

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

IN RE FOREIGN EXCHANGE
BENCHMARK RATES ANTITRUST
LITIGATION

ECF CASE

No. 1:13-cv-07789-LGS

JURY TRIAL DEMANDED

THIRD CONSOLIDATED AMENDED CLASS ACTION COMPLAINT

REDACTED

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Plaintiffs Aureus Currency Fund, L.P., The City of Philadelphia, Board of Pensions and Retirement, Employees' Retirement System of the Government of the Virgin Islands, Employees' Retirement System of Puerto Rico Electric Power Authority, Fresno County Employees' Retirement Association, Haverhill Retirement System, Oklahoma Firefighters Pension and Retirement System, State-Boston Retirement System, Syena Global Emerging Markets Fund, LP, Tiberius OC Fund, Ltd., Value Recovery Fund L.L.C., United Food and Commercial Workers Union and Participating Food Industry Employers Tri-State Pension Fund; Systrax Corporation, J. Paul Antonello, Marc G. Federighi, Thomas Gramatis, Doug Harvey, Izee Trading Company, John Kerstein, Michael Melissinos, Mark Miller, Robert Miller, Richard Preschern d/b/a Preschern Trading, Peter Rives, Michael J. Smith, Jeffrey Sterk, and, Kimberly Sterk make these allegations against Defendants based on personal knowledge as to their own actions and on information and belief as to other matters.

NATURE OF THE ACTION

1. This class action alleges Defendants conspired to fix the prices of currencies in the foreign exchange (“FX”) or foreign currency market.¹ It is brought to recover for injuries to Plaintiffs and members of the Class caused by Defendants’ violations of Sections 1 and 3 of the Sherman Antitrust Act, 15 U.S.C. §§1, 3, and violations of the Commodity Exchange Act, 7 U.S.C. §§1 *et. seq.*

¹ Acronyms, abbreviations, terms, and slang expressions are defined in Appendix 1, Glossary of Foreign Exchange Terms.

2. The FX market is the world's largest and most actively traded financial market. In April 2013, trading in the global FX market averaged \$5.3 trillion per day,² and, in the domestic market, FX trading averaged \$1.263 trillion per day.³

3. Defendants are the dominant dealers in the FX market, having a combined global market share of over 90%.⁴ The OTC Plaintiffs and members of the OTC Class are Defendants' direct customers for FX Instruments.⁵ The Exchange Plaintiffs and members of the Exchange Class are persons who transacted in FX Instruments through an exchange.

4. The FX market revolves around spot transactions. These transactions involve the outright exchange of currencies between two counterparties on a value date that is within two bank business days' time. Spot transactions account for approximately half of all FX volume in the United States; roughly \$620 billion per day.⁶

5. Spot transactions determine the pricing of and affect other FX Instruments. In OTC trading, spot prices impact the pricing of outright forwards, FX swaps, and FX options. These are instruments Defendants sell directly to their customers. Spot transactions also directly impact the pricing of FX Instruments traded on exchanges, including futures contracts and

² Bank for International Settlements, Triennial Central Bank Survey, Global foreign exchange market turnover in 2013 (February 2014) (<https://www.bis.org/publ/rpfx13fxt.pdf>), at Table 1 [hereinafter BIS Triennial Bank Survey 2013].

³ Federal Reserve Bank of New York, The Foreign Exchange and Interest Rate Derivatives Markets: Turnover in the United States, April 2013 (<http://nyfed.org/1dnmTlx>), at 3 [hereinafter Fed Triennial Bank Survey 2013].

⁴ Euromoney FX Survey 2013: Overall Results.

⁵ "FX Instruments" include FX spot transactions, outright forwards, FX swaps, FX options, FX futures contracts, options on FX futures contracts, and other instruments traded in the FX market.

⁶ Fed Triennial Bank Survey 2013, at 3.

options on futures contracts. The link between spot prices and FX Instruments traded on exchanges is clear and well known.

6. Beginning at least as early as 2003 and continuing through 2013, Defendants conspired with each other to fix prices in the FX market. Through the daily use of multiple chat rooms with incriminating names such as “The Cartel,” “The Bandits’ Club,” and “The Mafia,” Defendants communicated directly with each other to coordinate their: (i) fixing of spot prices; (ii) manipulating FX benchmark rates; and (iii) exchanging key confidential customer information in an effort to trigger client stop loss orders and limit orders. Defendants’ conspiracy affected dozens of currency pairs, including the seven pairs with the highest market volume. And due to the importance of spot prices, Defendants’ conspiracy impacted all manner of FX Instruments, including those trading both OTC and on exchanges.

7. In a spot transaction, a Defendant quotes its customer a “bid” (the price it will buy currency) and an “ask” (the price it will sell currency). The difference between the bid and the ask is called the bid/ask spread or simply the spread.

8. The spread is one way in which a Defendant is compensated as a market maker for spot transactions. Defendants want to buy low and sell high. Defendants want wider spreads. Customers, however, want narrower spreads. Narrower spreads mean customers pay lower prices when buying currency and receive higher prices when selling currency. Thus, collusively widening the spread directly injures customers by forcing them to pay more or receive less in a given spot transaction.

9. Defendants conspired to fix spot prices by agreeing to artificially widen spreads quoted to customers. There are thousands of communications involving multiple Defendants

reflecting discussions about FX spreads. These communications demonstrate that Defendants coordinated the spreads they quoted to customers.

10. Defendants also conspired to fix key FX benchmark rates, known generally as “Fixes.” The most widely used Fixes are the WM/Reuters Closing Spot Rates and the European Central Bank’s Fixing Rates. Chat room communications demonstrate Defendants exchanged confidential customer information and coordinated their trading to manipulate these key rates.

11. Defendants engaged in additional collusive conduct. Defendants exchanged information about the prices at which their respective customers had stop-loss orders and limit orders for the purpose of coordinating their trading to trigger these pricing thresholds. Defendants exploited these orders by manipulating prices to swing to the price at which the stop-loss or limit order is triggered.

12. The existence of a cartel to fix the prices in the FX market is now beyond dispute. The United States Department of Justice (“DOJ”) has an active and ongoing criminal investigation into Defendants’ conduct. Four Defendants: Barclays Bank PLC, Citicorp, JPMorgan Chase & Co., and RBS have already pled guilty to conspiring to violate the antitrust laws. Defendant UBS sought amnesty and has provided the DOJ and Plaintiffs with evidence of Defendants’ conspiracy.⁷ The Commodity Futures Trading Commission (“CFTC”) is investigating Defendants’ conduct, resulting in adverse findings of facts and billions of dollars in fines. Other law enforcement and regulatory authorities around the world, including in the United States, Europe, Asia, Australia, New Zealand, South Africa, and South America, have

⁷ Defendant UBS AG entered a guilty plea to one count of wire fraud for its conduct in the submissions of benchmark interest rates, including LIBOR, EURIBOR, and TIBOR. This plea was entered because the DOJ found that UBS’ conduct in the FX market violated its pre-existing non-prosecution agreement for its LIBOR-related conduct. DOJ UBS Plea Agreement, May 20, 2015 (<http://www.justice.gov/file/440521/download>).

open and active investigations into Defendants' conduct in the FX market. A number of Defendants are cooperating with authorities in these investigations by producing voluminous documents, including chat room transcripts and other conspiratorial communications. As a direct result of these global investigations, Defendants have terminated and suspended numerous personnel with supervisory authority over their FX operations.

13. Defendants' longstanding conspiracy reflected a culture of increasing profits at the expense of the very integrity of the FX market. As one Barclays employee bluntly wrote "*if you aint cheating, you aint trying.*"⁸ Defendants' conspiracy to fix prices in the FX market impacted the pricing of all FX Instruments, inflicting severe financial harm on Plaintiffs and members of the Classes.

JURISDICTION, VENUE, AND COMMERCE

14. This Court has subject matter jurisdiction under Sections 4 and 16 of the Clayton Antitrust Act, 15 U.S.C. §§15 and 26(a), and 28 U.S.C. §§1331 and 1337 and Section 22 of the Commodity Exchange Act, 7 U.S.C. §25.

15. Defendants' conduct was within the flow of, was intended to, and did, in fact, have a substantial effect on the interstate commerce of the United States, including in this District. During the Class Period, Defendants used the instrumentalities of interstate commerce, including interstate wires and the U.S. mail, to effectuate their illegal scheme.

16. The Court has personal jurisdiction over each Defendant, because Defendants' collusive and manipulative acts took place, in substantial part, in New York specifically and in the United States generally. These acts were conducted by persons and entities subject to the

⁸ N.Y. Dept. of Fin. Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law §§44 and 44-a, ¶47 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>) (emphasis added).

laws of the United States, including New York, as well as other states and territories. Each Defendant has continuously and systematically entered into FX transactions, including spot transactions, forward contracts, futures contracts, and options contracts in this District and throughout the United States. Defendants' conspiracy was directed at, and had the intended effect of, causing injury to persons residing in, located in, or doing business in this District and throughout the United States. These connections between the alleged conduct and New York are demonstrated herein.

17. Venue is proper in this District pursuant to Sections 4, 12, and 16 of the Clayton Antitrust Act, 15 U.S.C. §§15, 22, and 26, as well as Section 22(c) of the Commodity Exchange Act, 7 U.S.C. §25(c), and 28 U.S.C. §1391(b), (c), and (d). One or more of the Defendants resides, transacts business, is found, or has agents in this District, a substantial part of the events giving rise to Plaintiffs' claims arose in this District, and a substantial portion of the affected interstate trade and commerce described herein has been carried out in this District.

PARTIES

PLAINTIFFS

18. Plaintiff Aureus Currency Fund, L.P. ("Aureus") is an investment fund based in Santa Rosa, California. Aureus engaged in FX spot and outright forward transactions directly with Defendant Morgan Stanley during the Class Period, and has been injured in its business or property by reason of Defendants' violations of law as alleged herein.

19. The City of Philadelphia, Board of Pensions and Retirement is a municipal corporation organized under the laws of the Commonwealth of Pennsylvania and the Philadelphia Home Rule Charter and is a political subdivision of the Commonwealth of Pennsylvania. The Board of Pensions and Retirement is an independent board of the City of Philadelphia, Board of Pensions and Retirement under the Philadelphia Home Rule Charter. The

Board of Pensions and Retirement is charged with the maintenance of the retirement system for all City employees. The City of Philadelphia, Public Employees Retirement System, which is maintained by the Board of Pensions and Retirement, is funded by the City of Philadelphia and employees of the City. Plaintiff the City of Philadelphia, Board of Pensions and Retirement (“Philadelphia Retirement”) engaged in FX spot and outright forward transactions directly with Defendants Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, RBC, RBS, Société Générale, and UBS during the Class Period, and has been injured in its business or property by reason of Defendants’ violations of law as alleged herein.

20. Plaintiff Employees’ Retirement System of the Government of the Virgin Islands (“Virgin Islands”) is a defined benefit pension fund plan for officials and employees of the Government of the Virgin Islands and for their dependents and beneficiaries. It is one of the oldest pension systems under the American flag. Virgin Islands engaged in FX spot transactions directly with Defendants Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, RBS, Société Générale, and UBS during the Class Period, and has been injured in its business or property by reason of Defendants’ violations of law as alleged herein.

21. Plaintiff Employees’ Retirement System of Puerto Rico Electric Power Authority (“ERS-PREPA”) is a defined benefit pension fund plan for officials and employees of the Puerto Rico Electric Power Authority and for their dependents and beneficiaries. As of December 31, 2013, ERS-PREPA had \$1.384 billion of assets under management for the benefit of 11,203 retirees and beneficiaries and 8,317 active employees. ERS-PREPA engaged in FX spot and outright forward transactions directly with Defendants Bank of America, Barclays, BNP Paribas,

Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, Morgan Stanley, RBS, and UBS during the Class Period, and has been injured in its business or property by reason of Defendants' violations of law as alleged herein.

22. Plaintiff Fresno County Employees' Retirement Association ("FCERA") has net assets of \$4.01 billion and makes frequent foreign currency transactions in connection with the nearly \$1 billion in foreign equities and foreign fixed income assets in its portfolio. FCERA engaged in FX spot and outright forward transactions directly with Defendants Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, RBS, and UBS during the Class Period, and has been injured in its business or property by reason of Defendants' violations of law as alleged herein.

23. Plaintiff Haverhill Retirement System ("Haverhill") is located in the State of Massachusetts and is a defined benefit pension fund providing retirement and disability benefits to employees of the City of Haverhill, Massachusetts. Haverhill engaged in FX spot and outright forward transactions directly with Defendants Bank of America, Barclays, Deutsche Bank, Goldman Sachs, HSBC, Morgan Stanley, RBS, and UBS during the Class Period, and has been injured in its business or property by reason of Defendants' violations of law as alleged herein.

24. Plaintiff Oklahoma Firefighters Pension and Retirement System ("Oklahoma Firefighters") was established in 1980 to provide retirement and other specified benefits to qualified firefighters and their beneficiaries. Oklahoma Firefighters, headquartered in Oklahoma City, Oklahoma, oversees net assets in excess of \$1 billion on behalf of more than 21,000 beneficiaries. Oklahoma Firefighters engaged in FX spot and outright forward transactions directly with Defendants Bank of America, Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, and UBS during the Class Period, and has

been injured in its business or property by reason of Defendants' violations of law as alleged herein.

25. Plaintiff State-Boston Retirement System ("Boston Retirement") is a defined-benefit governmental pension plan located in Massachusetts. As of June 2013, Boston Retirement managed more than \$3.5 billion in assets on behalf of 37,000 beneficiaries associated with the City of Boston, the Boston Redevelopment Authority, the Boston Housing Authority, the Boston Water and Sewer Commission, the Boston Public Health Commission, and others. Boston Retirement engaged in FX spot, outright forward, and FX swap transactions directly with Defendants Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, RBS, and UBS during the Class Period, and has been injured in its business or property by reason of Defendants' violations of law as alleged herein.

26. Plaintiff Syena Global Emerging Markets Fund, LP ("Syena") is a hedge fund located at 125 Greenwich Ave., Greenwich, Connecticut. Syena engaged in FX spot transactions directly with Defendant Goldman Sachs during the Class Period, and has been injured in its business or property by reason of Defendants' violations of law as alleged herein.

27. Plaintiff Tiberius OC Fund, Ltd. ("Tiberius") is a global investment fund with a registered address of 42 North Church Street, Grand Cayman, Cayman Islands. Tiberius engaged in outright forward transactions directly with Defendant Morgan Stanley during the Class Period, and has been injured in its business or property by reason of Defendants' violations of law as alleged herein.

28. Plaintiff Value Recovery Fund L.L.C. ("VRF") is a Delaware limited liability Company, with a registered address of 2711 Centerville Road, Suite 400, Wilmington, Delaware

19808 and offices in Connecticut. VRF has standing, by virtue of a valid assignment from Camulos Master Fund LP (“Camulos”), to assert the federal antitrust claim herein. Camulos engaged in FX spot, outright forward, and FX swap transactions directly with Defendants Barclays, Goldman Sachs, and Morgan Stanley during the Class Period, and has been injured in its business or property by reason of Defendants’ violations of law as alleged herein.

29. Plaintiff United Food and Commercial Workers Union and Participating Food Industry Employers Tri-State Pension Fund (“United Food”) is a multi-employer and multi-union employee benefit plan based in Plymouth Meeting, Pennsylvania. United Food engaged in FX spot and outright forward transactions directly with Defendants Bank of America, Barclays, Credit Suisse, Deutsche Bank, Morgan Stanley, and UBS during the Class Period, and has been injured in its business or property by reason of Defendants’ violations of law as alleged herein.

30. Plaintiff Systrax Corporation (“Systrax”) is a private investment fund located in Queretaro, Mexico and Buenos Aires, Argentina. During the Class Period, Systrax was a Corporation incorporated in the British Virgin Islands with FX trades in the United States. Systrax engaged in FX spot transactions directly with Defendant UBS. Systrax also entered into exchange-traded FX Instruments, including Australian dollar, euro, Swiss franc, and Japanese yen, FX futures and/or options contracts at artificial prices proximately caused by Defendants’ manipulative conduct. Systrax has been injured in its business or property by reason of Defendants’ violations of law as alleged herein.

31. Plaintiffs Aureus, Philadelphia Retirement, Virgin Islands, ERS-PREPA, FCERA, Haverhill, Oklahoma Firefighters, Boston Retirement, Syena, Tiberius, URF, United Food, and Systrax are collectively defined as the “OTC Plaintiffs.”

32. Plaintiff J. Paul Antonello is an individual residing in Skokie, Illinois. During the Class Period, Mr. Antonello entered into exchange-traded FX Instruments, including Swiss franc, euro, Canadian dollar, Japanese yen, British pounds, and Australian dollar FX futures and/or options contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Antonello was injured in his business or property.

33. Plaintiff Marc G. Federighi is an individual residing in Barrington Hills, Illinois. During the Class Period, Mr. Federighi entered into exchange-traded FX Instruments, including euro and Japanese yen FX futures contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Federighi was injured in his business or property.

34. Plaintiff Thomas Gramatis is an individual residing in Hinsdale, Illinois. During the Class Period, Mr. Gramatis entered into exchange-traded FX Instruments, including euro FX futures and/or options contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Gramatis was injured in his business or property.

35. Plaintiff Doug Harvey is an individual residing in Chicago, Illinois. During the Class Period, Mr. Harvey entered into exchange-traded FX instruments, including Australian dollar and Canadian dollar FX futures and/or options contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Harvey was injured in his business or property.

36. Plaintiff Izee Trading Company ("Izee") is a futures and options trading company with its principal place of business in Highland Park, Illinois. During the Class Period, Izee entered into exchange-traded FX Instruments, including euro FX futures and/or options contracts

at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Izee was injured in its business or property.

37. Plaintiff John Kerstein is an individual residing in Riverwoods, Illinois. During the Class Period, Mr. Kerstein entered into exchange-traded FX Instruments, including euro FX futures and/or options contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Kerstein was injured in his business or property.

38. Plaintiff Michael Melissinos is an individual residing in Matawan, New Jersey. Mr. Melissinos entered into exchange-traded FX Instruments, including euro, British pound, Japanese yen, Australian dollar, New Zealand dollar, Canadian dollar and Swiss franc. FX futures and/or options at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Melissinos was injured in his business or property.

39. Plaintiff Mark Miller is an individual residing in Geneva, Illinois. During the Class Period, Mr. Miller entered into exchanged-traded FX Instruments, including euro FX futures and/or options contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Miller was injured in his business or property.

40. Plaintiff Robert Miller is an individual residing in Oak Brook, Illinois. During the Class Period, Mr. Miller entered into exchange-traded FX Instruments, including euro FX futures contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Miller was injured in his business or property.

41. Plaintiff Richard Preschern d/b/a Preschern Trading ("Preschern") is an individual residing in Evanston, Illinois. During the Class Period, Preschern entered into exchange-traded FX Instruments, including euro, Japanese yen, and Swiss franc FX futures and options contracts

at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Preschern was injured in its business or property.

42. Plaintiff Peter Rives is an individual residing in Naperville, Illinois. During the Class Period, Mr. Rives entered into exchange-traded FX Instruments, including euro FX futures contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Rives was injured in his business or property.

43. Plaintiff Michael J. Smith is an individual residing in Northbrook, Illinois. During the Class Period, Mr. Smith entered into exchange-traded FX Instruments, including Canadian dollar, euro, Australian dollar, Mexican peso, Japanese yen, British pounds, and Swiss franc FX futures and/or options contracts at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Smith was injured in his business or property.

44. Plaintiff Jeffrey Sterk is an individual residing in Encinitas, California. Mr. Sterk entered into exchange-traded FX Instruments, including euro, British pounds, Japanese yen, Australian dollar, and New Zealand dollar. FX futures and/or options at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Mr. Sterk was injured in his business or property.

45. Plaintiff Kimberly Sterk is an individual residing in Encinitas, California. Ms. Sterk entered into exchange-traded FX Instruments, including euro, British pounds, Japanese yen, Australian dollar, and New Zealand dollar. FX futures and/or options at artificial prices proximately caused by Defendants' manipulative conduct. As a result, Ms. Sterk was injured in her business or property.

46. Plaintiffs Antonello, Federighi, Gramatis, Harvey, Izee, Kerstein, Melissinos, Mark Miller, Robert Miller, Preschern, Rives, Smith, Jeffrey Sterk, Kimberly Sterk, and Systrax are collectively known as the “Exchange Plaintiffs.”

DEFENDANTS

47. Bank of America: Defendant Bank of America Corporation is a Delaware corporation headquartered at 100 North Tryon Street, Charlotte, North Carolina 28255. Bank of America Corporation is a multi-national banking and financial services corporation with its investment banking division located at the Bank of America Tower, One Bryant Park, 1111 Avenue of the Americas, New York, New York 10036. Defendant Bank of America, N.A. is a federally-chartered national banking association headquartered at 101 South Tyron Street, Charlotte, North Carolina 28255, and is an indirect, wholly-owned subsidiary of Bank of America Corporation. Defendant Merrill Lynch, Pierce, Fenner & Smith Inc. is a corporation organized under the law of Delaware with its principal place of business in New York, New York and is a wholly-owned subsidiary of Bank of America Corporation. Merrill Lynch, Pierce, Fenner & Smith Inc. is registered as a broker-dealer with the SEC and as a registered futures commission merchant with the CFTC. Merrill Lynch, Pierce, Fenner & Smith Inc. is also a clearing member of the Chicago Mercantile Exchange. Defendants Bank of America Corporation, Bank of America, N.A., and Merrill Lynch, Pierce, Fenner & Smith Inc. are referenced collectively in this Complaint as “Bank of America.”

48. Bank of Tokyo-Mitsubishi: Defendant The Bank of Tokyo Mitsubishi UFJ Ltd. (“BOTM”) is a Japanese company headquartered in Tokyo, Japan. BOTM, New York Branch is headquartered at 1251 Avenue of the Americas, New York, New York 10002. BOTM’s New

York Branch is BOTM's "traditional hub" for FX trading.⁹ The New York Department of Financial Services ("NYDFS") lists BOTM as a foreign bank licensed to do business in New York through BOTM, New York Branch.¹⁰ As of March 31, 2013, BOTM, NY Branch had \$101 billion in total assets.¹¹

49. Barclays: Defendant Barclays Bank PLC is a British public limited company headquartered at 1 Churchill Place, London E14 5H, England. Barclays Bank PLC is licensed by the NYDFS with a registered address at 745 Seventh Avenue, New York, New York 10019 and a foreign representative office at One MetLife Plaza, 27-01 Queens Plaza North, Long Island City, New York 11101. Defendant Barclays Capital Inc. is a wholly-owned subsidiary of Barclays Bank PLC and engages in investment banking, wealth management, and investment management services. It is registered with the CFTC as a Futures Commission Merchant and is also a clearing member of the CME. Defendants Barclays Bank PLC and Barclays Capital Inc. are referenced collectively in this Complaint as "Barclays."

⁹ See Shigeru Sato and Takako Taniguchi, *Forex, fixed-income traders: Mitsubishi UFJ is hiring*, BLOOMBERG (April 23, 2012) (<http://m.futuresmag.com/2012/04/23/forex-fixed-income-traders-mitsubishi-ufj-is-hirin>).

¹⁰ NYDFS licenses "Foreign Bank Branches," which it defines as follows: "A Foreign Bank Branch is an office of a foreign bank that is licensed by the Superintendent to conduct banking business in New York. A branch may exercise the same powers as a state-chartered commercial bank, including accepting deposits, making loans, issuing letters of credit, dealing in foreign exchange, making acceptances and, if authorized, exercising fiduciary powers. There are two types of foreign branches – insured and uninsured. An insured branch may conduct a retail banking business in New York, making consumer loans and accepting consumer deposits. An uninsured branch may accept deposits only as authorized by the FDIC Rules, with disclosure of their non-insured status. Foreign branches, agencies and representative offices are covered in Article V-B of the Banking Law. Since 1991, they have also been subject to supervision by the Federal Reserve Board. Since the FDIC Foreign Bank Supervision Enhancement Act (FBSEA) was passed in 1991, no new insured branches have been allowed." (<http://www.dfs.ny.gov/about/whowesupervise.htm#foreignbranch>).

¹¹ See *Public: Mitsubishi UFJ Fin. Group, Inc. Resolution Plan* (<http://www.federalreserve.gov/bankinforeg/resolution-plans/mitsubishi-fin-3g-20131231.pdf>).

50. BNP Paribas: Defendant BNP Paribas Group is a French bank and financial services company headquartered in Paris, France, at 16 Boulevard des Italiens, Paris, France 75009. BNP Paribas Group is licensed by the New York Department of Financial Services with a registered address at 787 Seventh Avenue, New York, New York 10019. BNP Paribas North America, Inc. is a Delaware corporation headquartered at 787 7th Avenue, New York, New York 10019. BNP Paribas North America, Inc. provides corporate, investment banking, and securities brokerage activities and is an affiliate of BNP Paribas Group. Defendant BNP Paribas Securities Corp. is a Delaware corporation with its principal place of business in New York, New York. BNP Paribas Securities Corp. is a wholly-owned subsidiary of BNP Paribas North America, Inc. BNP Paribas Securities Corp. is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. BNP Paribas Securities Corp. is also a clearing member of the CME. BNP Paribas Prime Brokerage, Inc. is a Delaware corporation with its principal place of business in New York, New York. BNP Paribas Prime Brokerage, Inc. is registered as a futures commission merchant with the CFTC. Defendants BNP Paribas Group, BNP Paribas North America, Inc., BNP Paribas Securities Corp., and BNP Prime Brokerage, Inc. are referenced collectively in this Complaint as “BNP Paribas.”

51. Citigroup: Defendant Citigroup Inc. is a Delaware corporation headquartered at 399 Park Ave, New York, New York 10022. Defendant Citibank, N.A. (“Citibank”) is a federally chartered national banking association headquartered at 399 Park Avenue, New York, New York 10022 and is a wholly-owned subsidiary of Defendant Citigroup Inc. Defendant Citicorp is a financial services holding company organized and existing under the laws of Delaware. Defendant Citigroup Global Markets Inc. is a wholly-owned subsidiary of Citigroup organized and existing under the laws of New York, with its principal place of business in New

York, New York. Citigroup Global Markets Inc. is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. Citigroup Global Markets Inc. is also a clearing member of the CME. Defendants Citigroup Inc., Citibank, N.A., Citicorp, and Citigroup Global Markets Inc. are referenced collectively in this Complaint as “Citigroup.”

52. Credit Suisse: Defendant Credit Suisse Group AG is a Swiss holding company headquartered in Zurich, Switzerland. Defendant Credit Suisse AG is a wholly-owned subsidiary of Credit Suisse Group AG and is a bank organized under the laws of Switzerland with principal place of business in Zurich, Switzerland. Credit Suisse AG is licensed by the NYDFS and operates a foreign branch with a registered address at 11 Madison Avenue, New York, NY 10010-3698. Defendant Credit Suisse Securities (USA) LLC is a Delaware limited liability company headquartered at 11 Madison Avenue, New York, New York 10010, and is a wholly-owned subsidiary of Credit Suisse Group AG. Credit Suisse Securities (USA) LLC is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. Credit Suisse Securities (USA) LLC is also a clearing member of the CME. Defendants Credit Suisse Group AG, Credit Suisse AG, and Credit Suisse Securities (USA) LLC are referenced collectively in this Complaint as “Credit Suisse.”

53. Deutsche Bank: Defendant Deutsche Bank AG is a German financial services company headquartered in Frankfurt, Germany. Defendant Deutsche Bank AG is licensed by the NYDFS with a registered address at 60 Wall Street, New York, New York 10005-2858. Defendant Deutsche Bank Securities Inc. is a Delaware corporation with principal place of business in New York, New York. Deutsche Bank Securities Inc. is an indirect wholly-owned subsidiary of Deutsche Bank AG and is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. Deutsche Bank Securities Inc. is a clearing

member of the CME. Defendants Deutsche Bank AG and Deutsche Bank Securities Inc. are referenced collectively in this Complaint as “Deutsche Bank.”

54. Goldman Sachs: Defendant The Goldman Sachs Group, Inc. is a Delaware corporation headquartered at 200 West Street, New York, New York 10282. The Goldman Sachs Group, Inc. is a bank holding company and a financial holding company. Defendant Goldman, Sachs & Co. is a wholly-owned subsidiary of The Goldman Sachs Group, Inc. and is its principal operating subsidiary in the United States. Goldman, Sachs & Co. is located at 200 West Street, New York, New York 10282. Goldman, Sachs & Co. is a clearing member of the CME. Defendants The Goldman Sachs Group, Inc. and Goldman, Sachs & Co. are referenced collectively in this Complaint as “Goldman Sachs.”

55. HSBC: Defendant HSBC Holdings PLC is a United Kingdom public limited company headquartered in London, England. Defendant HSBC Bank PLC is a United Kingdom public limited company headquartered in London, England and is a wholly-owned subsidiary of HSBC Holdings PLC. Defendant HSBC North America Holdings, Inc. is a Delaware corporation headquartered in New York, and is a wholly-owned subsidiary of HSBC Holdings PLC. Defendant HSBC North America Holdings, Inc. is the holding company for HSBC Holding PLC’s operations in the United States. Defendant HSBC Bank USA, N.A., is a national banking association with its principal place of business in New York, New York, and is an indirect wholly-owned subsidiary of HSBC North America Holdings, Inc. Defendant HSBC Securities (USA) Inc. is a Delaware corporation with its principal place of business in New York, New York. HSBC Securities (USA) Inc. is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. HSBC Securities (USA) Inc. is also a clearing member of the CME. Defendants HSBC Holdings PLC, HSBC Bank PLC, HSBC

North America Holdings, Inc., HSBC Bank USA, N.A., and HSBC Securities (USA) Inc. are referenced collectively in this Complaint as “HSBC.”

56. JPMorgan: Defendant JPMorgan Chase & Co. is a Delaware corporation headquartered at 270 Park Ave., 38th Floor, New York, New York 10017. Defendant JPMorgan Chase Bank, N.A., is a federally-chartered national banking association headquartered at 270 Park Avenue, 38th Floor, New York, New York 10017, and is a wholly-owned subsidiary of Defendant JP Morgan Chase & Co. Defendants JPMorgan Chase & Co. and JPMorgan Chase Bank, N.A., are referenced collectively in this Complaint as “JPMorgan.”

57. Morgan Stanley: Defendant Morgan Stanley is a Delaware corporation headquartered at 1585 Broadway, New York, New York 10036. Defendant Morgan Stanley & Co., LLC is a limited liability company organized and existing under the laws of Delaware with its principal place of business in New York, New York. Morgan Stanley & Co., LLC is a wholly-owned subsidiary of Morgan Stanley. It is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. Morgan Stanley & Co., LLC is also a clearing member of the CME. Defendant Morgan Stanley & Co. International plc is a United Kingdom public limited company with headquarters at 25 Cabot Square, Canary Wharf, London E14 4QA England. Defendants Morgan Stanley, Morgan Stanley & Co., LLC, and Morgan Stanley & Co. International plc are referenced collectively in this Complaint as “Morgan Stanley.”

58. RBC: Defendant RBC Capital Markets LLC (“RBC”) is a Minnesota limited liability company with its principal place of business and headquarters located at Three World Financial Center, 200 Vesey Street, 5th Floor, New York, New York 10281. Prior to 2010, RBC was RBC Capital Markets Corporation, which was also a Minnesota corporation headquartered

in New York, New York. RBC is registered as a broker-dealer with the SEC and is a Futures Commission Merchant with the CFTC. RBC is also a member of the New York Stock Exchange and a member of the Financial Industry Regulatory Authority. RBC is “ranked among the top banks globally in terms of revenues . . . in both major and emerging market currencies.”¹² RBC sells FX Instruments through its New York headquarters.

59. RBS: Defendant Royal Bank of Scotland Group PLC is a United Kingdom public limited company headquartered in Edinburgh, Scotland. Defendant Royal Bank of Scotland Group PLC is licensed by the NYDFS with a registered address at 340 Madison Avenue, New York, New York 10173. Defendant RBS Securities Inc. is a Delaware corporation headquartered at 600 Washington Boulevard, Stamford, Connecticut 06901. RBS Securities Inc. is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. RBS Securities Inc. is also a clearing member of the CME. Defendants Royal Bank of Scotland Group PLC and RBS Securities, Inc., are referenced collectively in this Complaint as “RBS.”

60. Société Générale: Defendant Société Générale S.A. (“SocGen”) is a financial services company headquartered in Paris, France. SocGen’s New York Branch is headquartered at 1221 Avenue of the Americas, New York, New York 10020. Defendant SocGen is licensed by the NYDFS with a registered address of 245 Park Avenue, New York, New York 10167. One of SocGen’s New York Branch’s “primary activities” is the sale of FX Instruments, and its heads of emerging market FX trading and G10 FX trading are based in New York.¹³

61. Standard Chartered: Defendant Standard Chartered Bank (“Standard Chartered”) is incorporated under the laws of England and Wales with headquarters in London. Standard

¹² (<http://www.rbccm.com/fic/cid-304290-html>).

¹³ See Miriam Siers, *Brooks departs Société Générale in New York*, FX WEEK (Feb. 28, 2011) (<http://www.fxweek.com/fx-week/news/2028898/brooks-departs-societe-generale-york>).

Chartered's New York Branch is licensed by the NYDFS with a registered address at 1094 Avenue of the Americas, No. 37, New York, New York 10036. Standard Chartered's New York Branch is the headquarters for Standard Chartered's Americas business and "primarily conducts a U.S. dollar clearing business," including the sale of FX Instruments.¹⁴ As of March 31, 2012, Standard Chartered's New York Branch held \$40.8 billion in assets. *Id.*

62. UBS: Defendant UBS AG is a Swiss company based in Basel and Zurich, Switzerland. Defendant UBS Securities LLC is a Delaware limited liability company headquartered at 677 Washington Blvd, Stamford, Connecticut 06901, and is a wholly-owned subsidiary of UBS AG. UBS Securities LLC is registered as a broker-dealer with the SEC and as a futures commission merchant with the CFTC. UBS Securities LLC is also a clearing member of the CME. Defendants UBS AG, UBS Group AG, and UBS Securities LLC are referenced collectively in this Complaint as "UBS."

63. "Defendant" or "Defendants" as used herein, includes, in addition to those named specifically above, all of the named Defendants' predecessors, including those merged with or acquired by the named Defendants and each named Defendant's wholly-owned or controlled subsidiaries or affiliates that played a material role in the unlawful acts alleged in this Complaint.

64. Whenever reference is made to any act of any corporation, the allegation means that the corporation engaged in the act by or through its directors, officers, employees, or agents while they were actively engaged in the management, direction, control, or transaction of the corporation's business or affairs.

¹⁴ N.Y. State Dept. of Fin. Services, *In the Matter of Standard Chartered Bank, New York Branch*, Order Pursuant to Banking Laws §39, at 6 (Aug. 6, 2012) (<http://www.dfs.ny.gov/about/ea/ea120806.pdf>).

65. Each of the Defendants named herein acted as the agent or joint-venturer of or for the other Defendants with respect to the acts, violations, and common course of conduct alleged herein.

66. Various other persons, firms, and corporations, that are unknown and not named as Defendants, have participated as co-conspirators with Defendants and have performed acts and/or made statements in furtherance of the conspiracy. Defendants are jointly and severally liable for the acts of their co-conspirators whether named or not named as Defendants in this Complaint.

CLASS ACTION ALLEGATIONS

67. Pursuant to Rule 23(a) and 23(b)(3) of the Federal Rules of Civil Procedure, OTC Plaintiffs bring this action on behalf of themselves and on behalf of the following “OTC Class”:

OTC Class: All persons who, between January 1, 2003 and December 31, 2013 (inclusive) entered into an FX Instrument¹⁵ directly with a Defendant, where such persons were either domiciled in the United States or its territories or, if domiciled outside the United States or its territories, transacted one or more FX instruments in the United States or its territories.

68. Pursuant to Rules 23(a) and 23(b)(3) of the Federal Rules of Civil Procedure, Exchange Plaintiffs bring this action on behalf of themselves and on behalf of the following “Exchange Class”:

Exchange Class: All persons who, between January 1, 2003 and December 31, 2013 (inclusive) entered into an FX Instrument on an exchange where such persons were either domiciled in the United States or its territories or, if domiciled outside the United States or its territories, entered into one or more FX Instruments on a U.S. exchange.

¹⁵ An “FX Instrument” is defined as any FX spot transaction, outright forward, FX swap, FX option, FX futures contract, an option on an FX futures contract, or other instrument traded in the FX market.

69. Both the OTC Class and the Exchange Class have the following exclusions:

Exclusions from both Classes: Specifically excluded from the Classes are Defendants and their co-conspirators; the officers, directors, or employees of any Defendant or co-conspirator; any entity in which any Defendant or co-conspirator has a controlling interest; any affiliate, legal representative, heir, or assign of any Defendant or co-conspirator, and any person acting on their behalf. Also excluded from these Classes are any judicial officer presiding over this action and the members of his/her immediate family and judicial staff, and any juror assigned to this action.

70. Ascertainability: The Classes are readily ascertainable and are those for which records should exist.

71. Numerosity: Due to the nature of the trade and commerce involved, Plaintiffs believe that there are thousands of geographically dispersed members of each Class, the exact number and their identities being known to Defendants and their co-conspirators.

72. Typicality: OTC Plaintiffs' claims are typical of the claims of the members of the OTC Class. Exchange Plaintiffs' claims are typical of the claims of the members of the Exchange Class. Plaintiffs and members of the Classes sustained damages arising out of Defendants' common course of conduct in violation of federal antitrust laws and the Commodity Exchange Act as alleged herein. The damages and injuries of each member of the Classes were directly caused by Defendants' wrongful conduct in violation of federal law.

