

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

ALASKA ELECTRICAL PENSION FUND;  
GENESEE COUNTY EMPLOYEES'  
RETIREMENT SYSTEM; COUNTY OF  
MONTGOMERY, PENNSYLVANIA;  
COUNTY OF WASHINGTON,  
PENNSYLVANIA; CITY OF NEW  
BRITAIN, CONNECTICUT, UNIQA  
CAPITAL MARKETS GMBH ON BEHALF  
OF UNIQA DOLLAR BOND,  
PENNSYLVANIA TURNPIKE  
COMMISSION, ERSTE  
ABWICKLUNGSANSTALT (EAA) and  
PORTIGON AG on behalf of themselves and  
all others similarly situated,

Plaintiffs,

vs.

BANK OF AMERICA, N.A.; BARCLAYS  
BANK PLC; B.N.P. PARIBAS SA;  
CITIGROUP INC.; CREDIT SUISSE AG,  
NEW YORK BRANCH; DEUTSCHE BANK  
AG; THE GOLDMAN SACHS GROUP,  
INC.; HSBC BANK USA, N.A.; ICAP  
CAPITAL MARKETS LLC; JPMORGAN  
CHASE & CO.; MORGAN STANLEY & CO.  
LLC; NOMURA SECURITIES  
INTERNATIONAL, INC.; ROYAL BANK  
OF SCOTLAND PLC; UBS AG; and WELLS  
FARGO BANK, N.A.,

Defendants.

Case No.: 14-cv-7126 (JMF)

**SECOND CONSOLIDATED  
AMENDED CLASS ACTION  
COMPLAINT**

**JURY TRIAL DEMANDED**

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Plaintiffs Alaska Electrical Pension Fund; Genesee County Employees' Retirement System; the County of Montgomery, Pennsylvania; the County of Washington, Pennsylvania; the City of New Britain, Connecticut; UNIQA Capital Markets GmbH, appearing here on behalf of the fund UNIQA Dollar Bond; Pennsylvania Turnpike Commission, Erste Abwicklungsanstalt (EAA), and Portigon AG (collectively, "Plaintiffs"); individually, collectively, and on behalf of all persons and entities similarly situated, bring this class action under Section 1 of the Sherman Antitrust Act, Sections 4 and 16 of the Clayton Antitrust Act, and certain state laws, for actual damages, treble damages, punitive damages, declaratory and injunctive relief, costs of suit, pre- and post-judgment interest, and other relief, and allege as follows:

#### **NATURE OF THE ACTION**

1. This case involves a conspiracy by Defendants to manipulate "ISDAfix." ISDAfix is a key benchmark for interest rates that determines the pricing, cashflows, and payments terms for a range of financial instruments ("ISDAfix Transactions"<sup>1</sup>). Defendants (and their affiliates) are not only the primary market makers for ISDAfix Transactions, but they set ISDAfix along with ICAP Capital Markets LLC ("ICAP"), an inter-dealer broker that participated in Defendant Banks' (defined below) conspiracy.

2. Plaintiffs and members of the Class (defined below) are Defendants' customers, contracting directly with Defendant Banks (and their affiliates) for interest rate swaps and

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<sup>1</sup> As used here, "ISDAfix Transactions" are all contracts, derivatives, notes, debt instruments, or any other type of transaction whose payments or value (or both) are linked to USD ISDAfix rates. This includes, without limitation, to the extent they are linked to USD ISDAfix rates, such products as swaps, swaptions, constant maturity swaps, inverse floaters and snowballs, steepeners and flatteners, digital and callable range accrual notes, swapnote futures, cash-settled swap futures, interest-rate linked structured notes, and variance and volatility swaps. For the sake of further clarity, physically settled swaptions are referred to as ISDAfix Transactions for purposes of this Complaint.

ISDAfix Transactions. By secretly colluding to collectively manipulate ISDAfix throughout the Class Period (defined below), Defendants extracted supra-competitive profits from Plaintiffs and the Class. Plaintiffs bring this action to redress the harm inflicted by Defendants (and their affiliates), which likely amounts to billions of dollars class-wide.

3. ISDAfix was designed to represent current market fixed rates for interest rate swaps of various terms. Specifically, it is supposed to be an average mid-market swap rate for six major currencies at selected maturities. This case concerns the ISDAfix rate for U.S. Dollars (“USD”), which was, until early 2014, administered by ICAP.

4. Throughout the Class Period, the USD ISDAfix swap rates were set every day between 11:00 and 11:15 a.m. Eastern Time in a two-step process.<sup>2</sup> The ISDAfix setting process began with rates drawn from actual transactions in the swaps market, where Defendants were supposed to be operating independently as horizontal competitors. From these transactions, ICAP was supposed to calculate a “reference rate,” which was to be ICAP’s estimate of the average trading rate of USD interest rate swaps of various tenors at 11:00 a.m. ICAP circulated the reference rates to the Defendant Banks, “polling” each of them as to the bank’s actual bid/offer spread. ICAP then adjusted the reference rates based on Defendants’ submissions with the resulting figures being the final, published ISDAfix rates for the day. From start to finish, ISDAfix was supposed to be set based on real transactions and prices drawn from a competitive market.

5. Rather than allow free market forces to set ISDAfix, Defendants conspired to, and did, rig it to their advantage.

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<sup>2</sup> USD 1-year ISDAfix swap rates were set twice daily, at 11:00 a.m. and 3:00 p.m.

*First*, Defendants shared with each other their own competitively sensitive pricing information, such as intended orders and how balanced or unbalanced the banks' exposure was on a particular day, with the purpose and effect of rigging the ISDAfix reference rate. No competitor operating independently would ever share such commercially sensitive information with its competitors absent collusion. By sharing such information, the Defendant Banks were able to coordinate their trading activities leading up to the ISDAfix polling window.

6. One way Defendants would manipulate ISDAfix was to “bang the close”. This involved executing a series of rapid-fire transactions through ICAP immediately before the opening of the polling window. For example, on August 10, 2010, when another desk at Barclays took a position that gave the Barclays swaps desk an incentive to push up the 10-year ISDAfix rate and push down the 2-year ISDAfix rate, Barclays swap desk Trader A, US Rate Derivatives, coordinated with ICAP Broker A on the timing, direction, and amount of “ammo” necessary to manipulate those two ISDAfix rates:

Trader A: “Could you pick me up?”

Broker A: “I got you picked up.”

Trader A: “Oh, okay. No one else is on the line, right?”

Broker A: “No.”

Trader A: “Alright, uh, I care about the elevens [11:00 a.m. fixings] okay.”

Broker A: “Oh, great. What, okay, what do you wanna do and how much do you have to burn?”

Trader A: “Yeah, so no one’s on the line right?”

Broker A: “No, not at all.”

Trader A: “Alright, um. So, I’m gonna want, uh, 10s higher and 2s lower, okay? So –“

Broker A: “Okay.”

Trader A: “Um, just, your discretion, I care more about 10s, but would care about both of ’em. Um, and have, uh, like two hundred [million] 10s and five hundred [million] 2-year spreads to use, okay?”

Broker A: “Okay fine, you got it.”<sup>3</sup>

7. Similarly, on May 14, 2007, ICAP Broker B wrote to Trader B, who worked on the Swaps Trading desk at Defendant BNP, complaining that “11 OCLOCK is becoming too complicated, people are timing the action in the last 10 seconds,” and that it is “hard to hit 2 maturitie [*sic*] at the same time with 2 or 3 seconds left, and then they get upset the screen didn’t print what they wanted it to be.”<sup>4</sup>

8. ICAP routinely served as a “go-between” for the Bank Defendants, facilitating the exchange of trading information. For example, on April 26, 2007, Barclays’ Trader C, who was Head of Interest Rate Options Trading, asked ICAP Broker A: “[H]ave you seen like Goldman, uh, doing much at eleven?” Broker A responded, “I, not lately I have. I mean, [the trader at Goldman] does from time to time, but over the last couple of days I have not.”<sup>5</sup>

9. Defendants would also instruct ICAP to delay reporting large market moving transactions until after the setting of ISDAfix. In a recent \$120 million sanctions order imposed by the CFTC upon Goldman Sachs for manipulation of ISDAfix rates, the CFTC noted that Goldman on occasion would instruct ICAP to delay reporting trades to get the ISDAfix rate it wanted, with a Goldman trader telling an ICAP broker “just have your screen guy go to coffee [or] to the bathroom [instead of timely reporting trades prior to 11am].”<sup>6</sup>

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<sup>3</sup> BARC-IFX\_00063898.

<sup>4</sup> BNPP\_AK\_00103254.

<sup>5</sup> BARC-IFX\_00011588.

<sup>6</sup> See Order Instituting Proceedings Pursuant to Section 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions (Dec 21, 2016), at 11.

10. Defendants would also punish ICAP by putting it “in the [penalty] box” (*i.e.*, by withholding trades from ICAP, thereby lowering their broker commissions) where ICAP failed to effectively implement the banks’ desire to manipulate ISDAfix. For example, on May 4, 2007, Trader D, a Director at Deutsche Bank, purported to punish ICAP because ICAP “f’ed [Deutsche Bank] on an isdafix setting.”<sup>7</sup>

11. Through these coordinated practices, Defendants moved the swaps market in the desired direction just prior to 11:00 a.m., when ICAP would calculate the reference rates to use in polling the Defendant Banks. The Defendants Banks’ actions in the swaps market purposely impacted the reference rates, and were so successful that traders would brag of their results. A Citi trader, Trader E, Director of US Exotics, once boasted that “[I] actually push the isdafixing on the days when it’s close . . . surprising[ly] easy to push!”<sup>8</sup>

12. Similarly, on August 20, 2009 Trader F at Morgan Stanley queried several competitors at Deutsche Bank: “u guys dont have much isdafix . . . as in im v surprised.” Trader F then continued: “here [at Morgan Stanley] it is much bigger, as in the option guys r all over it and insist on moving screen etc . . . gives good opportunities for others tho!!”<sup>9</sup>

13. Economic analyses commissioned by Plaintiffs confirm this collusive conduct: through the application of statistical tests and economic “screens,” Plaintiffs’ experts have identified thousands of instances of manipulation, across multiple tenors, occurring on *over 1,700 days* during the Class Period. In other words, they found signs of *market manipulation* on *nearly every trading day* during the Class Period. These movements can only be explained by

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<sup>7</sup> DB-SDNY-ISDAFIX\_00078095.

<sup>8</sup> Citi-ISDAFIX-Civil-00106909.

<sup>9</sup> DB-SDNY-ISDAFIX\_00142608.



collusion, and this is in line with, but in addition to, the fact that Defendants were rubberstamping the ISDAfix reference rates on the back end nearly every trading day during the Class Period, as described below.

14. *Second*, Defendants colluded with respect to their ICAP submissions during the polling process. The Defendant Banks agreed with each other that they would routinely not disturb the reference rates posted by ICAP, even though the polling process was supposed to be a *safeguard against* market manipulation. In a market free of collusion, a reference rate that had been subject to dramatic, last-minute swings would have been rejected by Defendant Banks as not reflecting the prices at which each would be willing to enter into swaps.

15. Rather than make honest, individual submissions to ICAP, reflecting the true market price, nearly *every day for multiple years*, the Defendant Banks incredibly claimed to have the *exact same* bid/ask spread, *down to five decimal points*. The odds against Defendant Banks unilaterally submitting over an extended period of time the exact same quotes without colluding are astronomical. Yet, the economic and record evidence reveals this to be precisely what happened.

16. A given bank was willing to submit to ICAP the exact same rate as the other Defendant Banks even if it was personally agnostic (or even against) the direction the reference rate had moved on a particular day because the other banks would return the favor on another day. There were more profits to be earned for Defendants in maintaining the shared ability to manipulate ISDAfix over the long term than there were to be lost due to a divergence of interests on any particular trading day.

17. Absent collusion, it would not have made economic sense for any of the Defendants to engage in the conduct outlined above and documented below in detail. A

Defendant Bank acting on its own would incur too large a risk that the market would actually move against it. Thus, attempts to manipulate ISDAfix by trying to move the market for swaps was a risky and ultimately hopeless task for any one market participant – but not for the Defendant Banks acting collectively. Not only was the swaps market too big to be consistently moved except by a combination of these market-dominating Defendants, but *only these Defendants* could ensure the resulting impact on reference rates was not undone through an honest “polling” process on the back end.

18. Defendants’ conspiracy harmed Plaintiffs and members of the Class. Plaintiffs and the Class were injured each time they received reduced payments or made inflated payments on ISDAfix Transactions, or traded in “vanilla” swaps which were the primary product Defendants manipulated in order to influence ISDAfix. The entire day’s trading activities for swaps were distorted by Defendants’ collusive efforts to move ICAP’s reference rate, *i.e.*, to fix the price for swaps in the run-up to the polling process.

19. Defendants carried out their unlawful conspiracy for years in secret, and without detection, until in 2013 government regulators first disclosed that they were investigating Defendants’ manipulation of ISDAfix.

20. In April 2013, the Commodity Futures Trading Commission (“CFTC”) began probing price manipulation by ICAP and interviewing ICAP brokers as well as employees of the Defendant Banks. In August 2013, based on recorded telephone calls and emails that had been reviewed, the CFTC reportedly concluded that the Defendant Banks had instructed ICAP brokers to facilitate as many interest rate swaps as possible to push ISDAfix to a predetermined level.

21. On September 9, 2014, *Bloomberg* reported that the CFTC had “told the U.S. Justice Department they’ve *found evidence of criminal behavior* following an investigation into

banks' alleged manipulation of ISDAfix[.]”<sup>10</sup> Other regulators, such as the U.K. Financial Conduct Authority and Germany's financial regulator, BaFin, have launched parallel probes into the manipulation of ISDAfix, and news reports indicate that criminal investigations are ongoing in the United States.<sup>11</sup>

22. In May 2016, the CFTC ordered Barclays to pay a \$115 million penalty for attempted manipulation and false reporting of ISDAfix, finding that “varied and sophisticated means [had been] employed by Barclays traders in their attempts to manipulate USD ISDAFIX.”<sup>12</sup> In May 2016, the CFTC ordered Citibank to pay a \$250 million penalty for attempted manipulation and false reporting of ISDAFix, finding - among other evidence of wrongdoing - that on multiple occasions Citibank “submitted a rate or spread higher or lower than the reference rates” because it “had a derivatives position settling or resetting against the

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<sup>10</sup> Matthew Leising and Tom Schoenberg, *CFTC Said to Alert Justice Department of Criminal Rate Rigging*, Bloomberg (Sept. 9, 2014), <http://www.bloomberg.com/news/2014-09-08/cftc-said-to-alert-justice-department-of-criminal-rate-rigging.html>. See also Tom Schoenberg, Greg Farrell and David McLaughlin, *U.S. Preparing Charges Against Banks in Currency Rate-Rigging Scandals*, Bloomberg (Oct. 8, 2014) <http://www.bloomberg.com/news/2014-10-08/u-s-said-to-ready-charges-against-banks-in-forex-rigging.html> (noting that “[e]vidence produced as part of [Libor settlement] agreements also is being used in a criminal probe of alleged manipulation of ISDAfix . . . according to a person with knowledge of the matter”).

<sup>11</sup> Ben Protess and Jessica Silver-Greenberg, *Big Banks Face Another Round of U.S. Charges*, New York Times (Oct. 6, 2014), <http://dealbook.nytimes.com/2014/10/06/big-banks-face-another-round-of-u-s-charges> (“The Justice Department . . . has widened its focus to include a criminal investigation into banks that set an important benchmark for interest rate derivatives, a previously unreported development that coincides with international regulators’ [sic] proposing overhauls to the rate-setting process.”).

<sup>12</sup> See, e.g., *CFTC Orders Barclays to Pay \$115 Million Penalty for Attempted Manipulation of and False Reporting of U.S. Dollar ISDAFIX Benchmark Swap Rates* (May 20, 2015), <http://www.cftc.gov/PressRoom/PressReleases/pr7180-15>.

USD ISDAFIX benchmark, [and wanted] to benefit that . . . position.”<sup>13</sup> In December 2016, the CFTC announced that it had reached a \$120 million settlement with Goldman Sachs after finding that traders at Goldman Sachs had made it a regular practice to manipulate ISDAFix from January 2007 to March 2012.<sup>14</sup>

23. These probes have not only turned up evidence of Defendants’ wrongdoing but have also prompted Defendants to take actions evidencing consciousness of guilt. Tellingly, *both* anomalous patterns uncovered by Plaintiffs’ experts – in the trading activity leading up to 11:00 a.m., *and* in the consistently identical responses to ICAP’s poll – began to dissipate at the exact same time. Both patterns began to dissipate in December 2012, when Defendant Banks came under increasing scrutiny for multiple benchmark-setting scandals, such as that involving the London Interbank Offered Rate (“LIBOR”), in which ICAP itself has been implicated. That both phenomena began to fade at this same time provides further evidence of who was behind the observed trading anomalies.

24. As government regulators continued to look into Defendants’ conspiracy, numerous banks cut ties to ISDAfix. By September 2013, Defendants The Goldman Sachs Group, Inc., HSBC Bank USA, N.A., Morgan Stanley & Co. LLC, Nomura Securities International, Inc., Royal Bank of Scotland plc, and Wells Fargo Bank, N.A. had all abandoned the process. Because of ICAP’s involvement in this conspiracy, ISDA removed ICAP from its role as the administrator of the USD ISDAfix rates in January 2014.

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<sup>13</sup> See, e.g., *CFTC Orders Citibank to Pay \$250 Million for Attempted Manipulation and False Reporting of U.S. Dollar ISDAFIX Benchmark Swap Rates* (May 25, 2016), <http://www.cftc.gov/PressRoom/PressReleases/pr7371-16>.

<sup>14</sup> Commodity Futures Trading Commission, Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions (“Goldman CFTC Order”), CFTC Dkt. No. 17-03 (Dec. 21, 2016).

25. In reaction to the rate-fixing scandals, the United Kingdom has moved to criminalize any manipulation of benchmark rates, including ISDAfix.<sup>15</sup> The ISDAfix rate setting process was also brought under the supervision of the U.K.'s Financial Conduct Authority on April 1, 2015.<sup>16</sup>

### **JURISDICTION AND VENUE**

26. This Court has subject matter jurisdiction over this action under 28 U.S.C. §§1331, 1332, 1337(a), and 1367(a) and pursuant to §§4 and 16 of the Clayton Act, 15 U.S.C. §§15(a) and 26.

27. Venue is proper in this District pursuant to §§4, 12 and 16 of the Clayton Act, 15 U.S.C. §§15(a), 22 and 26, and 28 U.S.C. §1391(b), (c) and (d). One or more of the Defendants resided, transacted business, were found, or had agents in this District; a substantial part of the events giving rise to Plaintiffs' claims arose in the District; and a substantial portion of the affected interstate trade and commerce described herein has been carried out in this District.

