, market efficiency, and competition in the derivatives markets.

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