73. Commonality: There are questions of law and fact common to one or both of the Classes, including, but not limited to:

- a. whether Defendants and their co-conspirators engaged in an agreement, combination, or conspiracy to fix, raise, elevate, maintain, or stabilize foreign currency bid/ask spreads in interstate commerce in the United States;
- b. whether Defendants and their co-conspirators engaged in manipulation of the Fixes and other FX benchmark rates in interstate commerce in the United States;

- c. the identity of the participants of the conspiracy or manipulative scheme;
- d. the duration of the conspiracy or manipulative scheme alleged herein and the acts performed by Defendants and their co-conspirators in furtherance thereof;
- e. whether the alleged conspiracy violated Sections 1 and 3 of the Sherman Act, 15 U.S.C. §§1 and 3;
- f. whether Defendants' conduct violated Section 22 of the Commodity Exchange Act, 7 U.S.C.; §25;
- g. whether Defendants acted to aid and abet in violation of the Commodity Exchange Act;
- h. whether Defendants' unlawful conduct caused cognizable legal injury under the Commodity Exchange Act;
- i. whether the conduct of Defendants and their co-conspirators, as alleged in this Complaint, caused injury to Plaintiffs and members of the Classes; and
- j. the appropriate measures of damages for each Class.

74. Adequacy: Plaintiffs will fairly and adequately protect the interests of the members of the Classes. Plaintiffs' interests are aligned with, and not antagonistic to, those of the other members of the Classes and Plaintiffs have retained counsel competent and experienced in the prosecution of class actions and antitrust litigation to represent themselves and the Classes.

75. Predominance: Questions of law or fact that are common to the members of the Classes predominate over any questions affecting only individual members of the Classes.

76. Superiority: A class action is superior to other available methods for the fair and efficient adjudication of this controversy. The prosecution of separate actions by individual members of the Classes would impose a heavy burden on the courts and Defendants and would create a risk of inconsistent or varying adjudications of the questions of law and fact common to the Classes. A class action, on the other hand, would achieve substantial economies of time, effort, and expense, and would assure uniformity of decision as to persons similarly situated,

without sacrificing procedural fairness or bringing about other undesirable results. Absent a class action, it would not be feasible for the vast majority of the members of the Classes to seek redress for the violations of law herein alleged.

FACT ALLEGATIONS

I. THE FX MARKET

A. Background

77. The FX market is the market in which currencies are bought and sold. It is the largest and most actively traded financial market in the world. According to the most recent Bank for International Settlements (“BIS”) Triennial Central Bank Survey,¹⁶ global trading in FX averaged \$5.3 trillion per day in April 2013, up from \$4.0 trillion in April 2010.¹⁷ U.S. trading in FX averaged \$1.263 trillion per day in April 2013, up from \$864 billion in April 2010.¹⁸

78. There are numerous participants in the FX market including dealers (such as Defendants), smaller or regional commercial and investment banks, securities houses, mutual funds, pension funds, hedge funds, proprietary trading firms, currency funds, money market funds, other investment funds, building societies, leasing companies, insurance companies, reinsurance companies, endowments, central banks, sovereign wealth funds, international

¹⁶ The BIS Triennial Central Bank Survey describes itself as “the most comprehensive source of information on the size and structure of global foreign exchange (FX) and OTC derivatives markets.” BIS, Triennial Central Bank Survey, Foreign exchange turnover in April 2013: preliminary global results (<https://www.bis.org/publ/rpfx13fx.pdf>) [hereinafter BIS, Triennial Bank Survey, Preliminary Results 2013], at 3. Central banks, including the Federal Reserve Bank of New York, and other authorities in 53 jurisdictions participated in the survey, collecting data from 1,300 banks and other financial institutions throughout the world. *Id.*

¹⁷ BIS Triennial Bank Survey, Preliminary Results 2013, at 3.

¹⁸ Fed Triennial Bank Survey 2013, at 1. This growth in FX trading was largely driven by growth in market participation by “other financial institutions,” which include pension funds, mutual funds, insurance companies, and hedge funds. *See Id.* at 3.

financial institutions of the public sector, retail aggregators, non-financial corporations, non-financial government entities, and private individuals.¹⁹

79. Trading in the FX market is done either over-the-counter (“OTC”) directly with a counterparty, such as a Defendant, or on a centralized exchange. During the Class Period, approximately 98% of FX trading occurred OTC.²⁰ The remaining trades are executed on exchanges, the most important of which is the Chicago Mercantile Exchange (“CME”).

80. Trading in the OTC FX market occurs 24 hours a day. The market opens on Monday at 7:00 a.m. in New Zealand. One hour later, Sydney, Australia opens. Trading continues throughout Asia as Tokyo, Hong Kong, and Singapore begin trading. Trading then shifts to Europe. One hour later, London opens. At midday London time, New York opens for trading. New York and London (the two largest FX trading centers) are open simultaneously for several hours, including at 4:00 p.m. London time (11:00 a.m. New York time). The FX trading day ends at 5:00 p.m. in New York for booking purposes. As New York’s day ends, a new trading day reopens in New Zealand. The FX trading week closes on Friday at 5:00 p.m. in New York. With the advent of electronic trading, it is possible to trade over the weekends.

81. The following chart graphically illustrates the 24-hour nature of the OTC market:

FX MARKET HOURS																								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
New Zealand																								
	Sydney																							
		Tokyo																						
			Hong Kong																					

¹⁹ *Id.* at 19.

²⁰ *Id.* at Table 1.

FX MARKET HOURS															

82. Similarly, FX trading on exchanges is available virtually 24 hours a day.²¹

83. Currencies are bought or sold in pairs.²² The price to buy or sell a given currency pair is reflected by its exchange rate. The term “currency pair” highlights the fact that all foreign exchange transactions are simultaneously the purchase of one currency and the sale of another.²³ In April 2013, the top three currency pairs accounted for over half of all FX market turnover globally: EUR/USD (24.1%), USD/JPY (18.3%), and GBP/USD (8.8%).²⁴ In April 2013, the U.S. dollar was on one side of 87% of all FX transactions globally²⁵ and on 89% of all FX transactions in the United States.²⁶

84. Participants in the FX market engage in several types of transactions. In OTC trading, three types of FX transactions account for approximately 95% of transactions in the FX market in the United States:²⁷

Spot – An agreement to exchange sums of currency at an agreed-on exchange rate on a value date that is within two bank business days’ time.

²¹ See, e.g., CME Group, FX Trading Hours (http://www.cmegroup.com/trading_hours/fx-hours.html).

²² Currency abbreviations are described in Appendix 2.

²³ David F. DeRosa, FOREIGN EXCHANGE OPERATIONS: SPOT FX TRANSACTIONS, at 25 (DEROSA RESEARCH 2013).

²⁴ BIS, Triennial Bank Survey, Preliminary Results 2013, at 3.

²⁵ *Id.* at Table 2.

²⁶ Fed Triennial Bank Survey 2013, at 4.

²⁷ *Id.* at 3-4.

Outright Forward – An agreement to exchange sums of currency at an agreed-on exchange rate on a value date that will usually be in more than two bank business days’ time. The exchange rate for a forward transaction is called the forward outright.

FX Swap – A combination of a spot transaction plus an outright forward done simultaneously, but in the opposite direction.

Two types of transactions are entered into through exchanges:

FX Futures – Standardized contracts trading on an exchange and calling for delivery of a specified quantity of a specified currency, or a cash settlement, on a specified date.

Options on FX Futures – Standardized contracts trading on an exchange, and upon exercise, calling for the establishment of an FX futures position.

85. The FX market revolves around spot transactions because spot rates are the foundation for pricing *all* FX Instruments. For example, the prices of outright forwards and FX swaps are derived from the underlying spot price. Every time the spot price moves, outright forward and FX swap prices move. An outright forward is the spot price plus the interest differential or “cost of carry.” The cost of carry is determined mathematically from the overall cost involved when lending one currency and borrowing another during the time period stretching from the spot date until the forward date. Outright forward rates are quoted in “swap points” (also called “forward points”), which are added (premium) or subtracted (discount) from the spot rate. Similarly, an FX swap is determined by the spot price, because it is a simultaneous spot transaction and an outright forward – a spot-forward swap.

86. Likewise, FX futures and options contracts traded on the CME and other exchanges track rates in the spot market at near parity after adjusting for the forward differential,

or adding or subtracting “forward points.”²⁸ In this regard, they are comparable to outright forwards.

87. The importance of spot FX transactions and the widespread use of spot prices throughout the financial system means that Defendants’ misconduct with respect to spot transaction pricing had far-reaching consequences affecting other types of FX Instruments and financial markets generally.²⁹

B. Spot Transactions

88. Spot transactions are the simple exchange of one currency for another. Spot transactions occur OTC, rather than through a central exchange. As a result, spot transactions depend on financial institutions, such as Defendants, to act as dealers willing to continuously buy and sell currencies. These dealers are known as “market makers” or “liquidity providers.”

89. A dealer in the FX spot market quotes prices at which the dealer stands ready to buy or sell the currency. A quote consists of a bid and an ask on a designated quantity of currency. The bid is the price at which the dealer is willing to buy the indicated quantity of currency. The ask is the price at which the dealer is willing to sell the indicated quantity of currency. Dealers generally provide price quotes to four decimal points, with the final digit known as a “percentage in point” or “pip.” The difference between the bid and ask is the “bid-ask spread” and is the primary way in which the dealer is compensated.

²⁸ *In the Matter of Citibank, N.A.*, CFTC Docket No. 15-03, Order Instituting Proceeding Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 5 (Nov. 11, 2014).

²⁹ FCA, Final Notice to Citibank, N.A., Number 124704, ¶2.3 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

90. Customers execute FX spot transactions either by a telephone call or electronic message to a salesperson at a dealer bank or through an electronic communications network (“ECN”). An ECN is a computer system that customers can use to execute orders with dealers over a network. ECN platforms include single-bank proprietary platforms operated by dealers and multi-bank dealer systems. Multi-bank dealer systems include platforms such as Reuters, Bloomberg, EBS, Hotspot, and Currenex.

91. The following is a sample conversation between a dealer and customer placing an FX spot transaction. This conversation would take place in a brief span of time, perhaps less than one minute.³⁰

Sample Dealing Conversation (Spot)		<i>Explanation</i>
Customer	HIHI FRIENDS	
Dealer	HIHI	
Customer	EUR ON 50 PLS?	<i>Customer requests a quote from dealer on 50 million euros. Customer does not reveal whether it is a buyer or seller.</i>
Dealer	50 / 55	<i>Dealer quotes its bid-ask spread. This spread equals 1.2350/1.2355, as 1.23 is understood by both parties.</i>
Customer	I SELL	<i>Customer agrees to sell 50 euros at the bid price of 1.2350.</i>
Dealer	VALUE 03AUG2012 TO CONFIRM 50 MIO EUR AGREED AT 1.2350 BUY EUR MY EUR TO BANK LDN THANKS AND BIBI	<i>Dealer confirms the trade and instructs customer to deliver the euros to its bank in London.</i>
Customer	TO CONFIRM 50 MIO EUR I SELL EUR @1.2350 VALUE 03AUG2012 MY USD TO BANK NY THANKS AND BIBI	<i>Customer confirms trade and instructs dealer to deliver the dollars to its bank in New York.</i>

³⁰ David F. DeRosa, FOREIGN EXCHANGE OPERATIONS: MASTER TRADING AGREEMENTS, SETTLEMENT, AND COLLATERAL, at 103 (Wiley 2014).

92. In the above example, the dealer buys euros from the customer at 1.2350. The dealer would also be selling 50 million euros to another customer or group of customers at 1.2355. The dealer buys at 1.2350 and sells at 1.2355, earning the bid-ask spread of .0005 (or 5 pips) as its compensation as a market-maker.

93. The dealers' salespeople and traders are in regular communication. Salespeople inform the traders of incoming potential orders, confirm bid and ask quotes, and ultimately convey placed orders to the trading desk. Traders are aware of numerous potential and pending trades that could be processed through their desks. Dealers record and analyze their customers' trading histories. As a result, dealers can often predict a customer's trading patterns, even before a customer places an order. This is particularly sensitive commercial information.

C. Benchmark Rates and Uses

94. While an FX spot transaction may be entered into and executed at any time, customers often use what are called daily fixing rates. A fixing rate is a published exchange rate at a moment in time or over a short interval of time. To place an order at a fixing rate, a customer gives the dealer instructions to buy or sell a quantity of currency at the fixing rate. The dealer guarantees execution at the fixing rate.

95. Prior to the Fixes, Defendants' customers will place orders to buy or sell a specific currency at one of the Fixes. The Defendant agrees to transact with its customers at that Fix. Because this order is for a future time (the Fix has not yet been set), Defendants are exposed to unexpected interim movements in the price of that currency.

96. Defendants will go into the market and attempt to purchase or sell currency before the Fixes to fulfill their customers' orders. If a Defendant is able to buy the currency it needs to sell to its customer at an average price that is less than the Fix, the Defendant will profit off the

client order. Conversely, if a Defendant purchases at an average price greater than the Fix, it loses money on the transaction.

97. While there are a number of Fixes used by FX market participants, in OTC trading, the major Fixes are the WM/Reuters Closing Spot Rates and the ECB Fixing Rates. These Fixes are used in the valuation and performance management of investment portfolios held by pension funds and asset managers globally.³¹ “The rates established at these Fixes are also used as reference rates in financial derivatives.”³² The WM/Reuters Closing Spot Rates are more widely used than the ECB Fixing Rates.

98. The Fixes are particularly useful to major participants in the FX market, such as pension funds, mutual funds, insurance companies, and hedge funds. These entities are the most rapidly growing segment of FX market participants. Because many of these entities participate in the FX market in a way that is ancillary to their investing activities, rather than as a primary source of profits, the Fixes take on a more critical role for them. These customers are generally not seeking to speculate on currency movements, but rather, to repatriate payments, such as dividends, interest, and redemptions on foreign equity and debt instruments that are paid in foreign currencies to U.S. dollars. Accordingly, these entities are continually re-balancing their portfolios to adjust their proportions of domestic and foreign holdings in response to shifting economic conditions.

99. In addition, the Fixes are also customarily used to mark-to-market FX exposures. Before the Fixes became the standard benchmark, portfolio managers used different methods to

³¹ See FCA, Final Notice to Citibank, N.A., Number 124704, ¶4.3 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notice/2014/citibank-na>).

³² *Id.*

mark-to-market, some of which were dependent on a single dealer's quote. The Fixes were adopted to mark FX exposures to market because the Fixes had the perceived advantages of universality and independence from any specific dealer.

100. Trading at the Fixes is popular because the Fixes allow non-speculating entities to achieve their goals while removing tracking error when comparing fund performance to indexed benchmarks, such as those created by FTSE Group and MSCI Inc., which track stocks and bonds in multiple countries, or to other portfolios.

101. The widespread use and acceptance of the Fixes as a pricing mechanism and as the primary benchmark for currency trading globally has caused the Fixes to occupy a crucial role in the operation of financial markets.

1. WM/Reuters

102. The WM/Reuters rates are the most important fixing rates in the FX market. WM/Reuters publishes fixing rates for spot rates and forwards.³³ WM/Reuters calculates fixing rates for Trade Currencies every half hour from 6:00 a.m. in Hong Kong/Singapore to 10:00 p.m. in the U.K. WM/Reuters defines Trade Currencies to include, among others, the major currencies traded against the U.S. dollar and the euro.³⁴

103. The most widely used WM/Reuters rates are the WM/Reuters Closing Spot Rates for Trade Currencies, which are calculated around 4:00 p.m. London time (11:00 a.m. New York time). The WM/Reuters Closing Spot Rates are popular, in part, because they are set at the end of the trading day in London when the market is most liquid.

³³ The WM Company, WM/Reuters Spot & Forward Rates Methodology Guide, at 3 (<http://www.wmcompany.com/pdfs/026808.pdf>) [hereinafter WM/Reuters Guide].

³⁴ See WM/Reuters Guide, at 3.

104. For Trade Currencies during the Class Period, the 4:00 p.m. fix is based on actual trades, using bids and offers extracted from a certain electronic trading system during a one-minute window (“fix period”).³⁵ The WM/Reuters Closing Spot Rates are calculated using the median of a snapshot of bid and ask order rates and actual spot transactions in the 30 seconds before and the 30 seconds after 4:00 p.m. London time (usually 11:00 a.m. in New York). Trades and rates from Currenex, Reuters Dealing 3000, and EBS are used in the validation and calculation.³⁶

105. The process for capturing the information used to calculate the WM/Reuters Closing Spot Rates is automated and anonymous. Because these rates are based on the median value of the transactions, the WM/Reuters Closing Spot Rates do not take the notional size of the quotes and transactions into account; all quotes and transactions are weighted equally.

106. WM/Reuters also provides fix rates for forward and non-deliverable forward contracts which are published as premiums or discounts to the WM/Reuters spot rates.³⁷ Thus, manipulation of the WM/Reuters Closing Spot Rates (as alleged herein) will necessarily impact the WM/Reuters forward rates and futures rates.

³⁵ See *In the Matter of Citibank, N.A.*, CFTC Docket No. 15-03, Order Instituting Proceeding Pursuant to Section 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 4 (Nov. 11, 2014).

³⁶ The WM/Reuters Spot Rates for the “Non-trade Currencies” are set by a methodology similar to that of Trade Currencies. Non-trade currency are those that have less market liquidity. Non-trade currencies are only calculated on an hourly basis. WM/Reuters relies on indicative quotes (submissions) derived from a Reuters computer feed that solicits “indications of interest” from market participants as part of its fixing methodology. WM/Reuters captures snapshots of indicative quotes for bids and offers, and selects the median rate from these quotes as the “WM/R 4 p.m. London fix.” WM/Reuters Guide, at 6.

³⁷ *Id.*

2. The ECB Rates

107. Like the WM/Reuters rates, the ECB reference rate provides spot FX rates throughout the day for euro-denominated currency pairs. The European Central Bank owns and administers euro foreign exchange reference rates for 32 different currencies on a daily basis.³⁸ The rates are published for currency pairs that are actively traded against the euro.³⁹ The ECB reference rate is the second most frequently used global FX benchmark.⁴⁰

108. The ECB fix is the exchange rate for various spot FX currency pairs as determined by the European Central Bank at 1:15pm GMT, or 2:15pm CET. For G10 currency pairs, the ECB fix is based upon spot FX trading activity by market participants at or around the times of the 1:15pm ECB fix. Only one reference exchange rate (the mid-rate) is published for each currency.⁴¹ “The rate is ‘based on the regular daily concertation procedure between central banks within and outside the European System of Central Banks.’”⁴² This process is referred to as the “ECB fix” and reflects the rate at that particular moment in time.

109. The ECB reference exchange rates are published both by electronic market information providers and on the ECB’s website shortly after the concertation procedure has been completed.⁴³

³⁸ Financial Stability Board, Final Report on Foreign Exchange Benchmarks (Sept. 30, 2014) (“FSB Report”) at 11 (http://www.financialstabilityboard.org/2014/09/4_1409301).

³⁹ FSB Report at 11.

⁴⁰ *Id.* at 7.

⁴¹ *Id.* at 11.

⁴² FCA, Final Notice to Citibank, N.A., Number 124704, Annex B, ¶2.2 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

⁴³ FSB Report at 11.

110. The ECB fix is used in global financial markets by various market participants, including banks, asset managers, pension funds, and corporations. Like the WM/Reuters Closing Spot Rates, the ECB fix rates are used to value foreign currency-denominated assets and liabilities, and in the valuation and performance management of investment portfolios held by pension funds and asset managers. The rates established at the ECB fix are also used as a reference rate in financial derivatives.⁴⁴

3. Other Benchmark Rates

111. Other FX benchmark rates are priced through actual market transactions or through the use of indicative rates. For instance, the Russian ruble/U.S. dollar CME/Emerging Markets Traders Association benchmark rates are based on indicative rates submitted by market participants to the CME are a component of the final settlement rate of the CME's RUB/USD futures contract.⁴⁵ This rate is supposed to be based upon a bank's honest assessment of the current prevailing market rate at which it could execute a \$100,000 RUB/USD spot transaction for next-day value in the Moscow marketplace.⁴⁶

112. The Association of Banks in Singapore publishes a range of daily spot rate fixings for deliverable and non-deliverable currency markets. Those rates stem from 11:00 a.m. submissions by a panel of banks selected by ABS to represent each panel bank's current bid and offer spot rates for Indonesian rupiah, Indian rupee, Singapore dollar, and Thai baht against the U.S. dollar, among others.

⁴⁴ FCA, Final Notice to Citibank, Number 124704, ¶4.3 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

⁴⁵ *In the Matter of Barclays Bank PLC*, CFTC Docket No. 15-24, at 5 (May 20, 2015).

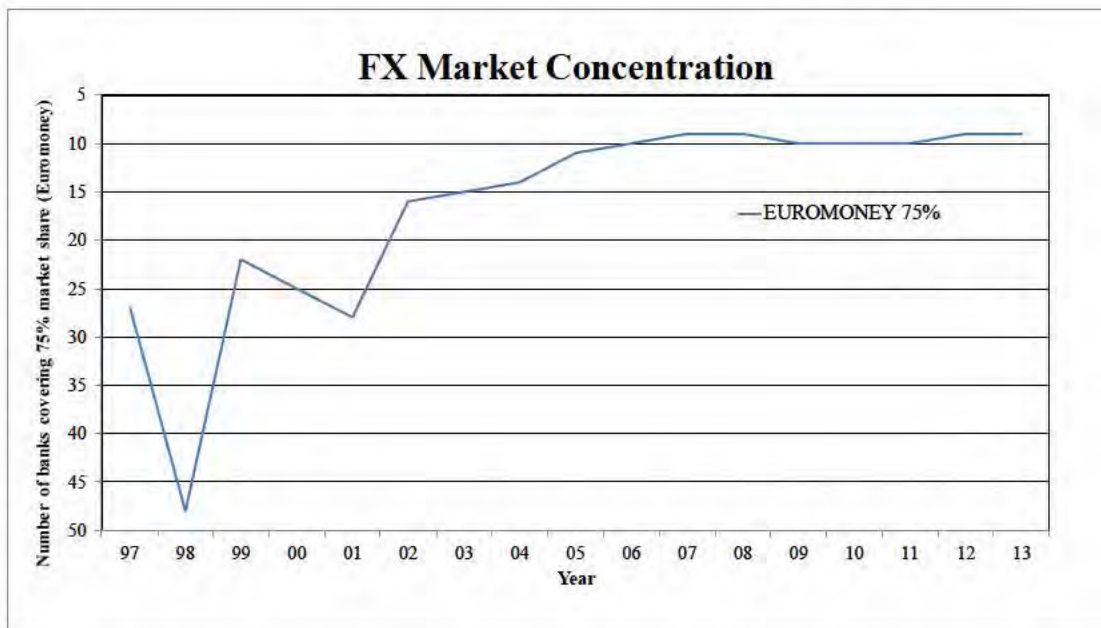
⁴⁶ *Id.*

113. Most major banks in Tokyo publish their own fixing rates at 9:55 a.m. Japan Standard Time for a variety of Japanese yen currency pairs. Defendant BOTM's rates are often considered the most significant rate, and are used for approximately 90% of fixing orders across Tokyo.

114. The Treasury Markets Association ("TMA") in Hong Kong publishes FX rates, which consist of spot fixings for the USD/Hong Kong dollar (HKD) and USD/Chinese yuan (CNY) currency pairs. These fixing rates are calculated by averaging the middle quotes after excluding a number of the highest and lowest quotes from the contributing banks appointed by the TMA.

D. The FX Market Is Concentrated and Dominated by Defendants

115. Beginning in the late 1990s, the FX market experienced a substantial increase in concentration, with the number of banks covering 75% market share declining:



116. Defendants now dominate the FX market. According to the 2012 and 2013 FX Surveys by EUROMONEY, an industry publication, Defendants' individual and aggregate shares of the global FX market for 2012 and 2013 are:⁴⁷

Defendant	2012 Market Share (Rank)	2013 Market Share (Rank)
Deutsche Bank	14.57% (1)	15.18% (1)
Citigroup	12.26% (2)	14.90% (2)
Barclays	10.95% (3)	10.24% (3)
UBS	10.48% (4)	10.11% (4)
HSBC	6.72% (5)	6.93% (5)
JPMorgan	6.60% (6)	6.07% (6)
RBS	5.86% (7)	5.62% (7)
Credit Suisse	4.68% (8)	3.70% (8)
Morgan Stanley	3.52% (9)	3.15% (9)
Goldman Sachs	3.12% (10)	2.75% (11)
BNP Paribas	2.63% (11)	2.52% (12)
Bank of America	2.41% (12)	3.08% (10)
Société Générale	1.76% (13)	1.57% (13)
Standard Chartered	0.89% (18)	0.91% (17)
RBC	0.84% (19)	0.88% (18)
Mitsubishi UFJ Financial Group	0.24% (30)	0.31% (23)
Defendants' Aggregate Market Share:	90.86%	90.92%

117. Defendants also dominate the U.S. spot market. The Federal Reserve Bank of New York reported that as of April 2013, the top ten banks engaged in 98% of all spot volume in the United States, up from 91% in April 2010. Moreover, the five largest banks by volume accounted for 80% of spot transactions in the United States in April 2013.⁴⁸

118. A small and close-knit group of traders employed by Defendants dominate FX trading. These traders have formed strong ties by working with one another in prior trading

⁴⁷ Defendants' market shares for 2003-2013 are available at Appendix 3.

⁴⁸ Fed Triennial Bank Survey 2013, at 6.

positions. Many of these traders also live near each other, many living in the same neighborhoods in the Essex countryside just northeast of London's financial district. They belong to the same social clubs, golf together, dine together, and sit on many of the same charity boards. As Andre Spicer, a professor at the Cass Business School in London, said, "[t]he foreign-exchange market has a very strong culture, in which practitioners feel more attached to each other than they do their banks. It is also dominated by an extremely small group of individuals, often with strong social ties formed by working with each other at some point in the past."⁴⁹ These social and professional ties in the FX trading community create incentives and opportunities for collusion. As one former Citigroup banker noted, "[t]his is a market in which price fixing and collusion could actually work."⁵⁰

E. The FX Market Is Unregulated and Opaque

119. Notwithstanding its size, importance, and concentration, the FX market is one of the world's least regulated financial markets, with most trading taking place OTC, away from exchanges. The United States does not have any specific rules or agencies governing FX spot, outright forward, or FX swap transactions, and such transactions are exempt from the Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. 111-203, 124 Stat. 1376 (2010).

120. There is no centralized exchange or institution that collects and posts real-time trade information for the OTC market. While Defendants' proprietary dealing platforms allow them to match buyers with sellers, Defendants' real-time order flow and volume data is not available to the market. Defendants closely guard their real-time order flow and volume data

⁴⁹ Liam Vaughan, Gavin Finch and Bob Ivry, *Secret Currency Traders' Club Devised Biggest Market's Rates*, BLOOMBERG (Dec. 19, 2013) (<http://bloom.bg/1hA9KXj>).

⁵⁰ Daniel Schäfer, Alice Ross, and Delphine Strauss, *Foreign exchange: The big fix*, FINANCIAL TIMES (Nov. 12, 2013) (<http://www.ft.com/cms/s/2/7a9b85b4-4af8-11e3-8c4c-00144feabdc0.html#axzz3fnepy5Pj>).

from the public and do not make it commercially available for purchase. This substantially limits knowledge of traders' conduct inside these dealing platforms and on the voice trading desk. Absent an agreement to collude, each bank would not share this information with one another; however, as explained here, Defendants *did* share this information with one another.

121. Defendants enjoy informational advantages over Plaintiffs and the Classes as a result of this market opacity. Knowledge of a customer's identity, trading patterns, and orders allows Defendants to predict the direction of market movements.

122. Defendants' ability to predict – and exploit – market movements grows when they share this information with one another.

123. With relatively few firms having a large share of the FX market protected by high barriers to entry, a lack of regulation, and limited customer access to real-time pricing and volume information, the FX market exhibits characteristics that antitrust law and economics have identified as making a market susceptible to collusion and manipulation.

II. DEFENDANTS CONSPIRED TO FIX PRICES IN THE FX MARKET

124. As alleged below, beginning at a time unknown, but at least as early as January 1, 2003, Defendants conspired to fix prices in the FX market on a daily basis. Defendants' conspiracy targeted the pricing of over two dozen currencies, including the most heavily traded currency pairs, throughout each trading day. Defendants' conspiracy encompassed: (1) price fixing of bid/ask spreads; (2) price fixing various benchmark rates, including, but not limited to, WM/Reuters benchmark rates and the ECB reference rate; and (3) other collusive conduct, such as triggering client stop-loss orders and limit orders. UBS traders interrogated by FINMA officials agreed that the anti-competitive conduct alleged herein was “common practice.”⁵¹

⁵¹ FINMA, *Foreign exchange trading at UBS AG: investigation conducted by FINMA*, at

125. Defendants' conduct in furtherance of their conspiracy included: (1) creating and participating in exclusive interbank chat rooms; (2) improperly sharing confidential client and proprietary trading information; (3) coordinating trading to influence the FX rates; (4) monitoring the conduct of co-conspirators to ensure secrecy and compliance with the conspiracy; (5) using code names and misspelled words in interbank communications to evade detection; and (6) agreeing to "stand down" by holding off buying or selling currency to benefit co-conspirators.

126. As a result of Defendants' conspiracy, Plaintiffs and the members of the Classes were harmed.

A. Defendants Used Electronic Communications, Including Chat Rooms, Instant Messages, and Emails, to Conspire

127. Defendants' top-level traders used electronic communications, including chat rooms, to meet and conspire for more than a decade. Plaintiffs are aware of thousands of communications showing traders at more than two dozen banks, including each Defendant, participating in chats where traders coordinated and exchanged information about spreads, currency pairs, and fixes.

128. Defendants brazenly named their chat rooms "The Cartel," "The Bandits' Club," "The Mafia," "The Swiss Mafia," and "One Team, One Dream." Other chat rooms described themselves as "The Sterling Lads," the "Essex Express," "The Players," "The 3 Musketeers," "Barrier Killers," "Sllllaaaagggsssss2," "A Co-operative," and "The A-team."⁵² Being a

¶3.3 (Nov. 12, 2014) (<http://www.finma.ch/e/aktuell/Documents/ubs-fx-bericht-20141112-e.pdf>).

⁵² *FCA fines five banks £1.1 billion for FX failings and announces industry-wide remediation programme* (Nov. 12, 2014) (<http://www.fca.org.uk/news/fca-fines-five-banks-for-fx-failings>).

member of certain chat rooms was by invitation only, indicating the secret nature of this conduct.⁵³ These electronic chat rooms replaced the classic, smoke-filled backrooms of the past. The transcripts of these chat rooms are reportedly “peppered with allusions to drinks, drugs and women.”⁵⁴

129. Entry into chat rooms was coveted among traders because of the influence its members exerted in the FX market. For example, in one chat room transcript, traders from JPM, UBS, and Citigroup welcome a trader from Barclays into The Cartel chat room:

TIME (UTC)	TRADER	MESSAGE
08:02:22	JPMorgan	you have been given access for a 1 month trial
08:02:24	UBS	Congratulations
08:02:29	JPMorgan	This trial will automatically extend
08:02:31	Barclays	I am honoured [...]
08:03:25	Citigroup	[REDACTED]
08:04:17	JPMorgan	[REDACTED]

130. During investigations by FINMA, UBS foreign exchange traders testified that they had been encouraged by their superiors to actively participate in chat rooms with clients and traders at third-party banks in order to exchange information.⁵⁵ The FCA noted the value in these chat rooms to traders:

A “persistent” chat room allows participants to have ongoing discussions with other participants from different firms and in different time zones for extended timeframes. Participants can communicate through electronic messaging over a period of

⁵³ *In the Matter of Citibank, N.A.*, CFTC Docket No. 15-03, Order Instituting Proceeding Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 5 (Nov. 11, 2014).

⁵⁴ Daniel Schäfer, Alice Ross, and Delphine Strauss, *Foreign exchange: The big fix*, FINANCIAL TIMES (Nov. 12, 2013) (<http://www.ft.com/cms/s/2/7a9b85b4-4af8-11e3-8c4c-00144feabdc0.html#axzz3fnepy5Pj>).

⁵⁵ *Foreign exchange trading at UBS AG: investigation conducted by FINMA* at ¶3.1.3 (Nov. 12, 2014) (<http://www.finma.ch/e/aktuell/Documents/ubs-fx-bericht-20141112-e.pdf>).

multiple days, weeks or months. There can be multiple participants in a particular persistent chat and once invited an individual will be able to view a continuous record of the entire discussion thread and participate from then on.⁵⁶

131. Defendants' top-level traders ran the chat rooms. For example, Richard Usher ran The Cartel while he was JPMorgan's chief currency dealer in London and head of spot trading for G10 currencies from 2010-2013 and as a trader at RBS before then. The Cartel's membership numbered a half-dozen or more of Defendants' top traders. Other members of The Cartel included:

- Rohan Ramchandani, Citigroup's head of spot trading in London;
- Matt Gardiner, Barclays' director of spot trading for EUR/USD from 2007 to 2011;
- Chris Ashton, former head of Barclays voice spot trading globally; and
- Niall O'Riordan, UBS's co-global head of G10 and emerging market spot trading.

Usher, Ramchandani, Gardiner, Ashton, and O'Riordan each have been fired from their respective institutions.

132. Like playing multiple bingo cards, Defendants' FX traders participated in multiple chat rooms, allowing them to simultaneously communicate with numerous other Defendants on a global basis. Defendants' participation in chat rooms demonstrates the widespread reach of their anticompetitive conduct. For instance, based solely on information learned to date, Defendants participated in chat rooms discussing the following currencies:

- Defendant Bank of America participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), Australian dollar (AUD), Swiss franc (CHF), and South African rand (ZAR).

⁵⁶ FCA Final Notice to Barclays Bank, PLC No. 122702, Annex B, ¶6.2. (May 20, 2015) (<http://www.fca.org.uk/your-fca/documents/final-notice/2014/citibank-na>) <https://www.fca.org.uk/your-fca/documents/final-notice/2015/barclays-bank-plc>

- Defendant Barclays participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), Canadian dollar (CAD), Russian ruble (RUB), South African rand (ZAR), and Brazilian real (BRL).
- Defendant BNP Paribas participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), Polish zloty (PLN), Russian ruble (RUB), Mexican peso (MXN), Israeli shekel (ILS), and Thai baht (THB).
- Defendant BOTM participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), and Swiss franc (CHF).
- Defendant Citigroup participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), New Zealand dollar (NZD) Russian ruble (RUB), and South African rand (ZAR).
- Defendant Credit Suisse participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Australian dollar (AUD), Swiss franc (CHF), Czech koruna (CZK), Israeli shekel (ILS), Polish zloty (PLN), and South African rand (ZAR).
- Defendant Deutsche Bank participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), the British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), New Zealand dollar (NZD), Canadian dollar (CAD), Russian ruble (RUB), South African rand (ZAR), Chinese yuan (CNY), Czech koruna (CZK), Hong Kong dollar (HKD), Hungarian forint (HUF), Polish zloty (PLN), Singapore dollar (SGD), Turkish lira (TRY), Indonesian rupiah (IDR), Indian rupee (INR), South Korean won (KRW), Malaysian ringgits (MYR), and Taiwan dollar (TWD).
- Defendant Goldman Sachs participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), and Australian dollar (AUD).
- Defendant HSBC participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Swiss franc (CHF), Russian ruble (RUB), Mexican peso (MXN), and Thai baht (THB).
- Defendant JPM participated in chat rooms discussing the U.S. dollar (USD), euros (EUR), British pound (GBP), Australian dollar (AUD), Swiss franc (CHF), and South African rand (ZAR).
- Defendant Morgan Stanley participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Australian dollar (AUD), and New Zealand dollar (NZD).

- Defendant RBC participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Australian dollar (AUD), New Zealand dollar (NZD), Canadian dollar (CAD), Swiss franc (CHF), Japanese yen (JPY), Czech koruna (CZK), Israeli shekel (ILS), Polish zloty (PLN), South African rand (ZAR).
- Defendant RBS participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), New Zealand dollar (NZD), South African rand (ZAR), and Brazilian real (BRL).
- Defendant SocGen participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Australian dollar (AUD), Polish zloty (PLN), Brazilian real (BRL), Mexican peso (MXN), Chinese yuan (CNY), Israeli shekel (ILS) and Thai baht (THB).
- Defendant Standard Chartered participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), Japanese yen (JPY), Australian dollar (AUD), Swiss franc (CHF), Brazilian real (BRL) and South African rand (ZAR).
- Defendant UBS participated in chat rooms discussing the U.S. dollar (USD), euro (EUR), British pound (GBP), Japanese yen (JPY), Swiss franc (CHF), Australian dollar (AUD), New Zealand dollar (NZD), Canadian dollar (CAD), Swedish krona (SEK), Norwegian krone (NOK) Russian ruble (RUB), South African rand (ZAR), Chinese yuan (CNY), Czech koruna (CZK), Hong Kong dollar (HKD), Hungarian forint (HUF), Polish zloty (PLN), Singapore dollar (SGD), Turkish lira (TRY), Indonesian rupiah (IDR), Indian rupee (INR), South Korean won (KRW), Malaysian ringgits (MYR), and Taiwan dollar (TWD).

133. Over time, various chat rooms, in furtherance of the conspiracy, evolved to discuss numerous currency pairs beyond those for which they were originally established. The Sterling Lads included traders from HSBC, RBS, UBS, Barclays, and Credit Suisse, assigned to trade “cable,” the nickname for the British pounds sterling and U.S. dollar (GBP/USD) currency pair. They also discussed many other currencies, including the euro and Japanese yen. The “Essex Express” included traders from UBS, Barclays, RBS, BOTM, and others, focused on trading Japanese yen. Later, this group would delve into other currency pairs, including EUR/USD. In the “Swiss Mafia,” traders from Citigroup, Credit Suisse, UBS, and other banks discussed prices for euros, British pounds, Swiss francs, and Swedish krona.

134. Chat room transcripts demonstrate that the traders intended to coordinate their efforts to move the market in a direction that favored Defendants. Statements reflecting coordinated conduct, such as “lets double team em” and “team effort” and “yep you and me bro we’re going to ruin them,” are replete throughout the chats. This language evidences an agreement to execute joint behavior in furtherance of the conspiracy.

135. Chats also reflect the success of Defendants’ coordinated effort to fix prices in the FX market. After the traders had coordinated trades and fixed spreads and spot rates, they would often congratulate each other on accomplishing a fix on the market with comments like, “[t]hat’s how its done” and “that’s how to do a fix” and “won’t find that in any textbook.” Often, after manipulating the WM/Reuters Closing Spot Rates, The Cartel members “would send written slaps on the back for a job well done.”⁵⁷

136. Chat room transcripts also show that Defendants monitored each other’s activity to ensure compliance with the overarching conspiracy and threatened to punish traders whose conduct didn’t conform to the agreement. For example, when JPM took an action that negatively impacted Citigroup, a Citigroup trader contacted JPM trader #1 via chat. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁵⁷ Liam Vaughan, Gavin Finch and Bob Ivry, *Secret Currency Traders’ Club Devised Biggest Market’s Rates*, BLOOMBERG (Dec. 18, 2013) (<http://bloom.bg/libwUXj>).