28. Each Defendant is subject to personal jurisdiction because each transacted business throughout the United States, including in this District, including by transacting in

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<sup>15</sup> Julia Sun, *UK to Criminalize Manipulation of Seven Benchmark Rates Before Election*, The Street (Sept. 25, 2014), <http://www.thestreet.com/video/12892447/uk-to-criminalize-manipulation-of-seven-benchmark-rates-before-election.html>; HM Treasury, *Chancellor confirms manipulation of key FOREX benchmark to be made a criminal offence*, Gov.uk (Dec. 22, 2014), <https://www.gov.uk/government/news/chancellor-confirms-manipulation-of-key-forex-benchmark-to-be-made-a-criminal-offense>.

<sup>16</sup> Lianna Brinded, *FCA to regulate FX, swaps, repo, gold and oil indexes after market fixing scandals*, International Business Times (Dec. 22, 2014), <http://www.ibtimes.co.uk/fca-regulate-fx-swaps-repo-gold-oil-indexes-after-market-fixing-scandals-1480594>. See also Financial Conduct Authority, *Bringing additional benchmarks into the regulatory and supervisory regime* (Dec. 22, 2014), <http://www.fca.org.uk/news/cp14-32-additional-benchmarks>.

interest rate swaps and/or ISDAfix Transactions with members of the Class throughout the United States and in this District.

29. Defendants' activities, and those of their co-conspirators, were within the flow of, were intended to, and did, in fact, have a substantial effect on foreign and interstate commerce. During the Class Period, Defendants used the instrumentalities of interstate commerce, including interstate wires, in furtherance of their illegal conspiracy.

30. Defendants' manipulation, conspiracy, and conduct alleged herein had direct, substantial and reasonably foreseeable effects on U.S. domestic commerce, and such effects give rise to Plaintiffs' claims, within the meaning of the Foreign Trade Antitrust Improvements Act.

## **THE PARTIES**

### **Plaintiffs**

31. Plaintiff Alaska Electrical Pension Fund ("Alaska Fund") is a pension fund with its headquarters in Anchorage, Alaska. As reflected by the indicative examples listed in Appendix A, during the Class Period, Alaska Fund transacted in vanilla swaps and ISDAfix Transactions directly impacted by Defendants' manipulation of ISDAfix. The Alaska Fund specifically transacted on days that have been identified as being subject to manipulation with one or more Defendant Banks, including Bank of America, Barclays, B.N.P. Paribas, Citibank, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, Morgan Stanley, Royal Bank of Scotland, and UBS. As a result, the Alaska Fund was injured by Defendants' unlawful and anticompetitive conduct.

32. Plaintiff Genesee County Employees' Retirement System ("Genesee County") is a multiple-employer defined benefit pension plan with its principal place of business in Flint, Michigan. Participating employer units include Genesee County, Genesee County Road

Commission, Genesee County Community Mental Health, Genesee County Division of Water and Waste Services, Genesee District Library, and the City of Mt. Morris. As reflected by the indicative examples listed in Appendix A, during the Class Period, Genesee County transacted in vanilla swaps and ISDAfix Transactions directly impacted by Defendants' manipulation of ISDAfix. Genesee County specifically transacted on days that have been identified as being subject to manipulation with one or more Defendant Banks, including Barclays, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, JPMorgan, Morgan Stanley, and RBS. As a result, Genesee County was injured by Defendants' unlawful and anticompetitive conduct.

33. Plaintiff the County of Montgomery ("Montgomery County") is a political subdivision organized and existing under the laws of the Commonwealth of Pennsylvania. As reflected by the indicative examples listed in Appendix A, during the Class Period, Montgomery County, transacted in vanilla swaps and ISDAfix Transactions directly impacted by Defendants' manipulation of ISDAfix. Montgomery County specifically transacted on days that have been identified as being subject to manipulation with one or more of the Defendant Banks, including UBS. As a result, Montgomery County was injured by Defendants' anticompetitive conduct.

34. Plaintiff the County of Washington ("Washington County") is a political subdivision organized and existing under the laws of the Commonwealth of Pennsylvania. As reflected by the indicative examples listed in Appendix A, during the Class Period, Washington County transacted in vanilla swaps or ISDAfix Transactions directly impacted by Defendants' manipulation of ISDAfix. Washington County specifically transacted on days that have been identified as being subject to manipulation with one or more of the Defendant Banks, including JPMorgan. As a result, Washington County was injured by Defendants' anticompetitive conduct.

35. Plaintiff the City of New Britain (“New Britain”) is a political subdivision organized and existing under the laws of Connecticut. As reflected by the indicative examples listed in Appendix A, during the Class Period, New Britain transacted in vanilla swaps or ISDAfix Transactions directly impacted by Defendants’ manipulation of ISDAfix. New Britain specifically transacted on days that have been identified as being subject to manipulation with one or more of the Defendant Banks, including Deutsche Bank. As a result, New Britain was injured by Defendants’ anticompetitive conduct.

36. Plaintiff UNIQA Capital Markets GmbH (“UNIQA Capital Markets”), appearing here on behalf of the fund UNIQA Dollar Bond (“UNIQA Dollar Fund”), is a corporation organized under the laws of Austria, with its principal place of business at Untere Donaustraße 21, 1029 Vienna, Austria. UNIQA Capital Markets and the UNIQA Dollar Fund are part of the UNIQA Group, which also includes Austria’s largest health insurer, one of Austria’s leading providers of life insurance, and one of Austria’s top three property and accident insurance companies. As reflected by the indicative examples listed in Appendix A, during the Class Period, UNIQA Capital Markets transacted in ISDAfix Transactions directly impacted by Defendants’ manipulation of ISDAfix. UNIQA Capital Markets specifically transacted on days that have been identified as being subject to manipulation with one or more of the Defendant Banks, including Barclays, JPMorgan (through its predecessor, Bear Sterns) and Goldman Sachs. As a result, UNIQA Capital Markets was injured by Defendants’ anticompetitive conduct.

37. Plaintiff Pennsylvania Turnpike Commission (the “Commission”) is a Component Unit of the Commonwealth of Pennsylvania with its principal place of business in Middletown, Pennsylvania. As reflected by the indicative examples listed in Appendix A, during the Class Period, the Commission transacted in swaps and ISDAfix Transactions directly impacted by



Defendants' manipulation of ISDAfix. The Commission specifically transacted on days that have been identified as being subject to manipulation with one or more of the Defendant Banks, including UBS, JPMorgan, Deutsche Bank and Bank of America. As a result, the Commission was injured by Defendants' unlawful and anticompetitive conduct.

38. Plaintiff Erste Abwicklungsanstalt ("EAA"), which is the "First Winding-up Agency" is a public law entity with its principal place of business in Dusseldorf, Germany, and registered at the Dusseldorf Local Court (Amtsgericht Dusseldorf). EAA brings its claims against Defendants for vanilla swaps and/or ISDAfix Transactions which EAA acquired from Portigon AG and for vanilla swaps and/or ISDAfix Transactions entered into by EAA. EAA has, since 2012, been winding up a trading portfolio of derivative contracts acquired from Portigon AG.

39. Plaintiff Portigon AG (f/k/a WestLB AG) is a licensed bank existing under the laws of Germany, with its principal place of business in Düsseldorf, Germany, and branch locations in New York, New York. Portigon AG entered into vanilla swaps and/or ISDAfix Transactions with numerous Defendant Banks. Numerous of these vanilla swaps and/or ISDAfix Transactions were obtained by EAA, along with all associated rights, title, interest, causes of action and claims in and related to such certificates, including all claims at issue herein. Portigon AG has standing to sue for injuries incurred during the time it held its derivative portfolio and EAA has standing to sue the Defendants to recover damages regarding vanilla swaps and/or ISDAfix Transactions entered into by Portigon AG and/or EAA. Portigon AG and/or EAA transacted in vanilla swaps and/or ISDAfix Transactions directly impacted by Defendants' manipulation of ISDAfix, and transacted with one or more of the following Defendant Banks: Nomura, UBS, HSBC, Wells Fargo, Morgan Stanley, and BNP Paribas. As a result, EAA and/or

Portigon AG were injured by Defendants' unlawful and anticompetitive conduct. A selection of indicative examples of such transactions are listed on the attached Appendix A.

**Defendants**

40. Defendant Bank of America, N.A. is a wholly owned subsidiary of Bank of America Corporation, a Delaware corporation, with its principal place of business in Charlotte, North Carolina, and with branch locations in New York, New York. As used herein, "Bank of America" refers to Bank of America, N.A., its subsidiaries and affiliates and, to the extent it served on the ISDAfix panel during the Class Period, Merrill Lynch Capital Services, Inc. During the Class Period, Bank of America both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

41. Defendant Barclays Bank PLC is a British public limited company, with its principal place of business in London, England, and with branch locations in New York, New York. As used herein, "Barclays" includes Defendant Barclays Bank PLC and its subsidiaries and affiliates. During the Class Period, Barclays both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

42. Defendant BNP Paribas SA is a company organized and existing under the laws of France, with its principal place of business in Paris, France, and with branch locations in New York, New York. As used herein, "BNP" includes Defendant BNP Paribas SA and its subsidiaries and affiliates. During the Class Period, BNP both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

43. Defendant Citigroup, Inc. is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York. As used herein, “Citigroup” includes Defendant Citigroup, Inc. and its subsidiaries and affiliates, including Citibank N.A. During the Class Period, Citigroup both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

44. Defendant Credit Suisse AG, New York Branch is a branch based in New York, New York that operates as a part of Credit Suisse AG. As used herein, “Credit Suisse” includes Defendant Credit Suisse AG, New York Branch and the subsidiaries and affiliates of Credit Suisse AG. During the Class Period, Credit Suisse both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

45. Defendant Deutsche Bank AG is a corporation organized and existing under the laws of Germany, with its principal place of business in Frankfurt, Germany, and branch locations in New York, New York. As used herein, “Deutsche Bank” includes Defendant Deutsche Bank AG and its subsidiaries and affiliates. During the Class Period, Deutsche Bank both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

46. Defendant The Goldman Sachs Group, Inc. is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York. As used herein, “Goldman Sachs” includes Defendant The Goldman Sachs Group, Inc. and its subsidiaries and affiliates, including Goldman Sachs & Co. Throughout the majority of the Class Period and until approximately June 2012, Goldman Sachs both

participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

47. Defendant HSBC Bank USA, N.A. a wholly owned subsidiary of HSBC USA, Inc., is a Delaware corporation with its main office in McLean, Virginia. It has a principal office located in New York City. As used herein, “HSBC” refers to HSBC Bank USA, N.A., and its subsidiaries and affiliates. Throughout the majority of the Class Period and until approximately January 2013, HSBC both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

48. Defendant JPMorgan Chase & Co. is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business in New York, New York. As used herein, “JPMorgan” includes Defendant JPMorgan Chase & Co. and its subsidiaries and affiliates, including JPMorgan Chase Bank N.A. During the Class Period, JPMorgan both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

49. Defendant Morgan Stanley & Co., LLC is a United States investment banking firm headquartered in New York, New York. As used herein, “Morgan Stanley” includes Defendant Morgan Stanley & Co., LLC and its subsidiaries and affiliates. Although it has since left the ISDAfix panel, during the majority of the Class Period, Morgan Stanley both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

50. Defendant Nomura Securities International, Inc. is a corporation organized and existing under the laws of New York, with its principal place of business in New York, New York, and a wholly owned subsidiary of Nomura Holdings America, Inc., which is a wholly

owned subsidiary of Nomura Holdings, Inc. As used herein, “Nomura” includes Defendant Nomura Securities International, Inc. and its subsidiaries and affiliates. Throughout the majority of the Class Period and until approximately October 2013, Nomura both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class. In addition to regularly transacting in vanilla swaps and cash and physically settled swaptions, Nomura’s ISDAfix Transactions with Plaintiffs and the class include, among others, the following: vanilla swaps, swaptions, constant maturity swaps, structured CMS, and other, more bespoke exotics that are linked to ISDAfix.

51. Defendant Royal Bank of Scotland plc is a corporation organized and existing under the laws of the United Kingdom, with its principal place of business in Edinburgh, Scotland, and branch locations in New York, New York. As used herein, “RBS” includes Defendant Royal Bank of Scotland plc and its subsidiaries and affiliates. Throughout the majority of the Class Period and until approximately September 2013, RBS both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

52. Defendant UBS AG is a corporation organized and existing under the laws of Switzerland, with its principal places of business in Basel and Zurich, Switzerland, and regional offices in New York, New York, and Stamford, Connecticut. As used herein, “UBS” includes Defendant UBS AG and its subsidiaries and affiliates. During the Class Period, UBS both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

53. Defendant Wells Fargo Bank, N.A., is a corporation organized and existing under the laws of the State of Delaware, and operates as a subsidiary of Wells Fargo & Co. As used

herein, “Wells Fargo” or “Wachovia” includes Wells Fargo & Co. and its subsidiaries and affiliates, including Wachovia Bank, N.A. and its successor by merger Wells Fargo Bank N.A. Throughout the majority of the Class Period and until approximately September 2013, Wells Fargo both participated in setting ISDAfix rates and transacted in interest rate swaps and ISDAfix Transactions with Plaintiffs and members of the Class.

54. Bank of America, Barclays, BNP, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan, Morgan Stanley, Nomura, RBS, UBS, and Wells Fargo are referred to collectively herein as the “Defendant Banks.”

55. Defendant ICAP Capital Markets LLC (“ICAP”), a subsidiary of ICAP plc, is a Delaware limited liability company with its headquarters in Jersey City, New Jersey. As used herein, “ICAP” includes Defendant ICAP plc and its subsidiaries and affiliates. During the Class Period and until January 26, 2014, ICAP served as the administrator for the setting of the USD ISDAfix rate and as a broker for billions, if not trillions, of dollars of interest rate derivatives and other transactions.

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

57. Various other non-parties also participated as co-conspirators, performed acts, and made statements in furtherance of the conspiracy. Plaintiffs reserve the right to identify other co-conspirators and to name subsequently some or all co-conspirators, whether identified here or not, as defendants.

58. Defendants are jointly and severally liable for the acts of their co-conspirators whether named or not named as Defendants in this complaint. Each Defendant acted as the agent or co-conspirator of or for the other Defendants with respect to the acts, violations, and common course of conduct alleged herein.

## **FACTUAL ALLEGATIONS**

### **I. BACKGROUND ALLEGATIONS**

#### **A. Interest Rate Derivatives and ISDAfix Transactions**

59. A derivative is a financial instrument, the value of which depends on the value of another underlying asset, such as a stock, bond, or commodity, or on a rate paid on underlying assets, such as an interest rate. Derivatives permit market participants to manage and transfer risk by allowing parties to separate out and trade individual risk components, such as interest rate risk.

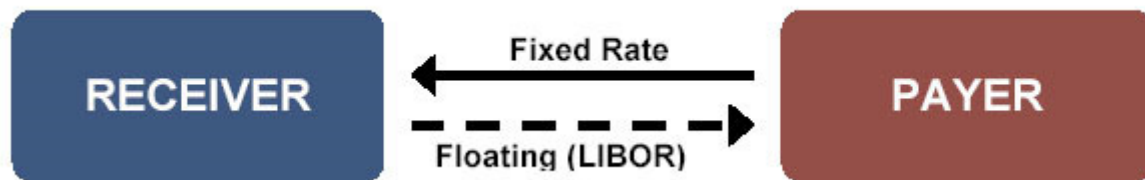
60. The largest derivatives market in the world is the interest rate derivatives market. The simplest and most common type of interest rate derivative is the interest rate swap, which is a transaction in which two parties – commonly referred to as “counterparties” – exchange interest rate payments on an agreed notional amount for a fixed period of time. Typically, one party will pay based on a “fixed” interest rate on the notional amount that does not vary from one payment to the next, while the other party will pay based on a variable “floating” interest rate that is tied to an independent benchmark such as LIBOR.<sup>17</sup> The fixed rate payer can also be

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<sup>17</sup> LIBOR is a benchmark interest rate. It is supposed to represent the average interest rate, estimated by leading banks, that one bank would be charged when borrowing from another bank. Much like ISDAfix, LIBOR is important for determining the value of a wide variety of derivatives. Several Defendants – most notably Barclays, RBS, UBS and ICAP – were found by American and British regulatory agencies to have manipulated LIBOR. *See, e.g.,* CFTC Press Release, *CFTC Orders Barclays to pay \$200 Million Penalty for Attempted Manipulation of and False Reporting concerning LIBOR and Euribor Benchmark Interest Rates*, CFTC.gov (June. 27,

called the floating rate receiver and is often referred to as having bought the swap or having a “long” position. Conversely, the floating rate payer can also be called the fixed rate receiver and is referred to as having sold the swap and having a “short” position.

61. The following diagram illustrates a typical interest rate swap transaction. Here, the receiver pays the floating LIBOR rate to the payer, and the payer pays a fixed rate to the receiver:



A fixed-for-floating rate swap allows parties with floating rate debt to hedge their interest rate exposure by receiving a variable rate on the notional amount in exchange for paying a fixed rate on that same notional amount.

62. For example, when an entity (*e.g.*, a company, fund, public entity, or pension fund) issues floating rate debt, it may seek to avoid interest rate risk by hedging the floating rate obligation. The debt issuer can enter into interest rate swaps with one or more banks. Under the

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2012), <http://www.cftc.gov/PressRoom/PressReleases/pr6289-12>; UBS Press Release, *UBS Board of Directors authorizes settlements of LIBOR-related claims with US and UK authorities; Swiss regulator to issue order*, UBS.com (Dec. 19, 2012) [http://www.ubs.com/kr/en/about-us/korea\\_newsdisplay.html/en/2012/12/19/20121219a.html](http://www.ubs.com/kr/en/about-us/korea_newsdisplay.html/en/2012/12/19/20121219a.html); CFTC Press Release, *CFTC Orders The Royal Bank of Scotland plc and RBS Securities Japan Limited to Pay \$325 Million Penalty to Settle Charges of Manipulation, Attempted Manipulation, and False Reporting of Yen and Swiss Franc LIBOR*, CFTC.gov (Feb. 6, 2013), <http://www.cftc.gov/PressRoom/PressReleases/pr6510-13>; Department of Justice Press Release, *ICAP Brokers Face Felony Charges for Alleged Long-Running Manipulation of LIBOR Interest Rates*, Justice.gov (Sept. 23, 2013), <http://www.justice.gov/opa/pr/icap-brokers-face-felony-charges-alleged-long-running-manipulation-libor-interest-rates>. The investigation into other participants in the LIBOR scandal, including other Defendant Banks, is ongoing.