137. Defendants used code words to avoid detection from authorities. [REDACTED]

[REDACTED] One such code was Defendants' use of the words "pick" and "pickun" as code for the WM/Reuters London fix.⁵⁸ Defendants also used code names to identify customers to each other. The FCA noted that "[t]he value of the information exchanged between the traders and the importance of keeping it confidential between recipients was clear to participants."⁵⁹

138. As a direct result of the numerous government investigations, Defendants Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, JPMorgan, Morgan Stanley, RBS, and UBS banned their traders from participating in multi-bank chat rooms. Moreover, as a result of the conduct that occurred in chat rooms, Defendants have terminated or otherwise overseen the departure of more than 50 individuals with trading or supervisory authority over FX trading.

B. Defendants Conspired to Fix Bid/Ask Spreads Quoted in the Spot Market

139. Beginning at a time unknown, but at least as early as January 1, 2003, as part of their conspiracy to fix prices in the FX market, Defendants conspired to fix the bid/ask spreads paid by customers for various currency pairs. As alleged above, there are thousands of communications involving one or more Defendants reflecting discussions about FX spreads. These communications show traders at more than 30 banks, including Defendants, participated in interbank chats where traders coordinated and exchanged information about spreads or customer

⁵⁸ Like many of the traders' euphemisms, the term "pick" or "pickun" is a use of Cockney rhyming slang, using rhyming words or similar references to refer to a word that could trigger compliance review of their chats like "fix." The term "pickun" refers to a candy store present in the United Kingdom called Pick 'n' Mix. Pickun, therefore, refers to the "Fix."

⁵⁹ FCA, Final Notice to Citibank, N.A., Number 124704, ¶4.33 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/Citibank-na>).

orders. The conspiracy to fix prices in the FX market affected dozens of currency pairs, including the seven pairs with the highest market volume.

140. Spreads are the most visible and immediate way in which banks compete against each other for customers. In the FX market, spreads are indicative of price. The bid/ask spread represents the price a dealer is willing to buy or sell a given volume of currency. Traders use the terms “spread” and “price” interchangeably.

141. Because currency is fungible (there is no difference between one dollar and another), spreads are therefore a key competitive issue for securing customers. Customers want narrower spreads, *i.e.*, they want to buy currency for less and sell it for more. Thus, the width of a spread will impact a Defendant’s competitiveness in the FX market. By quoting narrower spreads than their competitors, Defendants can gain customers and market share. On the other hand, a decision to widen spreads (or decline to tighten spreads) would result in loss of customers and market share. Only through collusion could a dealer quote wider spreads without losing market share and still reap supra-competitive profits.

142. Defendants quote bid/ask spreads to their customers in a couple of ways. First, Defendants provide spread matrices to certain customers on a periodic (usually quarterly) basis. These matrices list the bid/ask spreads for various volumes and currencies. These matrices are like a price list, and represent the price that the bank anticipates offering in competition with other banks. The banks with the tightest spreads are most likely to secure customer business. Beyond being a list provided to customers, the spread matrices tended to inform Defendants’ views as to what current pricing was in the market.

143. Defendants also simply quoted bid/ask spreads to customers throughout the trading day.

1. Chat Room Transcripts Demonstrate Spread Fixing

144. Chat room transcripts confirm that Defendants’ FX spot traders agreed on spreads they quoted to clients in the FX spot market. When the traders discussed their spreads with each other, they had an explicit understanding that the spreads discussed would be the spreads quoted to customers. A trader would artificially adjust his spreads based on the information gained from other traders in the group. Spreads quoted by Defendants in the FX spot market were wider than they would have been absent collusion and Plaintiffs paid these supra-competitive prices.

145. In The Cartel chat room, traders from Barclays, Citigroup, and UBS conspired to fix the spreads offered to clients in their spread matrices for EUR/USD. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
10:42:13	UBS	[REDACTED]
10:42:21	UBS	[REDACTED]
10:44:32	UBS	[REDACTED]
10:44:36	UBS	[REDACTED]
10:45:50	Barclays	[REDACTED]
10:45:56	Barclays	[REDACTED]
10:46:10	Citigroup	[REDACTED]
10:46:14	Citigroup	[REDACTED]
10:46:16	Citigroup	[REDACTED]
10:46:17	Citigroup	[REDACTED]
10:46:23	Citigroup	[REDACTED]

TIME (UTC)	TRADER	MESSAGE
10:46:26	Citigroup	[REDACTED]
10:46:31	Citigroup	[REDACTED]
10:46:49	Citigroup	[REDACTED]
10:46:51	Citigroup	[REDACTED]
10:46:54	Citigroup	[REDACTED]
10:46:56	Citigroup	[REDACTED]
10:46:57	Citigroup	[REDACTED]
10:50:23	UBS	[REDACTED]
10:50:39	UBS	[REDACTED]

146. In the Essex Express chat room example below, traders from BOTM, RBS, and Barclays conspired to fix the spread matrices for EUR/JPY⁶⁰ provided to customers. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
09:50:14	RBS	[REDACTED]
09:50:24	RBS	[REDACTED]
		...
09:51:26	Barclays	[REDACTED]
09:51:43	RBS	[REDACTED]
		...
09:52:02	BOTM	[REDACTED]

147. In another chat room, traders from UBS and Deutsche Bank colluded on spreads quoted to customers in spread matrices. [REDACTED]

[REDACTED]

[REDACTED]

⁶⁰ EUR/JPY is one of the top ten most traded currency pairs.

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
09:42:52	UBS	[REDACTED]
09:43:03	Deutsche Bank	[REDACTED]
09:43:07	UBS	[REDACTED]
09:43:09	UBS	[REDACTED]
09:43:09	Deutsche Bank	[REDACTED]
09:43:23	UBS	[REDACTED]
09:44:50	Deutsche Bank	[REDACTED]
09:44:56	Deutsche Bank	[REDACTED]
09:45:09	UBS	[REDACTED]
09:45:13	UBS	[REDACTED]
09:45:21	Deutsche Bank	[REDACTED]

148. In a one-on-one chat room with a trader from UBS and a trader from an unidentified bank, the traders agreed on the prices offered in spread matrices for the British pound (GBP)/Norwegian krone (NOK), Canadian dollar (CAD)/Swiss franc (CHF), Norwegian krone (NOK)/Canadian dollar (CAD) and Canadian dollar (CAD)/Japanese yen (JPY). [REDACTED]

[REDACTED]

[REDACTED]

TIME	TRADER	MESSAGE
08:28:51	Bank	[REDACTED]
08:28:52	UBS	[REDACTED]
08:28:59	Bank	[REDACTED]
08:29:44	UBS	[REDACTED]
08:29:59	UBS	[REDACTED]
08:30:14	Bank	[REDACTED]
08:30:23	Bank	[REDACTED]
08:30:30	Bank	[REDACTED]
08:30:36	Bank	[REDACTED]
08:30:41	UBS	[REDACTED]
08:31:10	Bank	[REDACTED]
08:31:20	Bank	[REDACTED]
08:31:47	Bank	[REDACTED]

TIME	TRADER	MESSAGE
08:31:54	UBS	[REDACTED]
08:32:09	UBS	[REDACTED]
08:32:18	UBS	[REDACTED]
08:32:33	UBS	[REDACTED]
08:32:37	UBS	[REDACTED]
08:33:09	Bank	[REDACTED]
08:33:12	Bank	[REDACTED]
08:33:23	Bank	[REDACTED]
08:33:47	UBS	[REDACTED]
08:34:00	UBS	[REDACTED]
08:34:06	Bank	[REDACTED]
08:34:31	Bank	[REDACTED]
08:34:39	Bank	[REDACTED]
08:35:14	UBS	[REDACTED]
08:35:24	Bank	[REDACTED]
08:35:25	Bank	[REDACTED]
08:35:57	Bank	[REDACTED]
08:36:19	UBS	[REDACTED]
08:36:21	UBS	[REDACTED]
08:36:24	Bank	[REDACTED]
08:36:47	Bank	[REDACTED]
08:36:49	Bank	[REDACTED]
08:37:08	UBS	[REDACTED]
08:37:10	UBS	[REDACTED]

149. In addition to fixing spread matrices, Defendants continued their conspiracy on a regular basis, colluding to fix daily spreads quoted to customers in the FX spot market.

150. For example, members of the Essex Express, including traders from BOTM, RBS, Barclays, and UBS discussed how they were going to reach out to other Defendants to keep the spread wider than it would be under competitive circumstances. Defendants acknowledged their concern about narrow spreads with two major currency pairs: USD/JPY and EUR/JPY. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

151. In the following example, traders from JPMorgan, Citigroup, and Barclays agreed on a spread to offer a particular customer and did offer that customer the exact same spread. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
14:13:57	JPMorgan	[REDACTED]
14:14:00	JPMorgan	[REDACTED]
14:14:02	JPMorgan	[REDACTED]
14:14:11	JPMorgan	[REDACTED]
14:14:44	Citigroup	[REDACTED]
14:14:46	Barclays	[REDACTED]
14:14:46	Citigroup	[REDACTED]
14:14:57	JPMorgan	[REDACTED]
14:15:58	Citigroup	[REDACTED]
14:16:03	Citigroup	[REDACTED]
14:16:14	Citigroup	[REDACTED]
14:16:21	Citigroup	[REDACTED]
14:16:24	Barclays	[REDACTED]
14:16:25	JPMorgan	[REDACTED]
14:16:30	Citigroup	[REDACTED]
14:16:33	Citigroup	[REDACTED]
14:16:36	Citigroup	[REDACTED]

TIME (UTC)	TRADER	MESSAGE
14:16:39	Barclays	[REDACTED]
14:16:50	Barclays	[REDACTED]
14:16:54	Barclays	[REDACTED]

152. In a chat room, members of the Essex Express, including traders from BOTM, RBS, and Barclays agreed to widen spreads for EUR/CHF. [REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
07:15:16	BOTM	[REDACTED]
07:15:27	RBS	[REDACTED]
07:31:40	BOTM	[REDACTED]
07:31:50	RBS	[REDACTED]
07:33:21	Barclays	[REDACTED]
07:33:23	Barclays	[REDACTED]
07:33:34	BOTM	[REDACTED]
07:33:35	RBS	[REDACTED]
07:33:41	RBS	[REDACTED]
07:33:56	RBS	[REDACTED]
07:34:03	RBS	[REDACTED]
08:08:25	RBS	[REDACTED]
08:08:33	RBS	[REDACTED]
08:08:39	RBS	[REDACTED]
08:08:42	Barclays	[REDACTED]

153. The following chat from the Sterling Lads chat room involved traders from HSBC, Barclays, and UBS who coordinated spread pricing of the GBP/USD (a/k/a “cable”). [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
07:52:59	HSBC	[REDACTED]
07:53:10	Barclays	[REDACTED]
07:53:19	HSBC	[REDACTED]
07:53:28	HSBC	[REDACTED]
07:53:37	UBS	[REDACTED]
07:53:37	Barclays	[REDACTED]
07:53:52	UBS	[REDACTED]
07:54:08	HSBC	[REDACTED]

154. In another Sterling Lads chat, traders from Credit Suisse and RBS coordinate to fix the spread for EUR/GBP. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
10:46:55	Credit Suisse	[REDACTED]
10:47:31	RBS	[REDACTED]
10:47:42	RBS	[REDACTED]
10:48:01	Credit Suisse	[REDACTED]
10:48:07	RBS	[REDACTED]
10:48:23	RBS	[REDACTED]
10:48:35	Credit Suisse	[REDACTED]

155. In the next example, the Sterling Lads coordinated to fix spreads for the EUR/GBP currency pair. In this chat, traders from Barclays, RBS, and UBS shared confidential customer order information and agreed on a spread to offer a customer. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
08:56:47	UBS	[REDACTED]
08:57:54	RBS	[REDACTED]
08:57:58	Barclays	[REDACTED]
08:58:11	UBS	[REDACTED]
08:58:12	UBS	[REDACTED]
08:58:20	RBS	[REDACTED]
08:59:17	UBS	[REDACTED]
08:59:33	UBS	[REDACTED]
08:59:43	Barclays	[REDACTED]
08:59:49	Barclays	[REDACTED]
08:59:55	RBS	[REDACTED]
09:00:05	UBS	[REDACTED]

156. In the example below, traders from Citigroup and Deutsche Bank coordinated spreads quoted to customers after sharing real-time trading information regarding several currency pairs in an interbank chat with traders from Barclays, UBS, and RBC. At various times, this chat room also included traders from Bank of America. Notably, at the end of the chat depicted below, traders from Deutsche Bank and Citigroup colluded with respect to the spread for EUR/AUD. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
17:31:14	Citigroup	[REDACTED]
17:34:37	Deutsche Bank	[REDACTED]
17:34:50	Deutsche Bank	[REDACTED]
17:34:57	Deutsche Bank	[REDACTED]
17:35:10	Deutsche Bank	[REDACTED]
17:35:18	Citigroup	[REDACTED]

157. In another example of spread fixing, traders from Deutsche Bank and UBS fixed spreads in a Reuters chat room. In this conversation, UBS and Deutsche Bank discuss spread prices for the EUR/GBP currency pair. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
10:02:44	UBS	[REDACTED]
10:03:34	Deutsche Bank	[REDACTED]
10:08:05	UBS	[REDACTED]
10:08:32	Deutsche Bank	[REDACTED]
10:08:40	UBS	[REDACTED]
10:08:58	Deutsche Bank	[REDACTED]
10:10:10	UBS	[REDACTED]
10:10:42	Deutsche Bank	[REDACTED]
10:10:47	UBS	[REDACTED]
10:11:02	UBS	[REDACTED]

158. Members of “the Barrier Killers,” a permanent chat room which included traders from Bank of America, Credit Suisse, RBC, and UBS, among others, discussed spreads involving the euro and the Polish zloty (EUR/PLN). Below, traders from Credit Suisse and RBC agreed on the spread for EUR/PLN.

TIME (UTC)	TRADER	MESSAGE
08:49:13	RBC	[REDACTED]
08:49:20	RBC	[REDACTED]
08:50:10	Credit Suisse	[REDACTED]
08:50:27	RBC	[REDACTED]
08:50:32	RBC	[REDACTED]
08:50:50	Credit Suisse	[REDACTED]
08:52:54	RBC	[REDACTED]

159. Another permanent chat group included traders from Barclays, BNP Paribas, Citigroup, Deutsche Bank, RBC, RBS, and UBS who discussed spreads involving at least the Canadian dollar, New Zealand dollar, and U.S. dollar. This chat room was active from at least early 2008 to late 2012. [REDACTED]

[REDACTED] In that same chat, traders from Deutsche Bank, Citigroup, and RBC discussed spreads for New Zealand dollar being traded in New York City.

TIME (UTC)	TRADER	MESSAGE
12:24:34	Deutsche Bank	[REDACTED]
12:24:42	Deutsche Bank	[REDACTED]
12:25:54	RBC Trader 1	[REDACTED]
12:27:30	RBC Trader 2	[REDACTED]
12:31:23	Citigroup	[REDACTED]
12:31:40	Citigroup	[REDACTED]
1:58:03	RBC Trader 1	[REDACTED]

160. In another chat in this room, an RBC trader provided his quoted spreads to the group for the USD/CAD currency pair.

TIME (UTC)	TRADER	MESSAGE
10:17:29	RBC	[REDACTED]
10:17:33	Barclays	[REDACTED]
10:17:36	RBC	[REDACTED]
10:17:42	RBC	[REDACTED]
10:17:48	Barclays	[REDACTED]
10:17:56	RBC	[REDACTED]
10:18:00	RBC	[REDACTED]

161. In other chats, traders from RBC asked about spreads involving EUR/CHF and AUD/JPY.

TIME (UTC)	TRADER	MESSAGE
19:50:47	RBC	[REDACTED]
19:56:47	UBS	[REDACTED]
19:57:09	UBS	[REDACTED]
19:57:15	RBC	[REDACTED]
		[REDACTED]
20:37:49	RBC	[REDACTED]
20:38:30	UBS	[REDACTED]
20:38:38	UBS	[REDACTED]
20:38:42	RBC	[REDACTED]
20:38:47	UBS	[REDACTED]

162. Another permanent chat room, named “Slllaaaaggggsssss2,” demonstrates how multiple Defendants would, throughout the course of the day, discuss both spreads and fixes in the same chat room. Members of Slllaaaaggggsssss2 included traders from Barclays, Credit Suisse, HSBC, RBS, and UBS. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
14:49:16	RBS	[REDACTED]
14:49:20	RBS	[REDACTED]
14:50:11	Barclays	[REDACTED]
14:50:24	UBS	[REDACTED]
14:50:38	RBS	[REDACTED]
14:50:43	UBS	[REDACTED]
14:50:55	Barclays [Trader 2]	[REDACTED]
15:05:19	RBS	[REDACTED]

163. In the following chat room, traders from Bank of America, Citigroup, HSBC, JPMorgan, Standard Chartered, and UBS discussed spreads for EUR/CHF (Swiss franc), and the

upcoming WM/Reuters Fix. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
13:16:45	JP Morgan	[REDACTED]
13:16:51	JP Morgan	[REDACTED]
13:17:06	Bank of America	[REDACTED]
13:17:09	HSBC	[REDACTED]
13:17:14	HSBC	[REDACTED]
13:17:18	HSBC	[REDACTED]
13:18:22	UBS	[REDACTED]
13:19:00	Standard Chartered	[REDACTED]
13:19:38	UBS	[REDACTED]
13:19:41	UBS	[REDACTED]
13:20:15	Standard Chartered	[REDACTED]
13:20:22	UBS	[REDACTED]
13:20:27	UBS	[REDACTED]
13:20:30	Standard Chartered	[REDACTED]

TIME (UTC)	TRADER	MESSAGE
13:20:39	JP Morgan	[REDACTED]
13:21:00	JP Morgan	[REDACTED]
13:21:02	JP Morgan	[REDACTED]
13:21:05	JP Morgan	[REDACTED]
13:21:06	Bank of America	[REDACTED]
13:21:09	JP Morgan	[REDACTED]
13:21:10	JP Morgan	[REDACTED]
13:21:14	JPMorgan	[REDACTED]
13:21:15	Bank of America	[REDACTED]
13:21:18	JPMorgan	[REDACTED]
13:21:22	JPMorgan	[REDACTED]
13:21:24	HSBC	[REDACTED]
13:21:27	Bank of America	[REDACTED]
13:21:32	JP Morgan	[REDACTED]
13:21:38	JP Morgan	[REDACTED]
13:21:40	JP Morgan	[REDACTED]
13:21:41	JP Morgan	[REDACTED]
13:21:48	Bank of America	[REDACTED]
13:21:53	Bank of America	[REDACTED]
13:21:55	JP Morgan	[REDACTED]
13:22:10	Citigroup	[REDACTED]
13:22:14	Citigroup	[REDACTED]
13:22:22	UBS	[REDACTED]
13:22:29	UBS	[REDACTED]
13:22:35	HSBC	[REDACTED]
13:22:43	Citigroup	[REDACTED]
13:22:56	HSBC	[REDACTED]
13:23:04	Citigroup	[REDACTED]

164. In the chat example below, traders from JPMorgan, Merrill Lynch, and Morgan Stanley discuss the spread for “kiwi,” *i.e.*, New Zealand dollar (NZD)/U.S. dollar. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
02:04:13	Morgan Stanley	[REDACTED]

TIME (UTC)	TRADER	MESSAGE
02:04:30	Morgan Stanley	[REDACTED]
02:06:39	Morgan Stanley	[REDACTED]
02:07:14	JPMorgan	[REDACTED]
02:07:22	JPMorgan	[REDACTED]
02:07:24	JPMorgan	[REDACTED]
02:07:29	Morgan Stanley	[REDACTED]
02:07:40	Morgan Stanley	[REDACTED]
02:07:44	JPMorgan	[REDACTED]
02:07:47	JPMorgan	[REDACTED]
02:07:47	Merrill Lynch	[REDACTED]
02:07:50	JPMorgan	[REDACTED]
02:07:56	Merrill Lynch	[REDACTED]
02:07:58	Merrill Lynch	[REDACTED]
02:08:03	Merrill Lynch	[REDACTED]
02:08:07	Merrill Lynch	[REDACTED]
02:08:08	Merrill Lynch	[REDACTED]
02:08:15	Morgan Stanley	[REDACTED]
02:08:18	Merrill Lynch	[REDACTED]
02:08:22	Morgan Stanley	[REDACTED]
02:08:32	Merrill Lynch	[REDACTED]
02:08:36	Morgan Stanley	[REDACTED]

165. In another chat, Morgan Stanley, JPMorgan, and UBS discussed spread prices for “cable,” *i.e.*, British pound (GBP)/U.S. dollar. [REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
01:58:58	Bank	[REDACTED]
01:59:24	Bank	[REDACTED]
01:59:27	Bank	[REDACTED]
01:59:56	UBS	[REDACTED]
02:00:25	BankA	[REDACTED]
02:00:32	JPMorgan	[REDACTED]
02:00:43	Bank	[REDACTED]
02:00:53	JPMorgan	[REDACTED]
02:00:54	UBS	[REDACTED]
02:00:00	Bank	[REDACTED]
02:00:26	Morgan Stanley	[REDACTED]

166. Defendants did not limit their collusion to major currency pairs; rather, they colluded with respect even to emerging market currencies.

167. For instance, in its order fining Barclays, the New York Department of Financial Services highlighted a series of examples. In one such example, a “Barclays FX trader explicitly discussed with a JP Morgan trader coordinating the prices offered for USD/South African Rand to a particular customer, stating, in a November 4, 2010 chat, ‘if you win this we should coordinate you can show a real low one and will still mark it little lower haha.’ After the JP Morgan trader suggested that they ‘prolly shudnt put this on perma chat,’ the Barclays trader responded ‘*if this is the chat that puts me over the edge than oh well. much worse out there.*’”⁶³

168. Several months later, this Barclays trader was “still instructing traders at other banks to follow his lead. On February 25, 2011, a Standard Chartered FX trader asked ‘what bid you want me to show if somwone calls’ and the Barclays trader responded ‘up to 02.’ The [Standard Chartered] trader said ‘okok’ and ‘ill let you know if we get asked.’”⁶⁴

169. In the following chat from the “Barrier Killers,” traders from Bank of America, Credit Suisse, and RBC, discussed the appropriate spread to quote a customer for USD/ZAR (South African rand):

TIME (UTC)	TRADER	MESSAGE
13:06:20	Credit Suisse	[REDACTED]
13:07:24	RBC	[REDACTED]
13:07:54	RBC	[REDACTED]

⁶³ New York State Department of Financial Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law ¶34 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>) (emphasis added).

⁶⁴ *Id.*, ¶36.

TIME (UTC)	TRADER	MESSAGE
13:08:21	Credit Suisse	[REDACTED]
13:08:26	Credit Suisse	[REDACTED]
13:09:16	Bank of America	[REDACTED]
13:09:21	Bank of America	[REDACTED]
13:09:28	Bank of America	[REDACTED]
13:09:29	Credit Suisse	[REDACTED]
13:09:59	Credit Suisse	[REDACTED]
13:10:09	Bank of America	[REDACTED]
13:10:18	Bank of America	[REDACTED]
13:10:20	Bank of America	[REDACTED]

170. Société Générale was a member of a permanent chat room group with traders from BNP Paribas, HSBC, RBC, RBS, and UBS. In the example below, traders from BNP Paribas, HSBC, and Société Générale discussed spreads for USD/THB (Thai baht) and USD/MNX (Mexican peso). [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
10:06:24	Société Générale	[REDACTED]
10:06:28	Société Générale	[REDACTED]
10:07:40	Société Générale	[REDACTED]
10:19:49	HSBC	[REDACTED]
10:19:56	Société Générale	[REDACTED]
		[REDACTED]
10:20:36	Société Générale	[REDACTED]
10:21:50	BNP Paribas	[REDACTED]
10:21:58	BNP Paribas	[REDACTED]

TIME (UTC)	TRADER	MESSAGE
10:22:03	BNP Paribas	[REDACTED]
10:22:07	Société Générale	[REDACTED]
10:22:11	Société Générale	[REDACTED]
10:22:17	BNP Paribas	[REDACTED]
10:22:26	Société Générale	[REDACTED]
10:22:29	Société Générale	[REDACTED]
10:22:37	BNP Paribas	[REDACTED]
10:22:39	BNP Paribas	[REDACTED]
10:22:41	Société Générale	[REDACTED]
10:22:43	Société Générale	[REDACTED]
10:22:46	Société Générale	[REDACTED]

171. As the above chats demonstrate, Defendants routinely agreed on the spreads for numerous currency pairs.

C. Defendants Conspired to Fix the Benchmark Rates

172. Beginning at least as early as January 1, 2003, Defendants conspired to manipulate the Fixes. Defendants communicated with one another, including in chat rooms, via instant messages, and by email, to carry out their conspiracy. Through these communications, Defendants regularly exchanged their customers' confidential order flow information before the Fixes. Exploiting shared confidential information, Defendants executed concerted trading strategies designed to manipulate, and which actually did manipulate, the Fixes.

173. Defendants' collusive actions allowed them to substantially reduce their risk in FX trading and to reap supra-competitive profits at the expense of Plaintiffs and the Classes. Defendants faced less risk in their market making activity recorded in the Defendants' front book. Additionally, Defendants' traders could reap even greater profits for their proprietary (prop) trades made on behalf of their bank and recorded in their individual back books.

1. The Fixes Are Susceptible to Collusive Manipulation

174. Defendants understood that the methodology used to calculate the WM/Reuters Closing Spot Rates is vulnerable to manipulation. For example, in a July 4, 2008 meeting of the

Bank of England's Foreign Exchange Joint Standing Committee, Chief Dealers' Sub Group, the WM Company gave a presentation on the median calculation of the WM/Reuters rates to chief currency traders from RBS, HSBC, Deutsche Bank, Morgan Stanley, JPMorgan, and Citigroup. In response to this presentation, the chief dealers in attendance admitted that the methodology was susceptible to manipulation:

It was noted that WM/Reuters do not use traded volumes data in the calculation of the spot rates. While they have access to Reuters volume data, the same is not the case for EBS data. The Chief Dealer group agreed that actual traded volumes is a key consideration in the calculation of accurate fixings and suggested that this would be a useful next step in the development of WM/Reuters' model. Furthermore it was suggested that using a snapshot of the market may be problematic, as it could be subject to manipulation. Perhaps WM could use a window of observations, and determine at what point to fix using volume data.⁶⁵

175. As explained below, Defendants seized on the weakness in this methodology and colluded to manipulate the WM/Reuters Closing Spot Rates.

176. The ECB Fix is essentially a snapshot of the market rate at exactly 1:15 p.m. GMT or 2:15 p.m. CET. The ECB publishes rates for its 32 currencies by averaging the buying and selling prices of each currency against the euro at 1:15 GMT.

⁶⁵ The Chief Dealers' Sub Group of the Bank of England's Foreign Exchange Joint Standing Committee was established in 2005 for the purpose of facilitating discussions between chief dealers at major dealer banks and Bank of England staff concerning developments in the foreign exchange markets. The Chief Dealers' Sub Group consists of 11 chief traders active in the London FX market and top Bank of England officials. The Chief Dealers' Sub Group meets three to four times per year. Between 2005 and 2013, representatives from Defendants Barclays (2005-2012), BOTM (2005-2013), Merrill Lynch (Bank of America) (2006-2007), HSBC (2007-2013), JPMorgan (2007-2009, 2011-2013), Morgan Stanley (2005-2008, 2010-2011), Goldman Sachs (2009-2013), BNP Paribas (2009-2013), Deutsche Bank (2005-2012), RBS (2005-2013), UBS (2005-2013), Credit Suisse (2005-2008), and Citigroup (2005-2013), participated in the Chief Dealer's Sub Group. Foreign Exchange Joint Standing Committee Chief Dealers' Sub Group Meeting Minutes, 2005-2013 (<http://www.bankofengland.co.uk/publications/Documents/foi/disc050314.pdf>).

177. Because the ECB Fix represents a “flash” fix, a fixing that reflects a rate at a particular moment in time, Defendants have repeatedly targeted their trades for that precise moment in time in an attempt to substantially skew the rates.

2. Defendants Shared Confidential Customer Order Information to Manipulate Benchmark Rates, Including the WM/Reuters Closing Spot Rates

178. Through electronic means, Defendants shared their confidential customer order information with one another. Each Defendant aggregated its customers’ orders to determine what its individual net position in a specific currency was going to be at the Fix. Defendants then shared this information with one another to determine their aggregate net position in a specific currency at the Fix. By sharing and aggregating their confidential customer order flows, Defendants could more precisely predict how the market would move than would have been possible acting alone.

179. Defendants’ sharing of their confidential customer information violates the Federal Reserve Bank of New York’s “Guidelines for Foreign Exchange Trading Activities,” which have been in place for decades. Specifically, the Guidelines note:

Confidentiality and customer anonymity are essential to the operation of a professional foreign exchange market. Market participants and their customers expect that their interests and activity will be known only by the other party to the transaction . . . and an intermediary, if one is used.

*It is inappropriate to disclose, or to request others to disclose, proprietary information relating to a customer’s involvement in a transaction*⁶⁶

* * *

⁶⁶ Federal Reserve Bank of New York, Guidelines for Foreign Exchange Trading Activities, Foreign Exchange Committee, at 11 (May 2008)) (<http://www.newyorkfed.org/fxc/2008/fxc051608a.pdf>)(emphasis added).

Customer anonymity should not be circumvented with the use of slang or pseudonyms. If confidentiality is broken, management must act promptly to correct the conditions that allowed the event to occur ***Staff should not pass on confidential and nonpublic information outside of their institution. Such information includes discussions with unrelated parties concerning their trades, their trading positions, or the firm's position.*** It is also inappropriate to disclose, or to request others to disclose, information relating to a counterparty's involvement in a transaction

Trading room staff should take special precautions to avoid situations involving or appearing to involve trading on nonpublic information.⁶⁷

180. Defendants have already produced evidence to government investigators confirming that their traders “inappropriately share[d] market-sensitive information with rivals.”⁶⁸ Defendants acknowledged in their respective plea agreements that the Department of Justice would have been able to prove that the pleading Defendants “engaged in communications, including near daily conversations, some of which were in code, in an exclusive electronic chat room, which chat room participants, as well as others in the FX Spot Market, referred to as ‘The Cartel’ or ‘The Mafia.’”⁶⁹

181. Evidence obtained by government investigations confirms that “[s]hortly before the fix . . . it was common for a group of senior currency traders to discuss with their competitors the types and volume of trades they planned to place.”⁷⁰ A transcript provided by RBS to the UK-FCA revealed that a trader, reportedly, JPMorgan’s Richard Usher, wrote “messages to

⁶⁷ *Id.* at 26.

⁶⁸ Chiara Albanese, Katie Martin and David Enrich, *Banks Fix on Sales in Probe*, WALL STREET JOURNAL (Nov. 19, 2013) (<http://on.wsj.com/P2iHS8>).

⁶⁹ *See, e.g., U.S.A. v. Barclays plc*, Plea Agreement, ¶4(h) (D. Conn. May 19, 2015).

⁷⁰ Katie Martin and David Enrich, *Forex Probe Uncovers Collusion Attempts, Global Investigation Has Reportedly Found London-Based Traders Worked Together in Trying to Manipulate Currencies*, WALL STREET JOURNAL (Dec. 19, 2013) (<http://on.wsj.com/1o1Y0Wr>).

traders at other firms [that] included details of his trading positions.”⁷¹ Defendants’ traders confirmed that “chatroom discussions between rival traders . . . allowed them to share information about pricing and order books.”⁷²

182. A number of Defendants have admitted to the Bank of England that they shared their confidential customer information. On April 23, 2012, the Foreign Exchange Joint Standing Committee, Chief Dealers’ Sub Group met at BNP Paribas’ London office. Citigroup’s Rohan Ramchandani, who was one of The Cartel members, was present. James Pearson (RBS), and Martin Millet (Bank of England) were also present.⁷³ A person familiar with the UK-FCA’s investigation disclosed to the media that a senior trader present at the meeting turned over his meeting notes. According to the notes, the traders told Bank of England officials that they shared information about customer orders before currency benchmarks were set.⁷⁴ The official meeting minutes concealed the admissions made at the meeting.⁷⁵

183. In March 2014, the Bank of England suspended a staff member as it launched an internal investigation into whether employees knew about or condoned manipulation of the

⁷¹ Gavin Finch, Liam Vaughan, and Suzi Ring, *Ex-RBS Trader in U.K. Probe Said to Be JPMorgan’s Usher*, BLOOMBERG (Oct. 14, 2013) (<http://bloom.bg/1ip3Yer>).

⁷² Daniel Schafer, Alice Ross and Delphine Strauss, *Foreign exchange: The big fix*, FINANCIAL TIMES (November 12, 2013) (<http://www.ft.com/cms/s/2/7a9b85b4-4af8-11e3-8c4c-00144feabdc0.html#axzz3fnepy5Pj>)

⁷³ Foreign Exchange Joint Standing Committee Chief Dealers’ Sub Group, Minutes of the 23 April 2012 12 pm Meeting at BNP Paribas, 10 Hareware Avenue, London, NW1 6AA (<http://www.bankofengland.co.uk/publications/Documents/foi/disc140207.pdf>).

⁷⁴ Suzi Ring, Gavin Finch and Liam Vaughan, *BOE Staff Said to Have Condoned Currency Traders’ Conduct*, BLOOMBERG (Feb. 7, 2014) (<http://bloom.bg/1d5bQmn>).

⁷⁵ Foreign Exchange Joint Standing Committee Chief Dealers, Minutes of the 23 April 2012 12pm Meeting at BNP Paribas, 10 Hareware Avenue, London, NW1 6AA (<http://www.bankofengland.co.uk/publications/Documents/foi/disc140207.pdf>).

WM/Reuters Closing Spot Rates. The Bank of England’s investigation included the search and review of 15,000 emails, 21,000 Bloomberg and Reuters chat room transcripts, and more than 40 hours of telephone records. At least four chief traders who participated in the Bank of England’s Chief Dealers’ Sub Group have been terminated by their institutions.

3. Methods of Fixing the Fixes

184. On May 20, 2015, four Defendants (Barclays, Citigroup, JPMorgan, and RBS) pleaded guilty to violations of Section 1 of the Sherman Act in the United States District Court for the District of Connecticut. In each of the plea agreements, the banks acknowledged that “[h]ad this case gone to trial, the United States would have presented evidence sufficient to prove the following facts: . . . The defendant and its co-conspirators carried out the conspiracy to eliminate competition in the purchase and sale of the EUR/USD currency pair by various means and methods including, in certain instances, “by: . . . coordinating the trading of the EUR/USD currency pair in connection with European Central Bank and World Markets/Reuters benchmark currency ‘fixes’ which occurred at 2:15 PM (CET) and 4:00 PM (GMT) each trading day”⁷⁶

185. In executing their coordinated trading, Defendants employed a number of trading tactics to fix the Fixes, including “front-running,” “banging the close,” “painting the screen,” “netting off,” “building,” “giving the ammo,” “taking the ammo,” “taking out the filth,” and “clearing the decks.” Defendants undertook these activities together in order to minimize their risks and maximize the impact of their scheme.

⁷⁶ See, e.g., *U.S.A. v. Barclays PLC*, Plea Agreement, ¶6 (<http://1.usa.gov/1Hzn6mf>). *United States v. Citicorp*, Plea Agreement (May 19, 2015) (<http://www.justice.gov/file/440486/download>); *United States v. JPMorgan Chase & Co.*, Plea Agreement (May 19, 2015) (<http://www.justice.gov/file/440491/download>); *United States v. The Royal Bank of Scotland, plc*, Plea Agreement (May 19, 2015) (<http://www.justice.gov/file/440496/download>).

186. Each of these manipulative strategies was accomplished through the sharing of confidential customer information and trading positions. By sharing their individual trading positions, Defendants gained an understanding of the overall order flows across the FX market. According to traders, banks “would share details of orders with brokers and counterparts at banks through instant messages to align their strategies” and “improve their chances of getting the desired move in the benchmark.”⁷⁷

a. “Front-Running”/“Trading Ahead”

187. Traders “front run” on customer information when they receive customer orders that could move the market and then trade their own proprietary positions prior to executing their customers’ market-moving trades. Large client orders come from, for example, tracker funds, which typically place orders as much as an hour before the WM/Reuters Closing Spot Rates are set. Such an order gives traders information about the direction the market will move, and traders from the largest dealer banks have admitted that they use the information to take positions that benefit the bank – to their customers’ detriment.

188. According to a former trader, even one large transaction can move the market.

The trader stated:

[I]f he received an order at 3:30 p.m. to sell 1 billion Euros (\$1.3 billion) in exchange for Swiss francs at the 4 p.m. fix, he would have two objectives: to sell his own euros at the highest price and also to move the rate lower so that at 4 p.m. he could buy the currency from his client at a lower price.

He would profit from the difference between the reference rate and the higher price at which he sold his own euros. A move in the

⁷⁷ Liam Vaughan, Gavin Finch and Ambereen Choudhury, *Traders Said to Rig Currency Rates to Profit Off Clients*, BLOOMBERG (June 12, 2013) (<http://bloom.bg/1qGQ3oy>).

benchmark of 2 basis points [0.02 percent], would be worth 200,000 francs (\$216,000).⁷⁸

189. Nevertheless, absent collusion, a Defendant “front running” the market would still face the risk that another Defendant with a larger position could trade in the opposite direction at the same time. If this were to happen, a Defendant’s strategy would backfire, and it would, in industry parlance, get “run over.” For instance, if in the above example, the trader decided to sell 1 billion euros in exchange for Swiss francs, but another market participant traded the opposite direction and sold Swiss francs for 2 billion euros, the market price would move higher, not lower, as the trader had anticipated based on his client’s order. If, as a consequence, the market moved 2 basis points higher, the trader would lose 200,000 francs (\$216,000) on the transaction.