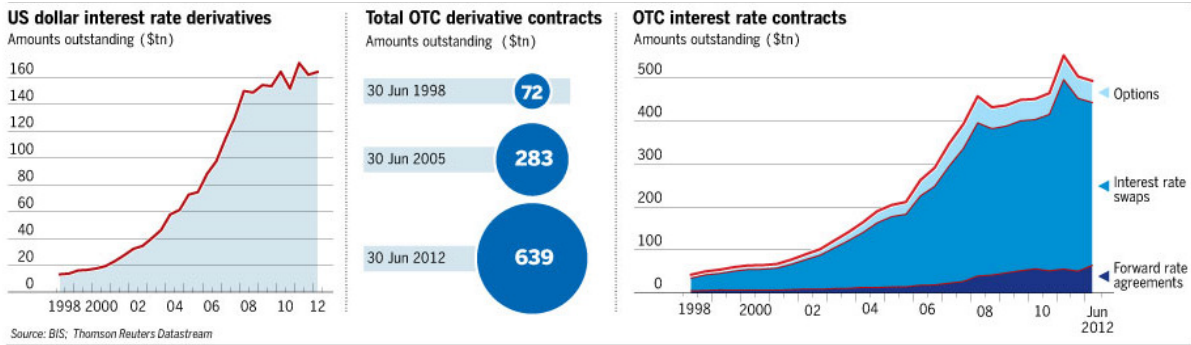
swap, the bank assumes an obligation to pay the issuer a floating rate (which changes over time) in exchange for the issuer assuming an obligation to pay a pre-determined fixed rate to the bank. If the floating rate exceeds the fixed rate, the bank, as floating rate payer, pays the issuer. On the other hand, if the floating rate index is less than the fixed rate, the issuer, as the fixed rate payer, pays the bank. Fixed rate and floating rate payments are netted against each other with a payment made by the party owing the larger amount on the specified scheduled payment dates.

63. Over the past three decades, interest rate derivatives and, specifically, interest rate swaps have proliferated. ISDA, a trade association for the over-the-counter derivatives markets, estimates that the collective notional amounts on interest rate swaps was approximately \$2.3 trillion in 1990. By 2009, that figure had grown to over \$450 trillion. As of June 2012, according to the Bank for International Settlements, the notional amounts outstanding were \$494 trillion for over-the-counter interest rate transactions and \$342 trillion for over-the-counter interest rate swaps, including \$164 trillion of U.S. dollar swaps.<sup>18</sup>

64. The following charts published by the *Financial Times* in April 2013, when news of the ISDAfix conspiracy first broke, demonstrate the magnitude of the market for interest rate derivatives and its rapid growth since 1998:

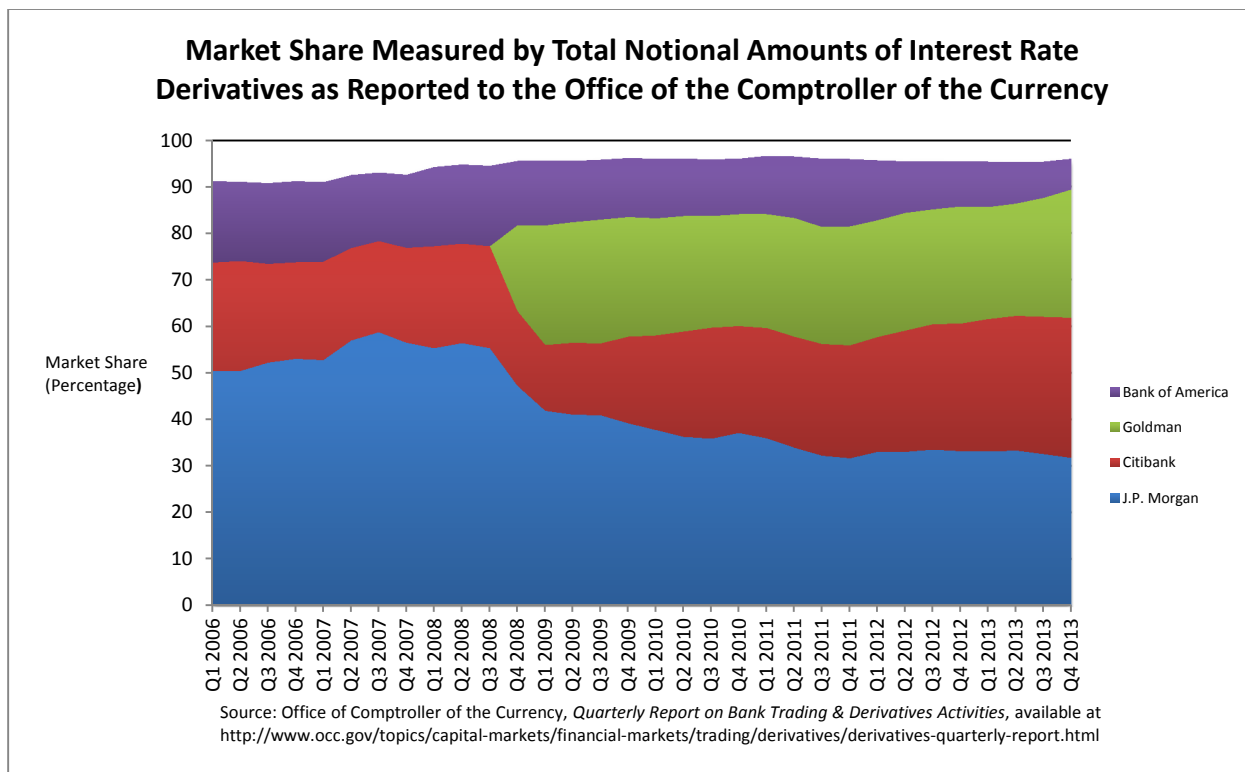
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<sup>18</sup> Michael Mackenzie, Tom Braithwaite & Kara Scannell, *Swap traders' morning fix under scrutiny*, *Financial Times* (Apr. 9, 2013), <http://www.ft.com/intl/cms/s/0/ddbebb32-a11d-11e2-bae1-00144feabdc0.html#axzz2x74uiRT6>.



65. The growth of this market has been concentrated in many of Defendant Banks, which individually and collectively maintain huge portfolios of derivatives. During the Class Period, the Office of the Comptroller of the Currency (OCC) collected data on reporting banks' derivatives activities and published quarterly reports. The OCC's data includes reports from between 800 and 1,400 banks, and yet a small group of Defendant Banks were responsible for the vast majority of interest rate derivatives. Over the course of the entire Class Period, the collective interest rate derivatives holdings of Defendants Bank of America, Goldman Sachs, Citibank, and JPMorgan represented over 90% of the reported outstanding total notional amount of interest rate derivatives held by U.S. dealers that report to the OCC, as shown by the graph below:<sup>19</sup>

<sup>19</sup> The OCC did not start tracking interest rate derivatives holdings for Defendant Goldman Sachs until the fourth quarter of 2008.



66. According to the Office of the Comptroller of the Currency's *Quarterly Report on Bank Trading and Derivatives Activities – Fourth Quarter 2013*, a substantial portion of the Defendant Banks' derivatives contracts were concentrated in interest rate derivatives. For example, 77.6% of JPMorgan's derivatives contracts concerned interest rates; for Citigroup, the total was 83.7%; for Goldman Sachs, the total was 95%; for Bank of America, the total was 79.8%; for HSBC, the total was 73.9%; and for Wells Fargo, the total was 90.7%.<sup>20</sup>

67. As the market for interest rate derivatives has grown, so too has the variety of these investments. Another common interest rate derivative is the swaption. According to the Depository Trust & Clearing Corp., the value of swaption contracts outstanding as of July 26, 2013 was \$29.5 trillion as measured by notional amount. In a swaption, instead of swapping

<sup>20</sup> Office of Comptroller of the Currency, *OCC's Quarterly Report on Bank Trading & Derivatives Activities Fourth Quarter 2013*, Table 3.

interest rates on the date of the transaction, the parties negotiate an option to enter into an interest rate swap in the future. Thus, a swaption is a contract wherein the buyer of the swaption pays the seller a premium for the option, but not the obligation, to enter an interest rate swap contract with the seller on a future. The swaption spells out all of the terms of the underlying potential swap, including the length of the swap, the notional amount, the rates for each party, the dates on which payments are due (the “settlement dates”), and how often such payments are due (the “settlement periods”), as well as the premium the buyer of the swaption must pay and when the option may be exercised.<sup>21</sup>

68. When entering a swaption, the parties may choose for the swaption to be *physically settled* or *cash settled*. For pricing, valuation and risk exposure purposes, there is no difference between a swaption that cash-settled and one that is physically settled. Only at the expiry of the option leg of an “in-the-money” swaption will an exercised physically settled swaption begin to exhibit more risk exposure as a result of the underlying swap, whereas the cash-settled swaption simply terminates after cash settlement.

69. A physically settled swaption, if exercised, results in the parties entering into the underlying swap. Industry-standard documentation provides that such swaptions would automatically be exercised if the relevant ISDAfix rate met or exceeded a certain rate on the exercise date. For example, under the 2006 ISDA Definitions, a physically settled swaption may be specified as “Automatic Exercise” such that the swaption will, subject to certain conditions,

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<sup>21</sup> In a “payer swaption,” the buyer of the swaption is the party expected to pay the fixed interest rate. In a “receiver swaption,” the buyer of the swaption is the party expected to receive the fixed interest rate.

be “deemed to be exercised” at the expiration time on the expiration date if the buyer is in-the-money against a given ISDAfix rate.<sup>22</sup>

70. In a cash-settled swaption, the seller of the swaption (the party selling the right to swap a floating rate for a fixed rate) pays the buyer, on the exercise date, the positive market value of the right, if any. This is known as the “expiry value.” At exercise, a cash-settled swaption is either “in-the-money” or “out-of-the-money.” A cash-settled swaption is valued by comparing the fixed rate in the swaption’s underlying swap transaction to the fixed rate available on the market for an equivalent swap. If the buyer is “in-the-money,” the seller simply pays the buyer the difference in value between the underlying swap transaction and an equivalent swap transaction available on the open market on the exercise date.

71. ISDAfix is the benchmark rate that the financial community, including Defendant Banks, almost always use to settle cash-settled swaptions.<sup>23</sup> Indeed, ISDAfix is the benchmark nominated to be the default rate by ISDA in the 2000 and 2006 ISDA Definitions, which provide standardized definitions setting the terms for interest rate and currency derivatives transactions. Thus, on the exercise date, the parties to a swaption compare the swaption’s fixed rate to the comparable ISDAfix rate on that date to determine whether the swaption is in-the-money, and, if it is, how much it is worth.

72. Cash-settled swaptions are typically valued by calculating the present value of future cash flows on the exercise date. The fixed rate specified by the swaption contract is compared to the current ISDAfix rate on the exercise date to determine the value of the net future

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<sup>22</sup> See ISDA, *2006 ISDA Definitions*, Section 13.7.

<sup>23</sup> In the case of USD 1-year swaptions, for which an ISDAfix rate was set at both 11:00 a.m. and 3:00 p.m., the 11:00 a.m. rate was used to determine the “expiry value.”

payments under the two swaps. The net future payments are then discounted to present value, again using the then current ISDAfix rates.

73. A payer swaption is in-the-money if the fixed rate available in the market is higher than the swaption's fixed rate, because the buyer of that swaption would be making lower fixed payments than the market rate. A receiver swaption is in-the-money if the fixed rate available in the market is lower than the swaption's fixed rate, because the buyer of that swaption would be receiving higher fixed payments than the market rate.

74. If the swaption is in-the-money, then the swaption's value will increase the further the swaption's fixed rate is from the ISDAfix rate. Therefore, accurate calculation and reporting of the ISDAfix rate is critical to the fair settlement of swaptions, and even the smallest movement of ISDAfix can drastically affect the value of a cash-settled swaption.

75. In addition to some interest rate swaps<sup>24</sup> and swaptions, ISDAfix Transactions include many other financial instruments that use or make reference to the ISDAfix benchmark rate, including swapnote futures, constant maturity swaps, cash-settled swap futures, "steepeners," "inverse floaters," and "snowballs," digital and callable range accrual notes, and variance and volatility swaps, among others. The U.S. Federal Reserve uses ISDAfix as the source for USD swap rates in its Statistical Release H.15, and banks use ISDAfix rates to value their own portfolios, which are then incorporated into the banks' reported financial results. ISDAfix rates may also be used to price commercial real estate mortgages and various types of structured bonds and notes. Finally, both the Chicago Mercantile Exchange and the Chicago Board of Trade use ISDAfix as the settlement price in their swap futures contracts.

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<sup>24</sup> Though most "vanilla" swaps use LIBOR to determine the floating-rate amount, as outlined above, not all do. Plaintiffs and members of the Class have swaps whose "floating" payment streams were tied to USD ISDAfix rates.

76. With the exception of swap futures, all of these ISDAfix Transactions (and vanilla swaps) were transacted in the over-the-counter market during the Class Period, meaning that there was no centralized and regulated exchange. In the over-the-counter market, inter-dealer brokers – such as Defendant ICAP – exist to provide liquidity to the market, facilitate information flow by providing a centralized hub for bids and offers, and to improve market efficiency by rapid matching of buyers and sellers. Inter-dealer brokers are well compensated by receiving a commission on the deals they create through matching a buyer and a seller.

77. In selecting an inter-dealer broker to facilitate interest rate derivative transactions, market participants have few options. In the over-the-counter interest rate derivatives market, five inter-dealer brokers “dominate the landscape,”<sup>25</sup> and ICAP has consistently asserted that it is the leader of this market. In 2007, ICAP declared itself the leader of the interdealer broker market by global revenue, and estimated its own market share as 30-31%.<sup>26</sup> In 2014, ICAP claimed “the highest market share by total notional volume traded in interest rate derivatives products” on its new, regulated swap execution facility. ICAP claimed a 59% market share in interest rate derivative products, and noted that such products “represent the largest asset class by notional volume[.]”<sup>27</sup> The interest rate derivatives market is highly active and profitable for inter-dealer brokers like ICAP. During the Class Period, ICAP brokered approximately \$1.4 *trillion* in interest rate swaps *every day*.

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<sup>25</sup> *Interdealer brokers: the firms that connect buyers and sellers in wholesale markets are under the cosh*, The Economist (Nov. 17, 2012), <http://www.economist.com/news/finance-and-economics/21566651-firms-connect-buyers-and-sellers-wholesale-markets-are-under>.

<sup>26</sup> ICAP, *Annual Report for the year ended 31 March, 2007* at 20, <http://www.icap.com/~media/Files/I/Icap-Corp/Annual%20Reports/annual-report2007.pdf>.

<sup>27</sup> ICAP, *Annual Report for the year ended 31 March, 2014* at 21, <http://www.icap.com/~media/Files/I/Icap-Corp/Annual%20Reports/annual-report2014.pdf>

78. During the Class Period, ICAP also controlled interest rate swap prices on a Reuters electronic screen service known as Screen 19901. Screen 19901 publicized the bid/offer rates of all swap transactions of the specified terms executed through ICAP, and was updated periodically throughout the day by ICAP as trades were executed. Screen 19901 was subscribed to by around 6,000 companies, financial firms, and other market participants who relied upon its data to value interest rate swaps, swaptions, and other financial products.

79. David Kelly, who helped design the underlying analytics of Screen 19901 in the early 2000s, stated “[t]hat screen is critical. That screen makes or breaks a lot of profit and loss, so clearly there’s a lot of opportunity for influence.”<sup>28</sup> Thus, ICAP’s control of Screen 19901 and exclusive role as the source of swap interest rates on Screen 19901, and the collector of USD ISDAfix rates submissions combined with Defendant Banks’ substantial portfolios of interest rate derivatives and other ISDAfix Transactions created the perfect storm to enable and motivate Defendants to manipulate ISDAfix.

**B. The Purported Process of Setting ISDAfix**

80. As described above, ISDAfix is a key benchmark rate for a broad range of interest rate derivatives and other financial instruments. ISDA established ISDAfix in 1998 to serve as a benchmark of fixed swap rates. ISDAfix was intended to be a benchmark for average swap rates on a daily basis and was developed “to facilitate the determination of exercise values for cash-settled swap options.”<sup>29</sup> ISDAfix was supposed to provide “a transparent, readily available value and settlement rate.” Without ISDAfix, an over-the-counter derivatives market participant

<sup>28</sup> Matthew Leising, *CFTC Said Probing ICAP on Swap Price Allegations: Credit Markets*, Bloomberg (Apr. 9, 2013), <http://www.bloomberg.com/news/2013-04-09/cftc-said-probing-icap-on-swap-price-allegations-credit-markets.html>.

<sup>29</sup> Intercontinental Exchange, *ISDAFIX*, <https://www.theice.com/iba/isdafix#contributors-users> (last visited Feb. 11, 2015).



would have to call multiple other market participants to value, for example, a swaption upon cash exercise. This is because the over-the-counter derivatives market did not have a centralized exchange where market prices were readily available. Thus, ISDAfix was often the only available reference for parties looking to settle interest rate options, cancel swaps contracts, and value other financial instruments. Indeed, the 2000 and 2006 ISDA Definitions establish ISDAfix as a default benchmark for calculating the value of a cash-settled swaption.

81. There are multiple varieties of ISDAfix rates for transactions of varying length in different currencies. While some ISDAfix rates are no longer currently reported, there have been rates published for the Euro, the British Pound Sterling, the Hong Kong Dollar, the Japanese Yen, the Swiss Franc, and the U.S. Dollar. The length or tenors of swaps with an ISDAfix rate range from one-year swaps to 30-year swaps. All published ISDAfix rates are expressed as a percentage to three decimal places, such as 3.202%, and Defendants as contributing banks submitted rates running to five decimal places.

82. These rates are then distributed to market participants who subscribe to five electronic screen services operated by Reuters, called ISDAFIX 1 – ISDAFIX 5. These screens are subscribed to by thousands of market participants and display that day's ISDAfix rates. For example, ISDAFIX 3 displays the USD swap rates and swap spreads, while ISDAFIX 4 displays the rates for swaps in British Pounds Sterling and Swiss Francs. An ISDAfix rate is calculated either once or twice a day, depending on the currency and maturity. While the final ISDAfix rates are published, the Defendant Banks' individual submissions are not. That information is tightly controlled by Thomson Reuters and ICAP.

83. During the Class Period, there were two parties responsible for administration of the ISDAfix benchmark fixing process: Defendant ICAP, which calculated all USD rates, and Thomson Reuters, which was responsible for all other rates.<sup>30</sup>

84. The ISDAfix rate is supposed to represent the average fixed interest rate that an over-the-counter derivatives dealer would bid or offer for a swap of a certain tenor and currency in exchange for a specified floating LIBOR rate (*e.g.*, 3-month LIBOR). In ISDA's own words:

**How does ISDAFIX fix?**

*Rate Definition.*

The contributor is asked to provide a rate which is the mean of where *that dealer would itself offer and bid a swap* in the relevant maturity for a notional equivalent amount of US \$50 million or whatever amount is deemed market size in that currency for that tenor to an acknowledged dealer of good credit in the swap market. *The rate should not be where the dealer sees mid-market away from itself, but should be a function of its own bid/offer spread.*<sup>31</sup>

85. Thus, the rules governing ISDAfix required the banks to make submissions to ICAP based on their own, personal bid/offer spreads. This is not changed by ISDA's 2012 letter to the European Commission's Public Consultation on the Regulation of Indices (the "ISDA/European Commission Letter"). In response to the questions: "Who in your sector submits data for inclusion in benchmarks? What are the current eligibility requirements for benchmarks' contributors?," ISDA responded with respect to ISDAfix rates:

ICAP collects spread information from contributors via a secure website that contributors log into every morning. Contributors are asked to indicate the USD swap spread as of 11:00 am, *in accordance with the criteria set by ISDA . . . .* At 10:58 am, ICAP will send an email reminder to each contributor reminding them to contribute. At 11:02 am, ICAP will indicate on the secure website a USD swap

<sup>30</sup> In 2014, ISDA stripped ICAP of its ISDAfix duties, most likely in reaction to the investigation and allegations regarding ICAP and Defendant Banks' rigging of the ISDAfix rate.

<sup>31</sup> ISDA, *How does ISDAFIX fix?, Rate Definition*, <https://web.archive.org/web/20120630173533/http://www2.isda.org/asset-classes/interest-rates-derivatives/isdafix> (emphasis added).

spread and USD swap rate to serve *as a reference point for contributors*. This reference point is generated from two sources of information:

(1) Information contained on Reuters page 19901 at 11:00 am, which reflects the most recent swap spreads from completed trades and executable bids and offers in market size done/posted at ICAP.

(2) Information reflecting executed trades and executable bids and offers at 11 a.m. for US Treasury securities from ICAP's BrokerTec US Treasury electronic trading platform.

By their nature, because both sources of information reflect completed transactions and/or at-risk trading interest, ICAP considers them to be a useful and meaningful reference point for where the market may be at that point in time.

From 11:00 am to 11:15 am, contributors are able to submit *their* swap spread information and *rate* to the secure website. In terms of process, contributors may accept the reference swap spread and/or rate indicated on the website, or submit different values. During this time the ICAP swaps desk monitors dealer participation to ensure that the 10-bank minimum is met. As contributors submit spread and rate information, the values are sent to Thomson Reuters on a streaming basis.

At 11:26 am, Thomson Reuters will calculate the USD ISDA FIX rate by eliminating a given number of the highest and lowest rates submitted, and then by calculating a simple average of the remaining rates. A rate will be posted as long as the Minimum Number of Contributions is received.<sup>32</sup>

86. Thus, Defendant Banks could “accept the reference . . . rate.” But even ISDA’s post-hoc explanations make clear that that rate was just that, only a “reference point.” “Contributors” are still required to abide by the definition of ISDAfix itself, *i.e.*, submissions were supposed to still reflect “their . . . rate.” Thus, in line with ISDAfix’s definition, contributing banks were to respond with “the rate which is the mean of where that [Defendant] would itself offer and bid a swap,” a function “of [that Defendant’s] own bid/offer spread.” A

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<sup>32</sup> ISDA, *ISDA Response to the European Commission’s Public Consultation on the Regulation of Indices*, at 7 (Nov. 29, 2012), <http://www2.isda.org/news/isda-response-to-the-european-commissions-public-consultation-on-the-regulation-of-indices> (emphasis added).

Defendant Bank was to “accept” ICAP’s reference rate *if and only if* the reference rate *exactly* matched the mean of its own *bank-specific* spreads.

C. **Government Investigations Reveal the Extent of Collusion Between Defendants in Manipulating Financial Benchmarks**

87. Government investigations into the manipulation of ISDAfix are, in part, an outgrowth of cooperation agreements reached in the earlier investigations of and prosecutions in the LIBOR scandal. Following revelations regarding manipulation of LIBOR, regulatory agencies began to focus on whether the banks responsible for the LIBOR benchmark had colluded to illicitly profit. The investigations resulted in both criminal and regulatory charges, and were coordinated between agencies from the United States, the United Kingdom, Canada, Japan, and the European Union.

88. While they are still ongoing, the LIBOR investigations have already turned up emails and other evidence proving that certain Defendants and others colluded to submit false rates to drive the LIBOR benchmark in whichever direction would benefit them the most. This evidence showed that swap traders at a Defendant Bank would tell their colleagues in charge of sending the rate submissions which rate would make the Defendant Bank the most money that day. This paper trail, along with other evidence, eventually led to enormous fines and settlements for Defendants Barclays, UBS, and others.

89. On December 19, 2012, the scandal widened when, for the first time, it was revealed that LIBOR manipulation was not restricted to co-workers at Defendant Banks, but involved third-party dealers and brokers. This revelation occurred in connection with UBS’s settlement agreement, wherein UBS agreed to pay fines three times that of Barclays for its role in manipulating the LIBOR rate.

90. UBS's settlement "exposed the systemic problems with the rate-setting process."<sup>33</sup> According to Tracey McDermott, the enforcement director for the U.K. Financial Services Authority ("FSA"), UBS ignored "[t]he integrity of benchmarks [which] are of fundamental importance to . . . international financial markets." The UBS settlement exposed the illicit profit certain Defendants had gained, and prompted criminal investigations and arrests. Banks had previously expected to face fines, almost as a cost of doing business, but now the U.S. Department of Justice had extracted a guilty plea by UBS's Japanese subsidiary to wire fraud, and indicted some of the bank's senior traders.

91. Defendant ICAP was at the center of the LIBOR scandal, and paid \$87 million to settle U.S. investigations into its conduct. ICAP was found to have "knowingly disseminated false and misleading information concerning Yen borrowing rates to market participants in attempts to manipulate, at times successfully, the official fixing of the daily Yen LIBOR."<sup>34</sup> ICAP and its clients, most noticeably UBS, worked together to hide their collusion from the rest of the market.

92. Following UBS's settlement, updates about the breadth of ongoing investigations continued throughout 2013. With each report, the scope of the benchmark-setting corruption investigations became broader. Having seen the banks' corruption of one key financial measurement, regulators were not content to presume they were trustworthy with respect to others. For instance, regulatory agencies have explicitly stated that their investigation into

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<sup>33</sup> Mark Scott and Ben Protess, *As Unit Pleads Guilty, UBS Pays \$1.5 Billion Over Rate Rigging*, New York Times (Dec. 19, 2012), [http://dealbook.nytimes.com/2012/12/19/as-unit-pleads-guilty-ubs-pays-1-5-billion-in-fines-over-rate-rigging/?\\_php=true&\\_type=blogs&\\_r=0](http://dealbook.nytimes.com/2012/12/19/as-unit-pleads-guilty-ubs-pays-1-5-billion-in-fines-over-rate-rigging/?_php=true&_type=blogs&_r=0).

<sup>34</sup> CFTC, *CFTC Charges ICAP Europe Limited, a Subsidiary of ICAP plc, with Manipulation and Attempted Manipulation of Yen Libor* (Sept. 25, 2013), <http://www.cftc.gov/PressRoom/PressReleases/pr6708-13>.

ICAP's wrongdoing is not limited to its manipulation of Yen LIBOR, with Mythili Raman, head of the Justice Department's criminal division, stating "We're not done."<sup>35</sup>

93. By the time ICAP settled the investigation into its role in manipulating Yen LIBOR, the CFTC had already turned its attention to ISDAfix. The U.K. Financial Conduct Authority has given its ISDAfix investigation "formal status," signifying that it is conducting its own full investigation rather than merely assisting the CFTC. The investigation into ISDAfix is turning up the same sort of incriminating evidence as was uncovered in the context of LIBOR: emails, telephone records, and other evidence showing bank traders and brokers working together with the express goal of moving the ISDAfix rate in order to profit from their derivatives positions. Many of the Defendants that signed settlement agreements over their role in LIBOR are required to cooperate with the investigations into ISDAfix as part of that settlement, and face criminal prosecution should they withhold any evidence.

94. In April 2013, it came to light that the CFTC had issued its first round of ISDAfix-related subpoenas. The CFTC is said to be sifting through over one million emails and instant messages, as it simultaneously interviews current and former employees of banks, dealers, and ICAP as part of its ISDAfix investigation. In regulatory reports, ICAP confirmed that "the US CFTC has requested information in relation to [ICAP's] role in the setting of the US dollar segment of a benchmark known as ISDAFIX which could also result in a formal investigation, claims or penalties as well as incurring further legal costs."<sup>36</sup>

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<sup>35</sup> David Enrich, Jean Eaglesham, and Devlin Barrett, *ICAP Is Fined \$87 Million in Libor Scandal*, Wall Street Journal (Sept. 25, 2013), <http://online.wsj.com/news/articles/SB10001424052702303342104579096942161083458>.

<sup>36</sup> ICAP Group Holdings plc, *Issue of EUR 350,000,000 3.125 per cent. Notes due March 2019 under the £1,000,000,000 Global Medium Term Note Programme* (Mar. 4, 2014), <http://www.icap.com/~media/Files/I/Icap-Corp/pdfs/002%20Final%20Terms.pdf>.

95. UBS, RBS, Barclays, Citibank, and Goldman Sachs have all similarly admitted in their regulatory filings to being subject to ISDAfix investigations, including having “ongoing obligations” to cooperate with such investigations. Indeed, it is now standard for instruments that use ISDAfix as a benchmark to include a warning notifying investors of the investigation into the ISDAfix manipulation.<sup>37</sup> And tellingly, as of February 16, 2015, ISDAfix was no longer set by a reference rate and submission process under the exclusive control of Defendants. Instead, in a move described as “an important step in ensuring market confidence in the integrity of the rate” by the ISDAfix administrator who replaced Defendant ICAP in 2014, the rate is now set by “tradable quotes provided by counterparties and order book data on regulated electronic trading venues.”<sup>38</sup>

96. On September 9, 2014, Bloomberg reported that the CFTC had “told the U.S. Justice Department they’ve found evidence of criminal behavior following an investigation into banks’ alleged manipulation of ISDAfix[.]”<sup>39</sup> The article stated that the CFTC “which first sent subpoenas to the world’s largest banks in November 2012 to determine whether ISDAfix was rigged, has flagged its findings to prosecutors, according to a person familiar with the matter.”

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<sup>37</sup> For instance, one offering document discloses: “It has been reported that the U.K. Financial Conduct Authority and the U.S. Commodity Futures Trading Commission are working together to investigate potential manipulation of ISDAfix. If such manipulation occurred, it may have resulted in this rate or the quarterly difference in such rate being artificially lower (or higher) than it would otherwise have been. Any changes or reforms affecting the determination or supervision of ISDAfix in light of these investigations, may result in a sudden or prolonged increase or decrease in reported ISDAfix or the quarterly difference in ISDAfix, which could have an adverse impact on the trading market for ISDAfix-benchmarked securities such as your notes, the value of your notes and any payments on your notes.” Jan. 12, 2015 Goldman, Sachs & Co. Preliminary Prospectus Supplement (Registration Statement No. 333-198735 ) at S-6, <http://www.sec.gov/Archives/edgar/data/886982/000119312515008369/d850903d424b2.htm>.

<sup>38</sup> Financial Times, *ICE changes Isdafix interest rate swap basis* (Jan. 26, 2015), <http://www.ft.com/fastft/267592/ice-changes-isdafix-interest-rate-swap-benchmark>.

<sup>39</sup> Leising and Schoenberg, *supra* note 2.

97. All of this regulatory scrutiny over the ISDAfix rates caused ISDA to hire the consulting firm Oliver Wyman – the same firm retained by the British Bankers Association in connection with the LIBOR scandal – to make recommendations on how to modify the interest rate swap pricing process.

98. It was not until regulatory scrutiny increased in 2013 and 2014 that ISDA began the process of replacing ICAP in the setting of USD ISDAfix rates. ISDA spokesperson Steven Kennedy stated in January 2014 that ISDA removed ICAP from its role as collector of the USD ISDAfix rates and turned over the collection and calculation of those rates to Thomson Reuters.

99. In a press release, ISDA announced the implementation date for the “first stage in its two-phased process for moving to an automated, market-based ISDAFIX rate setting.”<sup>40</sup> The first phase includes a number of initiatives “to enhance the ISDAFIX polling process in response to the International Organization of Securities Commissions (IOSCO) Principles for Financial Benchmarks.” In addition to replacing ICAP with Thomson Reuters, ISDA announced the following initiatives in connection with its first phase:

- a) Clarifying the definition of ISDAfix to emphasize that contributing banks should use executable bid/offer rates. The definition includes a table referencing typical contract sizes for each ISDAFix tenor in order to provide a reference point for all banks and ensure consistency.
- b) Establishing an ISDAfix Code of Conduct and an ISDA Oversight Committee to address internal governance, systems, and controls in order to maintain the

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<sup>40</sup> ISDA, Press Release, *ISDA Announces Key Steps in ISDAFIX Transition* (Jan. 27, 2014), <http://www2.isda.org/news/isda-announces-key-steps-in-isdafix-transition>.



highest standards for ISDAfix and the contributing banks, as well as ensuring compliance with the IOSCO Principles for Financial Benchmarks.

- c) Identifying, suspending, and/or discontinuing currencies and tenors of ISDAfix with insufficient liquidity in the underlying swap market. For example, ISDA suspended EUR LIBOR and JPY ISDAfix in January 2014.
- d) Implementing stronger ex-ante and ex-post checks and analysis of bank submissions by the calculation agent and by the contributing banks in order to validate individual submissions.

100. The second stage of ISDA's reforms "includes moving from the current bank submission-based method to an automated model that utilizes live prices from multilateral trading facilities (MTFs)." ISDA stated its intention to transition to an "MTF submission-based approach i[n] the second quarter of this year [2014] for euro swaps, with the US dollar and sterling swaps following later in 2014 or early 2015." Such an approach would lessen the possibility of contributor banks conspiring to manipulate ISDAfix rates.

101. In late February 2014, ISDA stated that it was soliciting offers from companies seeking to become the new benchmark administrator for ISDAfix. The winning bidder would be responsible for collecting the data, checking its integrity, and calculating the ISDAfix Rates.<sup>41</sup>

102. In August 2014, ISDA officially announced ICE Benchmark Administration ("IBA") as the new ISDAfix administrator. In a press release, ISDA stated that the IBA formally "took on its responsibilities as benchmark administrator and calculation agent for ISDAFIX in

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<sup>41</sup> Gavin Finch, *ISDA Puts Out to Tender Role of ISDAFIX Benchmark Administrator*, Bloomberg (Feb. 24, 2014), [www.bloomberg.com/news/2014-02-24/isda-puts-out-to-tender-role-of-ISDAFIX-benchmark-administrator.html](http://www.bloomberg.com/news/2014-02-24/isda-puts-out-to-tender-role-of-ISDAFIX-benchmark-administrator.html).

US dollar, euro, British pound and Swiss franc from August 1, 2014.”<sup>42</sup> Implicitly acknowledging the flaws in the former ISDAfix setting process, ISDA stated that “[a]s administrator, IBA will oversee a move from a polled submissions model, where contributing banks submit price estimates, to a methodology based on actual transactions and/or executable quotes posted on regulated trading venues.” ISDA stated that starting in February 2015 the manner in which ISDAfix is calculated would change – shifting from submissions by a panel of banks to published rates based on tradeable quotes – in an effort “to bolster market confidence.”<sup>43</sup> To avoid the stigma attached to the “ISDAfix” name, and to reflect the new administrator, the benchmark was renamed the “ICE Swap Rate” in April 2015.<sup>44</sup>

103. On February 4, 2015, it was reported that ICAP had been fined \$17 million by the European Commission’s competition authority for “breach[ing] antitrust laws by facilitating attempts by several banks to rig a benchmark interest rate.”<sup>45</sup> The European Commission also accused ICAP “of disseminating misleading information to banks that weren’t part of a cartel of banks trying to influence the yen Libor, saying the information was veiled as ‘predictions’ or ‘expectations’ of where the rate would be set” and of “using its contacts at other banks in an attempt to influence their submissions and serving as a communications channel between traders

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<sup>42</sup> ISDA, Press Release, IBA Assumes ISDAFIX Administrator Role (Aug. 4, 2014).

<sup>43</sup> See Philip Stafford, *ICE to change Isdafix calculation*, Financial Times (Jan. 26, 2015), [www.ft.com/intl/cms/s/0/e778d3d6-a56e-11e4-ad35-00144feab7de.html#axzz3QGnQh9M8](http://www.ft.com/intl/cms/s/0/e778d3d6-a56e-11e4-ad35-00144feab7de.html#axzz3QGnQh9M8).

<sup>44</sup> See “ICE Benchmark Administration Completes Transition to New ISDAFIX Calculation Methodology; Benchmark Renamed ICE Swap Rate”, BusinessWire (Apr. 1, 2015), <http://www.businesswire.com/news/home/20150401005074/en/ICE-Benchmark-Administration-Completes-Transition-ISDAFIX-Calculation>.

<sup>45</sup> See Chad Bray, *European Authorities Fine ICAP \$17 Million in Libor Investigation*, New York Times (Feb. 4, 2015), <http://dealbook.nytimes.com/2015/02/04/european-authorities-fine-icap-17-million-in-libor-investigation/>.

at Citigroup and at R.B.S., assisting in their anticompetitive behavior.”<sup>46</sup> In other words, as alleged to have also have occurred here, ICAP was willingly and actively facilitating coordination among multiple benchmark-setting banks.

104. In May 2015, Barclays reached an agreement with the CFTC to pay \$115 million for alleged manipulation of ISDAfix.<sup>47</sup> In May 2016, Citibank reached a similar agreement with the CFTC, agreeing to pay \$250 million for alleged manipulation of ISDAfix.<sup>48</sup> The CFTC found Barclays and Citi had “attempted on many occasions to manipulate [ISDAfix]”.<sup>49</sup>

105. In December 2016, the CFTC reached a \$120 million settlement with Goldman Sachs after finding that it had used multiple methods to manipulate ISDAfix between January 2006 and June 2012,<sup>50</sup> including (i) “banging the close” through its swaps broker to set ISDAFix rates where they would benefit Goldman Sachs’ settling/resetting derivatives positions (Goldman CFTC Order at 2-3, and 9), (ii) making false submissions to ICAP for purpose of skewing ISDAFix rates toward where Goldman wanted them (*id.*, at 3, 9, 12), and (iii) instructing ICAP to delay reporting trades where this would help ensure that Goldman Sachs received the ISDAFix rate it wanted (*id.*, at 10-11).

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<sup>46</sup> *Id.*

<sup>47</sup> CFTC Press Release, *CFTC Orders Barclays to Pay \$115 Million Penalty for Attempted Manipulation of and False Reporting of U.S. Dollar ISDAFIX Benchmark Swap Rates* (May 20, 2015), <http://www.cftc.gov/PressRoom/PressReleases/pr7180-15>.

<sup>48</sup> CFTC Press Release, *CFTC Orders Citibank to Pay \$250 Million Penalty for Attempted Manipulation of and False Reporting of U.S. Dollar ISDAFIX Benchmark Swap Rates* (May 25, 2016), <http://www.cftc.gov/PressRoom/PressReleases/pr7371-16>.

<sup>49</sup> *Id.*

<sup>50</sup> Goldman CFTC Order, CFTC Dkt. No. 17-03 (Dec. 21, 2016).

**D. Further Investigations Into Financial Benchmarks Confirm Defendants' Tools of the Trade**

106. To manipulate the market for interest rate swaps around the start of the ISDAfix polling window so as to move the ISDAfix reference rate in their desired direction, Defendants employed the same unlawful means that have been exposed by investigations and multi-billion dollar settlements concerning other financial benchmarks.