190. Absent collusion and manipulation, executing trades at the Fixes would pose more risk for Defendants than other order types. It poses more risk because, by agreeing to trade at a rate determined sometime in the future (even the relatively near future), there is a greater time period for market movements. By agreeing to execute at a Fix before the Fix occurs, the bank faces a risk not present in trades executed immediately, that the market will have moved against its position in the interim. In addition, the Fix price represents midpoint price. Buy and sell orders are filled at the same price as opposed to ordinary orders where banks fill bid or buy orders at a price less than they fill ask or sell orders. Despite this increase in risk, Defendants commonly incentivized their sales forces, through items such as increased “sales credits,” to execute transactions at the WM/Reuters Closing Spot Rates.

⁷⁸ *Id.*; Liam Vaughan, Gavin Finch and Bob Ivry, *Secret Currency Traders’ Club Devised Biggest Market’s Rates*, BLOOMBERG (Dec. 18, 2013) (<http://bloom.bg/libwUXj>).

191. To limit this risk of being “run over,” Defendants agreed to “front run” together by “improperly working as a pack” and agreeing “to a sequence for placing their own trades to their advantage.”⁷⁹

b. “Banging the Close”

192. Defendants also engaged in “banging the close” to manipulate the Fixes and thereby fix the prices of FX Instruments. “Banging the close” occurs when traders break up large customer orders into small trades and concentrate the trades in the moments before and during the Fix calculation window in order to spike the published rates up or down. Because the WM/Reuters Closing Spot Rates are known to be based on the median of trades during the calculation window and not weighted for the average notional amount of a transaction, the rates are readily susceptible to manipulation by “banging the close.” That is, because WM/Reuters looks only at trades and not at their relative volume, a trader would have substantially more influence over the Closing Spot Rates by breaking a \$100,000,000 trade into 100 trades, rather than executing one trade for the whole amount.

193. As explained by numerous sources, “[t]o maximize profit, dealers would buy or sell client orders in installments during the 60-second window to exert the most pressure possible on the published rate Because the benchmark is based on the median of transactions during the period, placing a number of smaller trades could have a greater impact than one big deal.”⁸⁰

⁷⁹ Katie Martin and David Enrich, *Forex Probe Uncovers Collusion Attempts*, WALL STREET JOURNAL (Dec. 19, 2013) (<http://on.wsj.com/1h7x0j4>); Liam Vaughan, Gavin Finch and Ambereen Choudhury, *Traders Said to Rig Currency Rates to Profit Off Clients*, BLOOMBERG (June 12, 2013) (<http://bloom.bg/1qGQ3oy>); Liam Vaughan, Gavin Finch and Bob Ivry, *Secret Currency Traders’ Club Devised Biggest Market’s Rates*, BLOOMBERG (Dec. 18, 2013) (<http://bloom.bg/1ibwUXj>).

⁸⁰ Liam Vaughan, Gavin Finch and Ambereen Choudhury, *Traders Said to Rig Currency Rates to Profit Off Clients*, BLOOMBERG (June 12, 2013) (<http://bloom.bg/1qGQ3oy>).

c. “Painting the Screen” and Other Tactics

194. Defendants also manipulated at least the WM/Reuters Closing Spot Rates (and thereby fixed the prices of numerous FX Instruments) by “painting the screen.” “Painting the screen” occurs when Defendants place phony orders with one another to create the illusion of trading activity in a given direction in order to move rates prior to the fixing window. After the relevant fix is calculated, Defendants reverse those trades.

195. The FCA found that traders also manipulated the fix in the desired direction by undertaking the following actions:⁸¹

- a. Traders in a chat room with net orders in the opposite direction to the desired movement at the fix sought before the fix to transact or “*net off*” their orders with third parties outside the chat room, rather than with other traders in the chat room. This maintained the volume of orders in the desired direction held by traders in the chat room and avoided orders being transacted in the opposite direction at the fix. Traders within the market have referred to this process as “*leaving you with the ammo*” or similar.
- b. Traders in a chat room with net orders in the same direction as the desired rate movement at the fix sought before the fix to do one or more of the following:
 - i. net off these orders with third parties outside the chat room, thereby reducing the volume of orders held by third parties that might otherwise be transacted at the fix in the opposite direction. Traders within the market have referred to this process as “*taking out the filth*” or “*clearing the decks*” or similar;
 - ii. transfer these orders to a single trader in the chat room, thereby consolidating these orders in the hands of one trader. This potentially increased the likelihood of successfully manipulating the fix rate since that trader could exercise greater control over his trading strategy during the fix than a number of traders acting separately. Traders within the market have referred to this as “*giving you the ammo*” or similar; and

⁸¹ See, e.g., FCA, Final Notice to Citibank, N.A., Number 124704, ¶4.36 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

iii. transact with third parties outside the chat room in order to increase the volume of orders held by them in the desired direction. This potentially increased the influence of the trader(s) at the fix by allowing them to control a larger proportion of the overall volume trades at the fix than they would otherwise have and/or to adopt particular trading strategies, such as trading a large volume of a currency pair aggressively. This process was known as “*building*.”

c. Traders increased the volume traded by them at the fix in the desired direction in excess of the volume necessary to manage the risk associated with the firms’ net buy or sell orders at the fix. Traders within the market have referred to this process as “*overbuying*” or “*overselling*.”⁸²

196. Thus, by agreeing in chat rooms to coordinate their trading in the manner described above, Defendants manipulated the Fixes.

4. Manipulation of the WM/Reuters Closing Spot Rates

197. As described above, Defendants engaged in a number of manipulative and collusive tactics with respect to the WM/Reuters Closing Spot Rates.

198. As one example, on January 1, 2012, members of The Cartel, including traders from Citigroup and JPMorgan, coordinated trading to manipulate the EUR/USD, identifying their discussion as relating to the WM/Reuters Fix through a code word – “*pickun*.”⁸³

⁸² FCA, Final Notice to Citibank, N.A., Number 124704, ¶4.36 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

⁸³ The CFTC referenced this chat as an example of JPMorgan’s and Citi’s misconduct in attempting to manipulate the EUR/USD currency pair just ahead of the WM/Reuters 4 p.m. fix. See *In the Matter of Citibank, N.A.*, CFTC Docket No. 15-03, Order Instituting Proceeding Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 7 (Nov. 11, 2014) (<http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfcitibankorder111114.pdf>); *In the Matter of JPMorgan Chase Bank, N.A.*, CFTC Dkt. No. 15-04 (Nov. 11, 2014) at 7-8 (<http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfjpmorganorder111114.pdf>); see also CFTC Examples of Misconduct in Private Chat Rooms, *Traders Coordinate in an Attempt to Manipulate the EUR/USD Fix* (available online <http://www.cftc.gov/ucm/groups/public/@newsroom/documents/file/hsbcmisconduct111114.pdf>).

TIME (UTC)	TRADER	MESSAGE
15:51:21	JPMorgan	ok, I got a lot of euros
15:51:25	Citigroup	?
15:51:28	Citigroup	u selling?
15:51:30	JPMorgan	yes
15:51:33	Citigroup	now
15:51:35	Citigroup	or pickun
15:51:39	JPMorgan	pick un

199. The traders (along with a trader from UBS) continued to discuss their approach and appear to agree to front run a customer order. Having indicated that they were discussing a trade at the WM/Reuters Fix, the traders reached an agreement to “double team” the “pickun.” In this chat, the traders coordinated not only the side of their trades, but the timing of their trades, making demands of each other and extracting promises to comply with the collusive agreement.

TIME (UTC)	TRADER	MESSAGE
15:51:46	JPMorgan	u want it?
15:52:24	Citigroup	ill take it [JP Morgan trader]
15:52:26	Citigroup	if u don't want it
15:52:39	JPMorgan	tell u what
15:52:42	JPMorgan	lets double team it
15:52:45	JPMorgan	how much u got
15:52:46	Citigroup	ok
15:52:47	Citigroup	300
15:52:52	Citigroup	U?
15:53:01	JPMorgan	ok ill give u 500 mor
15:53:05	Citigroup	wow
15:53:06	Citigroup	Ok
15:53:08	Citigroup	ha
15:53:09	Citigroup	cool
15:53:14	UBS	[REDACTED]
15:53:20	JPMorgan	so we have 800 each
15:53:21	JPMorgan	ok
15:53:31	JPMorgan	but we gotta both do some at fix
15:53:36	JPMorgan	don't sell em all and take the foot off
15:53:40	Citigroup	I promise I will
15:53:47	JPMorgan	me too

200. One individual trader's series of chats, made public in the CFTC's enforcement order against HSBC, illustrates the sweeping breadth of activity that traders would use to collude

with respect to the WM/Reuters Closing Spot Rates.⁸⁴ The set of chats released by the CFTC involved one chat room with traders from four banks (HSBC, Barclays Trader (1),⁸⁵ Bank R,⁸⁶ Bank S), one private chat room with two traders (HSBC, Barclays Trader (2)), another private chat room with two traders (HSBC, Bank V), and a fourth chat room with three traders (HSBC, Barclays Trader (2), Bank Z). Just this single afternoon of collusion involved, at a minimum, eight traders from six banks.

201. Chats would include numerous traders, many of whom openly acknowledged their intentions of moving the fix, often through colorful euphemisms. In the following chat that occurred on June 28, 2011,⁸⁷ the conspiring traders disclosed that they were net sellers of GBP/USD and announced their intention to “team whack” the WM/Reuters Closing Spot Rate in GBP/USD (“cable”).⁸⁸ After the 4 p.m. fix closed, the participants in the chat room congratulated each other.

⁸⁴ CFTC, *In the Matter of HSBC Bank plc*, CFTC Docket No. 15-07, Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 6-9 (Nov. 11, 2014); *see also* FCA, Final Notice to HSBC Bank plc, No. 114216, ¶¶4.38-4.44 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/hsbc-bank-plc>).

⁸⁵ *See* New York State Department of Financial Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law, at ¶28 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>) (identifying Barclays’ trader in the same chat room conversation).

⁸⁶ Chats that identify banks by single letter codes were reproduced in settlements between the identified banks and the Commodity Futures Trading Commission.

⁸⁷ *See* New York State Department of Financial Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law, at ¶28 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>).

⁸⁸ The term cable to refer to GBP/USD is believed to refer to the laying of the first transatlantic cable, which was laid between the United Kingdom and the United States in 1858. It also gives rise to another euphemism for GBP/USD based on a rhyming scheme (“Betty”), referring to the rhyme of actress Betty Grable’s last name with “cable.”

TIME (GMT)	TRADER	MESSAGE
14:50:21	Barclays 1	early days but im a seller cable at fix
...		
15:11:43	Bank S	here also
15:24:50	Bank R	u got much to do in fix [Barclays Trader]
15:25:07	Barclays 1	im seller 130 cable that it
...		
15:28:02	Barclays 2	hopefulyl a fe wmore get same way and we can team whack it
15:28:17	Bank R	ill do some digging
...		
15:36:13	Barclays 1	im seller 170 gbp atmofix
15:36:26	Bank R	we sellers of 40
15:38:26	HSBC	lhs in cable at the fix
15:38:29	HSBC	good amount...
16:00:35	Bank R	well done gents
16:01:56	Barclays 1	hooray nice team work
16:02:22	HSBC	nice one mate

202. This information would also be passed to other traders outside of the chat rooms, so that they could plan their trading accordingly. Simultaneously, in a separate chat room, prior to the close of the fix period, HSBC trader informed Barclays trader 2 at 3:25 p.m. that he should buy cable at the fix. Shortly thereafter, HSBC trader told Barclays trader 2 that he had a net sell order of approximately 400 million cable at the fix, and Barclays trader 2 acknowledged that he was a seller of 150 million cable at the fix.

TIME (GMT)	TRADER	MESSAGE
15:25:19	HSBC	get lumpy cable at the fix ok
15:25:32	Barclays 2	ta mate
15:25:35	Barclays 2	150 here
15:25:46	HSBC	400 odd here
15:25:50	HSBC	lets go
15:26:00	Barclays 2	yeah baby
15:26:03	HSBC	[Barclays Trader 1] is too
...		
15:27:00	Barclays 2	sry thats the [Barclays] flow
15:27:23	Barclays 2	[Barclays Trader 1] gets
15:28:26	HSBC	so its 150 all day wiht you guys?

TIME (GMT)	TRADER	MESSAGE
		...
15:36:34	Barclays 2	170 here

203. After the WM/Reuters Closing Spot Rate window closed and the fix was set, the traders celebrated.

TIME (GMT)	TRADER	MESSAGE
16:01:03	Barclays 2	nice job mate
16:03:34	HSBC	haha
16:03:40	HSBC	i sold a lot up there
16:03:46	HSBC	and over sold by 100
16:03:48	HSBC	hahaha
		...
16:04:06	Barclays 2	sweet nice job
		...
16:05:04	Barclays Trader 2	bravo

204. By sharing their respective positions, traders were also able to gather greater market intelligence than by acting independently, rallying their cohorts to “do some digging” as in the following chat, which was also effectively concurrent with the two chats transcribed above.

TIME (GMT)	TRADER	MESSAGE
15:28:45	HSBC	lhs in about 300 quid cable for the fix
15:28:54	Bank V	sweet
15:29:42	HSBC	can you do some digging and seeif anyone is that way
15:29:52	Bank V	ofcourse mate
15:34:49	Bank V	im getting 83 at mom mate
15:34:56	HSBC	nice
		...
15:37:38	Bank V	someone tells a guy here he is getting 170 cble at fix
15:43:28	Bank V	see that [HSBC Trader]
15:43:57	HSBC	thx

205. After the fix, the HSBC trader again acknowledged that the collusion “worked nice.”

TIME (GMT)	TRADER	MESSAGE
16:00:51	Bank V	have that my son
16:00:52	Bank V	hahga

TIME (GMT)	TRADER	MESSAGE
16:00:56	Bank V	v nice mate
16:04:53	HSBC	that worked nice mate
16:05:44	Bank V	big time mate.

206. The chat below is an example of Barclays “clearing the decks” for HSBC by getting rid of the main buyer.⁸⁹ After the fixing window closed, the same traders celebrated the spot rate that was set, and appear to attribute it to collusion (a “combo boom”), but lamented their failure to move it even further.

TIME (GMT)	TRADER	MESSAGE
15:43:52	Barclays	right ive taken him out
15:43:58	Barclays	he paid me for 186
15:44:09	HSBC	ok thx
15:44:15	Barclays	so shud have giot rid of main buyer for u
15:44:58	Barclays	im stilla seller of 90
15:45:06	Barclays	gives us a chance and ive paid a load of bro ha
		...
16:05:03	Barclays	yeah babyxx
16:05:11	Barclays	[HSBC Trader] [Barclays Trader 1] combo boom
16:05:22	HSBC	loved that mate
16:05:26	HSBC	worked lovely
16:05:34	HSBC	pity we couldn't get it below the 00

207. Because the fix period for WM/Reuters Closing Spot Rates lasts only a minute, the timing of trades was critical. In the following chat, which occurred simultaneously in yet another chat room, traders discussed unloading their positions just before the fixing window, an example of “banging the close.”

TIME (GMT)	TRADER	MESSAGE
15:54:32	Barclays	can u let me know when are down to your last tenner
15:55:02	HSBC	ok
15:55:10	HSBC	i'm down to my last tenner
15:55:17	Barclays	ok ta

⁸⁹ See New York State Department of Financial Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law, at ¶28 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>).

TIME (GMT)	TRADER	MESSAGE
15:55:41	Barclays	just sold some more
15:55:49	HSBC	hahaha
15:55:51	Barclays	hehehe
16:00:57	Barclays	nice on son
16:03:15	HSBC	learnt from a good fella
16:15:43	Barclays	there u go
16:16:48	Barclays	go early, move it, hold it, push it

208. The FCA described HSBC's trading in the minutes surrounding and including the above chats.⁹⁰ In the period from 3:32 p.m. to 4:01 p.m., HSBC sold GBP 381 million on Reuters and other trading platforms.⁹¹ Approximately 18% of this volume (GBP 70 million) was sold by HSBC in advance of the 60-second fix window around 4 p.m.⁹² During the period from 3:32 p.m. to the start of the fix window, the GBP/USD rate fell from 1.6044 to 1.6009.⁹³ In the first five seconds of the fix window, HSBC entered a further nine offers to sell GBP 101 million, causing the bid rate to fall from 1.6009 to 1.6000.⁹⁴ HSBC continued to sell GBP 210 million throughout the remainder of the fix window (for a total GBP 311 million) at a bid rate between 1.6000 and 1.6005.⁹⁵ Subsequently, WM Reuters published the 4p.m. fix rate for GBP/USD at 1.6003.⁹⁶

⁹⁰ See FCA, Final Notice to HSBC Bank plc, No. 114216, ¶4.40 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/hsbc-bank-plc>).

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.* at ¶4.41.

⁹⁵ *Id.* at ¶¶4.41-4.42.

⁹⁶ *Id.* at ¶4.42.

209. The amount HSBC sold on Reuters accounted for 51% of the volume sold in the GBP/USD currency pair on the Reuters platform during the fix window.⁹⁷ Cumulatively, HSBC, Barclays, and the other two firms accounted for 63% of selling during the fixing window.⁹⁸ Defendants successfully decreased the WM/Reuters Closing Spot Rate to their benefit, generating a profit of approximately \$162,000 for HSBC.⁹⁹

210. Certain chat rooms would often target the WM/Reuters Closing Spot Rates for a particular currency pair. For instance, Defendants in the Sterling Lads chat room regularly manipulated the exchange rate between British pounds sterling and U.S. dollars (GBP/USD or “cable”) – the world’s third most-traded currency pair. On occasions, they would deal in other currencies, including EUR/USD and USD/JPY. The members of the Sterling Lads group changed over time, but included at least traders from HSBC, RBS, UBS, Barclays, and Credit Suisse.

211. [REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
11:13:23	RBS	[REDACTED]
11:13:31	RBS	[REDACTED]
11:14:07	Barclays	[REDACTED]
11:14:12	RBS	[REDACTED]
11:14:53	HSBC	[REDACTED]
11:15:12	Barclays	[REDACTED]
11:15:12	Barclays	[REDACTED]

⁹⁷ *Id.*

⁹⁸ *Id.*

⁹⁹ *Id.* at ¶4.43.

212. In this example, the Sterling Lads coordinated trading ahead of the fix and matched off with JPMorgan and Credit Suisse outside of the chat room.¹⁰⁰ [REDACTED] RBS, HSBC, and Barclays traders then chimed in, indicating that they were “getting” their respective volumes, meaning that they were buying GBP. The Barclays’ trader even announced the total position, but clarified that he would be matching off a portion of his position with his New York desk. UBS’s trader indicated in response that he was selling (“lose”) and agreed to match off with Barclays before the fix using a broker. They then confirmed the details of the match (“we sell 54 quid to u at fix”). RBS’s trader then announced he was “getting more” and matched off a portion of HSBC’s position with other traders outside the chat room. After 15:00 (the time of the fixing), the members of the chat room congratulated each other on the fixing.

TIME (UTC)	TRADER	MESSAGE
14:44:05	Barclays	[REDACTED]
14:45:35	RBS	im getting abt 80 quid now
14:45:41	RBS	fixing
14:45:54	HSBC	my ny 100 quid
14:46:00	Barclays	[REDACTED]
14:46:01	Barclays	[REDACTED]
14:46:07	Barclays	[REDACTED]
14:46:14	HSBC	[REDACTED]
14:46:31	Barclays	[REDACTED]
14:48:04	UBS	[REDACTED]
14:48:13	Barclays	[REDACTED]
14:48:20	Barclays	[REDACTED]
14:48:46	UBS	[REDACTED]

¹⁰⁰ Portions of this chat have been published by the CFTC and the UK-FCA. See *In the Matter of The Royal Bank of Scotland, plc*, CFTC Dkt. No. 15-05 at 6 (Nov. 11, 2014) (http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enf_royalbankorder111114.pdf); *FCA Final Notice 2014: The Royal Bank of Scotland plc*, No. 121882, ¶¶4.38-4.45 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notice/2014/royal-bank-of-scotland>).

TIME (UTC)	TRADER	MESSAGE
14:48:55	Barclays	[REDACTED]
14:49:00	UBS	[REDACTED]
14:49:03	RBS	[REDACTED]
14:49:11	UBS	[REDACTED]
14:49:19	Barclays	[REDACTED]
14:49:30	UBS	[REDACTED]
14:49:34	Barclays	[REDACTED]
14:49:40	Barclays	[REDACTED]
14:49:42	Barclays	[REDACTED]
14:49:46	UBS	[REDACTED]
14:51:19	RBS	getting more than u know [HSBC trader] betty
14:51:26	HSBC	ok thx
14:52:23	UBS	nice job gents
14:54:16	HSBC	[RBS trader], just matched with [REDACTED] for 100 still lhs in about 140
14:54:26	RBS	cool
14:56:26	UBS	options guys payiong us down here and selling the x
15:00:58	UBS	I don my hat
15:01:08	Barclays	what a job
15:01:23	UBS	welld one lads
15:01:28	Barclays	bravo
15:07:03	RBS	1.6218..nice\
15:07:33	HSBC	worked ok that one...

213. In the example above, from 3:50:30 p.m. to 3:59:30 p.m., RBS sold GBP 167 million and HSBC sold GBP 26 million, accounting for 28% of all sales on the Reuters platform during this period.¹⁰¹ The GBP/USD rate dropped from 1.6276 to 1.6233.¹⁰² During the 60-second fixing window, RBS and HSBC accounted for 41% of the sales in GBP/USD on the Reuters platform during the fixing window.¹⁰³ During the fixing window, the GBP/USD rate fell from 1.6233 to 1.6213.¹⁰⁴ Subsequently, WM/Reuters published the 4 p.m. fix rate for

¹⁰¹ *Id.* at ¶4.42.

¹⁰² *Id.*

¹⁰³ *Id.* at ¶4.43.

¹⁰⁴ *Id.*

GBP/USD at 1.6218.¹⁰⁵ Defendants' trading in GBP/USD in this example generated a profit for RBS of \$615,000.¹⁰⁶

214. In another example, RBS and two other banks conspired to fix the WM/Reuters Closing Spot Rate for the AUD/USD and NZD/USD currency pairs. Bank T's trader announced to the chat room that he was buying Australian dollars and New Zealand dollars at the fix, but that it was not a big order.¹⁰⁷ The RBS trader informed the group that he was buying 50 million Australian dollars at the fix and that he would execute Bank T trader's transaction.¹⁰⁸ Bank T trader agreed.¹⁰⁹ Bank P's trader expressed his order to buy 25 million and asked the RBS trader if he was interested in taking his order as well, because it would give him more "ammo" (a larger position) at the fix.¹¹⁰ The RBS trader agreed. Bank T's trader also offered RBS more "ammo" in New Zealand dollars.¹¹¹ The RBS trader informed the group that he had built an aggregate 220 million buy order and at 3:53:20 p.m., Bank T's trader instructed the RBS trader to "ramp it." After the fix period had closed, the traders congratulated themselves on successfully manipulating the fix.

TIME (GMT)	TRADER	MESSAGE
15:43:42	Bank T	buying aud and nzd at the fix
15:43:43	RBS	Tkx
15:43:52	Bank T	ntg big

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ See *In the Matter of The Royal Bank of Scotland, plc*, CFTC Dkt. No. 15-05, at 6 (Nov. 11, 2014) (<http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfroyalbankorder111114.pdf>).

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.*

15:43:59	RBS	Im buying 50 aud can do yours if you want
15:45:13	Bank T	ok . . .60 plse . . .****
15:45:56	RBS	Great
15:50:00	Bank P	I need to buy 25 aud at the fix too.. any int? more ammo for you...?
15:50:21	RBS	Sure [Bank P Trader]
15:51:24	Bank P	cool all yours [RBS Trader]
15:51:46	RBS	Buying 220 now
15:51:57	Bank P	good luck
15:52:20	Bank T	load up your 50 offr . . .
15:53:14	Bank P	ill do those ones if you want
15:53:19	RBS	haah
15:53:20	Bank T	ur fkg [RBS Trader], ramp it
16:00:41	Bank T	nice one *****
16:00:56	Bank P	look at you!...-well done mate . . .

215. In the following example, on June 30, 2010, a trader from JPMorgan and a trader from Société Générale agreed to coordinate trading immediately before the WM/Reuters Closing Spot Rate for AUD/BRL (Australian dollar/Brazilian real) was determined and effectively fixed the WM/Reuters rate for AUD/BRL.

TIME (EST)	TRADER	MESSAGE
10:58:17	JPMorgan	[REDACTED]
10:58:53	Société Générale	[REDACTED]
10:58:59	Société Générale	[REDACTED]
10:59:04	JPMorgan	[REDACTED]
10:59:06	SocGen	[REDACTED]
10:59:07	JPMorgan	[REDACTED]
10:59:24	Société Générale	[REDACTED]
10:59:26	Société Générale	[REDACTED]
10:59:29	Société Générale	[REDACTED]
10:59:30	JPMorgan	[REDACTED]
10:59:35	JPMorgan	[REDACTED]
11:03:55	Société Générale	[REDACTED]

216. On December 4, 2012, a chat room group, including Goldman Sachs, JPMorgan, and Credit Suisse, took actions to continue the conspiracy through alternate means. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (EST)	TRADER	MESSAGE
10:52:50	Goldman Sachs	[REDACTED]
10:52:52	Goldman Sachs	[REDACTED]
10:53:54	JPMorgan	[REDACTED]
10:54:00	Credit Suisse	[REDACTED]
10:54:02	Credit Suisse	[REDACTED]
10:54:12	Goldman Sachs	[REDACTED]
10:54:21	JPMorgan	[REDACTED]
10:54:26	JPMorgan	[REDACTED]
10:55:16	Credit Suisse	[REDACTED]
10:55:19	Credit Suisse	[REDACTED]
10:56:01	Goldman Sachs	[REDACTED]
10:56:14	JPMorgan	[REDACTED]
10:56:54	Goldman Sachs	[REDACTED]
10:57:10	JPMorgan	[REDACTED]
10:57:18	JPMorgan	[REDACTED]
10:57:19	Goldman Sachs	[REDACTED]
10:57:27	Goldman Sachs	[REDACTED]
10:57:34	JPMorgan	[REDACTED]
10:57:34	Goldman Sachs	[REDACTED]
10:57:39	JPMorgan	[REDACTED]
10:57:52	JPMorgan	[REDACTED]
10:58:14	Goldman Sachs	[REDACTED]
10:58:37	JPMorgan	[REDACTED]
10:58:46	JPMorgan	[REDACTED]
10:59:00	Goldman Sachs	[REDACTED]
10:59:10	Credit Suisse	[REDACTED]

217. Transcripts of The Cartel’s communications reveal that Defendants exchanged information on customer orders and agreed to trading strategies to manipulate the WM/Reuters

Closing Spot Rates.¹¹² [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
11:52:41	UBS	[REDACTED]
11:55:45	JPMorgan	[REDACTED]
11:55:50	JPMorgan	[REDACTED]
11:56:16	JPMorgan	[REDACTED]
11:56:19	JPMorgan	[REDACTED]
11:56:28	JPMorgan	[REDACTED]
11:56:34	Citigroup	[REDACTED]
11:56:37	Citigroup	[REDACTED]
		...
11:58:12	JPMorgan	[REDACTED]
11:58:14	JPMorgan	[REDACTED]
11:58:16	JPMorgan	[REDACTED]
11:58:19	JPMorgan	[REDACTED]
11:58:41	UBS	[REDACTED]
11:59:31	UBS	[REDACTED]
11:59:34	UBS	[REDACTED]
11:59:48	UBS	[REDACTED]
12:00:08	JPMorgan	[REDACTED]
12:04:02	UBS	[REDACTED]

218. Later that day, in another chat room, while traders from UBS, Barclays, and two other banks coordinated trading before the ECB fix, at 1:14 p.m., a firm involved in the chat above, copied into the chat the comment made by UBS at 12:04 p.m. that the earlier WM/Reuters 12:00 p.m. fix was “the best fix of my ubs career.” The firm then said “*challenge*

¹¹² Liam Vaughan, Gavin Finch and Bob Ivry, *Secret Currency Traders’ Club Devised Biggest Market’s Rates*, BLOOMBERG (Dec. 18, 2013) (<http://bloom.bg/1ibwUXj>).

[sic]” and another firm added “*stars aligned.*”¹¹³ A description of this chat is described more fully in the ECB fix section *infra*.

219. The chats described above are a mere snippet of Defendants’ conduct throughout the Class Period. They demonstrate how Defendants participated in chat rooms, sharing highly confidential information and fixed the WM/Reuters Fix.

5. The ECB Fixing Rate

220. The WM/Reuters Closing Spot Rates were not the only fixing benchmark that Defendants manipulated. The European Central Bank Fixing Rate was the subject of repeated collusive efforts by FX traders. The European Central Bank publishes 32 foreign exchange rates as against the euro. Its “fixing” is determined at 1:15 GMT.

221. On February 15, 2012, as documented by the UK-FCA, and the New York Department of Financial Services, The Cartel, including traders from UBS, Barclays, and two other banks coordinated trading ahead of the ECB fix to manipulate the ECB fix in the EUR/USD currency pair.¹¹⁴ Notably, their efforts to fix the ECB occurred on the same day they fixed the 12:00 p.m. WM/Reuters rates described in paragraph 217 above. On this day, UBS had net client sell orders to sell at the fix which meant that it would benefit if it was able to move the ECB fix rate lower.¹¹⁵ The following table describes the UK-FCA’s findings of fact regarding UBS’s and others’ conduct on this day.

¹¹³ See FCA Final Notice to UBS AG, No. 186958, at ¶4.40(10) (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/ubs-ag>).

¹¹⁴ *Id.* at ¶4.39; New York State Department of Financial Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law, at ¶30 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>) (identifying Barclays in this same chat). On information and belief, Bank B or Bank C is either JPMorgan or Citi as members of The Cartel.

¹¹⁵ FCA Final Notice to UBS AG, No. 186958, ¶4.39 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/ubs-ag>).

TIME (GMT)	TRADER	MESSAGE
12:36	UBS, Barclays, Bank B	"[Barclays] disclosed that it had net sell orders for the fix." ¹¹⁶ "UBS disclosed that it had net sell orders for the fix of EUR200 million." ¹¹⁷ "Firm B disclosed that it had net sell orders for the fix of EUR100" ¹¹⁸
12:37	Barclays	"[Barclays] disclosed that these net sell orders were EUR200 million." ¹¹⁹
12:40	Barclays	"[Barclays] updated this figure to EUR175 million." ¹²⁰
12:44	UBS	"UBS disclosed that its net sell orders had increased to EUR250 million." ¹²¹
12:48	Barclays	"[Barclays] disclosed that its net sell orders had reduced to EUR100 million, but that it was ' <i>...hopefully taking all the filth out for u . . .</i> '" ¹²²
1:02	Barclays	"[Barclays] disclosed that it had sold EUR25 million to a client in a transaction separate to the fix but would remain EUR25 million short (' <i>lose . . . s het [i.e. 25 million] though natch dont buy</i> ')." ¹²³
1:02	UBS	"UBS disclosed that it had also sold EUR25 million to a client in a separate transaction." ¹²⁴
1:02	Bank B	"Firm B indicated that these short positions should be held for 12 minutes (i.e. until the ECB fix)." ¹²⁵
1:03	Barclays	"[Barclays] disclosed that it had been trading in the market and its net orders at the fix had been reduced to EUR50 million (' <i>i getting chipped away at a load of bank filth for the</i> '")

¹¹⁶ *Id.* at ¶4.40(1).

¹¹⁷ *Id.* at ¶4.40(2).

¹¹⁸ *Id.* at ¶4.40(3).

¹¹⁹ *Id.* at ¶4.40(1).

¹²⁰ *Id.*

¹²¹ *Id.* at ¶4.40(2).

¹²² *Id.* at ¶4.40(4); *see also In the Matter of Barclays Bank PLC*, New York State Department of Financial Services Consent Order, at ¶30 (May 19, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>) (Barclays stated, "hopefully taking all the filth out for you [UBS Cartel member].")

¹²³ FCA Final Notice to UBS AG, No. 186958, ¶4.40(5) (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notice/2014/ubs-ag>).

¹²⁴ *Id.* at ¶4.40(6).

¹²⁵ *Id.*

TIME (GMT)	TRADER	MESSAGE
		<i>fix...back to bully [i.e. 50 million]...hopefully decks bit cleaner.”</i> ¹²⁶
1:04	UBS	“UBS disclosed that it still had net sell orders for EUR200 million at the forthcoming ECB fix. UBS also stated it had a separate short position of EUR50 million.” ¹²⁷
1:05	Bank B	“Firm B disclosed it also had a short position of EUR50 million.” ¹²⁸
1:07	Bank C	“Firm C disclosed that it had net buy orders of EUR65 million at the forthcoming ECB fix. Firm C subsequently netted off with [Barclays] and Firm B, such that at 1:08pm Firm C disclosed that it only had EUR10 million left to buy in the opposite direction at the fix. Firm B advised Firm C to ‘go late’ (i.e. buy later when the rate would be lower).” ¹²⁹
1:14	Bank B	“Firm B copied into the chat a comment made by UBS at 12:04 p.m. that day describing an earlier fix as ‘ <i>the best fix of my ubs career.</i> ’ Firm B then said ‘ <i>challenge</i> ’ [sic] and Firm C added ‘ <i>stars aligned.</i> ’” ¹³⁰

222. From 12:35 p.m. to 1:14 p.m., the UBS trader sold a net amount of EUR 132 million. At 1:14:59 p.m. (one second before the ECB fix), the UBS trader placed an order to sell EUR 100 million at the rate of 1.3092, which was three basis points below the prevailing best market bid at that time.¹³¹ The order was immediately executed and accounted for 29% of the sales in EUR/USD on the EBS platform during the period from 1:14:55 to 1:15:02 p.m.¹³² The

¹²⁶ *Id.* at ¶4.40(7); see also *In the Matter of Barclays Bank PLC*, New York State Department of Financial Services Consent Order, at ¶30 (May 19, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>) (Barclays stated, “hopefully decks bit cleaner.”)

¹²⁷ FCA Final Notice to UBS AG, No. 186958, ¶4.40(8) (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/ubs-ag>).

¹²⁸ *Id.*

¹²⁹ *Id.* at ¶4.40(9).

¹³⁰ *Id.* at ¶4.40(10).

¹³¹ *Id.* at ¶4.42.

¹³² *Id.* at ¶4.43.

ECB subsequently published the fix rate for EUR/USD at 1.3092.¹³³ Defendants’ trading in EUR/USD in this example generated a profit for UBS of \$513,000.¹³⁴

223. Immediately after Defendants fixed the ECB fix, UBS was congratulated on the success of its trading by traders from Barclays, Bank B, and Bank C, “*hes sat back in his chaoir [sic] . . . feet on desk . . . announcing to desk . . . that why I got the bonus poof*” and “*yeah made most peoples year.*”¹³⁵

224. The following chat occurred on March 22, 2011 between 1:08:18 and 1:18:58 P.M. (immediately before and following the ECB Fix). [REDACTED]

[REDACTED]

TRADER	MESSAGE
Barclays	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]
Citigroup	[REDACTED]
Barclays	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]
Citigroup	[REDACTED]
Barclays	[REDACTED]
Barclays	[REDACTED]
Barclays	[REDACTED]
JPMorgan	[REDACTED]
Citigroup	[REDACTED]
Barclays	[REDACTED]
JPMorgan	[REDACTED]
Barclays	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]

¹³³ *Id.* at ¶4.44.

¹³⁴ *Id.* at ¶4.45.

¹³⁵ *Id.* at ¶4.46.

225. The following chat, occurring between 1:01:26 p.m. and 1:05:05 GMT, 8:01:26 EST on April 24, 2012 provides another example of traders sharing information before the ECB Fix. [REDACTED]

TRADER	MESSAGE
JPMorgan	[REDACTED]
Citigroup	[REDACTED]
Citigroup	[REDACTED]
Citigroup	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]
Citigroup	[REDACTED]
JPMorgan	[REDACTED]
JPMorgan	[REDACTED]
Citigroup	[REDACTED]
JPMorgan	[REDACTED]
Citigroup	[REDACTED]
JPMorgan	[REDACTED]

226. Traders openly coordinated their conduct with respect to the ECB fix, and acknowledged that their conduct was beyond the realm of acceptable trade practice. [REDACTED]

TIME (EST)	TRADER	MESSAGE
07:53:52	JPMorgan	[REDACTED]
07:54:34	RBS	[REDACTED]
07:54:40	JPMorgan	[REDACTED]
07:54:40	RBS	[REDACTED]
07:54:46	JPMorgan	[REDACTED]
	RBS	[REDACTED]

TIME (EST)	TRADER	MESSAGE
07:55:01	JPMorgan	[REDACTED]
07:55:07	JPMorgan	[REDACTED]
07:55:09	JPMorgan	[REDACTED]
07:56:01	RBS	[REDACTED]
07:56:03	RBS	[REDACTED]
07:56:12	JPMorgan	[REDACTED]
07:56:56	RBS	[REDACTED]
...		
08:02:51	JPMorgan 1	[REDACTED]
	JPMorgan 1	[REDACTED]
	RBS 1	[REDACTED]
08:03:27	RBS 1	[REDACTED]
08:03:30	JPMorgan 1	[REDACTED]
08:03:35	RBS 1	[REDACTED]
	JPMorgan 1	[REDACTED]
08:04:21	RBS 1	[REDACTED]
	JPMorgan 1	[REDACTED]
	JPMorgan 1	[REDACTED]
	JPMorgan 1	[REDACTED]
	JPMorgan 1	[REDACTED]
	JPMorgan 1	[REDACTED]
08:07:38	JPMorgan 1	[REDACTED]
	JPMorgan 1	[REDACTED]
08:08:23	RBS 1	[REDACTED]
	RBS 1	[REDACTED]
[after the ECB fix]		
	JPMorgan 1	[REDACTED]
08:17:04	RBS 1	[REDACTED]

227. Often, the traders would discuss various collusive trading strategies to employ in order to maximize their profits, which were chosen based on information only available to the Defendants. On January 31, 2011, traders from RBS, JPMorgan, and Barclays shared confidential order information and agreed to “double team” their trading ahead of the ECB fix.