107. Most of the Bank Defendants here or their affiliates have been investigated, prosecuted and paid or agreed to pay criminal fines, civil penalties, and/or class action settlements for violating federal antitrust and other laws by colluding to rig the \$5.3 trillion-a-day foreign exchange (“FX”) market, the largest financial market in the world.

108. For instance, on May 20, 2015, Barclays, Citibank, JPMorgan, and RBS pled guilty to criminal price fixing of financial instruments involving FX benchmark rate manipulation and agreed to pay criminal fines totaling more than \$2.5 billion. Relatedly, UBS was declared in violation of a non-prosecution agreement in the LIBOR benchmark fixing case for its “collusive conduct” in FX and agreed to plead guilty to wire fraud.<sup>51</sup> The same day, the Federal Reserve assessed hundreds of millions in civil penalties on the banks.<sup>52</sup>

109. These followed earlier CFTC and other regulatory enforcement action against the banks. For instance, the CFTC found that Barclays, HSBC, Citibank, JPMorgan, Royal Bank of

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<sup>51</sup> See *United States Department of Justice, Five Major Banks Agree to Parent-Level Guilty Pleas: Citicorp, JPMorgan Chase & Co., Barclays PLC, The Royal Bank of Scotland plc Agree to Plead Guilty In Connection With The Foreign Exchange Market and Agree to Pay More Than \$2.5 Billion In Criminal Fines* (May 20, 2015), <https://www.justice.gov/opa/pr/five-major-banks-agree-parent-level-guilty-pleas>.

<sup>52</sup> Press Release, Board of Governors of the Federal Reserve System (May 20, 2015), <http://www.federalreserve.gov/newsevents/press/enforcement/20150520a.htm>.

Scotland, and UBS actively colluded to manipulate the price of Forex benchmarks, and it imposed civil penalties in excess of \$1.88 billion dollars on the six banks.<sup>53</sup> The U.K.'s Financial Conduct Authority imposed a further £1.4 billion in fines on the same six banks in respect of the same manipulation in the U.K.<sup>54</sup> On November 12, 2014, the OCC announced that it assessed penalties of \$950 million in collective civil penalties against Bank of America, Citibank and JPMorgan.<sup>55</sup> The same day, The Swiss Financial Market Supervisory Authority, FINMA, sanctioned UBS for manipulating FX benchmarks.<sup>56</sup>

110. The *FX* matter continues before criminal and civil antitrust courts and enforcement agencies. In the first weeks of 2017 alone, there have been indictments issued, guilty pleas entered, and sentences imposed for criminal price fixing of financial instruments involving FX benchmark rate fixing and manipulation that occurred contemporaneously with the conspiracy alleged herein.<sup>57</sup>

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<sup>53</sup> *CFTC Orders Five Banks to Pay over \$1.4 Billion in Penalties for Attempted Manipulation of Foreign Exchange Benchmark Rates* (November 12, 2014), at <http://www.cftc.gov/PressRoom/PressReleases/pr7056-14>; *Barclays to Pay \$400 Million Penalty to Settle CFTC Charges of Attempted Manipulation and False Reporting of Foreign Exchange Benchmark Rates* (May 20, 2015), at <http://www.cftc.gov/PressRoom/PressReleases/pr7181-15>.

<sup>54</sup> *FCA fines five banks £1.1 billion for FX failings and announces industry-wide remediation programme* (Nov. 12, 2014), at <https://www.fca.org.uk/markets/benchmarks/enforcement>.

<sup>55</sup> *OCC Fines Three Banks \$950 Million for FX Trading Improprieties* (Nov. 12, 2014), at <https://www.occ.gov/news-issuances/news-releases/2014/nr-occ-2014-157.html>.

<sup>56</sup> *FINMA sanctions foreign exchange manipulation at UBS* (Nov. 12, 2014), at <https://www.finma.ch/en/news/2014/11/mm-ubs-devisenhandel-20141112/>.

<sup>57</sup> See *United States v. Katz*, No. 1:17-cr-00003-KPF (S.D.N.Y.) (Failla, J.); *United States v. Barclays PLC*, No. 3:15-cr-00077 (D. Conn.) (Underhill, J.); *United States v. Citicorp*, 3:15-cr-00078 (D. Conn.) (Underhill, J.); *United States v. JP Morgan Chase & Co.*, 3:15-cr-00079 (D. Conn.) (Underhill, J.); *United States v. The Royal Bank of Scotland PLC*, 3:15-cr-00080 (D. Conn.) (Underhill, J.); *United States v. UBS AG*, 3:15-cr-00076 (D. Conn.) (Underhill, J.); *United States v. Usher*, No. 1:17-cr-00019-1 (S.D.N.Y.) (Berman, J.); *United States v. Ramchandani*, No. 1:17-cr-00019-2 (S.D.N.Y.) (Berman, J.); *United States v. Ashton*, No. 1:17-

111. *First*, Defendants used chat rooms, instant messages, phone calls, proprietary trading venues and platforms, and e-mails to coordinate among one another to ensure that attempts to move the market in one way or the other were not undone (unwittingly or otherwise) by the contrary efforts of other members or other large banks. In the context of currency manipulation, the CFTC found that Defendants Barclays, HSBC, UBS, Citibank, JPMorgan, and Royal Bank of Scotland, “used private electronic chat rooms to communicate and plan their attempts to manipulate the Forex benchmark prices for certain currency pairs.”<sup>58</sup>

112. *Second*, with information in hand and a decision made to move in a particular direction, the colluding banks would equip each other with the tools to do so. In the currency

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cr-00019-3 (S.D.N.Y.) (Berman, J.); *United States v. Cummins*, No. 1:17-cr-00026 (S.D.N.Y.) (Englmeyer, J.); *see also Global Head of HSBC’s Foreign Exchange Cash-Trading Desks Arrested for Orchestrating Multimillion-Dollar Front Running Scheme* (July 20, 2016), at <https://www.justice.gov/opa/pr/global-head-hsbc-s-foreign-exchange-cash-trading-desks-arrested-orchestrating-multimillion> (two HSBC traders charged with conspiracy to defraud a client in a \$3.5 billion transaction in 2011).

<sup>58</sup> U.S. Commodity Futures Trading Commission, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of HSBC Bank plc* (Nov. 11, 2014), at 2, [www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfhsbcorder111114.pdf](http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfhsbcorder111114.pdf). *See also* CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of UBS AG* (Nov. 11, 2014), at 2; CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of Citibank, N.A.* (Nov. 11, 2014), at 2; CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of JPMorgan Chase Bank, N.A.* (Nov. 11, 2014), at 2; CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of The Royal Bank of Scotland, pls* (Nov. 11, 2014), at 2; ; CFTC, *Order Instituting Proceedings Pursuant to Sections 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions in the matter of Barclays Bank PLC* (May 20, 2015), at 2. The CFTC has also released multiple examples of trader misconduct in private chat rooms by which Forex-trading banks – including Defendant HSBC – were able to profit from manipulation of currency benchmarks. *See* CFTC, *Examples of Misconduct in Private Chat Rooms*, [www.cftc.gov/ucm/groups/public/@newsroom/documents/file/hsbcmisconduct111114.pdf](http://www.cftc.gov/ucm/groups/public/@newsroom/documents/file/hsbcmisconduct111114.pdf).

context, where one of the five above-mentioned banks had a contrary book of orders, those orders would be “netted off” with third parties in order to reduce the number of adverse orders that were to be processed during the pivotal polling window – a process referred to as “taking out the filth” or “clearing the decks.”<sup>59</sup>

113. When the banks had orders going in the same direction, they would “build” the orders by transferring them between other conspirators – a process referred to as “giving you the ammo.” That way a subset of banks could more easily control the process of ensuring the trades had the maximum effect at just the right time. Again, the CFTC found that the aforementioned five banks –including Defendants here– repeatedly engaged in such behavior to manipulate Forex benchmarks, including that they “altered [their] 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 [downward] certain FX benchmark rates.”<sup>60</sup>

114. *Third*, even if Defendants did not have enough “ammo” to move the market, they would just invent some. This has been called “painting the screen” – placing orders to give the illusion of activity, with the intention they would be cancelled later after the pivotal measuring window was closed. The placing of these fake orders would move the market at a time and in a way that would drive the benchmark in the desired direction. Defendants could thus use fake trades – which gave rise to no actual liability on their parts – to move the reference rate. In the ISDAfix area, as discussed below, a similar practice of simply instructing ICAP to alter the reporting process of transactions was used – and, when the market moved but not all the way,

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<sup>59</sup> See U.K. Financial Conduct Authority, *Final Notice to HSBC Bank plc* (Nov. 11, 2014), at 16.

<sup>60</sup> *Id.* at 17.

ICAP could and would also step in by nonetheless setting the “reference rate” at the predetermined level.

**II. DEFENDANTS CONSPIRED TO UNIFORMLY RUBBERSTAMP THE “REFERENCE RATE” THAT MEMBERS OF THE CONSPIRACY HAD DRIVEN**

115. Though the process of setting ISDAfix started with the prices that were in the market for swaps at 11:00 a.m., by way of ICAP’s “reference rate,” the final ISDAfix rate was set based on the results of a “poll” of the Defendant Banks as to their own individual pricing practices that day. This should have dissuaded anyone from trying to manipulate the market for swaps, because any last-minute swings would be filtered out by the Defendant Banks’ honest submissions to ICAP. But rather than honestly and individually responding to ICAP’s poll, as discussed below, Defendant Banks conspired to consistently tell ICAP they all had *exactly the same* prices, *down to five decimal places*.

116. In this way, Defendants each played a knowing part in a conspiracy to price-fix, *regardless* of whether one or more Bank Defendants had that day worked with ICAP to manipulate the 19901 Screen. Defendants all knew that the USD rate was the *only* ISDAfix currency that used the “reference rate” process. They all knew the “reference rate” process was being administered by a fatally conflicted entity (ICAP), and they all knew the USD ISDAfix setting process was being corrupted on a daily basis.

117. Indeed, as early as 2008, certain Defendants considered becoming “honest and decent” and abandoning the conspiracy. For example, on August 28, 2008, a Barclays trader wrote to a former Barclays trader who had since moved to BNP Paribas, saying: “one of the things we (rbs/goldman and barcap) are talking about is to be honorable and try not to affect the



spds at 11 am. if everyone is honest and decent, we will save ourselves a lot of time and energy.”<sup>61</sup>

**A. Defendants Repeatedly Claim – Impossibly – To Have Had Identical Rates**

118. After ICAP had determined the “reference rate” for a given tenor for a given day, it would circulate that rate to the Defendant Banks. The Defendant Banks were permitted to consider the reference rate, but were required to submit a rate which was a mean of where that Defendant was in fact offering and bidding swaps in the relevant currency and of the relevant maturity. Under the explicit terms of the ISDAfix rate-setting process, Defendants were thus *not* free to simply accept the reference rate unless the mean of their own offer/bid rates happened to be *exactly the same* as the reference rate.

119. In reality, however, the Defendant Banks rigged this process, in contravention of the relevant rules. Defendant Banks agreed not to submit the *real* rates upon which they would trade in the market, but instead to accept the ICAP reference rate *regardless* of whether it matched the mean of that Defendant Bank’s bid/offer rates.

120. The Defendant Banks could and would communicate with each other via phone, email, and online chat rooms as to where to move ISDAfix. As illustrated by ICAP’s fine for its involvement in similar benchmark setting misconduct, the Defendants banks could and would also coordinate their efforts by using ICAP as a go-between. Based on these communications, Defendant Banks coordinated their approach to ISDAfix, including strategies such as banging the close *and* falsifying submissions. Currently, the CFTC has reviewed phone recordings and over one million emails and instant messages linked to this conspiracy.

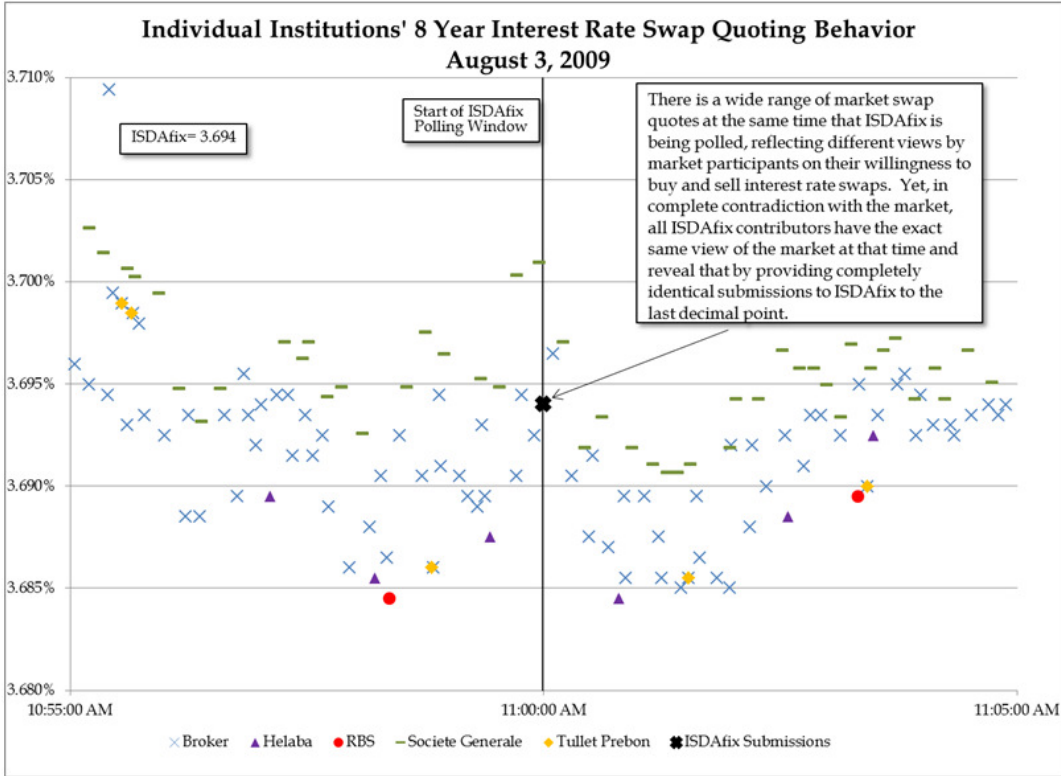
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<sup>61</sup> BNPP\_AK\_00035048.

121. However, the reference rate process enabled the conspiracy to operate even without express, daily coordination. Every member of the conspiracy knew that its daily task was to rubberstamp the reference rates, no matter what – and that in return it could rely on others to do the same when it was advantageous for itself to take the lead in manipulating.

122. ISDAfix rate submissions go to five decimal points – to a thousandth of a basis point (*e.g.*, 3.20219%). Even if contributing banks always responded similarly to market conditions, the odds against contributors unilaterally submitting the exact same prices down to the thousandth of a basis point are astronomical. Yet, this happened *almost every single day* between at least 2009 and December 2012 (the only years for which data was available at the time of the consolidated amended complaint).

123. To illustrate the improbability of so many banks taking the exact same view of the market, absent collusion, consider August 3, 2009. Quotes were scattered, as they naturally are, but the Banks' ISDAfix submissions for that day were remarkable – they all claimed to have the *exact same* view of the market.



124. “Dispersion” refers to the extent to which each ISDAfix submission varies from every other ISDAfix submission. Plaintiffs’ experts compared the level of dispersion in ISDAfix submissions to the level of dispersion found in financial benchmarks that use similar submission systems. They computed the average difference between the highest and lowest rate submissions for a variety of such benchmarks.

125. The level of uniformity observed in ISDAfix was not present in the rate submissions for analogous benchmarks. The only exception was a period of approximately one year from August 2006 through August 2007 in which USD LIBOR quotes were completely equal to each other day in and day out for almost virtually all of the contributing banks. But of course, it is now known that LIBOR was being manipulated, so this parallel bolsters Plaintiffs’ allegations.

126. Aside from LIBOR, the comparable benchmark with the least dispersion among its submissions – the ISDAfix rate in British pounds – showed six times more dispersion than the USD ISDAfix submissions. Benchmarks for government bonds showed between 23 and 37 times more dispersion than USD ISDAfix. These findings point powerfully to the conclusion that the USD ISDAfix panel banks were coordinating their ISDAfix submissions.

<b>Instrument</b>	<b>Dispersion (basis points)</b>	<b>Ratio to USD ISDAfix</b>
30-year USD ISDAfix submissions	0.12	N/A
30-year GBP ISDAfix submissions	0.7	6x
30-year EUR ISDAfix submissions	1.0	8x

127. The above chart demonstrates that the level of dispersion seen in GBP (British Pound) and EUR (Euro) ISDAfix submissions is respectively six and eight times higher than USD ISDAfix submissions of the same duration.<sup>62</sup> While, for the entirety of the Class Period, ICAP administered the USD ISDAfix rates, Reuters administered the ISDAfix rates for other currencies. ICAP, unlike Reuters, functions as both the ISDAfix administrator and as an inter-dealer broker. Because of ICAP's commission structure, its brokers have a strong incentive to assist in manipulating ISDAfix rates. Where that incentive does not exist, substantially greater levels of dispersion are observed.

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<sup>62</sup> The data within this table is based on ISDAfix submissions by dealer banks across a selected sample of days through mid-2013. In the case of USD submissions, the average result across the sample also corresponds to the average dispersion taken across all submissions from 2009 through mid-2013.

128. The results are even more dramatic when comparing USD ISDAfix to other, similar non-ISDAfix benchmarks, as seen below.<sup>63</sup>

Instrument	Dispersion (basis points)	Ratio to USD ISDAfix
30-year USD ISDAfix submissions	0.12	N/A
USD interest rate swaps	0.7	6x
10-year German Bunds	1.4	12x
10-year US Treasury Bonds	2.7	23x
10-year Italian BTPs	4.4	37x

**B. The Level of Uniformity Seen in Defendants' ISDAfix Submissions Was Undermined by Their Concurrent Market Rates**

129. Prior to December 2012, the Defendant Banks made stunningly similar ISDAfix submissions. That those were not actually each bank's honest views of its own prices is not only confirmed by the sheer statistical unlikelihood of such perfect alignment, and by the comparative misalignment to other interest rates, but also by the fact that the banks in the real world were not so aligned at any other time of the day.

130. The following table shows how Defendants RBS and JPMorgan (the only two Defendants with identifiable quotes available to Plaintiffs) *almost always* told ICAP that they had *identical* rates. Yet on those same exact days, RBS and JPMorgan were *only rarely* providing similar quotes to the actual market. The table below contains data measuring the

<sup>63</sup> The data within this table is based on end of day quotes from dealer banks from the end of 2010 until mid-2014 for USD interest rate swap quotes; from the beginning of 2014 until mid-2014 for US Treasury Bonds and German Bunds; and from mid-2013 until mid-2014 for Italian BTPs. All data is from Bloomberg sources.

percentage of instances where RBS and JPMorgan submitted matching interest rate swap prices versus the percentage of instances where RBS and JPMorgan contributed matched ISDAfix submissions for the period January 1, 2009 – December 18, 2012. The swap prices compared were submitted within two minutes of each other.

### Comparison of Agreement: ISDAfix and Market Price (JPMorgan and RBS)

Maturity	Number of Instances Where RBS and JP Morgan Submit Interest Rate Market Prices Within 2 Minutes of Each Other	Percentage of Instances from Column [B] Where Market Prices Match	Percentage of Days that RBS and JP Morgan Contribute Matching ISDAfix Submissions and for Which They Also Submit Interest Rates Prices Within 2 Minutes of Each Other	Number of Days from January 2009 through December 18, 2012 Where Both RBS and JP Morgan Contribute ISDAfix Submissions	Percentage of Matching ISDAfix Submissions from Column [E]
[A]	[B]	[C]	[D]	[E]	[F]
1Y	n/a	n/a	n/a	163	93.9%
2Y	19	21.1%	100.0%	163	97.5%
3Y	24	0.0%	100.0%	163	95.1%
4Y	1	0.0%	100.0%	163	91.4%
5Y	18	0.0%	100.0%	163	93.9%
6Y	n/a	n/a	n/a	163	93.3%
7Y	12	25.0%	100.0%	163	90.2%
8Y	n/a	n/a	n/a	163	91.4%
9Y	n/a	n/a	n/a	163	92.6%
10Y	21	23.8%	100.0%	163	87.1%
15Y	n/a	n/a	n/a	163	91.4%
20Y	n/a	n/a	n/a	163	91.4%
30Y	n/a	n/a	n/a	163	93.9%

131. The only possible explanation for these results is simple: Defendants' ISDAfix submissions to ICAP were not – as they should have been – based on each Bank's unilateral and honest pricing decisions.

#### C. The Level of Uniformity Seen in Defendants' ISDAfix Submissions Abated Once Regulatory Scrutiny Increased

##### 1. Defendant Banks' submissions begin to disperse in December 2012

132. If the mere provision of reference rates validly explained the uniformity in bank submissions observed above, then one would have expected the Banks' bunching to continue in every year in which reference rates were provided. To the contrary, the submission rates dispersed in late 2012 and into 2013, even though the reference rate process nominally remained the same.

133. In late 2012, with subpoenas being served on ISDAfix contributors and the announcement of the UBS LIBOR settlement and the subsequent announcements throughout 2013 of investigations into other benchmarks – such as the WM/Reuters foreign exchange fix, London gold fix, and even ISDAfix itself – Defendants’ ISDAfix conspiracy began to unravel.

134. Throughout 2013, Defendant Banks’ USD ISDAfix rate submissions became increasingly dispersed. For at least three years prior to December 2012, the Defendant Banks had submitted identical ISDAfix submissions virtually every day. By the end of 2013, however, less than half of the submissions submitted to ICAP were identical to the final ISDAfix rate for a given day. These changes in behavior of the ISDAfix panel banks are not explainable by any market events or market forces. They instead reflect steps by the Defendants to stop submitting identical rates in the hope of heading off further regulatory scrutiny of their conspiracy.

135. The chart below uses time periods corresponding to what can be understood as different “stages” ISDAfix manipulation: period one predates the first LIBOR manipulation settlement to reveal the involvement of brokers such as ICAP, period two ranges from this revelation regarding broker involvement until the first news of an investigation into ISDAfix, period three covers the period after news of the investigation has broken but prior to any indication that illegal conduct has been found, and period four follows the announcement that regulatory investigations found what they regarded as evidence of criminal behavior.

Average Percentage of Daily Contributor Submissions That Are Identical to ISDAfix				
Tenor	Period 1 (1/2/2009 - 12/18/2012)	Period 2 (12/19/2012 - 4/7/2013)	Period 3 (4/8/2013 - 8/1/2013)	Period 4 (8/2/2013 - 12/31/2013)
USD1Y	94.23%	67.72%	55.65%	43.00%
USD2Y	94.88%	61.99%	48.97%	38.68%
USD3Y	94.71%	58.41%	50.01%	39.06%
USD4Y	93.72%	58.14%	45.69%	34.77%
USD5Y	95.27%	81.88%	76.31%	56.76%
USD6Y	95.73%	54.80%	36.44%	29.02%
USD7Y	94.74%	56.55%	45.41%	32.87%
USD8Y	95.43%	43.75%	39.15%	31.23%
USD9Y	94.95%	48.13%	37.39%	32.22%
USD10Y	93.57%	78.66%	72.93%	50.01%
USD15Y	95.29%	50.22%	40.83%	32.03%
USD20Y	95.75%	50.41%	42.93%	26.91%
USD30Y	95.95%	85.04%	72.72%	59.46%
Source: Thomson Reuters, Bloomberg.				

136. The above chart shows the average percentage of USD ISDAfix submissions for various tenors that were identical to the final ISDAfix rate for the day they were submitted. In Period 1 (from January 2, 2009 to December 18, 2012), about 95% of ISDAfix submissions were identical to the eventual, published ISDAfix rates for that day. In all subsequent periods, measuring the extent to which ISDAfix submissions matched the ISDAfix rates after December 19, 2012 (when the UBS LIBOR settlement became public), one sees a massive drop in the level of submissions identical to the ISDAfix rates. For example, in the USD6Y tenor, in Period 1, 95.73% of ISDAfix submissions were identical to the published ISDAfix rate. In the same tenor in Period 4, only 29.02% of submissions were identical to the ISDAfix rate.

137. Even where the submissions were not identical, they were still bunched together. The following table tracks the average difference between the highest and lowest ISDAfix rate submissions on each day for the same four time periods seen above. For each period, Plaintiffs' experts subtracted the lowest ISDAfix rate submission on each day from the highest submission and then averaged the difference for the whole period. The numbers go steadily up after December 19, 2012, indicating that the differences among ISDAfix submissions substantially



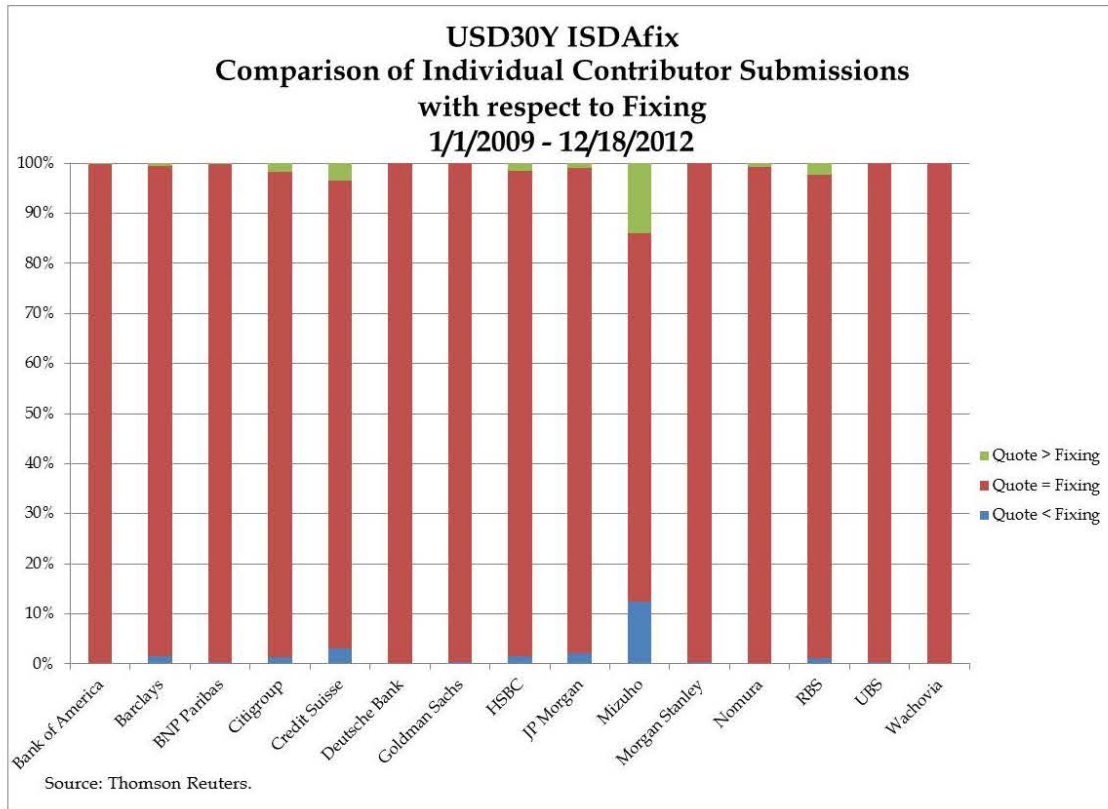
increased after disclosure of the involvement of banks and brokers in the LIBOR conspiracy and other benchmark scandals. This pattern continues over time, with the average difference between the highest and lowest ISDAfix submission steadily increasing as Defendant Banks came under fire from regulators. In fact, across many tenors, the average difference between minimum and maximum daily submissions more than quadrupled from Period 1 to Period 4.

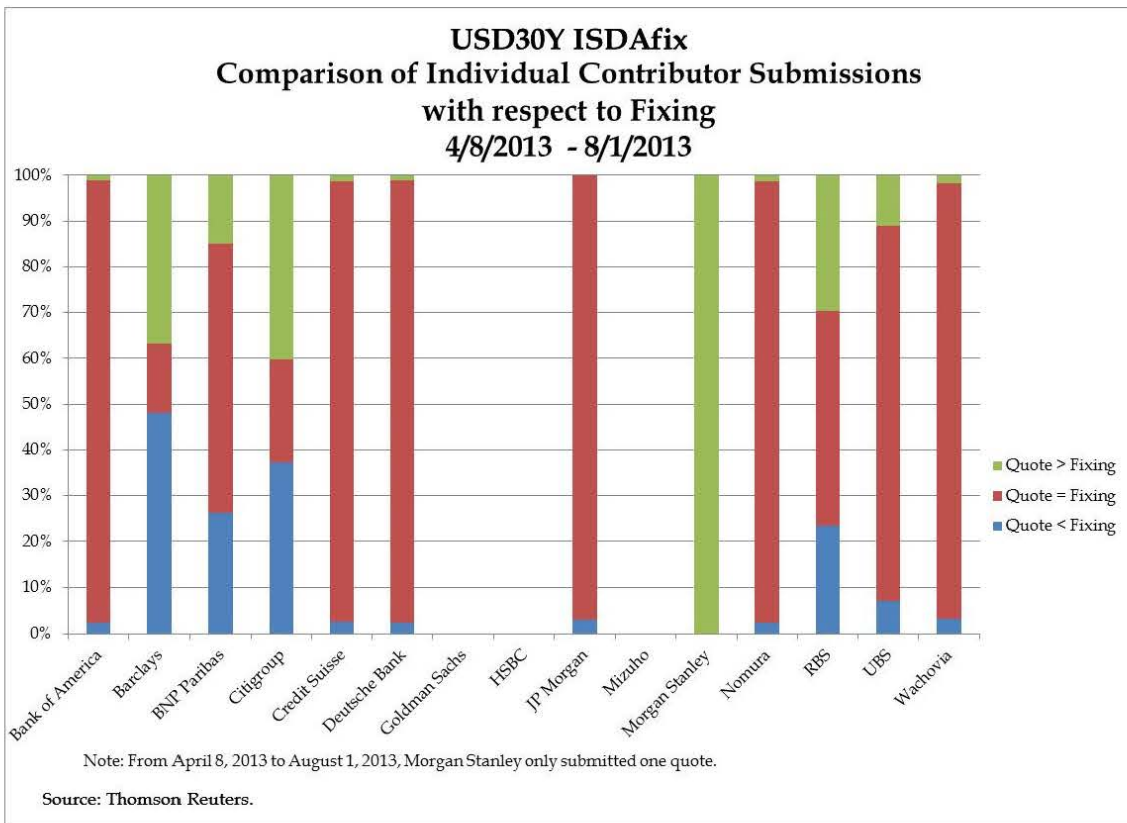
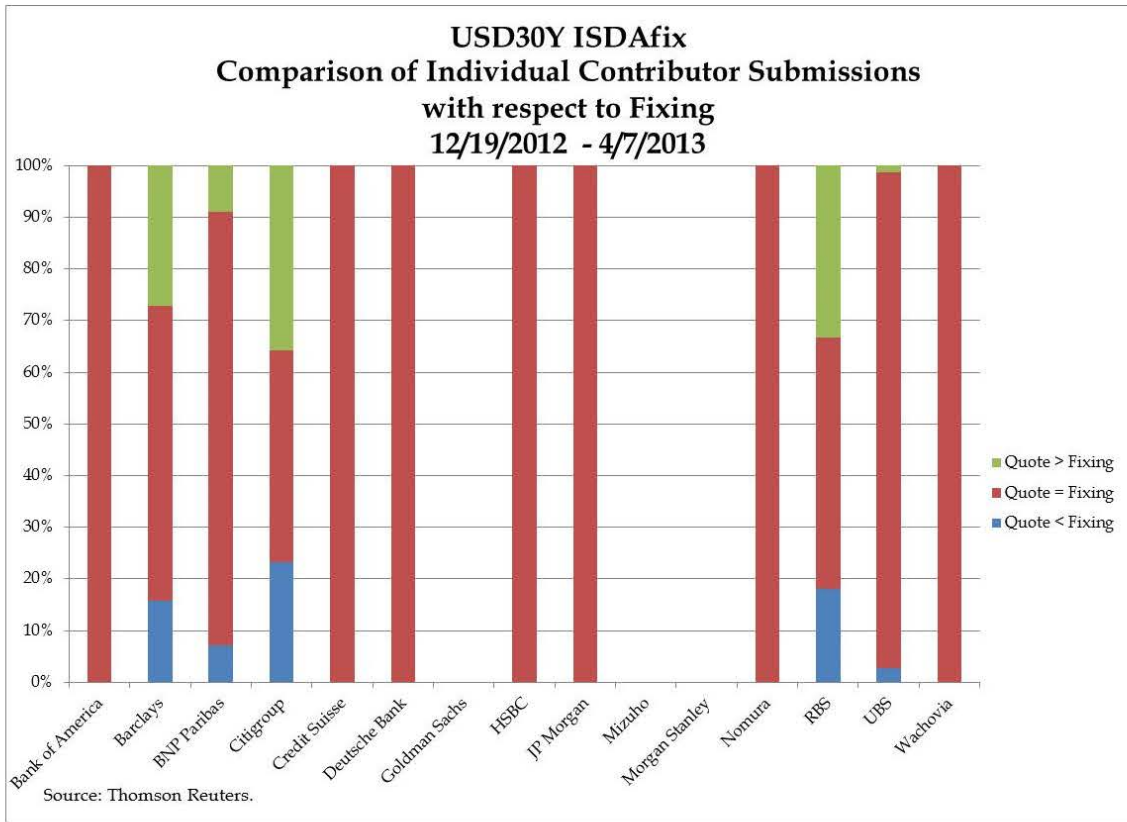
Average Difference Between Minimum and Maximum Daily Contributor Submissions for ISDAfix				
Tenor	Period 1 (1/2/2009 - 12/18/2012)	Period 2 (12/19/2012 - 4/7/2013)	Period 3 (4/8/2013 - 8/1/2013)	Period 4 (8/2/2013 - 12/31/2013)
USD1Y	0.0013	0.0019	0.0029	0.0040
USD2Y	0.0018	0.0045	0.0026	0.0034
USD3Y	0.0020	0.0033	0.0035	0.0039
USD4Y	0.0026	0.0031	0.0037	0.0045
USD5Y	0.0016	0.0038	0.0028	0.0039
USD6Y	0.0014	0.0034	0.0043	0.0056
USD7Y	0.0018	0.0032	0.0038	0.0049
USD8Y	0.0013	0.0041	0.0048	0.0056
USD9Y	0.0013	0.0038	0.0046	0.0055
USD10Y	0.0021	0.0027	0.0032	0.0044
USD15Y	0.0016	0.0041	0.0049	0.0057
USD20Y	0.0012	0.0043	0.0050	0.0059
USD30Y	0.0010	0.0025	0.0033	0.0044
Source: Thomson Reuters, Bloomberg.				

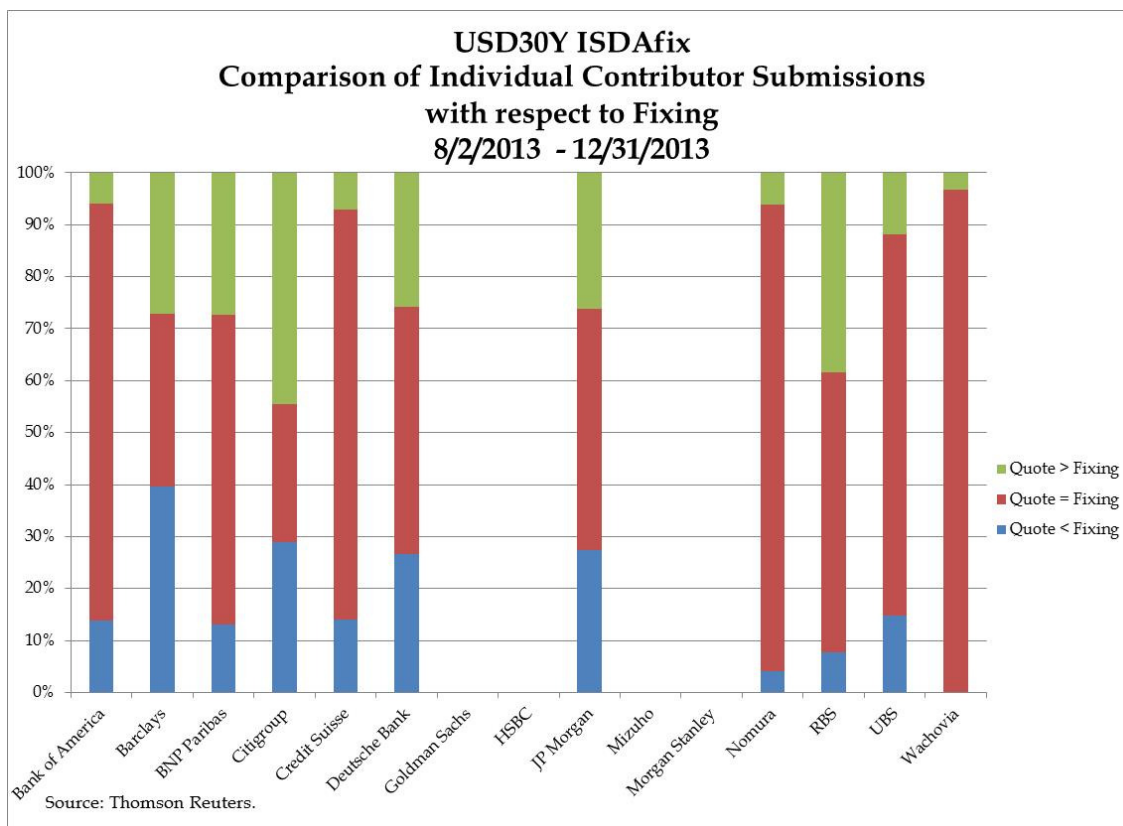
138. The practice of rubberstamping – or close to it – the reference rate ran across virtually every ISDAfix contributor. The following charts demonstrate the percentage of individual Defendant Banks’ ISDAfix submissions that were *identical* to the ISDAfix rate for several different time periods. Red represents the percentage of the time a Defendant Bank’s ISDAfix submission was identical to the ISDAfix rate. Blue reflects the percentage of the time the ISDAfix rate was greater than the bank’s submission, while green represents the percentage of the time that the ISDAfix rate was lower than the bank’s submission.<sup>64</sup>

<sup>64</sup> Charts for additional tenors (20Y, 15Y, 10Y, 9Y, 8Y, 7Y, 6Y, 5Y, 4Y, 3Y, 2Y, 1Y) are contained in Appendix B.