TIME (EST)	TRADER	MESSAGE
07:31:35	RBS	[REDACTED]
07:43:10	JPMorgan	[REDACTED]
	Barclays	[REDACTED]
	RBS	[REDACTED]
	JPMorgan	[REDACTED]
	JPMorgan	[REDACTED]

TIME (EST)	TRADER	MESSAGE
07:44:09	RBS	[REDACTED]
	RBS	[REDACTED]
	JPMorgan	[REDACTED]
	RBS	[REDACTED]
	JPMorgan	[REDACTED]
	RBS	[REDACTED]
07:45:42	JPMorgan	[REDACTED]
07:49:19	JPMorgan	[REDACTED]
08:01:13	JPMorgan	[REDACTED]
	JPMorgan	[REDACTED]
08:01:54	RBS	[REDACTED]
	RBS	[REDACTED]
	JPMorgan	[REDACTED]
08:04:43	JPMorgan	[REDACTED]
	RBS	[REDACTED]
	RBS	[REDACTED]
08:04:51	RBS	[REDACTED]
08:05:10	JPMorgan	[REDACTED]
08:05:26	JPMorgan	[REDACTED]
	RBS	[REDACTED]

228. The following exchange occurred between members of the Essex Express, including Barclays, RBS, and UBS. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
11:53:21	UBS	[REDACTED]
11:54:26	Barclays	[REDACTED]
11:54:31	Barclays	[REDACTED]
11:55:08	RBS	[REDACTED]
11:55:16	RBS	[REDACTED]
11:55:41	Barclays	[REDACTED]
11:59:53	UBS	[REDACTED]
12:04:41	Barclays	[REDACTED]
12:04:59	UBS	[REDACTED]
12:05:02	Barclays	[REDACTED]
12:05:05	Barclays	[REDACTED]

TIME (UTC)	TRADER	MESSAGE
12:05:13	UBS	[REDACTED]
12:05:19	Barclays	[REDACTED]
12:05:24	Barclays	[REDACTED]
12:05:26	Barclays	[REDACTED]
12:05:27	UBS	[REDACTED]
12:07:16	Barclays	[REDACTED]
12:07:22	Barclays	[REDACTED]
12:12:10	UBS	[REDACTED]
12:12:16	UBS	[REDACTED]
12:13:15	RBS	[REDACTED]
12:13:20	RBS	[REDACTED]
12:14:10	UBS	[REDACTED]
12:14:13	UBS	[REDACTED]
12:14:28	RBS	[REDACTED]
12:15:46	Barclays	[REDACTED]

229. On September 2, 2011, traders from BNP Paribas and JPMorgan shared their respective positions heading into the ECB Fix. [REDACTED]

[REDACTED]

[REDACTED]

TIME	TRADER	MESSAGE
07:55:37	BNP Paribas	[REDACTED]
07:58:24	BNP Paribas	[REDACTED]
07:58:33	BNP Paribas	[REDACTED]
08:00:37	JPMorgan	[REDACTED]
08:00:41	JPMorgan	[REDACTED]
08:00:49	JPMorgan	[REDACTED]
08:00:51	JPMorgan	[REDACTED]
08:01:42	BNP Paribas	[REDACTED]
08:02:06	JPMorgan	[REDACTED]
08:02:39	BNP Paribas	[REDACTED]
08:02:53	JPMorgan	[REDACTED]
08:02:59	BNP Paribas	[REDACTED]
08:03:03	BNP Paribas	[REDACTED]
08:12:26	JPMorgan	[REDACTED]

230. On February 21, 2012, traders from Barclays, Citigroup, and RBS, among others, manipulated the ECB fix in the EUR/USD currency pair.¹³⁶ On this day, Defendants disclosed to each other details about their net orders regarding the forthcoming ECB fix at 1:15 p.m. in order to determine their trading strategies.¹³⁷

TIME(GMT)	TRADER	MESSAGE
12:51	Citigroup	“Citi disclosed that it had net buy orders for the fix of EUR200 million.” ¹³⁸
12:53	Barclays	“[Barclays] disclosed that it had net sell orders for the fix of EUR47 million Firm B also offered to transfer its net buy orders for EUR26 million to Citi.” ¹³⁹
12:56	Barclays	“[Barclays] informed Citi that it had netted off its sell orders with [RBS],” ¹⁴⁰ <i>“gave mine to try at rbs so u shud be nice and clear to mangle.”</i> ¹⁴¹
12:57	Bank C	“Firm C disclosed that it had net sell orders for the fix of EUR39 million and offered to ‘ <i>shift it</i> ’ (i.e. to trade the order with a third party outside the chat room).” ¹⁴²

¹³⁶ On information and belief, Firm A is Barclays. See FCA Final Notice to Citibank N.A., No. 124704, ¶4.39(3) (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>) (“Firm A told Citi that ‘u shud be nice and clear to mangle.’”); and, New York State Department of Financial Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law, ¶31 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>) (“[Barclays] employed the same strategy of clearing the decks by selling EUR 47 million to RBS to assist his fellow Cartel member at Citi, noting ‘gave mine to try at rbs so u shud be nice and clear to mangle.’”).

¹³⁷ See FCA Final Notice to Citibank N.A., No. 124704, ¶4.38 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

¹³⁸ *Id.* at ¶4.39(1).

¹³⁹ *Id.* at ¶4.39(2).

¹⁴⁰ *Id.* at ¶4.39(3).

¹⁴¹ NYDFS Order Barclays at ¶31; see also FCA Final Notice to Citibank N.A., No. 124704, ¶4.59(3) (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>) (“u shud be nice and clear to mangle”).

¹⁴² *Id.* at ¶4.39(4).

TIME(GMT)	TRADER	MESSAGE
1:01	Bank C	“Firm C told Citi that it had ‘ <i>matched on fix here...you’re all clear.</i> ’” ¹⁴³
1:06	Bank D	“Firm D confirmed that it needed to buy an unspecified quantity of EUR in the market at the ECB fix” and “offered to transfer these net buy orders to Citi or execute this order in a way that would assist Citi (<i>‘u can have oir I can help [sic].’</i>)”
1:10	Bank D	“Firm D transferred its net orders of EUR49 million to Citi at 1:10 pm, whereby Firm D bought EUR49 million from Citi at the fix rate.” ¹⁴⁴

231. Immediately prior to the ECB fix, the Citigroup trader placed four buy orders on the EBS trading platform. Each order placed by the Citigroup trader was of increasing size and price, and was priced at a level above the best offer price prevailing on the EBS platform at the time:

- a. At 1:14:45pm, Citigroup placed an order to buy EUR 25 million at a rate of 1.3216 (the prevailing offer was 1.32159);
- b. At 1:14:49pm, Citigroup placed an order to buy EUR 50 million at a rate of 1.3218 (the prevailing offer was 1.32176);
- c. At 1:14:54pm, Citigroup placed an order to buy EUR 100 million at a rate of 1.3220 (the prevailing offer was 1.3219);
- d. At 1:14:57pm, Citigroup placed an order to buy EUR 400 million at a rate of 1.3222 (the prevailing offer was 1.32205).¹⁴⁵

232. During the period from 1:14:29pm to 1:15:02pm, Citigroup bought EUR 374 million which accounted for 73% of all purchases on the EBS platform.¹⁴⁶ At 1:15:00pm, the

¹⁴³ *Id.*

¹⁴⁴ *Id.* at ¶4.39(6).

¹⁴⁵ FCA Final Notice to Citibank N.A., No. 124704, ¶4.41 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notice/2014/citibank-na>).

¹⁴⁶ *Id.* at ¶4.42.

bid (buying price) and the first trade for EUR/USD on the EBS platform was 1.3222.¹⁴⁷ The ECB subsequently published the fix rate for EUR/USD at 1.3222.¹⁴⁸ Citigroup’s trading in EUR/USD in this example generated a profit of \$99,000.¹⁴⁹

233. Subsequent to the ECB fix, Defendants congratulated each other stating, “*impressive,*” “*lovely,*” and “*cnt [sic] teach that.*”¹⁵⁰ The Citigroup trader noted the successful fix, “*yeah worked ok.*”¹⁵¹ When the fix rate was published to the market, Barclays’ trader commented “*22 the rate*” and Citigroup replied “*always was gonna be.*”¹⁵²

234. In the chat below, traders from Barclays, BOTM, and UBS coordinated trading in advance of the ECB fix. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

TIME (UTC)	TRADER	MESSAGE
11:56:25	Barclays	[REDACTED]
11:57:11	Barclays	[REDACTED]
11:57:16	Barclays	[REDACTED]

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at ¶4.43.

¹⁵⁰ *Id.* at ¶4.44.

¹⁵¹ *Id.*

¹⁵² *Id.*

TIME (UTC)	TRADER	MESSAGE
11:57:31	BOTM	[REDACTED]
11:58:24	UBS	[REDACTED]
11:59:28	Barclays	[REDACTED]
12:01:02	Barclays	[REDACTED]
12:01:37	UBS	[REDACTED]
12:04:18	BOTM	[REDACTED]
12:06:31	BOTM	[REDACTED]
12:07:39	UBS	[REDACTED]
12:15:34	UBS	[REDACTED]

235. The NYDFS described a chat room discussion where a group including Barclays, HSBC, and another bank coordinated trading to fix the ECB fix.

On September 13, 2012, Barclays had a net position from clients to sell EUR 119 million, and this same Barclays trader built approximately EUR 30 million in additional “ammo” from Fortis Bank SA/NV, and EUR 169.5 million from HSBC. This trader stood to make additional profit if the ECB fix dropped. He sold EUR 175.4 million in the nine minutes leading up to the fix. While the market was rising up until 5 seconds prior to the fix (with best offers hovering around 1.2913), this trader sold EUR 147 million in the last three seconds before the ECB fix, which ultimately was 1.2910.¹⁵³

236. Traders were careful to maintain their collusive cartel and sought to punish traders that took positions adverse to the group even when the “offending” trader was employed by the same bank as another group member. For instance, on July 7, 2011, traders sought to punish JPMorgan trader (2), who had traded opposite their chat room’s ECB trading position. [REDACTED]

TIME (EST)	TRADER	MESSAGE
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¹⁵³ New York State Department of Financial Services, *In the Matter of Barclays Bank PLC*, Consent Order Under New York Banking Law §34, at ¶22 (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>).

TIME (EST)	TRADER	MESSAGE
08:15:30	Citigroup	[REDACTED]
08:15:46	Citigroup	[REDACTED]
	JPMorgan (1)	[REDACTED]
	JPMorgan (1)	[REDACTED]
08:16:35	JPMorgan (1)	[REDACTED]
08:16:45	Citigroup	[REDACTED]
	JPMorgan (1)	[REDACTED]
	Citigroup	[REDACTED]
	Citigroup	[REDACTED]
08:17:16	JPMorgan (1)	[REDACTED]

237. [REDACTED]

[REDACTED]

TIME (EST)	TRADER	MESSAGE
08:25:03	JPMorgan (2)	[REDACTED]
		...
	JPMorgan (2)	[REDACTED]
	Citigroup	[REDACTED]
	Citigroup	[REDACTED]
	JPMorgan (2)	[REDACTED]
	Citigroup	[REDACTED]
	Citigroup	[REDACTED]

238. [REDACTED]

[REDACTED]

TIME (EST)	TRADER	MESSAGE
09:45:41	JPMorgan (1)	[REDACTED]
	Citigroup	[REDACTED]

239. The chats described above demonstrate how Defendants participated in chat rooms, sharing highly confidential information and coordinating trading and fixed the ECB Fix.

6. The CME/EMTA Rates

240. Throughout the Class Period, traders from Barclays and other banks colluded to manipulate CME/EMTA rates. Rather than provide their honest independent assessment of the current prevailing market rates, Barclays and others used electronic chat rooms to coordinate their submissions to the CME. These coordinated submissions skewed bids and offers in a manner intended to move the CME/EMTA rates in a direction more favorable to the banks.

241. For example, in a chat room, traders from Barclays and other banks sought to manipulate the RUB/USD CME/EMTA fixing rate. One RUB/USD trader suggested “we should all lower fix by several kopecks.”¹⁵⁴ Another trader replied “yes.”¹⁵⁵ A third trader agreed that “it is a right idea to lower the fix by a few kopecks.”¹⁵⁶ The Barclays trader responded “so what, 5 kopecks and all/everyone is splendid.”¹⁵⁷ The Barclays trader then submitted an artificially low indicative bid and offer used by the CME to calculate the final CME/EMTA Rate.¹⁵⁸

242. As demonstrated by the chats above, Defendants exploited shared confidential information and executed concerted trading strategies designed to manipulate, and which actually did manipulate, the Fixes.

D. Other Collusive Conduct Demonstrates Defendants’ Conscious Commitment to Fix FX Prices

243. In addition to fixing bid/ask spreads, the WM/Reuters fix, ECB fix, and other benchmark rates, Defendants engaged in other collusive conduct in conducting FX spot market

¹⁵⁴ *Id.* at 8.

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.*

¹⁵⁸ *Id.* at 8-9.

transactions by at least: (1) intentionally “working” customers’ limit orders; and (2) triggering stop loss orders.

244. Several Defendants have admitted to this conduct and provided general examples of how they each profited to their customers’ detriment. For example, in their respective Plea Agreements with the Department of Justice, entered into on May 19, 2015, Defendants Barclays, Citigroup, JPM, and RBS¹⁵⁹ each were required to disclose that they engaged in the following inappropriate conduct:

We have, without informing clients, worked limit orders at levels (*i.e.*, prices) better than the limit order price so that we would earn a spread or markup in connection with our execution of such orders. This practice could have impacted clients in the following ways: (1) clients’ limit orders would be filled at a time later than when the Firm could have obtained currency in the market at the limit orders’ prices, and (2) clients’ limit orders would not be filled at all, even though the Firm had or could have obtained currency in the market at the limit orders’ prices. For example, if we accepted an order to purchase €100 at a limit of 1.1200 EURUSD, we might choose to try to purchase the currency at a EURUSD rate of 1.1199 or better so that, when we sought in turn to fill the client’s order at the order price (*i.e.*, 1.1200), we would make a spread or markup of 1 pip or better on the transaction. If the Firm were unable to obtain the currency at the 1.1199 price, the clients’ order may not be filled as a result of our choice to make this spread or markup.¹⁶⁰

245. Defendants also colluded to trigger customer’s stop-loss orders. A stop-loss order is an instruction from the client to the bank to trade a currency if the currency trades at a

¹⁵⁹ UBS also admitted to this type of conduct. *See United States v. UBS AG*, Plea Agreement, Exhibit 1 at 7 (May 19, 2015) (<http://www.justice.gov/file/440521/download>).

¹⁶⁰ *See, e.g., United States v. Barclays PLC*, Plea Agreement, Attachment C (May 19, 2015) (<http://www.justice.gov/file/440481/download>); *United States v. Citicorp*, Plea Agreement, Attachment B (May 19, 2015) (<http://www.justice.gov/file/440486/download>); *United States v. JPMorgan Chase & Co.*, Plea Agreement, Attachment B (May 19, 2015) (<http://www.justice.gov/file/440491/download>); *United States v. The Royal Bank of Scotland, plc*, Plea Agreement, Attachment B (May 19, 2015) (<http://www.justice.gov/file/440496/download>).

specified rate. In the case of stop-losses, a stop-loss order to sell is triggered if the bid price reaches the order rate, and a stop order to buy is executed if the offer price reaches the order rate.

246. When a customer's stop-loss order is to buy, the bank will profit if it purchases a quantity of the currency pair in the market at a lower average rate than that at which it subsequently sells that quantity of the currency pair to its client when the stop-loss order is executed.¹⁶¹

247. When a customer's stop-loss order is to sell, the bank will profit if it sells a quantity of the currency pair in the market at a higher average rate than that at which it subsequently buys that quantity of the currency pair from its client when the stop-loss order is executed.¹⁶²

248. Regulators have identified numerous instances where Defendants colluded throughout the day to manipulate the FX spot price to trigger client stop-loss orders. These attempts involved inappropriate disclosures to traders at other firms concerning details of the size, direction, and level of client stop-loss orders. The traders involved would trade in a manner aimed at manipulating the spot FX rate, such that the stop-loss order was triggered.¹⁶³

249. Regulators found examples of this collusive and inappropriate behavior in chat rooms used by, among others, Citigroup, JPMorgan, HSBC, RBS, and UBS:

- a. For example, "a Citi[group] trader referred in a chat room to the fact he '*had to launch into the 50 offer to get me stop done.*'"¹⁶⁴ On another

¹⁶¹ See, e.g., FCA Final Notice to Citibank N.A., No. 124704, ¶4.3(1) (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

¹⁶² *Id.* at ¶4.3(2).

¹⁶³ *Id.* at ¶4.45-4.46.

¹⁶⁴ *Id.* at ¶4.46.

occasion, a Citigroup trader described in a chat room how he “*went for a stop.*”¹⁶⁵

- b. In another chat, a JPMorgan trader explained to other traders in a chat room that he had traded in the market in order “*to get the 69 print*” (i.e., to move the spot FX rate for that currency pair to the level (“69”) at which a stop-loss would be triggered). On another occasion, the same trader disclosed the level of certain clients’ stop-loss orders to other JPMorgan traders in a chat room and asked “*shall we go get these stops?*”¹⁶⁶
- c. An HSBC trader in a chat room referred to “*going to go for broke at this stop . . . i t is either going to end in massive glory or tears.*” The same trader on another occasion stated, “*just about to slam some stops.*” When asked by a colleague whether a particular client’s stop-loss orders were “*a pain for you guys,*” another HSBC trader replied “*nah love them . . . free money*” and “*we love the orders . . . always make money on them.*”¹⁶⁷
- d. An RBS trader asked a trader at another firm in a chat room to attempt to trigger one of his client’s stop-loss orders, “*HIT IT . . . I ’m out of bullets haha.*”¹⁶⁸
- e. A UBS trader commented in a chat room “*i had stops for years but they got sick of my butchering.*” On a subsequent occasion, the same trader described himself as “*just jamming a little stop here.*”¹⁶⁹

250. Several other Defendants engaged in similar collusive conduct to the detriment of Plaintiffs. In a Bloomberg chat room that included traders from Deutsche Bank, UBS, Bank of America, Standard Chartered, and BNP Paribas, several of these traders coordinated strategies to trigger client stop-loss orders.

TIME (UTC)	TRADER	MESSAGE
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¹⁶⁵ *Id.*

¹⁶⁶ See FCA Final Notice to JPMorgan Chase Bank N.A., No. 124491, ¶4.48 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/jpmorgan-chase-bank>).

¹⁶⁷ See FCA Final Notice to HSBC Bank plc, No. 114216, ¶4.46 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/hsbc-bank-plc>).

¹⁶⁸ See FCA Final Notice to The Royal Bank of Scotland plc, No. 121882, ¶4.47 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/royal-bank-of-scotland>).

¹⁶⁹ See FCA Final Notice to UBS AG, No. 186958, ¶4.48 (Nov. 11, 2014) (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/ubs-ag>).

08:21:04	BNP Paribas	[REDACTED]
08:23:01	Deutsche Bank	[REDACTED]
08:23:46	BNP Paribas	[REDACTED]
08:23:54	BNP Paribas	[REDACTED]
08:24:00	Deutsche Bank	[REDACTED]
08:24:01	BNP Paribas	[REDACTED]
08:24:07	BNP Paribas	[REDACTED]
08:24:09	Deutsche Bank	[REDACTED]
08:24:58	BNP Paribas	[REDACTED]
08:25:00	BNP Paribas	[REDACTED]
08:25:08	BNP Paribas	[REDACTED]
08:25:19	BNP Paribas	[REDACTED]
08:25:28	Deutsche Bank	[REDACTED]
08:25:35	BNP Paribas	[REDACTED]
08:25:36	BNP Paribas	[REDACTED]
18:45:46	Bank of America	[REDACTED]
18:46:48	Deutsche Bank	[REDACTED]
18:46:57	Deutsche Bank	[REDACTED]
18:48:20	Bank of America	[REDACTED]
18:48:29	Bank of America	[REDACTED]
18:48:56	Deutsche Bank	[REDACTED]

251. In the chat transcript below, Defendants Citi, Barclays, Deutsche Bank, and RBS discussed their clients' stop-loss orders and colluded to trigger the orders in a way that would benefit Defendants. Defendants discussed client orders for Australian dollars (AUD), euro (EUR), Japanese yen (JPY), and South African rand (ZAR).

TIME (UTC)	TRADER	MESSAGE
13:55:06	Citigroup	[REDACTED]
13:56:04	Barclays	[REDACTED]
13:58:46	Deutsche Bank	[REDACTED]
14:00:27	Barclays	[REDACTED]
14:00:33	Barclays	[REDACTED]
14:00:53	Citigroup	[REDACTED]
14:01:08	Citigroup	[REDACTED]
14:01:14	Citigroup	[REDACTED]
5 ½ minutes later		[REDACTED]

TIME (UTC)	TRADER	MESSAGE
14:06:45	Deutsche Bank	[REDACTED]
14:07:09	Barclays	[REDACTED]
80 minutes later		
15:25:44	Deutsche Bank	[REDACTED]
15:28:56	Deutsche Bank	[REDACTED]

252. As described in the numerous examples above, Defendants conspiracy to fix prices in the FX market was continuing and pervasive, allowing them to substantially reduce their risk in FX trading and to reap supra-competitive profits at the expense of Plaintiffs and the Classes.

III. DEFENDANTS' CONSPIRACY RESULTED IN ARTIFICIAL PRICING FOR FX EXCHANGE-TRADED INSTRUMENTS

A. The FX Futures and Options Market

253. FX spot market prices, including benchmark rates, directly impact the prices of exchange-traded FX futures and options contracts. An FX futures contract is an agreement, similar to an outright forward, in which parties agree to buy or sell a certain amount of currency on a specified future date. FX spot market prices, including the WM/Reuters Closing Spot Rates, impact the value of FX futures contracts by determining the price of the currency pair to be exchanged, *i.e.*, the "commodity underlying" each FX futures contract.

254. FX futures contracts can be traded on several public exchanges, including the CME and ICE, however, most FX futures contracts are traded on the CME. For many years, most of the trading at the CME had been conducted via open outcry – the method of shouting and using hand signals to trade. This was the physical auction style of buying and selling of futures contracts in designated trading pits on the trading floor of the exchange. Those trading pits are closing now as trading has increasingly migrated to the CME's electronic auction trading platform called Globex. ICE contracts are traded on its proprietary electronic platform.

255. The trading hours are specified. On Globex, trading is open 23 hours a day, five days a week.

256. A substantial number of persons who trade FX futures and options on futures on exchanges also trade FX Instruments in the OTC market. Proprietary trading groups, such as hedge funds and quantitative trading groups, are responsible for approximately half the daily notional volume of trades on the CME. A large number of these entities trade both on exchanges and OTC as part of their business and investment strategies. Additionally, other traders, such as commercial hedgers, portfolio managers, and non-defendant banks, trade both on exchanges and OTC.

257. Both the CME and ICE are designated contract markets pursuant to Section 5 of the CEA (7 U.S.C. §7), and specify the terms of trading FX futures contracts and options, including the trading units, price quotation, trading hours, trading months, minimum and maximum price fluctuations, and margin requirements.

258. These “standardized” terms facilitate exchange-based trading and distinguish an FX futures contract from an outright forward transaction, which is conducted OTC between private parties and can be customized to a certain extent based on their needs. For example, while two parties to an outright forward can pick a date in the future on which currency will be exchanged, FX futures contracts are always settled on the third Wednesday of either March, June, September, and December, following the quarterly cycle of International Monetary Market or “IMM” dates. There are 20 contract months listed in the March quarterly cycle (March, June, September, December), which means the listed contracts available extend out five years. Similarly, each FX futures contracts is for a standardized amount of currency, *e.g.*, €125,000,

while the parties to an outright forward can choose the amount of currency that will be exchanged in the future.

259. FX futures contracts generally expire, *i.e.*, stop trading, on the second business day immediately preceding the third Wednesday of the contract month unless that day is a holiday. For example, the last trading day for the March 2015 EUR/USD contract was on Monday, March 16, 2015 (*i.e.*, the second business day immediately preceding the third Wednesday of the contract month).

260. In all futures contracts of the major currency pairs listed at the CME, the base currencies (the one listed first in the pair) are the foreign currency. The counter currency is the U.S. dollar, which means the gains or losses will be denominated in U.S. dollars.

261. The CME currently offers around 100 different FX futures contracts. The major currency futures pairs are EUR/USD, JPY/USD, GBP/USD, CAD/USD, CHF/USD, and AUD/USD. Each FX futures contract is “priced based on,” *i.e.*, it derives its value from an underlying currency pair. For example, a CME euro FX futures contract, which represents an agreement to buy or sell €25,000 in exchange for U.S. dollars, derives its value from the price of the spot EUR/USD currency pair. Similarly, a CME Japanese yen FX futures contract, which involves an exchange of ¥12,500,000 for U.S. dollars, derives its value from the price of the spot USD/JPY currency pair.

262. The value of each FX futures contract is determined by multiplying the quoted contract price by the underlying notional amount of currency. For example, on May 19, 2015, the daily settlement price of the September 2015 CME euro FX futures contract was \$1.1159. Thus, the total value of this CME euro FX futures contract on that day was \$139,487.50 or the \$1.1159 contract price multiplied by the underlying €25,000 notional amount to be exchanged.

263. The pricing relationship between an FX futures contract and the underlying currency pair is a product of how futures contracts are structured. A futures contract represents a bilateral agreement between two parties, a buyer and a seller, who are commonly referred to as a “long” and a “short.”

264. A long position, or simply a long, refers to a market position in which one has bought a futures contract. In currency futures, it refers to having bought a currency pair specified for the contract, meaning one bought the base currency and sold the counter currency.

265. As an FX futures contract nears “expiration,” *i.e.*, the last trading day, the long and short halves of each contract become binding obligations to exchange the underlying currency. For a CME euro FX futures contract, the longs (as the buyers of euro) are obligated to pay for and “take delivery” of that currency, while the shorts (as sellers of euro) are required to “make delivery” of that currency.

266. This obligation to exchange the underlying currency at some point in the future directly ties the value of an FX futures contract to the spot market price for the underlying currency pair. Prices for FX futures contracts track spot market prices adjusted for the forward differential. As FX futures contracts near expiration, their prices actually “converge” with those in the spot market, becoming equal to the current value of the underlying currency pair. The convergence between spot and futures prices only further demonstrates that the spot market value of the underlying currency pair (and the WM/Reuters spot rates) drives futures prices.

267. When FX futures contracts expire, the process of exchanging currency between buyer and seller at expiration is called “settlement.”

268. All FX futures contracts are settled following their expiration, however, in most cases, this does not result in an exchange of the physical currency. Market participants have the

option to offset or “financially settle” their FX futures positions. In financial settlement, instead of taking or making delivery of euro, or whatever currency is underlying a particular FX futures contract, investors in either the long or short position can offset their obligations with contracts for an equal but opposite position. For example, the buyer of a CME euro FX futures contract, who is long, can settle his obligation to take delivery of €125,000 by selling futures contracts to initiate an offsetting short position of equal size.

269. The difference between the two contract prices, meaning the difference between the price at which the initial contract was purchased and the price at which the later offsetting contract was sold, is the profit or loss on that transaction. Given this offsetting process, investors with long positions will generally benefit as the value of the currency they are purchasing rises, because they are able to sell an offsetting short contract at a higher price, while those with short positions will generally benefit as the value of the currency they are selling decreases because they are able to buy an offsetting long contract at a lower price. Thus, an investor with a long CME euro FX futures position wants the value of the euro to increase relative to the U.S. dollar, while the investor with a short position wants the euro to decrease in value relative to the U.S. dollar.

270. Just as there are long and short futures contracts, there are two types of options on exchange-traded FX futures contracts, commonly known as “calls” and “puts.” A call option gives the holder the right, but not the obligation, to buy a certain FX futures contract at a specified price, known as the “strike price,” prior to some date in the future, at which point the option to purchase that contract “expires.” One may either buy a call option, paying a negotiated price or premium to the seller, writer, or grantor of the call, or sell, write, or grant a call, thereby receiving that premium.

271. Conversely, a put option gives the holder the right, but not the obligation, to sell an FX futures contract at the strike price prior to expiration. Similarly, one may buy or sell a put option, either paying or receiving a negotiated premium or price.

272. Because the FX futures contracts underlying these options are priced based on certain underlying currency pairs, the prices of options on these futures contracts are also directly impacted by spot market prices of currency pairs underlying FX futures contracts.

B. Prices of FX Futures Contracts Are Impacted by the WM/Reuters Closing Spot Rates and Prices of the Underlying Currency Pairs

273. Every FX futures contract represents an obligation to exchange an underlying notional amount of currency in the future. Thus, there is a direct relationship between currency prices in the spot market and the value of each FX futures contract, which naturally flows from the value of the underlying currency pair.

274. The relationship between the prices of FX futures contracts and the spot market prices of the underlying currency pairs is demonstrated by the fact that FX futures prices closely track spot market currency prices. Indeed, futures prices are based on and derived arithmetically from spot prices. The CFTC found in its settlements with Defendants Barclays, Citigroup, HSBC, JPMorgan, RBS, and UBS that:

Exchange rates in many actively traded *CME foreign exchange futures contracts*, including the Euro/U.S. Dollar (EUR/USD) future, the U.S. Dollar/Japanese Yen (USD/JPY) futures, and British Pound Sterling/U.S. Dollar (GBP/USD) futures, *track rates in foreign exchange markets at near parity* after adjusting for the forward differential, or adding or subtracting “forward points.”¹⁷⁰

¹⁷⁰ See Barclays CFTC Order at 5; Citibank CFTC Order at 4-5; HSBC CFTC Order at 4; JPMorgan CFTC Order at 4-5; RBS CFTC Order at 4-5; UBS CFTC Order at 5 (emphasis added).

275. Consistent with this pricing relationship, the CFTC also found in its settlements with the same Defendants that FX benchmark rates, including the WM/Reuters Spot Rates, which determine the prices of various currency pairs in the spot market, also directly impact the prices of FX futures contract:

FX benchmark rates, including the *WM/R Rates, are used to price a variety of transactions including* foreign exchange swaps, cross currency swaps, spot transactions, forwards, *options, futures*, and other financial derivative instruments.¹⁷¹

276. In FX futures and options exchange trading, 2:00 p.m. CT is a critical time (even though Globex continues trading seamlessly through this time until its close at 4:00 p.m. CT) for the following reasons: (1) daily settlement occurs at 2:00 p.m. CT; (2) required margin is benchmarked to the 2:00 p.m. CT daily settlement, therefore the settlement price becomes a determinant for traders to keep or exit positions based on the margin needed; and (3) on Fridays, the 2:00 p.m. CT daily settlement is also the final settlement price for weekly or serial month and quarterly options on futures.

277. Daily settlement at 2:00 p.m. CT is generally calculated as a volume-weighted average price (“VWAP”) of all trades occurring between 13:59:30 and 14:00:00 CT. VWAP is calculated by adding up the total dollar amount traded for every futures transaction the period between 13:59:30 and 14:00:00 CT and then dividing by the total futures contracts traded during that same period.

¹⁷¹ See, e.g., *In the Matter of Citibank, N.A.*, CFTC Docket No. 15-03, Order Instituting Proceeding Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 2 (Nov. 11, 2014); *n the Matter of HSBC Bank plc*, CFTC Dkt. No. 15-07 at 2 (Nov. 11, 2014); *In the Matter of JPMorgan Chase Bank, N.A.*, CFTC Dkt. No. 15-04 at 2 (Nov. 11, 2014); *In the Matter of The Royal Bank of Scotland, plc*, CFTC Dkt. No. 15-05 at 2 (Nov. 11, 2014); *In the Matter of UBS AG*, CFTC Dkt. No. 15-06 at 2 (Nov. 11, 2014) (emphasis added).

278. FX futures rates track FX spot rates, therefore, the calculation of the CME settlement rate is tied to the spot rate prevailing in the market at the time of calculation.

279. Positive price correlation means two or more instruments move in relation to one another in the same direction, such as when the price goes up for one it goes up for the other. Since currency futures are a derivative of the spot cash currency market and are deliverable in the physical currency, their prices move in virtual lockstep to the spot price. This is known as high positive correlation. In addition, there is a positive correlation between currency pairs that share a common currency. For example, EUR/USD and CHF/USD both share USD as a common currency. If the relative value of USD declines versus EUR, the USD will be perceived as weakening and will decline versus CHF. Thus, manipulation of the EUR/USD causing suppression of the USD in this currency pair will have direct and measurable effects on other currency pairs involving the USD.

280. The relationship between FX futures prices and FX spot market prices is also confirmed by examining the mathematical nature of how FX futures contracts are priced. The price of each FX futures contract is quoted as the future cost of buying one currency, specifically the first currency in the underlying currency pair, “in terms of,” *i.e.*, in exchange for, the other.

281. The future cost of buying or selling currency, and thus the price of an FX futures contract, is a product of the costs and benefits associated with purchasing and carrying the underlying currency pair over the duration of that futures contract, *i.e.*, the time until expiration. For all FX futures contracts, this cost benefit relationship is determined by adjusting the spot price of the underlying currency pair to account for the difference in interest paid or received on deposits of each currency. This relationship is represented mathematically by the formula below:

FIGURE 1¹⁷²

$$\text{Future Price} = \text{Spot Price} \times \left(\frac{1 + [\text{Rterm} \times (\text{d} / 360)]}{1 + [\text{Rbase} \times (\text{d} / 360)]} \right)$$

282. Figure 1 contains the CME’s standard pricing formula used to determine the future cost of buying and selling a certain currency pair and, as a result, the value of related FX futures contracts. Figure 1 demonstrates that the “Spot Price” of the currency pair underlying each FX futures contract is an express term in the FX futures pricing formula. The remaining variables account for the cost of carrying the specific currency pair underlying that FX futures contract until expiration. The variable “d” represents the duration of the futures contract, while “Rbase” and “Rterm” represent the rate of interest paid on deposits of the “Base Currency,” the first currency listed in the underlying currency pair and the “Term Currency,” the second currency listed in the underlying currency pair, respectively.

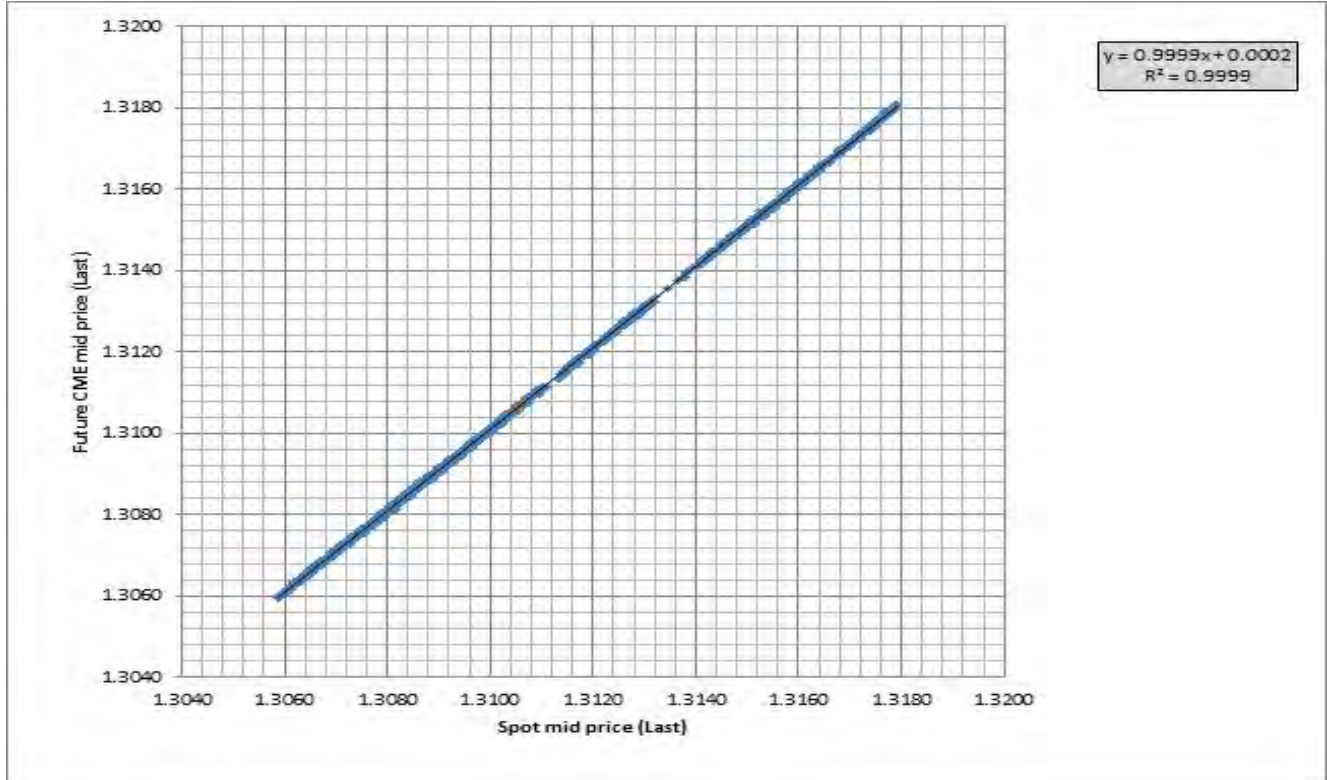
283. Given the structure of this pricing formula, prices of FX futures contracts should, as the CFTC found, “track rates in the foreign exchange markets at near parity,” increasing and decreasing with changes in the price of the underlying currency pair. To verify this relationship, Plaintiffs studied the relationship between the spot market price of the EUR/USD currency pair on the prices of the CME euro FX futures contract, the most highly traded FX futures contract on the CME. The results demonstrated that the two prices are highly correlated.

¹⁷² See John W. Labuszewski, Sandra Roh, David Gibbs, *Currencies Understanding FX Futures*, at 3, CME GROUP (April 22, 2013).

284. As an example, the following two figures demonstrate the relationship between spot prices and future prices on February 15, 2012. On that date, the Defendants manipulated both the 12 p.m. WM/Reuters fix and the 1:15 p.m. ECB fix.

FIGURE 2



FIGURE 3

285. Defendants dominated the FX market with a combined market share of over 90%. Defendants were significant participants in both OTC and exchange transactions as liquidity providers. They understood the interrelatedness of these various instruments. Given the direct relationship between FX futures prices and spot market prices for the underlying currency pairs demonstrated above, Defendants knew their manipulative and/or collusive activities in spot transactions would result in artificial price movements for exchange transactions.

286. Defendants' manipulative conduct caused FX futures contracts prices to be artificial throughout the Class Period. Further, Defendants' collusive and manipulative conduct caused exchanged-traded FX futures and options contracts to be artificial during at least the following times: WM/Reuters fix at 4:00 p.m. London; ECB fix at 2:15 p.m. Frankfurt; the 2:00 p.m. CT CME daily settlement; and at any time they collude with respect to bid/ask spreads.

This caused injury to Plaintiffs and members of the Class who engaged in transactions for FX futures contracts at artificial prices directly and proximately caused by Defendants' manipulative conduct.

IV. GOVERNMENT INVESTIGATIONS

287. Law enforcement and regulatory authorities in the United States, United Kingdom, European Union, Switzerland, Germany, Asia, Australia, New Zealand, and the international Financial Stability Board are continuing to actively investigate Defendants' conduct in the FX market. Many of these entities have instituted enforcement actions, entered into settlements, and imposed massive fines based on Defendants' conduct described herein.

A. U.S. Department of Justice ("DOJ")

288. On October 29, 2013, Acting Assistant Attorney General Mythili Raman (acting head of DOJ's Criminal Division) confirmed that DOJ's Criminal and Antitrust Divisions were actively investigating Defendants' manipulation of FX benchmark rates, including the WM/Reuters Closing Spot Rates. DOJ confirmed that several banks agreed to produce information relating to FX benchmark rates pursuant to their obligations under deferred prosecution and non-prosecution agreements reached in connection with DOJ's LIBOR investigation:

As part of our Libor resolutions, there have been pledges by banks to cooperate and indeed requirements by banks to cooperate not just in connection with Libor but all benchmark manipulations.¹⁷³

That's one of the most significant benefits that law enforcement has been able to secure as part of this [LIBOR] investigation.¹⁷⁴

¹⁷³ FT Reporters, *Day of reckoning as European banks' bill for misconduct mounts*, FINANCIAL TIMES (Oct. 29, 2013) (<http://on.ft.com/1kIBkG4>).

¹⁷⁴ M. Rochan, *FX Fixing Scandal: US Justice Department Confirms Currency Investigation*, INTERNATIONAL BUSINESS TIMES (Oct. 30, 2013) ().

289. DOJ entered into deferred prosecution and non-prosecution agreements with Defendants Barclays, UBS, and RBS in connection with LIBOR investigations. UBS', RBS', and Barclays' non-prosecution and deferred prosecution agreements with DOJ require them to provide information relating to benchmark manipulation, including manipulation of FX benchmark rates.

- a. On February 5, 2013, Defendant Barclays submitted to a Non-Prosecution Agreement with DOJ relating to LIBOR and EURIBOR manipulation.¹⁷⁵ Barclays admitted to submitting false figures for LIBOR and EURIBOR. In addition, Barclays paid \$451 million in penalties to U.S. and U.K. regulators in connection with LIBOR manipulation.
- b. On December 12, 2012, Defendant UBS submitted to a Non-Prosecution Agreement with DOJ relating to UBS's manipulation of LIBOR, EURIBOR, and TIBOR.¹⁷⁶ UBS agreed to pay a \$1.5 billion in penalties to U.S., U.K., and Swiss regulators.
- c. On February 5, 2013, Defendant RBS submitted to a Deferred Prosecution Agreement with DOJ relating to yen LIBOR and Swiss franc LIBOR manipulation.¹⁷⁷ RBS agreed to pay \$612 million in penalties to U.S. and U.K. regulators.

290. DOJ stated that “[t]he cooperation that we have been able to secure as part of our agreements in the Libor investigation has been very helpful to us in terms of holding banks’ feet to the fire.”¹⁷⁸ DOJ further stated that these cooperation provisions have produced “tangible, real

(<http://www.ibtimes.co.uk/justice-department-forex-rates-currency-manipulation-rigging-518316>).

¹⁷⁵ Barclays Non-Prosecution Agreement, February 5, 2013, at 2 (<http://www.justice.gov/iso/opa/resources/337201271017335469822.pdf>); Appendix A, Statement of Facts (<http://www.justice.gov/iso/opa/resources/9312012710173426365941.pdf>).

¹⁷⁶ UBS Non-Prosecution Agreement December 12, 2012, at 3 (<http://www.justice.gov/iso/opa/resources/1392012121911745845757.pdf>); Appendix A, Statement of Facts, (<http://www.justice.gov/iso/opa/resources/6942012121911725320624.pdf>).

¹⁷⁷ RBS Deferred Prosecution Agreement, February 5, 2013, at ¶6 (<http://www.justice.gov/criminal/vns/docs/2013/02/2013-02-rbs-dpa.pdf>).

¹⁷⁸ Tom Schoenberg and David McLaughlin, *Banks Aid U.S. Forex Probe, Fulfilling Libor*

results.” The cooperation “expanded our investigations into the possible manipulation of foreign exchange and other benchmark rates.”¹⁷⁹

291. A person familiar with DOJ’s investigation stated that banks are providing the DOJ with witness lists, making employees available for interviews, and providing documents.¹⁸⁰

292. In November 2013, DOJ and FBI agents questioned Robert Wallden, a director in Deutsche Bank’s foreign exchange trading unit, at his New York home. Agents questioned Wallden about transcripts of an electronic chat where he boasted “about his ability to influence currency markets.”¹⁸¹ Wallden, along with two other New York Deutsche Bank executives, Diego Moraiz and Christopher Fahy, was fired on February 14, 2014.¹⁸²

293. DOJ has also questioned executives at BNP Paribas as part of its investigation into FX market manipulation.¹⁸³ As of March 6, 2014, BNP Paribas had suspended its head of FX spot trading, Robert De Groot.¹⁸⁴

294. Former United States Attorney General Eric Holder publicly commented on the DOJ’s probe. In November 2013, the Attorney General stated that “the manipulation we’ve seen

Accords, BLOOMBERG (Jan. 23, 2014) (<http://bloom.bg/1cYkwUB>).

¹⁷⁹ Moneynews, *Banks Aid US Forex Probe to Fulfill Duty in Libor Settlements* (Jan. 23, 2014) (<http://nws.mx/1h6KY0G>).

¹⁸⁰ *Id.*

¹⁸¹ David Enrich, Katie Martin and Jenny Strasburg, *FBI Tries New Tactic in Currency Probe*, WALL STREET JOURNAL (Nov. 20, 2013) (<http://on.wsj.com/OIgEmq>).

¹⁸² Paritosh Bansal and Emily Flitter, *Exclusive: Deutsche fires three New York forex traders – source*, REUTERS (Feb. 4, 2014) (<http://reut.rs/1dAVufP>).

¹⁸³ Katherine Rushton, *BNP Paribas faces quiz on currency rate scandal*, THE TELEGRAPH, (Nov. 10, 2013) (<http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/10440146/BNP-Paribas-faces-quiz-on-currency-rate-scandal.html>).

¹⁸⁴ *BNP Paribas’s head of forex spot-trading suspended: WSJ*, REUTERS (Mar. 6, 2014) (<http://reut.rs/1hlK7x6>).

so far may just be the tip of the iceberg”; that “we’ve recognized that this is potentially an extremely consequential investigation”; and that DOJ’s criminal and antitrust divisions are “taking a leading role” in “the truly global investigation.”¹⁸⁵

295. In November 2013, former Deputy Attorney General James Cole commented further on the DOJ’s investigation:

The department’s criminal and antitrust divisions along with the FBI, regulators and other law enforcement agencies around the world are aggressively investigating possible manipulation of foreign-exchange rates involving a number of financial institutions.¹⁸⁶

296. On February 7, 2014, Reuters reported that UBS approached DOJ in September 2013 with information relating to the FX probe in hope of gaining antitrust immunity under the Antitrust Division’s Leniency Program.¹⁸⁷ UBS uncovered incriminating chats by traders and turned over the evidence to DOJ as part of UBS’s application for amnesty.

297. On July 13, 2014, Reuters reported that prosecutors from DOJ offered immunity deals to junior traders in London as they continued to investigate the rigging of FX rates by senior traders.¹⁸⁸

¹⁸⁵ Ben Protess, Landon Thomas Jr. and Chad Bray, *U.S. Investigates Currency Trades by Major Banks*, NEW YORK TIMES DEALB%K (Nov. 14, 2013) (<http://nyti.ms/1fP5Atu>).

¹⁸⁶ Tom Schoenberg, *U.S. ‘Aggressively’ Probing Possible Currency Rigging*, BLOOMBERG, (Nov. 18, 2013) (<http://bloom.bg/1jfAaV2>).

¹⁸⁷ Jamie McGeever, *UBS seeks first-mover immunity in U.S. currency probe – sources*, REUTERS (Feb. 7, 2014) (<http://reut.rs/1fBofJl>); Lindsay Fortado, Keri Geiger, and David McLaoughlin, *UBS Said to Seek Immunity in FX-Rigging Probes by EU, US*, BLOOMBERG, (Feb. 24, 2014) (<http://bloom.bg/Q16aj9>).

¹⁸⁸ Richa Naidu, *U.S. prosecutors offer junior UK traders immunity in forex probe: FT*, July 13, 2014 (<http://www.reuters.com/article/2014/07/13/us-regulator-doj-forex-idUSKBN0FI14520140713>).

298. On May 20, 2015, Citicorp, JPMorgan Chase & Co., Barclays PLC, and The Royal Bank of Scotland PLC, agreed to plead guilty to conspiring to manipulate the price of the U.S. dollar and euro currency pair exchanged in the FX spot market. Specifically, Defendants entered into and engaged in a “conspiracy to fix, stabilize, maintain, increase, or decrease the price of and rig bids and offers for the euro/U.S. dollar (“EUR/USD”) currency pair exchanged in the foreign currency spot market (“FX Spot Market”), which began at least as early as December 2007 and continued until at least January 2013, by agreeing to eliminate competition in the purchase and the sale of the U.S. dollar and euro currency pair in the United States and elsewhere, in violation of the Sherman Antitrust Act, 15 U.S.C. §1.”¹⁸⁹

299. The Defendants agreed to pay criminal fines totaling more than \$2.5 billion. Citicorp agreed to pay a fine of \$925 million.¹⁹⁰ Barclays PLC agreed to pay a fine of \$650 million.¹⁹¹ JPMorgan Chase & Co. agreed to pay a fine of \$550 million.¹⁹² The Royal Bank of Scotland PLC agreed to pay a fine of \$395 million.¹⁹³

300. Also, on May 20, 2015, UBS AG pleaded guilty to a count of wire fraud for its involvement in manipulating LIBOR and other benchmark interest rates and paid a \$230 million criminal penalty, after the DOJ determined UBS AG breached its December 2012 Non-

¹⁸⁹ See, e.g., DOJ Barclays Plea Agreement at ¶2, May 20, 2015 (<http://www.justice.gov/file/440481/download>).

¹⁹⁰ DOJ Citicorp Plea Agreement, May 20, 2015 (<http://www.justice.gov/file/440486/download>).

¹⁹¹ DOJ Barclays PLC Plea Agreement, May 20, 2015 (<http://www.justice.gov/file/440481/download>).

¹⁹² DOJ JPMorgan Chase & Co. Plea Agreement, May 20, 2015 (<http://www.justice.gov/file/440491/download>).

¹⁹³ DOJ The Royal Bank of Scotland PLC Plea Agreement, May 20, 2015 (<http://www.justice.gov/file/440496/download>).

Prosecution Agreement resolving the LIBOR investigation.¹⁹⁴ According to the factual statement of breach attached to UBS AG’s plea agreement, UBS AG engaged in deceptive FX trading and sales practices after it signed the LIBOR Non-Prosecution Agreement. UBS AG admitted that it conspired with other firms acting as dealers in an FX spot market by “agreeing to restrain competition in the purchase and sale of the EUR/USD currency pair in the United States and elsewhere . . . by, among other things: (i) coordinating the trading of the EUR/USD currency pair in connection with ECB and WMR benchmark currency ‘fixes’ . . . , and (ii) refraining from certain trading behavior, by withholding bids and offers, when one conspirator held an open risk position, so that the price of the currency traded would not move in a direction adverse to the conspirator with an open risk position.”¹⁹⁵ Additionally, UBS AG traders tracked and executed limit orders at a level different from the customer’s specified level in order to add undisclosed markups.¹⁹⁶

301. In connection with their plea agreements, Defendants also agreed to cooperate fully in the investigation involving “the purchase and sale of the EUR/USD currency pair, or *any other currency pair*, in the FX Spot Market, or any foreign exchange forward, foreign exchange option or other foreign exchange derivative, or other financial product”¹⁹⁷

302. On May 20, 2015, after the plea agreements were announced, Assistant Attorney General Bill Baer stated:

Simply put, exchange rates are prices to buy and sell currency. They should be set competitively the same way prices are set in any type of market.

¹⁹⁴ DOJ UBS AG Plea Agreement, May 20, 2015 (<http://www.justice.gov/file/440521/download>).

¹⁹⁵ *Id.* at Exhibit 1, ¶15.

¹⁹⁶ *Id.* at ¶14.

¹⁹⁷ *See, e.g.*, DOJ Barclays PLC Plea Agreement at ¶17.

Instead, the members of the aptly-named “Cartel” chatroom conspired to gain unlawful profit by manipulating these rates. The banks pleading guilty today are not ordinary market participants. They are “market makers,” representing 25 percent or more of dollar–euro exchange rate transactions each year. As such, they were uniquely positioned to manipulate the market.

And that is what they did. First, they agreed to rig the 1:15 p.m. and 4 p.m. “fixes.” These fixes are designed to be snapshots of the euro–dollar exchange rates at a given point in time, reported by unbiased third parties. The snapshot rates become the price paid for billions of dollars of currency bought or sold on any given day. “The Cartel” conspirators used chat room communications in the minutes and seconds leading up to the snapshot moment to move the fix price in the direction that would be most profitable to them, thereby cheating customers who relied on those fixes to fairly reflect market prices.

Second, members of “The Cartel” also hatched plans in the chatroom to protect the conspiring banks at other times during the day by agreeing to hold off buying or selling dollars and euros. By not trading at these times, or “standing down,” members of “The Cartel” minimized price movements and helped each other close out of their open positions profitably – at the expense of customers and counterparties who expected, and were entitled to receive, a competitive dollar–euro exchange rate. It is imperative that these banks accept full responsibility for these bad acts and carry through on their commitments to change the culture that allowed this behavior to go on for years without detection.

B. The Federal Reserve

303. On May 20, 2015, the Federal Reserve announced the following fines against Defendants: \$342 million each for UBS AG, Barclays Bank PLC, Citigroup Inc., and JPMorgan Chase & Co.; \$274 million for the Royal Bank of Scotland PLC; and \$205 million for Bank of America Corporation.¹⁹⁸ The Federal Reserve issued cease and desist orders requiring the banks to improve their policies and procedures for oversight and control over traders who buy and sell U.S. dollars and foreign currencies for the organizations’ own accounts and for customers in the FX market.¹⁹⁹

¹⁹⁸ Press Release, Board of Governors of the Federal Reserve System (May 20, 2015) (<http://www.federalreserve.gov/newsevents/press/enforcement/20150520a.htm>).

¹⁹⁹ See, e.g., UBS AG, Order to Cease and Desist and Order of Assessment of a Civil

304. The Board of Governors of the Federal Reserve System noted in its press release that “[f]ive of the banks failed to detect and address illegal agreements among traders to manipulate benchmark currency prices.”²⁰⁰ Bank of America failed to detect and address conduct by traders who discussed the possibility of entering into similar agreements to manipulate prices.²⁰¹ In addition, the Federal Reserve found UBS AG, Citigroup, Inc., JPMorgan Chase & Co., and Barclays Bank PLC engaged in unsafe and unsound conduct in multi-bank chat room communications, consisting of: “(i) disclosures to traders of other institutions of confidential customer information of the Bank and the Branch; (ii) agreements with traders of other institutions to coordinate FX trading in a manner designed to influence the WMR, ECB, and other FX benchmark fixes and market prices generally; (iii) trading strategies that raised potential conflicts of interest; and (iv) possible agreements with traders of other institutions regarding bid/offer spreads offered to FX customers.”²⁰²

305. The Connecticut Department of Banking joined the cease and desist provisions of the Federal Reserve’s action against UBS AG, which has a branch in Stamford, Connecticut. NYDFS took a separate action against Barclays Bank PLC and its New York-based branch on FX-related conduct.

Monetary Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, Docket No. 15-005-B-FB (May 20, 2015) (<http://www.federalreserve.gov/newsevents/press/enforcement/enf20150520a6.pdf>).

²⁰⁰ Press Release, Board of Governors of the Federal Reserve System, May 20, 2015 (<http://www.federalreserve.gov/newsevents/press/enforcement/20150520a.htm>).

²⁰¹ *Id.*

²⁰² *See, e.g., In the Matter of Barclays Bank PLC*, Federal Reserve Order, Docket 15-006, at 4 (May 20, 2015) (www.federalreserve.gov/newsevents/press/enforcement/enf20150520a3.pdf).

C. Commodity Futures Trading Commission

306. On November 11, 2014, the CFTC issued five Orders instituting and settling charges against Defendants Citibank, HSBC Bank PLC, JP Morgan Chase Bank, N.A., The Royal Bank of Scotland PLC, and UBS AG for violations of the Commodity Exchange Act.²⁰³ The CFTC instituted proceedings against these Defendants for attempted manipulation of global FX benchmark rates and aiding and abetting other banks' attempts to manipulate global FX benchmark rates, including the WM/Reuters Closing Spot Rates, to benefit the positions of certain traders. The CFTC Orders collectively impose over \$1.4 billion in civil monetary penalties.²⁰⁴ The CFTC fined Citibank and JPMorgan Chase Bank, N.A. \$310 million and issued fines of \$290 million each for The Royal Bank of Scotland PLC and UBS AG, and \$275 million for HSBC Bank PLC.²⁰⁵

307. On May 20, 2015, the CFTC issued an Order filing and settling charges against Defendant Barclays Bank PLC for violations of Sections 6(c)(4)(A) and 6(d) of the CEA.²⁰⁶ Barclays was fined \$400 million.²⁰⁷

308. The CFTC found that during the "Relevant Period,"²⁰⁸ certain traders from each of these Defendants "coordinated their trading with FX traders to attempt to manipulate certain

²⁰³ *CFTC Orders Five Banks to Pay over \$1.4 Billion in Penalties for Attempted Manipulation of Foreign Exchange Benchmark Rates*, Release PR 7056-14 (Nov. 12, 2014). (available, with links to Consent Orders, at <http://www.cftc.gov/PressRoom/PressReleases/pr7056-14>).

²⁰⁴ *Id.*

²⁰⁵ *Id.*

²⁰⁶ *See In the Matter of Barclays Bank PLC*, CFTC Docket 15-24 (May 20, 2015) (www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfbarclaysborder052015.pdf).

²⁰⁷ *Id.* at 16.

FX benchmark rates, including the 4 p.m. WM/R fix, to their benefit.”²⁰⁹ Defendants’ FX traders “used private electronic chat rooms to communicate and plan their attempts to manipulate the FX benchmark rates for certain currency pairs.” These traders “disclosed confidential customer order information and trading positions, altered trading positions to accommodate the interests of the collective group, and agreed on trading strategies as part of an effort by the group to attempt to manipulate certain FX benchmark rates, in some cases downward and in some cases upward.”²¹⁰

309. The CFTC found that Citibank, JPMorgan Chase Bank, N.A., HSBC Bank PLC, The Royal Bank of Scotland PLC, UBS AG, and Barclays Bank PLC “failed to adequately assess the risks associated with their FX traders participating in the fixing of certain FX benchmark rates and lacked adequate internal controls in order to prevent improper communications by traders.”²¹¹ These Defendants “lacked sufficient policies, procedures and training specifically governing participation in trading around the FX benchmarks rates; and had

²⁰⁸ The “Relevant Period” varied for each Defendant as follows: Citigroup (2009 through 2012); JP Morgan (2010 through 2012); HSBC (2009 through mid-2012); RBS (2009 through 2012); UBS (2009 through 2012); and Barclays (2009 through 2012).

²⁰⁹ See, e.g., *In the Matter of Citibank, N.A.*, CFTC Docket No. 15-03, Order Instituting Proceeding Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 2 (Nov. 11, 2014).

²¹⁰ *Id.*

²¹¹ See *CFTC Orders Five Banks to Pay over \$1.4 Billion in Penalties for Attempted Manipulation of Foreign Exchange Benchmark Rates*, Release PR 7056-14 (Nov. 12, 2014) (available, with links to Consent Orders, at <http://www.cftc.gov/PressRoom/PressReleases/pr7056-14>); see also *Barclays to Pay \$400 Million Penalty to Settle CFTC Charges of Attempted Manipulation and False Reporting of Foreign Exchange Benchmarks* (May 20, 2015) (www.cftc.gov/PressRoom/PressRelease/pr7181-15).

inadequate policies pertaining to, or sufficient oversight of, their FX traders' use of chat rooms or other electronic messaging.”²¹²

310. The CFTC Orders noted that between August 2012 and December 2013, Citibank, JPMorgan Chase Bank, N.A., HSBC Bank PLC, The Royal Bank of Scotland PLC, UBS AG, and Barclays Bank PLC either banned or restricted the use of multi-bank chat rooms for its FX personnel.²¹³

D. Office of the Comptroller of the Currency

311. On November 12, 2014, the Office of the Comptroller of the Currency (“OCC”) announced that it assessed \$950 million in fines against three U.S. banks for unsafe and unsound practices relating to FX trading.²¹⁴ The OCC assessed penalties of \$250 million against Bank of America, N.A., \$350 million against Citibank, and \$350 million against JPMorgan Chase Bank,

²¹² *Id.*

²¹³ *In the Matter of Citibank, N.A.*, CFTC Docket No. 15-03, Order Instituting Proceeding Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, at 9 (Nov. 11, 2014) (early 2013); *In the Matter of JPMorgan Chase Bank, N.A.*, CFTC Dkt. No. 15-04, at 8 (Nov. 11, 2014) (December 2013); *In the Matter of HSBC Bank plc*, CFTC Dkt. No. 15-07, at 10 (Nov. 11, 2014) (December 2012); *In the Matter of Royal Bank of Scotland plc*, CFTC Dkt. No. 15-05, at 7 (Nov. 11, 2014) (August 2012); *In the Matter of UBS AG*, CFTC Dkt. No. 15-06, at 8 (Nov. 11, 2014) (November 2013); *In the Matter of Barclays Bank PLC*, CFTC Dkt. No. 15-24, at 9 (May 20, 2015) (October 2012).

²¹⁴ OCC, *OCC Fines Three Banks \$950 Million for FX Trading Improprieties* (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/rr-occ-2014-157.html>).

N.A..²¹⁵ In addition to assessing civil money penalties, the OCC issued cease and desist orders requiring the banks to correct deficiencies and enhance oversight of their FX trading activity.²¹⁶

312. The OCC found that between 2008 and 2013, some of the banks' traders held discussions in online chat rooms about coordinating FX trading strategies to manipulate exchange rates to benefit traders or the bank.²¹⁷ In addition, the traders disclosed confidential bank information, including customer orders and rate spreads.²¹⁸ The OCC's examinations also found that traders discussed activity to trigger trading actions potentially detrimental to customers and beneficial to the trader or bank, and discussed pending orders and agreed not to trade in particular currencies."²¹⁹

E. New York State Department of Financial Services

313. On May 20, 2015 the New York State Department of Financial Services ("NYDFS") fined Barclays Bank PLC \$485 million and ordered the termination of eight employees who engaged in New York Banking Law violations in connection with manipulating

²¹⁵ Bank of America, N.A., Consent Order for a Civil Money Penalty, OCC AA-EC-14-99 (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157b.pdf>); Citibank, N.A., Consent Order for a Civil Money Penalty, OCC AA-EC-14-101 (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157d.pdf>); JPMorgan Chase Bank, N.A., Consent Order for a Civil Money Penalty, OCC AA-EC-14-100 (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157f.pdf>).

²¹⁶ Bank of America, N.A., Consent Order, OCC AA-EC-14-99 (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157a.pdf>); Citibank, N.A., Consent Order, OCC AA-EC-14-101 (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157c.pdf>); JPMorgan Chase Bank, N.A., Consent Order, OCC AA-EC-14-100 (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157e.pdf>).

²¹⁷ OCC, *OCC Fines Three Banks \$950 Million for FX Trading Improprieties* (Nov. 12, 2014) (<http://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157.html>).

²¹⁸ *Id.*

²¹⁹ *Id.*

spot trading in the FX market.²²⁰ Benjamin M. Lawskey, Superintendent of Financial Services said: “Put simply, Barclays employees helped rig the foreign exchange market. They engaged in a brazen ‘heads I win, tails you lose’ scheme to rip off their clients. While today’s action concerns misconduct in spot trading, there is additional work ahead.”²²¹

314. NYDFS noted that “in a fair and functioning economic market, a business takes on risk in the hopes of earning profit. However, Barclays’ traders coordinated with other banks to remove that risk and instead just take profits at the expense of their clients.”²²² “The culture within the Bank valued increased profits with little regard to the integrity of the market.”²²³ For example, in May 2012, after noting that “Large fixes are the key to making money as we have more chance of moving the market our way,” “a Barclays senior trader announced an ‘added incentive’ for Sales employees of 50% of profits made for increasing trading volume at certain fix orders.”²²⁴

315. NYDFS found that from at least 2008 through 2012, certain FX traders at Barclays communicated with FX traders at other banks to coordinate attempts to manipulate prices in certain FX currency pairs and certain FX benchmark rates, including the WM/R and ECB fixes.²²⁵ Barclays traders manipulated benchmarks in chat rooms, coordinated trading, and

²²⁰ New York State Department of Financial Services, *In the Matter of Barclays Bank plc, Consent Order Under New York Banking Law §§44 and 44-a* (May 20, 2015) (<http://www.dfs.ny.gov/about/ea/ea150520.pdf>).

²²¹ The New York State Department of Financial Services, *NYDFS Announces Barclays to Pay \$2.4 Billion, Terminate Employees for Conspiring to Manipulate Spot FX Trading Market* (May 20, 2015) (<http://www.dfs.ny.gov/about/press/pr1505201.htm>).

²²² *Id.*

²²³ *Id.*

²²⁴ *Id.*

²²⁵ *See id.*

discussed the spread between bids and offers which the banks were showing to customers.²²⁶ An additional tactic to reduce the banks' risk, traders at the various banks on a multi-bank chat to agree to stay out of each other's way around the time of the fix, and avoid executing contrary orders while an effort to push prices was being deployed.

316. Many of Barclays' employees who were implicated in the wrongful conduct, including a director on the FX Spot trading desk in London, a director on the FX Spot trading desk in New York, a director on the Emerging Markets desk in New York, a managing director in FX Hedge Fund Sales in New York, a director in FX Real Money Sales in New York, and assistant vice president in FX Hedge Fund Sales in London, are no longer employed at the bank.²²⁷ Additionally, as a result of the investigation, four more Barclays employees were recently terminated, including: the Global Head of FX Spot trading in London, an assistant vice president on the FX Spot trading desk in London, a director on the FX Spot trading desk in London and a director on the FX Spot trading desk in New York.²²⁸

317. NYDFS ordered Barclays to take all steps necessary to terminate four employees who played a role in the misconduct: a vice president on the Emerging Markets trading desk in New York, two directors on the FX Spot trading desk in New York and a director on the FX sales desk in New York (who previously was Co-Head of the UK FX Hedge Fund Sales in London).²²⁹

²²⁶ *Id.*

²²⁷ The New York State Department Financial Services, *NYDFS Announces Barclays to Pay \$2.4 Billion, Terminate Employees for Conspiring to Manipulate Spot FX Trading Market* (May 20, 2015) (<http://www.dfs.ny.gov/about/press/pr1505201.htm>).

²²⁸ *Id.*

²²⁹ *Id.*

F. United Kingdom Financial Conduct Authority (“UK-FCA”)

318. The UK-FCA has investigative and enforcement powers with respect to financial services providers.

319. On February 4, 2014, John Griffith-Jones, Chairman of the UK-FCA, and Martin Wheatley, CEO of the UK-FCA, testified before the House of Commons Treasury Committee about FX rates. In response to numerous questions about the UK-FCA’s FX investigation, Wheatley stated:

[T]he elements [of the FX investigation] that are different than LIBOR is that it’s a much deeper, much more liquid market based on real trades. The elements that are similar to LIBOR, and this is purely on what’s reported, is that the suggestions of collusion between individuals at a number of firms and the use of chat rooms and phones to collude to influence prices. But we’re still in the investigation phase, so I can’t really comment too much on any findings other than to say that the allegations are every bit as bad as they have been with LIBOR.²³⁰

[G]iven what’s come out, no, people will not trust the way the rates are fixed.²³¹

[A]round ten banks have themselves volunteered information that said they have been asked for information.²³²

I don’t think we will get to final conclusions within 2014, I hope that we will next year, but again the nature of these sort of investigations is that it’s very hard to predict.²³³

²³⁰ Videorecording, House of Commons Treasury Committee meeting (Feb. 4, 2014) (<http://www.parliamentlive.tv/Event/Index/7718bd4f-5583-403d-aec2-08e0d38c5bbd>), at 1:13:42 -1:14:11.

²³¹ *Id.* at 1:14:20-1:14:24.

²³² *Id.* at 1:15:04-1:15:10.

²³³ *Id.* at 1:17:13-1:17:22.

320. Wheatley further noted that in addition to the FX investigation, “there are a number of other benchmarks that operate in London that we are investigating because of concerns that have been raised with us.”²³⁴

321. The UK-FCA’s investigation focused on an electronic chat room used by top traders at financial institutions. Defendant RBS produced emails and instant messages to the UK-FCA, including The Cartel chat room activities of former RBS and JPMorgan trader Richard Usher. Usher has been specifically identified in the UK-FCA’s investigation of FX manipulation, as a result of instant messages he sent during his time at RBS. These messages reportedly included details of his trading positions.²³⁵ The UK-FCA has also asked Morgan Stanley to provide details in relation to its FX operations.²³⁶ In addition, approximately 40 traders have individually interviewed with the UK-FCA and produced communications dating back to 2004.

322. On November 11, 2014, the FCA imposed fines totaling £1.1 billion (\$1.7 billion) on Citibank, HSBC Bank PLC, JP Morgan Chase, N.A., The Royal Bank of Scotland PLC, and UBS AG for failing to control business practices in their G10 spot foreign exchange trading operations.²³⁷ On May 20, 2015, the FCA fined Barclays Bank PLC £284,432,000 (\$441,000,000).²³⁸ The FCA announced that between January 1, 2008 and October 15, 2013,

²³⁴ *Id.* at 1:17:48-1:17:53.

²³⁵ Gavin Finch, Liam Vaughan, and Suzi Ring, *Ex-RBS Trader in U.K. Probe Said to Be JPMorgan’s Usher*, BLOOMBERG (Oct. 14, 2013) (<http://bloom.bg/lip3Yer>).

²³⁶ Helia Ebrahimi, *Morgan Stanley contacted over forex probe: Sources* (Nov. 6, 2013)(www.cnbc.com/id/101175614).

²³⁷ *FCA fines five banks £1.1 billion for FX failings and announces industry-wide remediation programme* (Nov. 12, 2014) (available online at <http://www.fca.org.uk/news/fca-fines-five-banks-for-fx-failings>).

²³⁸ *FCA fines Barclays £284,432,000 for forex failings* (May 20, 2015) (available online at

ineffective controls at the banks allowed traders to improperly share confidential client information in an attempt to manipulate G10 spot FX currency rates, including in collusion with traders at other firms, in a way that could disadvantage clients and the market.²³⁹

323. The FCA found that traders formed tight-knit groups “based upon mutual benefit and often with a focus on particular currency pairs.”²⁴⁰ “The value of the information exchanged between the traders and the importance of keeping it confidential between recipients was clear to participants.”²⁴¹

324. Traders shared information about client identities and the size and direction of their firms’ net orders at a forthcoming fix, which provided traders with more information than they would otherwise have had about other firms’ client order flows and thus, the likely direction of the fix.²⁴² The traders used this confidential information to coordinate their trading strategies and then attempted to manipulate the WM/Reuters and the ECB fix rates and trigger client “stop-loss” orders.²⁴³

325. The FCA warned that it was “completely unacceptable . . . for firms to engage in attempts at manipulation for their own benefit and to the potential detriment of certain clients and other market participants.”²⁴⁴ The FCA’s Final Notices to Citibank, HBSC Bank PLC, JP

<http://fca.org.uk/news/fca-fines-barclays-for-forex-failings>).

²³⁹ *FCA fines five banks £1.1 billion for FX failings and announces industry-wide remediation programme* (Nov. 12, 2014) (available online at <http://www.fca.org.uk/news/fca-fines-five-banks-for-forex-failings>).

²⁴⁰ See, e.g., FCA Final Notice to Citibank N.A., No. 124704, Nov. 11, 2014, ¶4.32 (<http://www.fca.org.uk/your-fca/documents/final-notices/2014/citibank-na>).

²⁴¹ *Id.* at ¶4.33.

²⁴² *Id.* at ¶4.35.

²⁴³ See, e.g., *id.* at ¶¶4.31, 4.36.

²⁴⁴ *FCA fines five banks £1.1 billion for FX failings and announces industry-wide*

Morgan Chase Bank, N.A., The Royal Bank of Scotland PLC, UBS AG, and Barclays Bank PLC include examples of misconduct by each Defendant bank and details how their respective trading businesses made a significant profit.

G. Serious Fraud Office (“SFO”)

326. The U.K.’s SFO opened a criminal investigation into alleged manipulation of foreign-exchange benchmarks. On July 21, 2014, the agency stated that it was probing “allegations of fraudulent conduct in the foreign-exchange market.”²⁴⁵ On December 19, 2014, the first person was arrested in relation to the criminal investigation. The SFO said: “In connection with a Serious Fraud Office investigation, we can confirm one man was arrested in Billericay [Essex] on December 19. Officers from the City of London Police assisted with the operation.”²⁴⁶ Later reports confirm that the arrested man was Paul Nash of RBS.²⁴⁷

H. Bank of England

327. The Bank of England Oversight Committee hired Lord Grabiner QC and a law firm to investigate whether, between 2005 and 2013, any Bank of England official was involved in, or aware of, the conduct relating to the FCA’s FX investigation described above. Although Lord Grabiner reportedly found no evidence to suggest that any bank official was involved in

remediation programme (Nov. 12, 2014) (<http://www.fca.org.uk/news/fca-fines-five-banks-for-forex-failings>).

²⁴⁵ Lindsay Fortado and Julia Verlaine, *U.K. Prosecutors Investigate Foreign-Exchange Rigging*, BLOOMBERG (July 21, 2014) (<http://www.bloomberg.com/news/articles/2014-07-21/u-k-prosecutors-open-foreign-exchange-rigging-investigation>).

²⁴⁶ James Titcomb, *First arrest in SFO forex investigation*, THE TELEGRAPH (Dec. 19, 2014) (<http://www.telegraph.co.uk/finance/news/bysector/banksandfinance/11305106/First-arrest-in-SFO-forex-investigation.html>).

²⁴⁷ Caroline Binham, *RBS trader arrested in forex rigging probe named in court records* (Jan. 7, 2015) (<http://www.ft.com/intl/cms/s/0/8a9b0f76-968c-11e4-a83c-00144feabdc0.html#axzz3eV72z6XG>).

any unlawful or improper behavior in the FX market, the details in his report support Plaintiffs' allegations herein.²⁴⁸

328. Lord Grabiner found that at least from May 16, 2008, the Bank of England's Chief FX dealer, Martin Mallett, was aware that bank traders were sharing aggregated information about their client orders for the purposes of matching and had concerns that regulators would take interest in it. Mr. Mallett explained to a market participant in March 2012 that ". . . if [regulators] were aware that it was going on [they] would be uncomfortable with it . . ." and that he "would just feel uncomfortable justifying it to the regulator the way it's currently set up."²⁴⁹ From at least November 28, 2012, Mr. Mallett had concerns that the practice could involve collusive behavior and lead to market participants being disadvantaged. Mr. Mallett did not escalate this issue to an appropriate person. The investigation criticized Mr. Mallett for this error in judgment but noted that he was not involved in any unlawful or improper behavior and was not aware of specific instances of such behavior. On November 11, 2014, the Bank of England fired Mr. Mallett for his failure to adhere to internal policies.²⁵⁰

329. The Bank of England investigation has been widely criticized. The UK Parliament Treasury Committee criticized the terms of reference as being drawn too narrowly.²⁵¹

²⁴⁸ See generally Bank of England Foreign Exchange Market Investigation, A Report by Lord Grabiner QC (www.bankofengland.co.uk/publications/Documents/news/2014/grabiner.pdf).

²⁴⁹ *Bank of England Foreign Exchange Market Investigation A Report by Lord Grabiner QC*, BANK OF ENGLAND (Nov. 11, 2014) (<http://www.bankofengland.co.uk/publications/Documents/news/2014/grabiner.pdf>).

²⁵⁰ *Bank of England fires chief forex dealer in wake of probe*, BBC (Nov. 12, 2014) (<http://www.bbc.com/news/business-30022298>).

²⁵¹ Caroline Binham, *Mark Carney rejects criticism of forex probe*, FINANCIAL TIMES (March 3, 2015) (<http://www.ft.com/intl/cms/s/0/c983958a-c195-11e4-bd24-00144feab7de.html#axzz3auExUeIS>).

Furthermore, the investigation was scrutinized by the DOJ which requested to interview a senior employee at RBS amid concerns that the Bank of England's report was not appropriately thorough.²⁵²

I. European Commission ("EC")

330. EC's Competition Commissioner, Joaquin Almunia, acknowledged its investigation of the FX market, and in particular, manipulation of FX benchmark rates, including the WM/Reuters Closing Spot Rates. Almunia said EC learned of activities that "could mean violation of competition rules around the possible manipulation of types of exchange rates."²⁵³ During a press conference in December 2013, Almunia stated that EC was "looking very carefully at Forex."²⁵⁴ Almunia also stated, "We have internal information regarding possible manipulation of forex benchmarks We are in the preliminary steps."²⁵⁵ A person familiar with the EC's investigation stated that banks are queuing up to provide incriminating information "of startling quality."²⁵⁶

331. On September 6, 2014, Almunia told Bloomberg TV, "We are at the starting point of this investigation It is a very important case because the Forex markets every day

²⁵² James Titcomb, *Bank of England's foreign exchange investigation faces US scrutiny*, TELEGRAPH (May 13, 2015) (<http://www.telegraph.co.uk/finance/bank-of-england/11603854/Bank-of-Englands-foreign-exchange-investigation-faces-US-scrutiny.html>).