139. As can be easily seen, the amount of red – *i.e.*, how often the Defendant Banks were each submitting the same exact rate – dissipates after December 2012.



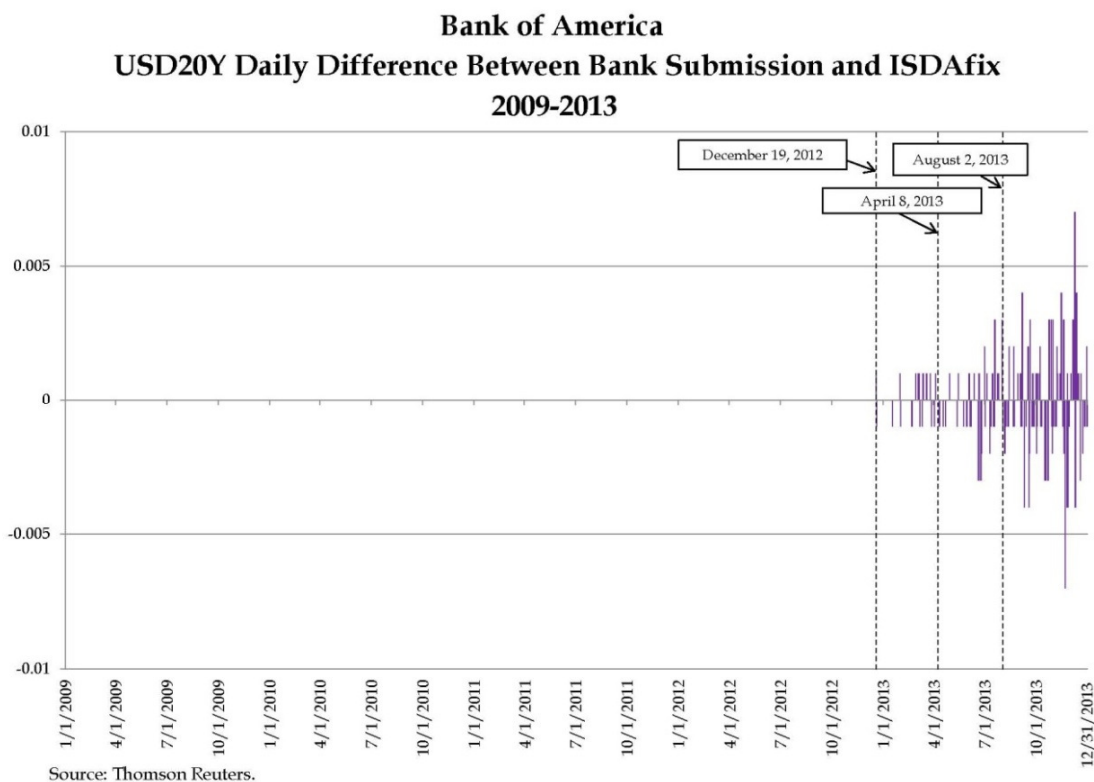




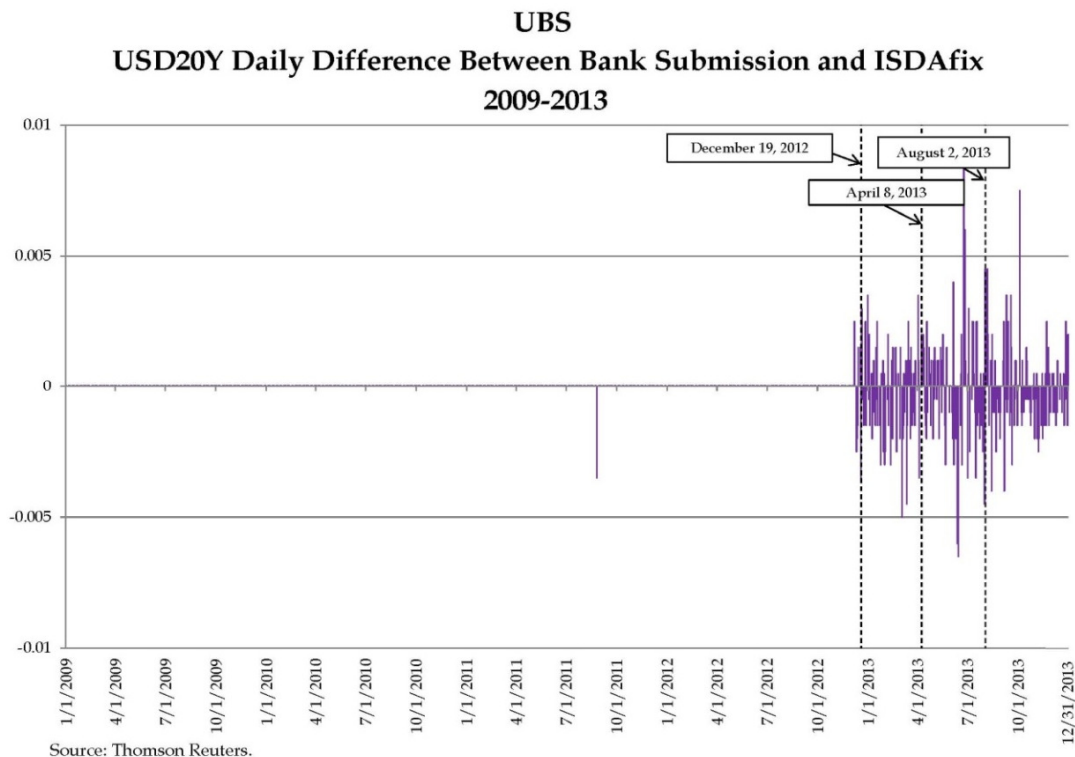
140. The first chart demonstrates that all Defendant Banks made identical submissions to ICAP well over 90% of the time prior to December 19, 2012. After December 19, 2012, amid news of the brokers' role in LIBOR and other benchmark scandals, Defendant Banks' submissions started to disperse. For several banks, the percentage of days on which their submissions are identical to the eventual ISDAfix rate goes from over 90% to under 50%. Virtually every bank shows a significant change in behavior. The picture that emerges from this study is the beginning of a structural break in the conspiracy where nearly every single ISDAfix contributor withdraws from the conspiracy and begins either to stop submitting altogether or to submit rates that truly reflect its actual swap rates in the marketplace.

141. To see this remarkable uniformity of rates another way, Plaintiffs' experts charted over time the difference between a Defendant Bank's ISDAfix submission, and the final rate.

The following charts represent Bank of America's and UBS's submission patterns over time in the USD 20Y tenor. The purple line represents the extent to which the individual banks' ISDAfix submissions deviated from the day's ISDAfix rate. In both charts, the purple line barely appears or does not appear at all until December 2012. Before December 2012, the banks' USD submissions always matched the ISDAfix rate. After December 19, 2012, the purple line begins to move upwards and downwards with increasing regularity – the banks' submissions frequently do not match the ISDAfix rate.<sup>65</sup>



<sup>65</sup> Additional charts for all Defendant Banks for 30Y, 20Y, 15, 10Y, 9Y, 8Y, 7Y, 6Y, 5Y, 4Y, 3Y, 2Y, and 1Y maturities are contained in Appendices C – P.



142. Of the original 15 ISDAfix panel banks, fewer than eight remained as of the time the ISDAfix process was restructured and renamed the “ICE Swap Rate” in April 2015.<sup>66</sup> As with the dispersions in rates submitted, these departures are directly linked to the ongoing investigations into rate-fixing of ISDAfix and other benchmarks. Increased regulatory scrutiny, as well as possible criminal penalties, have made participation in ISDAfix less profitable and, without the ability to manipulate the rates, Defendants “don’t see any upside.”<sup>67</sup> Indeed, “[f]irms are pulling out of rates such as . . . ISDAfix on growing concern that they may face lawsuits, fines and criminal penalties if found to have engaged in wrongdoing.”

<sup>66</sup> Intercontinental Exchange, *ISDAFIX Characteristics and Contributor Panels: US Dollar [USD] – Rates*, [https://www.theice.com/publicdocs/services/ISDAFIX\\_USD\\_Rates.pdf](https://www.theice.com/publicdocs/services/ISDAFIX_USD_Rates.pdf).

<sup>67</sup> Liam Vaughan, *Banks Drop Off IsdaFix Panel Amid Rate-Rigging Probes*, Bloomberg (Apr. 15, 2013), <http://www.bloomberg.com/news/print/2013-04-14/banks-drop-off-isdafix-panel-amid-rate-rigging-probes.html>.

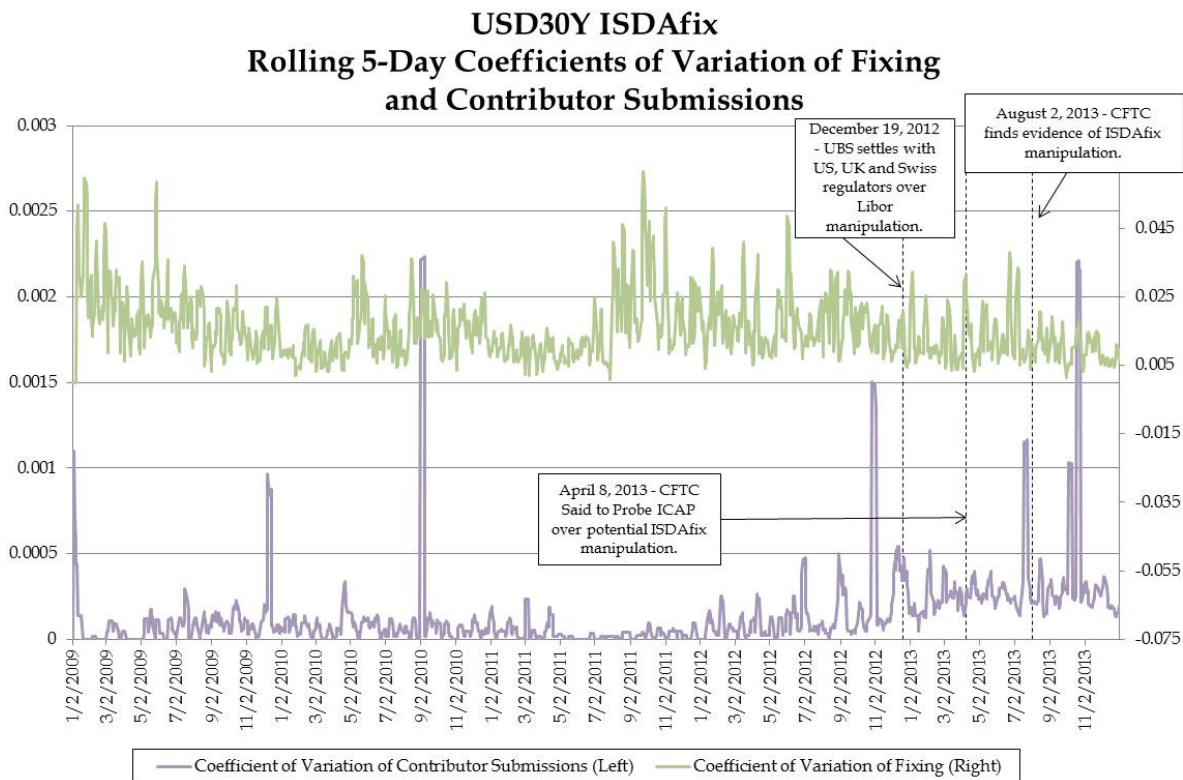
**2. The change in behavior cannot be explained by anything other than the breaking of the conspiracy**

143. As discussed immediately above, the Defendant Banks' submissions begin to disperse in December 2012, when the banks started to come under scrutiny. Plaintiffs' experts performed tests to determine if this increase in dispersion could be explained by some phenomenon other than the breaking of a conspiracy.

144. For instance, the experts sought to determine if the increase in dispersion could be explained by an increase in volatility in the market. To do this, Plaintiffs' experts first charted both the variation in individual ISDAfix submissions for the USD 30-year swap rate and the variation of actual ISDAfix rates for that same USD swap rate, with both measures calculated over rolling five-day windows. In the chart below, the higher, green line represents the average level of variation in the final ISDAfix number,<sup>68</sup> *i.e.*, it rises when the final ISDAfix rate changed more from day to day to day. The lower, purple line represents the average level of variation in USD 30-year ISDAfix submissions. It rises when the Defendant Banks' daily ISDAfix submissions diverge. While the green line (ISDAfix) may spike or fall for any particular period, what is important is that the overall trend stays steady – which is to say, there is no obvious change in the volatility of the market that would explain the change in the behavior of Defendants' ISDAfix submissions.

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<sup>68</sup> Specifically, it charts the coefficient of variation, which is a normalized measurement of the level of dispersion, over a five-day rolling window. The data in this chart is solely from the Reuters actual/360 swap rate data.



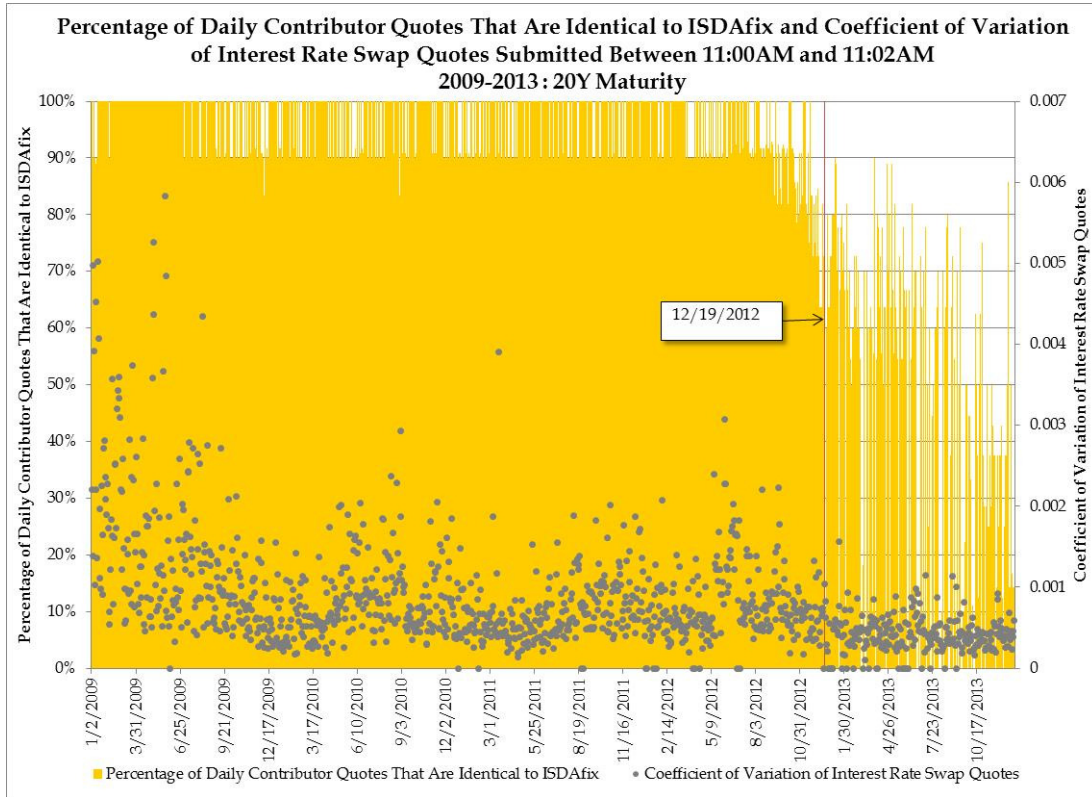
Sources: Thomson Reuters, Bloomberg.

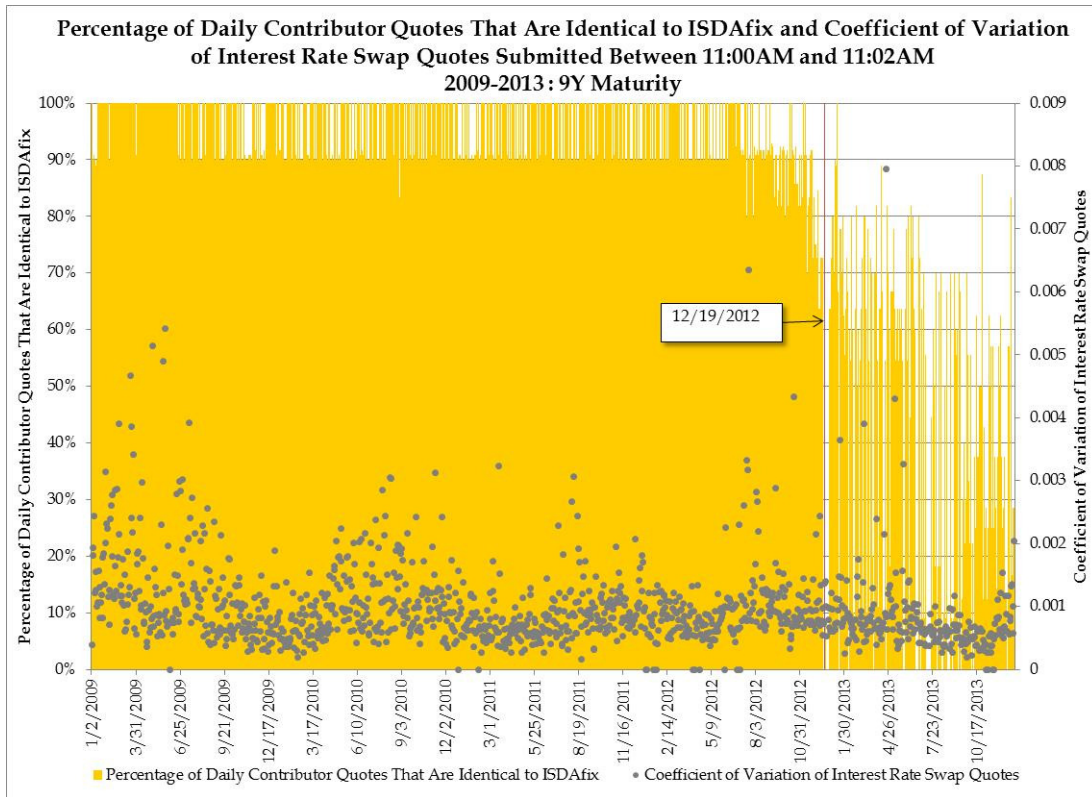
145. The following charts similarly show that there was no increase in the volatility in the market that could explain why Defendants suddenly started telling ICAP they had different prices, when they had not before. Here, volatility is shown by the gray dots, one dot per day, for the dispersion in market quotes at the beginning of the polling window, *i.e.*, 11:00 to 11:02 a.m., at the same exact time banks were making their submissions to ISDAfix.