²⁵³ Aoife White and Gaspard Sebag, *EU Regulators Start Inquiry Into Currency Rate-Manipulation*, BLOOMBERG (Oct. 7, 2013) (<http://bloom.bg/1plDnji>).

²⁵⁴ Graeme Wearden and Nick Fletcher, *Banks fined record €1.7 billion by EC over rate-fixing cartel scandal – as it happened*, THE GUARDIAN (Dec. 4, 2013) (<http://www.theguardian.com/business/2013/dec/04/banks-braced-for-new-rate-rigging-fines-tesco-sales-slide-business-live#block-529f0404e4b0acc591790b77>).

²⁵⁵ Conor Humphries, *EU Commission looking into possible forex manipulation – Almunia*, REUTERS (Dec. 5, 2013) (<http://reut.rs/1dlaW5n>).

²⁵⁶ FT reporters, *Forex in the spotlight*, FINANCIAL TIMES (Feb. 16, 2014) (<http://on.ft.com/1kVisGt>).

exchange billions and billions of euros – but I cannot anticipate anything.”²⁵⁷ On October 27, 2014, Bloomberg reported that FX traders’ messages on Facebook were sought by the EC.²⁵⁸

J. Switzerland

332. Swiss authorities are actively investigating manipulation of FX benchmark rates, including the WM/Reuters Closing Spot Rates. On September 30, 2013, the Swiss Competition Commission (“Swiss WEKO”) opened a preliminary investigation into manipulation of FX markets after learning about discussions about FX rates between banks. Swiss WEKO stated, “Through discussions they are said to have manipulated various exchange rates.”²⁵⁹ On March 31, 2014, WEKO provided additional details on its investigation, noting that its investigation included Defendants UBS, Credit Suisse, JPMorgan, Citigroup, Barclays, and RBS, among others. WEKO stated, “The possible actions include the following: the exchange of confidential information, the general co-ordination of transactions with other market participants at agreed price levels, coordinated actions to influence the WM/Reuters fix as well as the co-ordination of the sale and purchase of currencies in relation to certain third parties.”²⁶⁰ WEKO’s statement concluded, “There are indications that these banks went into anti-competitive agreements to manipulate price rates in foreign exchange trading.”²⁶¹

²⁵⁷ Gaspard Sebag and Flavia Rotondi, *FX Probe Lags in EU as Other Watchdogs Ready for Fines*, BLOOMBERG BUSINESS (Sept. 8, 2014) (<http://www.bloomberg.com/news/articles/2014-09-08/fx-probe-lags-in-eu-as-other-watchdogs-ready-for-fines>).

²⁵⁸ Aoife White and Gaspard Sebag, *FX Traders’ Facebook Chats Said to be Sought in EU Probe*, BLOOMBERG BUSINESS (Oct. 27, 2014) (<http://www.bloomberg.com/news/articles/2014-10-27/fx-traders-facebook-chats-said-to-be-sought-in-eu-probe>).

²⁵⁹ *Swiss anti-trust watchdog probes banks over FX manipulation*, REUTERS (Oct. 4, 2013) (<http://reut.rs/1oKSbcW>).

²⁶⁰ Daniel Schäfer, *Swiss watchdog launches forex investigation into eight banks*, FINANCIAL TIMES (March 31, 2014) (<http://on.ft.com/1dKuO1P>).

²⁶¹ *Id.*

333. In addition, on October 4, 2013, Financial Market Supervisory Authority (“Swiss FINMA”), Switzerland’s main market regulator, announced that it was “currently conducting investigations into several Swiss financial institutions in connection with possible manipulation of foreign exchange markets.” Swiss FINMA indicated multiple banks around the world were potentially implicated. Swiss FINMA “is coordinating closely with authorities in other countries.”²⁶²

334. On November 12, 2014, FINMA announced the conclusion of its enforcement proceedings against UBS AG regarding FX trading conducted in Switzerland. FINMA ordered UBS to pay 134 million francs (\$139 million) and to cap dealers’ bonuses over misconduct in FX and precious metals trading.²⁶³

335. FINMA found that UBS’s FX traders repeatedly, and over extended periods of time, acted in collusion with other banks to manipulate FX benchmarks to generate profits for the bank or third parties. Furthermore, FINMA found that UBS coordinated with other banks to: trigger client stop-loss orders; engage in front-running client orders; engage in risk-free speculation at the clients’ expense when making partial fills, where at least part of the clients’ profitable FX transactions were credited to the bank; and disclosed confidential client identifying information to third parties.²⁶⁴

336. FINMA found that “UBS’s risk assessment of foreign exchange trading was insufficient The bank did not have adequate control instruments in place to identify

²⁶² *FINMA is investigating possible manipulation of foreign currency exchange rates* (Oct. 4, 2013) (<https://www.finma.ch/en/news/2013/10/mm-untersuchung-manipulation-fremdwaehrungskurse-20131004/>).

²⁶³ *Foreign exchange trading at UBS AG: investigation conducted by FINMA* (Nov. 12, 2014) (<http://www.finma.ch/e/aktuell/Documents/ubs-fx-bericht-20141112-e.pdf>).

²⁶⁴ *Id.* at ¶¶3.3.1, 3.3.2.

violations of market conduct rules, manipulative conduct or breaches of the bank's duty to act in the interest of its clients The compliance function within the Foreign Exchange division was insufficiently developed.”²⁶⁵ FINMA initiated enforcement proceedings against 11 employees and managers to determine the knowledge and conduct of involved persons up to the highest level of UBS's foreign exchange business.

K. Financial Stability Board (“FSB”)

337. The FSB is an international body that was established in April 2009 as the successor to the Financial Stability Forum (“FSF”). The FSB coordinates regulation for the Group of Twenty (“G20”) leading economies, organizing the work of national financial authorities and international standard-setting bodies. The FSB includes all G20 major economies, FSF members, and the EC. The FSB set up a task force in 2013 to try to repair or replace tarnished financial benchmarks in the wake of LIBOR manipulation.

338. On February 14, 2014, the FSB, led by Bank of England governor, Mark Carney, said it would review the FX benchmarks. The FSB stated:

The [FSB] was tasked by the G20 in 2013 to co-ordinate and guide work on the necessary reforms to short-term interest rate benchmarks, to ensure that widely-used benchmarks are held to appropriate standards of governance, transparency and reliability.

* * *

Recently, a number of concerns have been raised about the integrity of foreign exchange (FX) rate benchmarks. The FSB has consequently decided to incorporate an assessment of FX benchmarks into its ongoing programme of financial benchmark analysis.

To take this work forward, a new sub-group on Foreign Exchange Benchmarks has been established. The new group will be chaired

²⁶⁵ *FINMA sanctions foreign exchange manipulation at UBS* (Nov. 12, 2014) (<http://www.finma.ch/e/aktuell/Pages/mm-ubs-devisenhandel-20141112.aspx>).

by Guy Debelle (Assistant Governor, Financial Markets, Reserve Bank of Australia) and Paul Fisher (Executive Director for Markets, Bank of England), both members of the [Official Sector Steering Group] (OSSG.).

The FX Benchmarks Group will undertake a review of FX benchmarks and will analyse market practices in relation to their use and the functioning of the FX market as relevant. Conclusions and recommendations will be transmitted by the FSB to the Brisbane Summit.²⁶⁶

339. On July 15, 2014, the FSB released a consultative document to aid in the search for a new process that could replace the way foreign exchange rates are set.²⁶⁷ The report included 15 recommendations regarding the calculation methodology of the WM/Reuters benchmark rates, publication of reference rates by central banks, market infrastructure in relation to the execution of fix trades, and the behavior of market participants around the time of the major FX benchmarks.

340. More than 30 asset managers, currency dealing banks, and industry associations took the opportunity to respond to the FSB's recommendations regarding the future of the foreign exchange benchmark.²⁶⁸ On September 30, 2014, the FSB released its final report.²⁶⁹ The FSB made 15 recommendations, including, among others: (1) that the fixing window be widened from its current width of one minute; (2) WM should incorporate price feeds and transaction data from a broader range of sources to further increase its coverage of the FX market

²⁶⁶ *FSB to review foreign exchange benchmarks* (Feb. 14, 2014) (https://www.financialstabilityboard.org/press/pr_140213.htm).

²⁶⁷ FSB, *Foreign Exchange Benchmarks Consultative Document* (July 15, 2014) (http://www.financialstabilityboard.org/wp-content/uploads/r_140715.pdf?page_moved=1).

²⁶⁸ Chiara Albanese, *Recommendations Roll in for Fixing the FX Fix*, WSJ (Aug. 20, 2014) (<http://blogs.wsj.com/moneybeat/2014/08/20/recommendations-roll-in-for-fixing-the-fx-fix/>).

²⁶⁹ FSB, *Foreign Exchange Benchmarks Final Report* (Sept. 30, 2014) (http://www.financialstabilityboard.org/wp-content/uploads/r_140930.pdf).

during the fixing window; (3) development of industry-led initiatives to create independent netting and execution facilities; (4) that the fixing transactions be priced in a manner that is transparent and consistent with the risk borne in accepting such transactions. This may occur via applying a bid-offer spread through a clearly communicated and documented fee structure, such as a direct fee or contractually agreed price; (5) market-makers should not share information with each other about their trading positions beyond that necessary for a transaction.²⁷⁰

L. Other Countries

341. Other countries have opened investigations of conduct in the FX market. These include Brazil, Germany, Singapore, Australia, South Africa, Hong Kong, and New Zealand.

342. Brazil's antitrust agency, Council for Economic Defence ("CADE"), is investigating banks, including BOTM, Deutsche Bank, Credit Suisse, Morgan Stanley, RBC, and Standard Chartered, among others, for manipulation of FX rates.²⁷¹ On July 2, 2015, CADE opened an administrative process to investigate manipulation of exchange rates involving the Brazilian real and foreign currencies, including the manipulation of benchmark rates, such as the Central Bank of Brazil (PTAX), the WM/Reuters and the ECB, and the fixing of spreads.²⁷² On July 14, 2015, CADE confirmed the names of 30 bankers under investigation.²⁷³

²⁷⁰ *Id.* at 23-31.

²⁷¹ Guillermo Parra-Bernal and Leonardo Goy, *Brazil probes currency market activity of 15 global banks* REUTERS (July 7, 2015) (<http://www.euronews.com/business-newswires/3029849-brazil-fx-manipulation-case-follows-us-uk-swiss-probes-official/>); *see also Superintendência do Cade investiga cartel na manipulação de taxas de câmbio* (July 2, 2015) (<http://www.cade.gov.br/Default.aspx?90a372879e74888b9facbf93a3a9>).

²⁷² *Id.*

²⁷³ Tom Madge-Wyld and Pallavi Gunigante, *CADE names 30 traders in Forex probe* GCR NEWS (July 14, 2015) (globalcompetitionreview.com/news/article/39066/cade-names-30-traders-forex-probe)

343. South Africa's competition commission is investigating numerous banks, including affiliates of Barclays, BNP Paribas, Citigroup, JPMorgan, and Standard Chartered for involvement of rigging FX rates involving the South African rand (ZAR).²⁷⁴

V. DEFENDANTS' PUBLIC FILINGS CONFIRM INVESTIGATIONS AND COOPERATION

344. Numerous public filings by Defendants confirm the existence of government investigations and the cooperation of certain Defendants with those investigations. These include filings by Defendants Bank of America, Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, RBS, Standard Chartered, and UBS.

VI. TERMINATIONS, SUSPENSIONS, AND DEPARTURES OF DEFENDANT EMPLOYEES

345. Highlighting the seriousness of the global investigations into Defendants' conduct regarding FX benchmark rates, including the WM/Reuters Closing Spot Rates, Defendants have terminated, suspended, or put on leave numerous employees with responsibility for their FX operations. Defendants have terminated or suspended more than 50 employees, while numerous Defendants have had long-time employees depart amidst the investigations.

A. Bank of America

346. At least two Bank of America FX employees have left the bank since the FX investigations began. In March 2014, Bank of America suspended Joseph Landes, its head of spot FX trading in Europe, the Middle East, and Africa. In April 2014, Milko Campusano, a New York currency trader, left the bank. Campusano came to Bank of America from JPMorgan in 2002, where he served as North America rates vice president and senior spot dealer.

²⁷⁴ Renee Bonorchis, *South Africa probes foreign exchange traders on price fixing*, BLOOMBERG (May 19, 2015) (<http://www.bloomberg.com/news/articles/2015-05-19/s-africa-antitrust-agency-probes-forex-traders-for-price-fixing>).

B. Barclays

347. Barclays has suspended or terminated at least 10 employees and has hired criminal-defense lawyers to represent some of their employees. In November 2013, Barclays suspended six traders as part of its internal inquiry into alleged rigging of the FX market, including its chief currency trader in London. The suspended individuals include London-based Chris Ashton, who oversaw Barclays' voice-spot trading. After Ashton's departure, Barclays appointed a junior trader as interim head of its London spot foreign exchange desk. Additionally, London-based FX spot trader Mark Clark, Tokyo-based FX spot trader Jack Murray, New York-based FX spot traders Russel Katz and Jerry Urwin, and at least one unknown Barclays' employee were all suspended. Ashton was part of The Cartel chat room.

348. In April 2014, Barclays fired four traders. Additionally, New York state's banking regulator Benjamin Lawsky ordered the bank to fire another four who had been suspended or placed on paid leave.

C. BNP Paribas

349. BNP Paribas has suspended or terminated at least one employee. In March 2014, BNP Paribas suspended its head of spot currency trading, Robert de Groot. De Groot was a member of the Bank of England's Chief Dealers' Sub Group.

D. Citigroup

350. At least 12 FX employees at Citigroup left the bank. Citigroup suspended Anthony John, a sterling trader in London, and Andrew Amantia, a Canadian dollar trader in New York. Citigroup also fired Rohan Ramchandani, who was head of European spot trading, after he was put on leave in October 2013. Ramchandani was part of The Cartel chat room and was a member of the Bank of England's Chief Dealers' Sub Group. In addition to the aforementioned employees disciplined by the bank, on February 5, 2014, Bloomberg reported

that Citigroup's foreign-exchange head Anil Prasad would leave the bank to "pursue other interests."²⁷⁵ On March 24, 2014, Citigroup named Richard Bibbey as head of global spot FX trading, and merged its voice and electronic trading businesses for currencies. Citigroup did not have a combined global head of spot FX trading previously.

351. In December 2014, Citigroup suspended at least seven traders. This included three New York emerging market traders, along with four London spot and emerging market traders. Among those suspended were Robert Hoodless, a director and emerging markets FX trader, and David Madaras, an emerging markets FX trader focused on Asia.

E. Credit Suisse

352. At least seven employees at Credit Suisse left the bank. On September 10, 2013, Todd Sandoz, head of global FX and short-term interest rate trading at Credit Suisse, left the bank after more than 17 years. Based in London, Sandoz took on the role in May 2011 and also became co-head of the new global currencies. Credit Suisse promoted David Tait, global head of FX trading in London, to succeed Sandoz. In May 2014, Credit Suisse cut more than half a dozen jobs in foreign exchange. The most senior people include Daniel Wise, managing director, head of FX spot trading in London; Mark Astley, director, senior FX strategist in London; Martin Amann, director, FX hedge fund sales in New York; and John Altadonna, director, FX spot trader in New York. Wise joined Credit Suisse in August 2011 after leaving Barclays where he was European head of FX spot trading. Altadonna was at Credit Suisse for seven years, he previously worked at Bank of America.

²⁷⁵ Amberdeen Choudhury, *Citigroup Head of Currencies Prasad to Step Down in March*, BLOOMBERG (Feb. 5, 2014) (<http://bloom.bg/1jmunIV>).

F. Deutsche Bank

353. At least seven employees at Deutsche Bank left the bank. In February 2014, Deutsche Bank fired three New York-based currency traders, Diego Moraiz, Robert Wallden, and Christopher Fahy, and one Argentina-based currency trader, Ezequiel Starobinsky. Moraiz was the head of Deutsche Bank's emerging markets FX trading desk and specialized in trading the Mexican peso. Wallden and Fahy were both directors in the FX trading unit. In November 2013, FBI agents questioned Wallden at his New York home about transcripts of an electronic chat in which he boasted about manipulating FX markets. On March 11, 2014, Christian Binaghi, Deutsche Bank's head of Latin America trading, left the firm. Binaghi was a New York-based managing director who oversaw all Latin America trading, including currency, debt, and equity. In addition, on March 31, 2014, London-based Kai Lew, a director of institutional FX sales, was placed on leave following an internal investigation. In May 2014, Deutsche Bank fired Marlene Galvan, a vice president at Deutsche Bank and a currency and derivatives trader in Mexico.

G. Goldman Sachs

354. At least seven employees at Goldman Sachs have left the bank. In 2013, James Coulton, head of emerging markets FX trading for Europe, the Middle East, and Africa in London and Alain Marcus, head of foreign exchange sales for the Americas and co-head of cross-asset sales in New York left the bank. In February 2014, New-York based Steven Cho, global head of spot and forward foreign exchange trading for G10 currencies at Goldman Sachs left the bank. Cho was a member of the FX committee sponsored by the Federal Reserve Bank of New York. Leland Lim, another partner in Goldman Sachs' currency-trading business, also left. Lim was co-head of macro trading, which includes interest rates and currencies, for Asia Pacific ex-Japan. Patrick Boyle, global head of foreign exchange options also left in February.

355. In September 2014, Mitesh Parikh, Goldman Sachs' European head of spot foreign exchange trading based in London, left the bank. In November 2014, Goldman Sachs fired Frank Cahill. Cahill joined Goldman Sachs in 2012 as a currency trader after working at HSBC Holdings plc.

H. HSBC

356. HSBC has suspended or terminated at least four employees. In November 2013, Vincent Craignau, global head of FX and metals derivatives in London, left HSBC after ten years. In January 2014, HSBC suspended Serge Sarramegna, the bank's chief trader for major currencies and head of HSBC's spot FX desk in London, and Edward Pinto, a Scandinavian currency trader. In October 2014, Sarramegna and Pinto were fired. In December 2014, HSBC fired Stuart Scott, its European head of currency trading. Scott joined HSBC in 2007, was based in London, and ran the bank's currency trading operations in Europe, the Middle East, and Africa.

I. JP Morgan

357. JP Morgan has suspended or terminated at least one employee. JP Morgan put its chief currency dealer, London-based Richard Usher, on leave in October. Usher was part of The Cartel chat room and was a member of the Bank of England's Chief Dealers' Subgroup. Usher was head of spot G10 currency trading at JP Morgan. He joined JP Morgan from RBS in May 2010.

J. Morgan Stanley

358. On March 21, 2014, Steve Glynn, co-head of foreign exchange and emerging markets and head of fixed income for Asia at Morgan Stanley, left the bank. Glynn had been at Morgan Stanley for 14 years, initially in London before moving to Hong Kong in 2009. Glynn's

role is being taken over by Ben Falloon. Falloon joined Morgan Stanley in 2008 from Credit Suisse.

K. RBS

359. RBS has suspended or terminated at least five employees. RBS suspended two London-based FX spot traders, Julian Munson and Paul Nash. In addition, RBS suspended a senior spot currency trader based in London, Ian Drysdale.

360. Paul Nash was reportedly arrested in December 2014, allegedly becoming the first trader arrested as a result of the global inquiry into FX manipulation.²⁷⁶

361. In February 2015, RBS suspended Jason Richardson, deputy head of markets at RBS, and Sarah Murdoch, head of UK large corporate FX sales at RBS. Richardson worked in Stamford, Connecticut, running FX and emerging markets before returning to London in 2009 to run the global emerging markets business. In 2012, Richardson became chief operating officer for markets before taking his latest role in 2014.

L. Standard Chartered

362. Standard Chartered has had two FX employees depart the bank. In March 2014, Standard Chartered FX trader Matt Gardiner resigned.²⁷⁷ He had joined Standard Chartered in September 2013, but was placed on leave a month after he joined the bank.

363. In November 2014, Jason Crank, a New York G10 FX trader, left Standard Chartered. Crank worked at RBS before joining Standard Chartered.

²⁷⁶ Jamie McGeever and Kirstin Ridley, *Arrested RBS forex trader named as Paul Nash: sources*, REUTERS (Jan. 8, 2015) (<http://www.reuters.com/article/2015/01/08/us-forex-rbs-court-idUSKBN0KH1IZ20150108>).

²⁷⁷ *Standard Chartered FX trader Gardiner resigns – source*, REUTERS (March 26, 2014) (<http://reut.rs/1QFSJwO>).

M. UBS

364. UBS has suspended or terminated at least 16 employees and has hired criminal-defense lawyers to represent some of their employees. UBS suspended Roger Boehler and Niall O’Riordan. Both had been at UBS since the early 1990s. Boehler was the global head of FX trading at UBS’s investment bank, based in Stamford, Connecticut. O’Riordan was the co-global head of FX G10 and emerging market spot trading at UBS, based in Zurich. O’Riordan was part of The Cartel chat room and was a member of the Bank of England’s Chief Dealers’ Subgroup. On March 28, 2014, UBS suspended seven FX traders. They include New-York based emerging markets spot trader Onur Sert, 20-year UBS currency trader Michael Velardi, and five more global traders. In April 2014, UBS suspended Michael Agaisse, a New York-based executive director in FX trading.

365. In November 2014, the Financial Market Supervisory Authority wrote to O’Riordan, Chris Vogelgesang, and the bank’s former global co-head of foreign exchange and precious metals, and precious metals trader, Andre Flotron, notifying them of a possible enforcement action. Flotron went on leave in early 2014. UBS announced in a November 19, 2013 memo that Vogelgesang would step down and look for another role at UBS. Former precious-metals trader Wolfgang Kajewski, currency trader Sven Schneider and structured-products trader Daniel Laager also received letters regarding an enforcement action.

366. In addition, former UBS senior FX trader Matt Gardiner was placed on leave by his current employer, Standard Chartered, where he is the assistant chief dealer in G10 foreign exchange. Gardiner was part of The Cartel chat room. Gardiner worked at UBS for two years prior to joining Standard Chartered and prior to UBS, Gardiner worked at Barclays from June 2007 to July 2011, where he was a director in FX spot trading responsible for EUR/USD.

ANTITRUST INJURY TO PLAINTIFFS

367. Defendants keep more inventory of currency than any other banks in the financial system and are therefore able to act as currency dealers, facilitating trading in various currencies. Defendants are horizontal competitors in the FX market, competing for customers by supplying exchange rate quotations and FX Instruments. The relationship between Defendants and their customers is the same as the relationship between any merchant selling goods to consumers in a marketplace. In FX trading, the “goods” are money, or currency. When a Defendant’s customer accepts a quote, the Defendant sells currency from its own inventory or seeks an off-setting order at the bargained-for price. Pricing of currency, like goods, is based on fundamental market forces of supply and demand.

368. Defendants’ conspiracy injures competition between dealers in the FX market. Where customers would, absent Defendants’ collusion, have received competitive quotes and reaped the benefits of competition, here, Defendants have repeatedly agreed in chats to conform quoted customer spreads and spread matrices to each other’s market views, “double team” transactions with the intent of manipulating the market, and collude to trigger customer limit orders through short-term trades. These actions, individually and collectively, have the effect of imposing overcharges on FX customer by artificially increasing the cost of buying currency and artificially decreasing the price received by currency sellers. These actions deprive FX customers of a competitive marketplace and expose them to artificial volatility.

369. Absent collusion, Defendants, competitors in the FX market, would have possessed independent incentives to quote tighter spreads to customers to win more business in the FX market. Every purchase of a quantity of currency represents demand relative to supply – forces that would, in a market free of collusion, determine the price. Through collusion, Plaintiffs were deprived of this active price competition.

370. Absent collusion, Defendants would have had incentives to avoid abusive trading practices, like front-running, that could cause customers to find they receive better execution and trade pricing from other FX dealers. Through collusion, FX customers were deprived of this competitive marketplace.

371. The collusion necessarily injures participants in the FX market. All market participants transacting in the FX spot market would be receiving artificially low prices for their currency sales and paying artificially high prices as a result of Defendants' collusion with respect to bid/ask spreads. This would only be compounded through Defendants' use of tactics like "front-running", "banging the close", or "painting the screen" to cause further injury through manipulation. Furthermore, because the pricing of other FX Instruments is driven by the pricing of FX spot transactions, this injury affected all members of the Class.

372. Furthermore, Defendants' concerted trading practices in FX spot transactions at or around the time of the Fixes directly impacted the prices of FX spot transactions entered into during that time period. As horizontal competitors in the FX market, Defendants would, absent collusion, compete with respect to the bids and asks that ultimately determine the Fixes. As such, they engage in price competition with respect to the Fixes themselves.

373. Defendants' collusion with respect to FX spot transactions directly impacted the pricing of outright forwards because their prices are mathematically derived from the prices of spot transactions. Defendants' collusion in the FX spot market directly impacted the pricing of FX swaps because FX swaps are simultaneous spot and outright forward transaction.

374. Indeed, this injury was not even limited to the OTC market. Prices in the futures market closely track the prices available on the spot market, such that any disconnect between the two is almost immediately eliminated through trader arbitrage. Accordingly, the

manipulative pricing on the spot market translated into artificial prices for FX exchange-traded instruments.

375. Plaintiffs and the members of the Class suffered antitrust injury stemming from anticompetitive aspects of Defendants' conduct.

376. Defendants' anticompetitive conduct had severe adverse consequences on competition in that Defendants artificially ensured advantageous market movements in the WM/Reuters Closing Spot Rates by exchanging confidential customer information and agreeing to concerted traded strategies, such as "front running", "banging the close", and "painting the screen", based on aggregate customer order flow information. Under the facts alleged herein, Plaintiffs and members of the Class could not escape such conduct because Defendants are collectively the dominant FX dealers.

377. No one Defendant could accomplish systematic and continuing manipulation of the WM/Reuters Closing Spot Rates without coordinating with its rivals. Absent Defendants' knowledge of one another's confidential customer information, the conduct alleged herein would be a risky strategy. Defendants benefited from coordinating their market activities.

378. As a direct, intended, foreseeable, and proximate result of Defendants' unlawful conspiracy and overt acts alleged herein, Plaintiffs have been injured in their business and property, in amounts that are presently undetermined.

379. The injury to Plaintiffs and members of the Class are of the type the antitrust laws were designed to prevent and flow from that which makes Defendants' acts unlawful.

FRAUDULENT CONCEALMENT

380. During the Class Period, Defendants actively, fraudulently, and effectively concealed their collusion, as alleged herein, from Plaintiffs and members of the Class.

381. By its very nature, the unlawful activity alleged herein was self-concealing. Defendants conspired to artificially inflate bid/ask spreads and manipulate key FX benchmark rates to the benefit of Defendants and to the detriment of Plaintiffs and members of the Class, and they further conspired to keep their collusive and manipulative conduct secret. As a result and as described herein, Plaintiffs could not, and thus did not, discover that they had suffered injury prior to Bloomberg's June 12, 2013 article.

382. Defendants fraudulently concealed their anticompetitive activities by, among other things, engaging in secret communications in furtherance of their conspiracy. These communications occurred in non-public chat rooms, instant messages, and through email, none of which are or were reasonably available to Plaintiffs or members of the Class.

383. The chat rooms in question were operated by the highest-ranking traders within Defendants' operations, and Defendants strictly limited access to the chat rooms. The substance of the conversations occurring within these chat rooms was unknown to Plaintiffs until June 12, 2013, at the earliest. Even then, it was not until the entry of a guilty plea by four Defendants on May 20, 2015 that the public became aware of widespread collusion with respect to bid/ask spreads.

384. When the first Defendant (Citigroup) announced its decision to bar traders from accessing chat rooms, it offered a pretextual reason for the ban, describing the decision as a "sign of concern by banks over online security issues."²⁷⁸

385. Defendants knew that they could not subject their collusive conduct to public scrutiny. In addition, Defendants actively and jointly concealed their collusive conduct. For

²⁷⁸ Alice Ross, *Citi Removes Forex Traders from Bloomberg internal chat groups*, FINANCIAL TIMES (May 16, 2013) (<http://on.ft.com/1m4mj1g>).

instance, Defendants agreed among themselves not to publicly discuss or otherwise reveal the nature and substance of the acts and communications in furtherance of the agreements alleged herein. Defendants acknowledged the critical importance of limiting information with respect to their collusion, as in the following chat transcript:

TIME (UTC)	TRADER	MESSAGE
09:52:11	RBS	[REDACTED]
09:52:21	Barclays	[REDACTED]
09:52:25	RBS	[REDACTED]
09:54:09	UBS	[REDACTED]

386. Traders' concern that others would not assist in their concealment was a critical concern, as reflected in the following chat from December 20, 2011:

TIME (GMT)	TRADER	MESSAGE
2:49:19	UBS	srsly though are we okay with keeping this as is? Ie info levels and risk sharing?
	Citi	Well...
	UBS	that is the qu. You know him best obv. If you think we need to adjust it then he shouldn't be in chat
	JPM	simple question [UBS Trader], I trust you implicitly [UBS Trader] and your judgment you know him. Will he tell rest of desk stuff or god forbin his nyk...
	Citi	yes that's really imp q don't want other numpty's in mkt to know but not only that. Is he gonna protect us like we protect each other against our own branches. Ie if you guys are rhs...and my nyk is lhs...ill say my nyk lhs in few.
	Citi	What concerns me is that I know he'll never tell us when at risk...he's a real lump kind of guy.
	UBS	[REDACTED]
	JPM	[REDACTED]
	UBS	[REDACTED]
	JPM	[REDACTED]
	UBS	[REDACTED]
	JPM	[REDACTED]

	UBS	[REDACTED]
	Citi	[REDACTED]

387. As discussed above, Defendants' traders regularly employed code words within chat rooms in order to evade detection. When a new trader entered one chat room, the following chat ensued, reflecting the traders' intention of disguising their activity:

TIME (UTC)	TRADER	MESSAGE
15:37:10	JPMorgan	[REDACTED]
15:37:16	JPMorgan	[REDACTED]
15:37:31	Citigroup	[REDACTED]
15:37:45	Barclays	[REDACTED]
15:37:53	Barclays	[REDACTED]
15:38:03	JPMorgan	[REDACTED]

388. Moreover, when Defendants' traders were instructed to terminate conversations with respect to the conspiracy, they simply concealed their conduct by using unmonitored platforms to conduct such conversations. These included, as discussed in the chat transcript below, the use of direct phone calls to other traders:

TIME (UTC)	TRADER	MESSAGE
16:37:16	Citigroup	[REDACTED]
16:37:19	Citigroup	[REDACTED]
16:37:28	Citigroup	[REDACTED]
16:37:35	Citigroup	[REDACTED]
16:37:40	Citigroup	[REDACTED]

389. On September 16, 2014, Bloomberg reported that Defendants' traders also reportedly communicated with clients and counterparts via "Snapchat, a mobile-phone application that sends messages that disappear, to circumvent their company's controls."²⁷⁹

²⁷⁹ Julia Verlaine and Gavin Finch, *Biggest Banks Said to Overhaul FX Trading After Scandals*, BLOOMBERG (Sept. 16, 2014) (<http://bloom.bg/1IVyj3E>).

390. None of the facts or information available to Plaintiffs, if investigated with reasonable diligence, could or would have led to the discovery of the conspiracies alleged in this Complaint.

391. As a result, Plaintiffs were prevented from learning of the facts needed to commence suit against Defendants for the manipulative and anticompetitive conduct alleged in this Complaint until Defendants and regulators publicly acknowledged their investigations.

392. There are many additional reasons why these facts could not have been known. FX trades occur primarily in the private, OTC market, and Defendants' trades and trading strategies are not public information. Defendants do not publish information concerning particular trading entities, including trading between dealer entities. Defendants, acting as executing dealers, also discouraged brokers from revealing or otherwise identifying them as counterparties on the brokers' customers' transactions, in order to conceal the counterparties on those transactions. Reasonable due diligence could not have uncovered Defendants' conspiracy because the non-exchange, closed, and private nature of the trades helped to conceal Defendants' conduct.

393. To Plaintiffs' knowledge, the first report of possible manipulation in the FX market was published by Bloomberg on June 12, 2013.²⁸⁰ Even that report, however, was premised on "five dealers with knowledge of the practice" who were not identified in the article.²⁸¹ The dealers specifically "declined to identify which banks engaged in manipulative practices."²⁸²

²⁸⁰ Liam Vaughan, Gavin Finch and Ambereen Choudhury, *Traders Said to Rig Currency Rates to Profit Off Clients*, BLOOMBERG (June 12, 2013) (<http://bloom.bg/1qGQ3oy>).

²⁸¹ *Id.*

²⁸² *Id.*

394. The facts necessary for Plaintiffs to formulate the basis of a complaint and satisfy applicable pleading standards remained within the exclusive control of Defendants, their co-conspirators, and the regulatory authorities investigating the activity alleged herein.

395. Even after the Bloomberg article indicated possible manipulation in the FX market, Defendants did not address the allegations. It was not until October 2013 that the first traders alleged to be involved in the FX-rigging were put on leave.

396. Nor did the Bloomberg article identify the currency pairs involved in the rigging, the parties to the rigging, or provide substantial detail as to how the rigging occurred.

397. Defendants' success in concealing their collusion was facilitated by their tremendous control over the global financial markets. Defendants wield substantial power over market participants. Market participants who suggest Defendants have engaged in anticompetitive behavior risk losing access to financial instruments like swaps, forwards, and options. It is thus unsurprising that the first reports of collusion came from bankers themselves, not market participants.

398. The first class action complaint in this action was filed November 1, 2013, just days after the first FX traders were put on leave. Plaintiffs and the Class have acted diligently in seeking to bring their claims promptly.

399. Because of Defendants' active steps, including fraudulent concealment of their conspiracy to prevent Plaintiffs from suing them for the anticompetitive activities alleged in this Complaint, Defendants are equitably estopped from asserting that any otherwise applicable limitations period has run.

CLAIMS FOR RELIEF

I. CLAIMS ON BEHALF OF THE OTC CLASS

A. Violation of Sections 1 and 3 of the Sherman Act, 15 U.S.C. §§1, 3 on Behalf of the OTC Class

400. OTC Plaintiffs incorporate by reference and re-allege the preceding allegations as though fully set forth herein.

401. Beginning at least as early as January 1, 2003, and continuing through the present, the exact dates being unknown to OTC Plaintiffs, Defendants, and their co-conspirators entered into and engaged in a conspiracy in unreasonable restraint of trade in violation of Sections 1 and 3 of the Sherman Act, 15 U.S.C. §§1, 3.

402. Section 3 of the Sherman Act, 15 U.S.C. §3, makes Section 1 applicable to “any Territory of the United States [and] the District of Columbia.”

403. Plaintiffs ERS-PREPA and Virgin Islands are domiciled in United States territories.

404. The conspiracy consisted of a continuing agreement, understanding, or concerted action between and among Defendants and their co-conspirators in furtherance of which Defendants fixed, maintained, or made artificial prices, as alleged herein.

405. Defendants’ unlawful conduct was through mutual understandings, combinations, or agreements by, between, and among Defendants and other unnamed co-conspirators. These other co-conspirators have either acted willingly or, due to coercion, unwillingly, in furtherance of the unlawful restraint of trade alleged herein.

406. Defendants’ conspiracy is a *per se* violation of the Sherman Act and is, in any event, an unreasonable and unlawful restraint of trade.

407. There is no legitimate business justification for, or procompetitive benefits caused by, Defendants' unreasonable restraint of trade. Any ostensible procompetitive benefit was pretextual or could have been achieved by less restrictive means.

408. Defendants' conspiracy, and the resulting impact on the prices of FX Instruments, occurred in and affected interstate commerce and commerce in and between the Territories of the United States.

409. The contract, combination, or conspiracy had anticompetitive effects, as alleged herein.

410. As a direct, intended, foreseeable, and proximate result of Defendants' conspiracy and overt acts taken in furtherance thereof, OTC Plaintiffs have suffered injury to their business or property.

411. The injury to Plaintiffs and members of the Class are of the type the antitrust laws were designed to prevent and flow from that which makes Defendants' acts unlawful.

412. Plaintiffs are entitled to treble damages, attorneys' fees, reasonable expenses, and cost of suit for the violations of the Sherman Act alleged herein.

II. CLAIMS ON BEHALF OF THE EXCHANGE CLASS

413. Exchange Plaintiffs incorporate by reference and re-allege the preceding allegations as set forth herein.

414. There is overwhelming evidence that Defendants intended to (and in fact did) manipulate prices of spot market currency pairs and benchmark rates, such as WM/Reuters Closing Spot Rates, underlying FX futures contract during the Class Period.

415. Because of the direct relationship between FX futures prices and the spot market prices for the underlying currency pairs, Defendants' manipulation of the spot market prices and benchmark rates manipulated both: (1) the prices of FX futures contract by altering

the spot price component of the FX futures pricing formula; and (2) the prices of the commodity underlying each FX futures contract.

416. This manipulation caused the prices FX futures contracts and options to be artificial throughout the Class Period, injuring Exchange Plaintiffs and members of the Class who engaged in transactions for FX futures contracts and options at artificial prices directly and proximately caused by Defendants' manipulative conduct.

417. The FX market trades currencies in pairs that establish a relationship between the prices of one currency, *e.g.*, U.S. dollars, and another, *e.g.*, euros. Each currency, and thus the various currency pairs, are a "commodity" and serve as the "commodity underlying" FX futures, as those terms are defined and used in Section 1a(9) and 22 of the CEA, 7 U.S.C. §§1a(9) and 25(a)(1)(D), respectively. More specifically, the currency pairs underlying FX futures are an "excluded commodity" as that term is defined in Section 1a(19), 7 U.S.C. §§1a(19) (formerly 7 U.S.C. §1a(13)). In the CEA, the term "'excluded commodity' means (i) an interest rate, exchange rate, currency, security, security index, credit risk or measure, debt or equity instrument, index or measure of inflation, or other macroeconomic index or measure" Excluded commodities are subject to all CFTC anti-manipulation rules, including Section 9(a)(2) of the CEA, which criminalizes the dissemination of false market information.

418. FX futures contracts, including those traded on the CME and ICE, are commodities that trade in interstate commerce. Defendants' restraint of trade and intentional manipulation of spot market prices of currency pairs and benchmark rates, such as WM/Reuters rates, had direct, substantial and foreseeable effects in the United States and on Plaintiffs and members of the Exchange Class. Billions of dollars in FX futures contracts were traded in the United States during the Class Period. Defendants, as dominant dealers in the FX market, knew

the results of the WM/Reuters fix were disseminated in the United States, and were used to price FX futures contracts, including CME and ICE FX futures and options contracts. For these reasons, Defendants knew that manipulating the WM/Reuters fix and spot market prices of currency pairs underlying those contracts, would, and did, have direct, substantial, and reasonably foreseeable effects in the United States, including on the prices of FX futures contracts traded on the CME and ICE.

A. Conspiracy to Restrain Trade in Violation of §1 of the Sherman Act

419. Exchange Plaintiffs incorporate by reference and re-allege the preceding allegations as though fully set forth herein.

420. Beginning at least as early as January 1, 2003, and continuing through the present, the exact dates being unknown to Exchange Plaintiffs, Defendants and their co-conspirators entered into and engaged in a conspiracy in unreasonable restraint of trade in violation of Sections 1 and 3 of the Sherman Act, 15 U.S.C. §1.

421. The conspiracy consisted of a continuing agreement, understanding, or concerted action between and among Defendants and their co-conspirators in furtherance of which Defendants fixed, maintained, or made artificial prices, as alleged herein.

422. Defendants' unlawful conduct was through mutual understandings, combinations, or agreements by, between, and among Defendants and other unnamed co-conspirators. These other co-conspirators have either acted willingly or, due to coercion, unwillingly, in furtherance of the unlawful restraint of trade alleged herein.

423. This conspiracy to manipulate and fix spot market prices of currency pairs underlying FX futures contracts caused injury to both Exchange Plaintiffs and members of the Exchange Class, because they were deprived of the benefit of a legitimate and accurate prices that reflected competitive market conditions. Exchange Plaintiffs and members of the Exchange

Class also were deprived of the ability to accurately price FX futures contracts entered into during the Class Period and to accurately determine the settlement value of FX futures contracts by reference to the spot market prices of the underlying currency pair. Exchange Plaintiffs and members of the Exchange Class thus received, during the term of their transactions and upon settlement, less in value than they would have received absent Defendants' conspiracy and overt acts taken in furtherance thereof.

424. The conspiracy is a *per se* violation of §1 of the Sherman Act. Alternatively, the conspiracy resulted in substantial anticompetitive effects in the exchange-traded FX futures contract market.

425. There is no legitimate business justification for, or pro-competitive benefits caused by, Defendants' conspiracy and overt acts taken in furtherance thereof. Any ostensible pro-competitive benefits are pretextual or could have been achieved by less restrictive means.

426. As a direct, material, and proximate result of Defendants' violation of §1 of the Sherman Act, Plaintiffs and the Exchange Class have suffered injury to their business and property, within the meaning of §4 of the Clayton Act, throughout the Class Period.

427. Plaintiffs are entitled to treble damages, attorneys' fees, reasonable expenses, and cost of suit for the violations of the Sherman Act alleged herein.

B. Manipulation in Violation of the Commodity Exchange Act, 7 U.S.C. §1, *et seq.*

428. Exchange Plaintiffs incorporate by reference and re-allege the preceding allegations as though fully set forth herein.

429. **Ability to Influence Prices.** Throughout the Class Period, Defendants dominated the FX market with a combined market share of over 90%. This dominant position was further extended in the spot market, where Defendants controlled more than 98% of the overall volume,

acting as counterparties for one leg of almost every transaction. Defendants used their dominant position in the FX market to manipulate spot market prices of various currency pairs, as well as numerous benchmark rates organizing in group chat rooms dubbed “The Cartel,” “The Bandits’ Club,” “The Mafia,” and “One Team, One Dream.” In fact, entry into chat rooms such as “The Cartel” was coveted among Defendants because of the influence its members exerted in the FX market. Within these chat rooms, Defendants coordinated their trading activity using classic manipulative strategies including, *inter alia*, (a) “banging the close” by breaking large client in orders into smaller pieces to be executed in rapid succession during the WM/Reuters fixing window; (b) “painting the screen” with phony orders intended to create the illusion that the market was trading direction beneficial to their positions; and (c) shifting their net positions among the group to consolidate order flow for maximum manipulative impact. Because the commodity underlying all FX futures contracts is a particular spot market currency pair, Defendants, by virtue of their dominant position in the spot market, had the ability to (and did) influence the prices of FX futures contracts and options.

430. **Causation and Artificial Price.** When a factor that affects a futures contract price is artificial or illegitimate, then the resulting futures contract price is necessarily artificial. Here, Defendants manipulated the spot market prices of currency pairs underlying FX futures contracts. Because all FX futures contracts derive their value from an underlying currency pair, once the spot market price of that currency pair was rendered artificial through, *inter alia*, Defendants’ manipulation of spot rates and coordinated manipulative trading activity, the prices of futures contracts based on that currency pair were also artificial. Options were similarly affected. Thus Defendants’ manipulative conduct in the FX market directly caused artificial FX futures prices.

431. **Intent.** Manipulative intent is evidenced by, among other things: (a) the extensive communications among Defendants alleged herein and also produced in connection with settlements with government regulators, including other facts and circumstances, showing that Defendants purposefully and systematically intended to and did manipulate spot market prices of various currency pairs to artificial levels, and (b) that these currency pairs are the commodity underlying FX futures and options contracts. Additionally, Defendants' specific intent and motive in the manipulation of spot market prices of various currency pairs was to obtain ill-gotten trading profits from transactions in the spot market and from FX derivative contracts, including the FX futures contracts, held by them or other co-conspirators. FX futures contracts are priced, benchmarked, and settled based on the spot market price of the underlying currency pair. Thus, as a direct consequence of Defendants' knowingly unlawful conduct, the prices of FX futures contracts, options, and/or the price of the commodity underlying such contracts were manipulated to artificial levels by the Defendants and their co-conspirators throughout the Class Period.

432. Each Defendant, individually, in concert, and/or as one another's control persons or agents, through their acts alleged herein, specifically intended to and did cause unlawful and artificial prices of futures and options contracts in violation of the CEA, 7 U.S.C. §1, *et seq.*

433. The Defendants' manipulative conduct and trading activity alleged herein constituted both a manipulation of the prices of FX futures contracts and the currency pairs underlying those contracts in violation of Section 4b(a), 4c(a), 9(a) and 22(a) of the CEA, 7 U.S.C. §§6b(a), 6c(a), 13(a)(2), and 25(a). As a direct result of Defendants' unlawful conduct, Exchange Plaintiffs and members of the Exchange Class have suffered actual damages and injury in fact due to artificial prices for FX futures and currency pairs to which they would not

have been subject but for the unlawful conduct of the Defendants as alleged herein. Exchange Plaintiffs and members of the Exchange Class were further legally injured and suffered injury in fact when they transacted FX futures contracts in an artificial and manipulated market operating under the artificial prices caused by the Defendants. Exchange Plaintiffs and members of the Exchange Class who purchased or sold FX futures contracts during the Class Period were injured and are each entitled to their actual damages for the violations of the CEA alleged herein.

C. Principal-Agent Liability in Violation of the Commodity Exchange Act, 7 U.S.C. §1, *et seq.*

434. Exchange Plaintiffs incorporate by reference and re-allege the preceding allegations as though fully set forth herein.

435. Each Defendant is liable under Section 2(a)(1) of the CEA, 7 U.S.C. §2(a)(1), for the manipulative acts of their agents, representatives and/or other persons acting for them in the scope of their employment.

436. Exchange Plaintiffs and members of the Exchange Class are each entitled to actual damages sustained in FX futures contracts for the violations of the CEA alleged herein.

D. Aiding and Abetting Manipulation in Violation of the Commodity Exchange Act, 7 U.S.C. §1, *et seq.*

437. Exchange Plaintiffs incorporate by reference and re-allege the preceding allegations as though fully set forth herein.

438. Defendants by, *inter alia*, using various electronic communications platforms, such as chat rooms and instant messages, to share market-sensitive information including: (a) pricing and spread information; (b) customer information; (c) their net trading positions; (d) and other details from their proprietary order books in advance of Fixes, knowingly aided, abetted, counseled, induced and/or procured the violations of the CEA by other Defendants as alleged herein. Defendants further coordinated their trading and market making activity around

this market-sensitive information for the purposes of manipulating spot market prices of currency pairs underlying FX futures contracts.

439. Each Defendant did so knowing of other Defendants' manipulation of the prices of spot market currency pairs underlying FX futures contracts. Defendants operated within chat rooms titled "The Cartel," "The Bandits' Club," and "The Mafia," blatantly demonstrating their manipulative intent. Defendants' traders frequently bragged to each other about their ability to manipulate the FX market, congratulating each other when their manipulation of spot market prices for currency pairs underlying FX futures contracts succeeded. These actions demonstrate that Defendants substantially and willfully intended to assist these manipulations to cause the prices of FX futures contracts to be artificial during the Class Period, in violation of Section 22(a)(1) of the CEA, 7 U.S.C. §25(a)(1).

440. Under Section 13c(a) of the CEA, 7 U.S.C. §13, Defendants are liable for willfully intending to assist the manipulation.

441. Other persons willfully intended to assist these manipulations to cause the WM/Reuters spot rates and spot market prices of currency pairs and the prices of FX futures contracts to reach artificial levels during the Class Period, in violation of Section 22(a)(1) of the CEA, 7 U.S.C. §25(a)(1). They are the agents and unnamed co-conspirators as alleged herein.

442. Exchange Plaintiffs and members of the Exchange Class are each entitled to actual damages sustained for the violations of the CEA alleged herein.

E. Manipulation by False Reporting and Fraud and Deceit in Violation of the Commodity Exchange Act, as Amended, 7 U.S.C. §1, et seq. and CFTC Rule 180.1(a)

443. Exchange Plaintiffs incorporate by reference and re-allege the preceding allegations as though fully set forth herein.

444. By their intentional or reckless misconduct, Defendants each violated Section 6(c)(1) of the CEA, as amended, 7 U.S.C. §9, and caused prices of FX futures and other derivatives contracts and derivatives to be artificial during the Class Period. Defendants delivered and caused to be delivered for transmission through the mails and interstate commerce, by multiple means of communication, including communications to electronic trading platforms, false or misleading or inaccurate reports concerning order and trade information that affected or tended to affect spot market prices of currency pairs, which are commodities in interstate commerce, knowing, or acting in reckless disregard of the fact that such report was false, misleading or inaccurate.

445. Under Section 6(c)(1) of the CEA, as amended, codified at 7 U.S.C. §9, and Section 22 of the CEA, as amended, 7 U.S.C. §25, it is unlawful for any person, directly or indirectly, to use or employ, or attempt to use or employ, in connection with any swap, or a contract of sale of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity, any manipulative or deceptive device or contrivance, in contravention of such rules and regulations as the CFTC shall promulgate.

446. In July 2011, the CFTC promulgated Rule 180.1(a), 17 C.F.R. §180.1(a) (2011), pursuant to Section (6)(c)(1), which provides, in relevant part:

It shall be unlawful for any person, directly or indirectly, in connection with any swap, or contract of sale of any commodity in interstate commerce, or contract for future delivery on or subject to the rules of any registered entity, to intentionally or recklessly:

- (1) Use or employ, or attempt to use or employ, any manipulative device, scheme, or artifice to defraud;
- (2) Make, or attempt to make, any untrue or misleading statement of a material fact or to omit to state a material fact necessary in order to make the statements made not untrue or misleading;

- (3) Engage, or attempt to engage, in any act, practice, or course of business which operates or would operate as a fraud or deceit upon any person; or
- (4) Deliver or cause to be delivered, or attempt to deliver or cause to be delivered for transmission through mails or interstate commerce, by any means of communication whatsoever, a false or misleading or inaccurate report concerning crop or market information or conditions that affect or tend to affect the price of any commodity in interstate commerce, knowing or acting in reckless disregard of the fact that such report is false, misleading or inaccurate.

447. Unlawful manipulation under the CEA, as amended, and Rule 180.1 includes delivering, or causing to be delivered for transmission through the mails or interstate commerce, by any means of communication whatsoever, a false or misleading or inaccurate report concerning market information or conditions that affect or tend to affect the price of any commodity in interstate commerce, knowing, or acting in reckless disregard of the fact that such report is false, misleading or inaccurate.

448. During the Class Period, Defendants used or employed manipulative or deceptive devices or contrivances, in connection with a contract of sale or purchase of FX futures and options contracts in interstate commerce. This conduct included the making of untrue, inaccurate or misleading statements of material facts, or omitting material facts necessary to make the statements made not misleading such as:

- (a) making untrue, inaccurate or misleading statements to influence FX prices, including benchmark rates, such as the WM/Reuters Closing Spot Rates;
- (b) failing to disclose that Defendants entered pre-arranged transactions to move the spot market prices for various currency pairs in a direction to benefit their own trading books;

- (c) failing to disclose that Defendants were unlawfully conspiring between and among themselves to manipulate, *inter alia*, the WM/Reuters Fix, as well as FX spot market prices; and
- (d) failing to disclose that Defendants were reporting bids, offers and transactions during the WM/Reuters fix to move the spot market prices of currency pairs and resulting WM/Reuters benchmark to benefit their FX trading positions.

449. Defendants' conduct caused injury to Plaintiffs and other members of the Class who transacted in an artificial and manipulated market, at manipulated prices, and with artificial price trends, during the Class Period.

450. Plaintiffs and other members of the Class are each entitled to damages for the violations of the CEA alleged herein.

REQUEST FOR RELIEF

WHEREFORE, Plaintiffs request relief as follows:

- A. That the Court determine that this action may be maintained as a class action under Rule 23(a) and (b)(3) of the Federal Rules of Civil Procedure, and direct that notice of this action, as provided by Rule 23(c)(2) of the Federal Rules of Civil Procedure, be given to the Class;
- B. That the Court enter an order declaring that Defendants' actions, as set forth in this Complaint, violate the law;
- C. That the Court award Plaintiffs and the Class damages in an amount according to proof against Defendants for Defendants' violation of the federal antitrust laws to be trebled in accordance with those laws;

D. That the Court award Plaintiffs and the Class damages against Defendants for their violations of the Commodity Exchange Act;

E. That the Court award Plaintiffs pre- and post-judgment interest;

F. That the Court award Plaintiffs their costs of suit, including reasonable attorneys' fees and expenses; and

G. That the Court award such other equitable and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Plaintiffs demand a trial by jury, pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, of all issues so triable.

DATED: June 3, 2016

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on June 3, 2016, I caused the foregoing to be electronically filed with the Clerk of the Court using the CM/ECF system, which operates to send notification of such filing to the email addresses denoted on the Electronic Mail Notice List, and that I caused the foregoing document or paper to be mailed via the United States Postal Service to non-CM/ECF participants indicated on the Manual Notice List.

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APPENDIX 1

Glossary of Foreign Exchange Terms	
ABS or Association of Banks in Singapore	ABS publishes a range of daily spot rate fixings for deliverable and non-deliverable currency markets. Those rates stem from 11:00 a.m. submissions by a panel of banks selected by ABS to represent each panel bank's current bid and offer spot rates for Indonesian rupiah, Indian rupee, Singapore dollar, and Thai baht against USD, among others.
A Co-operative	The name of a permanent chat room used by Defendants' traders.
Ammo	Ammo refers to the trades that one Defendant would give to another. <i>See, e.g.</i> , "leaving you with the ammo" and "giving you the ammo."
Arbitrage (Arb/Arbing)	The nearly simultaneous purchase and sale of an asset, such as foreign exchange, across two or more markets in order to profit from a discrepancy in their price relationship.
ASIC	ASIC, or Australian Securities and Investments Commission, is Australia's corporate, markets and financial services regulator.
Ask	The rate at which a market maker will sell the base or reference currency. The "ask" is also known as the "offer."
BaFin	BaFin (German: Bundesanstalt für Finanzdienstleistungsaufsicht), or Federal Financial Supervisory Authority, is the financial regulatory authority for Germany.
Back Book	A trader's personalized trading book used to carry out proprietary ("prop") trading for the bank.
Banging the Close	Banging the close occurs when traders break up large customer orders into small trades and concentrate the trades in the moments before and during the Fix calculation window in order to spike the published rates up or down.
Barrier Killers	The name of a permanent chat room used by Defendants' traders. Members included traders from RBS, Bank of America, Credit Suisse, RBC, and UBS.
Base Currency or Reference Currency	The first currency quoted in a currency pair.
Betty	FX jargon for the GBP/USD currency pair based on a rhyming scheme ("Betty"), referring to the rhyme of actress Betty Grable's last name with "cable." Cable is also FX jargon for GBP/USD.
Bid	The rate at which a market maker will buy the base or reference currency.
Big Figure	The big figure refers to the first 3 digits of a currency quote. For example, if EUR/USD was trading at 1.2676, the big figure would be 1.26.
BIS – Triennial Central Bank Survey	The BIS Triennial Central Bank Survey, describes itself as "the most comprehensive source of information on the size and structure of global foreign exchange (FX) and OTC derivatives markets."

Broker	An agent who executes orders to buy and sell currencies and related instruments either for a fee or commission. In the foreign exchange market, brokers tend to act as intermediaries between banks bringing buyers and sellers together for a commission paid by the initiator or by both parties.
Brokerage	A firm that acts as a broker by providing currency traders with access to trading.
Building	FX jargon for the act of transacting with third parties outside of the chat room in order to increase the volume of orders held by the traders in the chat room in the desired direction.
Bully	FX trader jargon for 50 million units of currency.
Cable	The nickname for GBP/USD, also called “Sterling”, “Quid”, or “Betty.”
CADE	CADE, or Council for Economic Defence is Brazil’s antitrust agency.
Call Option	An option that gives the holder the right, but not the obligation, to buy the underlying instrument at a specified price during a fixed period.
Cash Settlement	A procedure for settling future contracts where the cash difference between the future and the market price is paid instead of physical delivery.
CEA	Commodity Exchange Act
Central Bank	A central bank provides financial and banking services for a country’s government and commercial banks. It implements the government’s monetary policy, as well, by changing interest rates.
CFTC	The Commodity Futures Trading Commission
Clearing the Decks	Netting off orders with third parties outside the chat room, thereby reducing the volume of orders held by third parties that might otherwise be transacted at the fix in the opposite direction.
Chicago Mercantile Exchange (CME)	A US futures company and one of the largest options and futures exchanges. It owns and operates large derivatives and futures exchanges in Chicago, and New York, as well as online trading platforms.
Combo Boom	FX trader jargon for working together to manipulate FX rates.
Commodity Underlying	The cash commodity underlying a futures contract. Also, the commodity or futures contract on which a commodity option is based, and which must be accepted or delivered if the option is exercised.
Confirmation	A memorandum to the other party describing all the relevant details of the transaction.
Cost of Carry	Determined mathematically from the overall cost involved when lending one currency and borrowing another during the time period stretching from the spot date to the forward date.

Counter Currency	The currency used as the reference or second currency in a currency pair. It is also called the quote currency. In a currency pair, the counter currency provides the price per unit of base currency. For example, if the price of EUR/USD is 1.1672, it costs \$1.1672 to buy 1 euro.
Cross	A pair of currencies that does not include the U.S. dollar.
Currency	The type of money that a country uses. It can be traded for other currencies on the foreign exchange market, so each currency has a value relative to another.
Deal	An FX term that denotes a trade done at the current market price. It is a live trade as opposed to an order.
Dealer	An individual or firm acting as a principal, rather than as an agent, in the purchase and/or sale of currencies. Dealers trade for their own account in contrast to the brokers who trade only on behalf of their clients.
Delivery	The settlement of a transaction by receipt or tender of a financial instrument or currency.
Derivatives	A broad term relating to risk management instruments such as futures, options, swaps, etc. The contract value moves in relation to the underlying instrument or currency.
DOJ	The United States Department of Justice.
Double Team	FX trader jargon for working together to manipulate FX rates.
EC	EC, or European Commission, is the executive body of the European Union (“EU”) responsible for proposing legislation, implementing decisions, upholding EU law and managing the day-to-day business of the EU.
ECB Fix	Benchmark rates published by the European Central Bank, including FX rates for 32 currencies actively traded against the euro. The ECB Fix is based upon spot FX trading activity by market participants at or around 2:15 p.m. Central Europe Time (1:15 p.m. London time).
Electronic Communication Network (ECN)	An automated system that matches buy and sell orders for currencies. An ECN connects major brokerages and individual traders so that they can trade directly between themselves without going through a middleman.
Essex Express	The name of a permanent chat room including traders from UBS, Barclays, RBS, and Bank of Tokyo Mitsubishi.
Exercise Price (Strike Price)	The price at which an option can be exercised.
Expiration Date (Option)	The last date after which the option can no longer be exercised.
FCA or UK-FCA	FCA, or Financial Conduct Authority in the United Kingdom, is a regulatory body that regulates financial firms in the UK.
Fed	Federal Reserve Bank
FINMA	FINMA, or the Swiss Financial Market Supervisory Authority, is the Swiss governmental body responsible for financial regulation.

Fix	A benchmark FX rate used to price FX instruments, including the WM/Reuters rates and the ECB Fix.
Fixing Order	A transaction where a customer and bank agree to exchange currency at a benchmark fixing rate.
Foreign Exchange	The purchase or sale of a currency against the sale or purchase of another currency.
Forex (or FX)	An abbreviation of foreign exchange.
Forward Contract (or Forward)	An agreement to convert (“buy” or “sell”) a set amount of a foreign currency on a future date greater than two days at a specified exchange rate.
Front Book	A trader’s market making book, which is used to record client trading and current positions.
Front Running	Trading based upon non-public information regarding an impending trade (usually a customer’s), <i>e.g.</i> , trading in front of or before the customer’s trade.
FSB	FSB, or the Financial Stability Board, is an international body that monitors and makes recommendations about the global financial system.
Futures Contract	Standardized contracts trading on an exchange and calling for delivery of a specified quantity of a specified currency, or a cash settlement, on a specified date.
G10	The Group of 10 refers to 10 of the most heavily traded currencies. They are the USD, EUR, JPY, GBP, CHF, AUD, NZD, CAD, SEK, and NOK.
G20	The Group of 20 is an international forum for the governments and central bank governors from 20 major economies.
“Giving you the ammo”	FX trader jargon for transferring orders to a single trader in the chat room, thereby consolidating these orders in the hands of one trader.
Getting/Get	FX trader jargon for buying currency.
Good Guy	FX trader jargon for a client that may receive more favorable prices.
GMT or Greenwich Mean Time	The most commonly referred to time zone in the FX market. GMT does not observe daylight savings or summer time.
HK-MA	HK-MA, or Hong Kong Monetary Authority, is the government authority in Hong Kong responsible for maintaining monetary and banking stability.
International Monetary Market (IMM)	A division of the CME that deals with the trading of currency and interest rate futures and options. The IMM division of the CME includes such currencies as the U.S. dollar, British pound, the euro, and the Canadian dollar.
IMM Session	8:00 AM EST – 3:00 PM EST.
Interest Differential	Determined mathematically from the overall cost involved when lending one currency and borrowing another during the time period stretching from the spot date to the forward date. Also described as “cost of carry.”
Jam	FX trader jargon for trading rapidly.
Kiwi	The nickname for NZD/USD currency pair.

“Leaving you with the ammo”	FX trader jargon to describe traders in a chat room transacting or “netting off” with third parties outside the chat room to maintain the volume of orders in the desired direction held by traders in the chat room and avoid orders being transacted in the opposite direction at the fix.
Left Hand Side (LHS)	When a trader has orders to sell the first currency listed in any currency pair.
Limit Order	An order that seeks to buy at lower levels than the current market or sell at higher levels than the current market. An order with restrictions on the maximum price to be paid or the minimum price to be received. For example, if the current price of USD/YEN is 117.00/05, then a limit order to buy USD would be at a price below the current market, <i>e.g.</i> 116.50.
Liquidity	The degree to which an asset can be bought or sold in the market without affecting the asset’s price.
Liquidity Provider	A market maker that facilitates the trading of an asset or security.
London Close or London Fix	<i>See</i> WM/Reuters Fixing
London Session	3:00 AM EST – 12:00 AM EST
Long Position	A position that appreciates in value if the market price increases. When the base currency in a pair is bought, the position is said to be long. This position is taken with the expectation that the market will rise.
Losing / Lost	FX trader jargon for selling currency.
Lump	FX trader jargon for a non-descript amount of currency between 50 and 500 million.
Mangle	FX trader jargon for attempting to manipulate the Fix.
Mark to Market	The accounting act of recalculating the value of an account to reflect the fair value of positions, rather than book value. This is done by assuming all open positions are liquidated at current market exchange rates.
Market Making	A dealer is said to make a market when he quotes both the bid and offer prices at which he stands ready to buy and sell.
MIO	FX trader jargon for one million.
Mom	FX trader jargon for “at this moment.”
Netting Off	Consolidating the value of two or more transactions, payments, or positions in order to create a single value.
Non-Trade Currencies	Currencies with less market liquidity.
NYDFS	NYDFS, or New York State Department of Financial Services is an agency that regulates a broad array of financial products and services.
NYK	FX trader jargon for the New York branch of a financial institution.
New York Session	8:00 AM EST – 5:00 PM EST
OCC	OCC, or Office of the Comptroller of the Currency is an independent bureau of the U.S. Department of the Treasury, which regulates and supervises all national banks and federal savings associations as well as federal branches and agencies of foreign banks.

Offer	The rate at which a market maker will sell the base or reference currency. The “offer” is also known as the “ask.”
One Team, One Dream	The name of a permanent chat room used by Defendants’ traders
Options on FX Futures	Standardized contracts trading on an exchange and upon exercise, call for the establishment of a FX futures position.
Over The Counter (OTC)	A market conducted directly between dealers and principals rather than through a regulated exchange trading floor. The OTC market is largely unregulated.
Outright Forward	An agreement to exchange sums of currency at an agreed-on exchange rate on a value date more than two bank business days in the future. The exchange rate for a forward transaction is called the forward outright.
Overbuying or Overselling	Traders buying or selling more volume than necessary to fill client orders at the fix.
Painting the Screen	The act of placing phony orders with one another to create the illusion of trading activity in a given direction in order to move rates prior to the fixing window. After the relevant fix is calculated, the trades are reversed.
Pick or Pickun	FX trader jargon for the WM/Reuters Fix. Origin is from Pick n’ Mix, a UK candy store. Mix rhymes with Fix, hence Pick.
Pip	“Pip” stands for “price in interest point.” A pip measures the amount of change in the exchange rate for a currency pair. For currency pairs displayed to four decimal places, one pip is equal to 0.0001. For yen-based currency pairs, a pip is equal to 0.01.
Position	The net total holdings of a given asset.
Pound	Short hand reference for the pound sterling, the official currency of the United Kingdom.
Put Option	A put option confers the right but not the obligation to sell currencies, instruments or futures at the option exercise price within a predetermined time period.
Quote	An indicative market price in the OTC market.
Rate	The price of one currency in terms of another.
Rbase and Rterm	The rate of interest paid on deposits of the base currency.
Real Money	Traders of significant size, including pension funds, asset managers, insurance companies, etc. They are viewed as indicators of major long-term market interest, as opposed to shorter-term, intraday speculators.
RHS or Right Hand Side	When a trader is a buyer of the first currency listed in a currency pair.
SACC	SACC, or South African Competition Commission, is a regulatory body of South Africa responsible for investigating, controlling, and evaluating restrictive business practices.
Settlement	The process by which a trade is entered into the books, recording the counterparts to a transaction. The settlement of currency trades may or may not involve the actual physical exchange of one currency for another.

SFO	SFO, or Serious Fraud Office, is an independent government department in the United Kingdom responsible for investigating and prosecuting serious or complex fraud, bribery and corruption.
SG-MA	SG-MA. or MAS or the Monetary Authority of Singapore, is the central bank of Singapore.
Short Position	When the base currency in the pair is sold, the position is said to be short.
Slag	A derogatory term in British English for a sexually promiscuous woman.
Sllllaaaaggggsssss2	The name of a permanent chat room used by Defendants' traders. Members include traders from Barclays, Credit Suisse, HSBC, RBS, and UBS.
Snapchat	A mobile-phone application that sends messages that disappear after reading.
Spot Transaction	An agreement to exchange sums of currency at an agreed-on exchange rate on a value date that is within two bank business days' time. For the CAD\USD currency pair, the value date is normally within one bank business day.
Spot Rate	The exchange rate for a currency pair prevailing in the market at any given moment.
Spread	The difference between the bid and ask price of a currency.
Stand Down	FX trader jargon for agreeing to hold off buying or selling to benefit a co-conspirators position.
Sterling	Short hand reference for the pound sterling, the official currency of the United Kingdom.
Stop-Loss Order	An instruction from the client to the bank to trade a currency if the currency trades at a specified rate. In the case of stop-losses, a stop-loss order to sell is triggered if the bid price reaches the order rate, and a stop order to buy is executed if the offer price reaches the order rate.
Stops	FX trader jargon for a congregation of stop-loss orders.
Strike Price or Exercise Price	The price at which an option holder can buy or sell the underlying instrument.
Swap	The simultaneous purchase and sale of the same amount of a given currency for two different dates, against the sale and purchase of another.
Swiss WEKO	WEKO ("Wettbewerbskommission"), or Switzerland's Competition Commission, responsible for enforcing Switzerland's Cartel Act.
Ta	FX trader jargon for thank you.
Taking Out the Filth	<i>See</i> Clearing the Decks.
Term Currency	The second currency listed in the currency pair. <i>See</i> Counter Currency.
The 3 Musketeers	The name of a permanent chat room used by Defendants' traders. Members include traders from JPMorgan, Barclays, and Citigroup.
The A-team	The name of a permanent chat room used by Defendants' traders. Members included JPMorgan and HSBC.

The Bandits' Club	The name of a permanent chat room used by Defendants' traders.
The Cartel	The name of a permanent chat room used by Defendants' traders. Members include traders from Barclays, Citigroup, JPMorgan, and UBS.
The Mafia	The name of a permanent chat room used by Defendants' traders. Members include traders from JPMorgan, Barclays, UBS, and Citigroup.
The Players	The name of a permanent chat room used by Defendants' traders
The Sterling Lads	The name of a permanent chat room used by Defendants' traders. Members include traders from HSBC, RBS, UBS, Barclays, and Credit Suisse.
The Swiss Mafia	The name of a permanent chat room used by Defendants' traders. Members include traders from Citigroup, Credit Suisse, and UBS.
Treasury Markets Association (TMA)	Publishes spot fixes for the USD/HKD and USD/CNY currency pairs in Hong Kong.
Tokyo Fix	Most major banks in Tokyo publish their own fixes at 9:55 a.m. Japan standard time for a range of JPY currency pairings. The Bank of Tokyo Mitsubishi rates are used for approximately 90% of fixing order flow across the Tokyo market.
Tokyo Session	7:00 PM EST - 4:00 AM EST
Ton	FX trader jargon for 100 million units of currency.
Trade Currencies	The following 21 currencies (AUD, CAD, CHF, CZK, DKK, EUR, GBP, HKD, HUF, ILS, JPY, MXN, NOK, NZD, PLN, RON, RUB, SEK, SGD, TRY and ZAR) are referred to as "Trade Currencies" in WM/Reuters Guide.
Turnover	The total money value or volume of all executed transactions in a given time period.
UTC	Coordinated Universal Time is a primary time standard by which the world regulates clocks and time. It is within 1 second of mean solar time at 0° longitude and does not observe daylight savings time. For most purposes, UTC is considered interchangeable with GMT.
Value Date	Also known as the maturity date, it is the date on which counterparts to a financial transaction agree to settle their respective obligations, <i>i.e.</i> , exchanging payments. For spot currency transactions, the value date is normally two business days forward.
Volatility	Volatility (in Forex trading) refers to the amount of uncertainty or risk involved with the size of changes in a currency exchange rate. High volatility means that the price of the currency can change dramatically over a short time period in either direction. On the other hand, a lower volatility would mean that an exchange rate does not fluctuate dramatically, but changes in value at a steady pace over a period of time.
VWAP	VWAP, or Volume-weighted average price, is the ratio of the value traded to total volume traded over a particular time horizon.

WM/Reuters Fix	WM/Reuters publishes fixing rates for spot rates and forwards. WM/Reuters publishes spot rate fixings for 159 currencies. WM/Reuters calculates fixing rates for Trade Currencies every half hour from 6:00 a.m. in Hong Kong/Singapore to 10:00 p.m. in the U.K. The most widely used WM/Reuters rates are the WM/Reuters Closing Spot Rates for Trade Currencies, which are calculated around 4:00 p.m. London time (11:00 a.m. New York time). For Trade Currencies, the 4:00 p.m. fix is based on actual trades, using bids and offers extracted from a certain electronic trading system during a one-minute window (“fix period”).
Yard	FX trader jargon for one billion units of currency.

APPENDIX 2

Ticker	Currency Name
AUD	Australian dollar
BRL	Brazilian real
CAD	Canadian dollar
CHF	Swiss franc
CNY	Chinese yuan
CZK	Czech koruna
DKK	Danish krone
EUR	Euro
GBP	British pound
HKD	Hong Kong dollar
HUF	Hungarian forint
IDR	Indonesian rupiah
ILS	Israeli shekel
INR	Indian rupee
JPY	Japanese yen
KRW	South Korean won
MXN	Mexican peso
MYR	Malaysian ringgits
NOK	Norwegian krone
NZD	New Zealand dollar
PLN	Polish zloty
RUB	Russian ruble
SEK	Swedish krona
SGD	Singapore dollar
THB	Thai baht
TRY	Turkish lira
TWD	Taiwan dollar
USD	U.S. dollar
ZAR	South African rand

APPENDIX 3

Defendant	2003 Market Share (Rank)	2004 Market Share (Rank)	2005 Market Share (Rank)	2006 Market Share (Rank)	2007 Market Share (Rank)	2008 Market Share (Rank)	2009 Market Share (Rank)	2010 Market Share (Rank)	2011 Market Share (Rank)	2012 Market Share (Rank)	2013 Market Share (Rank)
Deutsche Bank	9.79% (3)	12.18% (2)	16.72% (1)	19.26% (1)	19.30% (1)	21.70% (1)	19.88% (1)	18.06% (1)	15.64% (1)	14.57% (1)	15.18% (1)
Citigroup	9.87% (2)	9.37% (3)	7.50% (3)	10.39% (3)	9.00% (3)	7.49% (4)	7.59% (5)	7.69% (4)	8.88% (4)	12.26% (2)	14.90% (2)
Barclays	3.84% (9)	4.08% (7)	5.85% (5)	6.61% (4)	8.80% (5)	9.12% (3)	10.10% (3)	11.08% (3)	10.75% (2)	10.95% (3)	10.24% (3)
UBS	11.53% (1)	12.36% (1)	12.47% (2)	11.86% (2)	14.85% (2)	15.80% (2)	13.55% (2)	11.30% (2)	10.59% (3)	10.48% (4)	10.11% (4)
HSBC	3.89% (7)	4.89% (5)	6.37% (4)	5.04% (7)	4.36% (7)	4.10% (7)	4.33% (7)	4.55% (7)	6.26% (6)	6.72% (5)	6.93% (5)
JPMorgan	6.79% (4)	5.78% (4)	5.29% (7)	3.89% (9)	3.33% (9)	4.19% (6)	5.27% (6)	6.35% (6)	6.43% (5)	6.60% (6)	6.07% (6)
RBS	2.85% (12)	3.51% (9)	3.62% (11)	6.43% (5)	8.90% (4)	7.30% (5)	6.90% (4)	6.50% (5)	6.20% (7)	5.86% (7)	5.62% (7)
Credit Suisse	4.23% (6)	3.79% (8)	2.36% (14)	1.61% (15)	1.02% (17)	1.51% (14)	2.98% (9)	4.44% (8)	4.80% (8)	4.68% (8)	3.70% (8)
Morgan Stanley	3.87% (8)	2.92% (13)	3.92% (10)	2.55% (12)	2.86% (10)	2.56% (10)	2.74% (11)	2.91% (10)	3.64% (10)	3.52% (9)	3.15% (9)
Bank of America Merrill Lynch	2.42% (14) 2.98% (11)	2.09% (15) 3.49% (10)	1.60% (16) 5.69% (6)	3.97% (8) 3.68% (10)	5.29% (6) 1.39% (13)	2.23% (11) 1.24% (15)	2.87% (12)	2.27% (12)	2.94% (12)	2.41% (12)	3.08% (10)
Goldman Sachs	5.56% (5)	4.54% (6)	4.39% (8)	5.25% (8)	4.14% (8)	3.47% (9)	3.88% (8)	4.28% (9)	4.13% (9)	3.12% (10)	2.75% (11)
BNP Paribas	2.72% (13)	1.43% (18)	1.09% (19)	1.10% (17)	1.34% (15)	1.62% (13)	2.26% (10)	2.89% (11)	3.23% (11)	2.63% (11)	2.52% (12)
Societe Generale	1.16% (23)	1.16% (20)	0.80% (20)	0.61% (20)	0.61% (20)	0.89% (18)	1.48% (13)	2.06% (13)	1.85% (13)	1.76% (13)	1.57% (13)
Standard Chartered	0.64% (27)	0.68% (24)	0.43% (24)	0.58% (21)	0.51% (22)	0.51% (24)	0.88% (16)	1.25% (15)	1.07% (17)	0.89% (18)	0.91% (17)
RBC Capital Markets	1.87% (17)	1.49% (17)	1.77% (15)	0.88% (19)	0.76% (19)	0.72% (19)	0.72% (17)	0.71% (20)	0.61% (18)	0.84% (19)	0.88% (18)
Mitsubishi UFJ Financial Group	0.20% (43)	0.62% (26)	0.48% (23)	0.36% (24)	0.40% (23)	0.56% (22)	0.54% (25)	0.52% (22)	0.60% (19)	0.24% (30)	0.31% (23)
Defs' Aggregate Market Share:	74.21%	74.36%	80.35%	84.07%	86.86%	85.01%	85.97%	86.86%	87.62%	90.86%	90.92%