146. The higher along the Y-axis, the more variability in prices existed around the fixing window for each day. At the same time, the following charts include, with yellow lines, indications as to how often the banks' submissions matched ISDAfix. There is a stark difference in behavior in the yellow lines starting around the time the banks came under scrutiny (they become shorter and spread out, indicating the submissions matched far less often) even though there is no clear change in patterns in the grey dots (that is, there was *not* a sudden increase in



volatility in 2013). Therefore, there were no changes in swaps market capable of explaining the drastic changes in ISDAfix submissions. Similar charts for additional tenors are contained in Appendix Q.





147. Market uncertainty thus cannot explain the drastic changes in ISDAfix submissions that coincided with the time period during which Defendant banks were coming under regulatory scrutiny. That the conspiracy began to break in December 2012 – *i.e.*, where the data shows the ISDAfix submissions began to act markedly differently – evidences consciousness of guilt on the part of Defendants. This is the only plausible explanation for the profoundly anomalous pattern of submissions, which started to dissipate when the banks came under scrutiny – despite no change either in the underlying ICAP reference-rate/polling process, or in the volatility of the underlying market.

### **III. DEFENDANTS AGREED NOT TO COMPETE IN THE SWAP MARKET TO DRIVE ICAP'S REFERENCE RATE TO THEIR PREFERRED LEVEL**

148. As noted, the USD ISDAfix setting process for a given tenor starts with ICAP providing a “reference rate” to the Defendant Banks. The telltale signs of a conspiracy are found

in the fact that the Banks repeatedly rubberstamped that rate, in lockstep fashion, every day, for years. They then began to stop doing so as often when the regulatory heat was turned up.

149. But there would be no reason to rubberstamp the reference rate, if the reference rate was not set where the members of the conspiracy wanted it. The ISDAfix conspiracy thus also involved joint efforts to manipulate the reference rate.

150. The reference rate is drawn from, among other things, completed trades and executable bids observed in the market for swaps – a market in which Defendants were horizontal competitors. But competing fully on price in the market for swaps risked ISDAfix being set at an undesired level. Defendants’ conspiracy thus involved price-fixing in the market for swaps – the sharing of sensitive information among competitors, as to enable joint efforts to move the market in the desired direction just prior to 11:00 a.m.<sup>69</sup> This ensured that the rubberstamping would result in an ISDAfix rate that was favorable to Defendants, regardless of what an unmanipulated market for swaps would have looked like.

A. **Even a Small Sample of the Evidence Produced to Date Confirms the Reference Rate Was Routinely Manipulated By All of the ISDAfix Panel Banks**<sup>70</sup>

151. The evidence to date confirms that ISDAfix was routinely being manipulated, and this was a fact know to all of the ISDAfix panel banks. For example, where one or more banks had a derivative or other investment whose value could be impacted by ISDAfix, ICAP brokers would gladly assist the Defendant banks in executing a high volume of trades just before the

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<sup>69</sup> As discussed further below, Defendants had to try to move the market, and thus the reference rate, among other reasons, so as to not make the conspiracy, and ISDAfix’s unreliability, too obvious. But when the market did not move far enough to hit the target rate exactly, ICAP could and would also simply set the reference rate at the predetermined level.

<sup>70</sup> The examples of manipulation that are set out in this section, or elsewhere in this complaint, are only a small but representative sample of the evidence of Defendants’ manipulation that Plaintiffs have discovered in Defendants’ productions to date.

reference rate was set, or share with them sensitive order flow information from other Defendant banks, so they could successfully to bang the close. For example:

- On September 18, 2008, a Barclays trader, Trader G, Managing Director, Head of U.S. Interest Rates Trading in New York, instructed an ICAP broker, Broker A, to buy swap spreads high in order to drive ISDAfix up because the bank stood to receive more in cash settlements from counterparties if ISDAfix was higher. Trader G, a supervisor of multiple desks, told Broker A: “Okay, at eleven o’clock, we have an option settlement, okay, I have 200 10s of ammo . . . . and I need to get the screen as high as possible.” The trader later told the same broker “don’t let him hit me down at a quarter” and “I want at least a half middle,” referring to the higher ISDAfix rate he wanted.<sup>71</sup>
- On April 28, 2008, an ICAP broker, Broker C, Vice President, Interest Rate Swaps, explained to a BNP Paribas trader, Trader H, Fixed Income Trader, USD Dollar LIBOR desk, how he thought another BNP Paribas trader, Trader B, Medium and Short Term Interest Rate Swap Group, intended Trader H to bang the close to manipulate ISDAfix. Broker C explained to Trader H: “[t]he fixing is set at 11:00:00 not before. I think what [Trader B] meant is that if u want to move the screen, he was probably suggesting u start at 10:59:50.”<sup>72</sup>

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<sup>71</sup> BARC-IFX\_00045684 and BARC-IFX\_00045685.

<sup>72</sup> BNPP\_AK\_00085617.

- On August 9, 2007, an ICAP broker, Trader D, explained to a Credit Suisse employee named Trader I, Equity Derivatives Front Office RAD Developer, that it “feels like MS is going to lift 2’s at 11.”<sup>73</sup>
- On April 15, 2010, a trader at Wells Fargo, Trader J, Director, Interest Rate Swap Trader, noted that traders at Morgan Stanley were trying to increase the spread on a 10 year ISDAfix tenor, explaining to other traders at Wells Fargo that there was a “lot of interest in 10y for 11am isda fixr – MS was trying to push sprd higher.”<sup>74</sup> One month earlier, on March 17, 2010, Wells Fargo’s options desk had an expiry on at least \$240 million of ISDA-linked swaptions, and Trader J directed the swap traders responsible for submitting Wells Fargo’s rates, Traders K, L and M, to mark the 10 year ISDAFix tenor low: “for 11oclocks today, could u mark our 10y point low (0.25-0.5). option desk has expiry today.”<sup>75</sup>
- On yet another occasion, Barclays stood to receive more from a counterparty on a trade that it had entered if the 10-year ISDAfix was lower, and so a Barclays swaps trader, Trader N, Derivatives Trader, instructed an ICAP broker that Barclays “wants to keep 10-year spreads down. So, if you can, we don’t have much ammo, like a hundred; don’t let it go up to 9, hit it down” to which the broker replied “I hear you. I’m just gonna lock ’em down at 11.”<sup>76</sup>

152. The banks sought to move ISDAfix artificially in order to increase the value of various ISDAfix-linked investment they held in their portfolios. For example, in one instance

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<sup>73</sup> ICM-000071630.

<sup>74</sup> AK-WF00012031-12034 at 12033.

<sup>75</sup> AK-WF00007925.

<sup>76</sup> BARC-IFX 00045457.

Barclays entered into a cash-settled swaption with a client and then worked almost *simultaneously* to manipulate the applicable ISDAfix rate for that cash settlement:

- On January 17, 2007, a Barclays employee, Trader O, phoned another Barclays employee, Trader P, to confirm cash settlement on a Barclays swaption tied to ISDAFix:

Trader O: “Cash Settled will be fine”

Trader P: “Kay,”

Trader O: “You wanna do that against ISDAfix 3, alright?”

Trader P: “okay, so you’ll cash settle the receiver?”

Trader O: “We’ll cash settle whichever one is in the money against ISDAfix 3 . . . whichever is obvious, it looks like it’ll be the receiver[.]”<sup>77</sup>

- Minutes later, Trader O placed a second call to an ICAP employee, Broker A, to coordinate the rate, direction and “ammo” for the ISDAfix manipulation necessary to increase Barclay’s profit on that cash settlement:

Trader O: “Bruce ... where are five years?”

Broker A: “two and a quarter”

Trader O: “I actually want to hit them at eleven, Stanley might be going the other way”

Broker A: “Oh fantastic. you’re a fucking animal.”

Trader O: “Try and hit them at two and eleven, okay? You’ve got, you really don’t have that much, you probably have three hundred fifty to work with.”

Broker A: “oh great.”<sup>78</sup>

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<sup>77</sup> BARC-IFX-C\_00000303

153. Similarly, on September 22, 2012, a Morgan Stanley trader, Trader B, Head of U.S. Interest Rates Swap Trading, contacted an ICAP broker, Broker B, to stress that “.25bp for us is worth hundreds of thousands of usd! I need to explain to you . . . We need you to force the screen up or down.”<sup>79</sup>

154. Likewise, on October 9, 2008, BNP Paribas trader, Trader Q, asked BNP trader, Trader R: “[W]hats [*sic*] going on with the 11am fix, and whats [*sic*] the desk strategy?” Trader R replied: “500k of steepening...to move the screen up.” Trader Q then asked: “[F]or the 11am fixing, how much is it worth? Meaning, how much money do we save, per basis point?” Trader R replied: “[I]t’s about 100k per bp...a little more.”<sup>80</sup>

**B. The Use of “Screens” To Identify Further Acts of Active Manipulation**

155. As discussed above, the evidence confirms that the reference rate was being regularly manipulated by the banks participating on the ISDAfix rate-setting panel. This is consistent with the findings of Plaintiffs’ experts who reached the same conclusion using only publically available trading data. Plaintiffs’ experts were able to preliminarily identify *thousands* of instances throughout the Class Period on which manipulative trading practices in the market for swaps occurred across multiple tenors around the fixing window. Because Defendants invariably accepted the reference rate and helped determine it by moving market rates ahead of the polling window, as described in more detail in Section II above, such practices not only meant that the market for swaps was distorted by Defendants’ pricing manipulations, but also that the final ISDAfix rate would be as well.

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<sup>78</sup> *Id.*

<sup>79</sup> MS-ALASKA00018093.

<sup>80</sup> BNPP\_AK\_00058471.

156. Plaintiffs' experts applied various screening methodologies to identify a non-exhaustive and preliminary set of days where the conspiracy was particularly active in moving rates even further than it had at other times. "Screens" are statistical tools based on economic models that use available data such as prices, bids, quotes, spreads, market shares, and volumes to identify the existence, causes, duration, and scope of manipulation, collusion, or other illegal behavior, and who may have been involved.<sup>81</sup> The screens that Plaintiffs' experts used to analyze the intra-day USD swap rates for the period of January 2007 – December 2013 were as follows:

- a) Screen #1: Plaintiffs' experts tested the statistical significance of market moves in each analyzed ISDAfix tenor immediately before and after the fixing window. Plaintiffs' experts used an Exponentially Weighted Moving Average estimator – a model that uses historical observations to capture the dynamic features of the volatility of the marketplace for any specific time or date – to predict the size of an expected market move. The model gives more weight to recent market observations than dated ones when estimating market volatility. Plaintiffs' experts compared the actual market moves immediately before and after the fixing window to the moves predicted by the Exponential Weighted Moving Average estimator, and identified as anomalous the moves whose size significantly exceeded the model's predictions.
- b) Screen #2: Plaintiffs' experts tested whether USD swap rates relevant to each of the analyzed tenors of ISDAfix rates immediately reversed direction following the ISDAfix windows. Specifically, Plaintiffs' experts examined whether at least half of the market movements leading up to the daily fixing were reversed within a time interval corresponding to the length of the fixing window (*i.e.*, before 11:30 a.m. following the 11:00 to 11:15 fixing window).

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<sup>81</sup> See generally Testimony of Rosa M. Abrantes-Metz on behalf of the Office of Enforcement Staff, Federal Energy Regulatory Commission (Sept. 22, 2014), [http://elibrary.ferc.gov/idmws/doc\\_info.asp?document\\_id=14274590](http://elibrary.ferc.gov/idmws/doc_info.asp?document_id=14274590). For instance, the use of screens was part of the initial analysis that eventually led to the discovery of the LIBOR rate-setting scandal that is still roiling the banking industry. Experts uncovered anomalous behavior in that interest-rate benchmark as compared to movements in other publically available data points (data points that were independent of the banks' purported individualized judgment). Screens also led to the initial detection, in the summer of 2013, of foreign exchange benchmark collusion and manipulation, which resulted in excess of \$3 billion in first round settlement payments by banks in the U.S., the U.K., and Switzerland in November 2014.



- c) Screen #3: Plaintiffs' experts identified days where ISDAfix was significantly different from the market rates quoted within the polling window. In particular, they flagged days for which ISDAfix was lower than the minimum price taken from 11:00 to 11:15 a.m., or higher than the maximum price taken from 11:00 to 11:15 a.m.
- d) Screen #4: Plaintiffs' experts identified whether any potentially anomalous moves could be explained by overall market volatility. Plaintiffs' experts ranked the largest market moves for each day during the period of January 2007 – December 2013, and examined whether moves during or close to the ISDAfix polling window were ranked among the top market moves for that day.

**C. Defendants “Banged the Close” to Routinely Rig the Reference Rate**

157. Throughout the Class Period, Defendants conspired to push prices to artificial levels through a manipulative trading strategy intended to move actual prices or swap rates around the time ISDAfix rates were set.

158. To move market prices or rates, Defendant Banks executed a series of rapid-fire trades and submitted executable bids and offers shortly before the reference rate was set.<sup>82</sup> These trades and bids and offers were not reflective of the market, but were instead artificial and reflective of the Banks' desire to move ISDAfix rates to whatever level benefitted their trading books.<sup>83</sup> Defendant Banks fixed the price of the reference rate by asking ICAP how to get to a

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<sup>82</sup> Regardless of whether “banging the close” is or can be a proper trading strategy when conducted in isolation or pursuant to an arm’s-length transaction, it is illegal when done pursuant to and in order to effectuate an antitrust conspiracy.

<sup>83</sup> See, e.g., CFTC Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions against Citibank (May 25, 2016), at 3 (finding that “Citibank attempted to manipulate USD ISDAFIX by bidding, offering, and executing transactions in targeted interest rate products, including swap spreads and U.S. Treasuries at or near the critical 11 :00 a.m. fixing time, with the intent to affect ... the published USD ISDAFIX”); CFTC Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions against Barclays (May 20, 2015), at 7, fn 7 (finding that “[o]n two occasions, there is evidence that Barclays swaps traders also attempted to manipulate on-exchange Eurodollar futures at

particular price, knowing that ICAP would share price information from the other panel banks that would allow the requesting bank to arrange its trades in such a way as to successfully move the reference rate with the knowledge the efforts would not be undermined by opposing movements by the other banks.

159. As seen in government findings in the FX, LIBOR, and other scandals similar to this one, Defendants' traders used telephone calls, emails, and instant message or chat room conversations to coordinate their activities. And they also were able to coordinate through go-betweens, like ICAP here. This included, as summarized in Section I.D, sharing information about the banks' respective exposures and pricing goals; entry into inter-Defendant deals to prevent the banks from tripping over each other; and coordination as to the timing of transactions to ensure they would (if the transaction was in the "right" direction vis-à-vis the current market) or would not (if it was in the "wrong" direction vis-à-vis the current market) impact the market just before the reference rate was set.<sup>84</sup>

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11:00 a.m. to advantage the Bank in connection with early-terminating swaps."); CFTC *Order Instituting Proceedings Pursuant to Section 6(c) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions* against Goldman Sachs (Dec. 21, 2016) at 2-3, and 9 (finding that a "method [of manipulation employed by Goldman] was to bid, offer, and trade the instruments that could influence Swap Broker's reference rates ... at and around Swaps Broker's 11 :00 a.m. print, in a manner designed to push USD ISDAFIX rates in a favorable direction.").

<sup>84</sup> Notably, these communications would need not have included every Defendant Bank on every day. Each conspirator knew its daily role, at a minimum, was to rubberstamp the reference rate, as discussed in Section II above. Thus, only the subset of Defendant Banks that had a particular interest in moving the rate on a given day had to carry out the anomalous trading that day. But, by subsequently rubberstamping the resulting artificial reference rate, *all* Defendants participated in the conspiracy on a *daily* basis.

160. According to anonymous witnesses interviewed by Bloomberg, “swaption traders at banks worked with rate-swap traders at their own firms to manipulate ISDAfix.”<sup>85</sup> Pursuant to their agreements with traders at other Defendant Banks, these “swaption traders told their rate-swap colleagues the level at which they needed ISDAfix to be set that day in order to bolster the value of their derivatives positions before these were settled the next day.” Those “rate-swap trader[s] would then tell a broker at ICAP . . . to execute as many trades in interest-rate swaps as necessary to move ISDAfix to the desired level.” Correspondence produced by the Defendant Banks to the CFTC “show[s] that traders at Wall Street banks instructed ICAP plc brokers to buy or sell as many interest-rate swaps as necessary to move the benchmark . . .” According to a source interviewed by Bloomberg, the Defendant Banks “sought to change the value of the swaps because the ISDAfix rate sets” swaptions prices.

161. Pursuant to these agreements between the Defendant Banks’ rate-swap traders and ICAP, the Defendants would execute an inordinately high volume of transactions during or just before the first two minutes of the ICAP polling window. According to one witness interviewed by Bloomberg, “[t]his would be done just before 11 a.m. in New York.”<sup>86</sup> The ICAP brokers had a strong incentive to participate in this conspiracy, as they would receive commissions on derivatives executed to move the ISDAfix rate and generate more overall transaction flow from the Defendant Banks. Consequently, ICAP brokers gladly assisted Defendant Banks in executing an exceedingly high volume of trades just before the reference rate was set.

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<sup>85</sup> Matthew Leising, *Swaps Probe Finds Banks Rigged Rate at Expense of Retirees* Bloomberg (Aug. 2, 2013), <http://www.bloomberg.com/news/2013-08-02/swaps-probe-finds-banks-manipulated-rate-at-expense-of-retirees.html>.

<sup>86</sup> *Id.*

162. ICAP brokers profited off each and every one of these trades; the higher the volume, the better. The approximately 20 interest rate swap brokers at ICAP would receive commissions based on every interest rate swap they facilitated. This group of brokers made \$100 million to \$120 million annually for ICAP in 2008 and 2009, according to individuals interviewed by Bloomberg. ICAP paid its brokers on average 61% of the revenue they generated in the six months ending in September 2012, according to an ICAP presentation dated November 14, 2012. ICAP paid brokers who used its electronic trading systems about 10-15% of revenue they generated.<sup>87</sup> The top three to five brokers were each paid \$5 million to \$7 million annually. The amount of profit flowing through ICAP, in part because of the Defendant Banks' manipulative trading, earned ICAP's New Jersey office the name "Treasure Island."

163. Defendant Banks were willing to pay large execution fees to ICAP because they stood to gain millions of dollars on interest rate derivatives by moving the USD ISDAfix rates. This is true even if the USD ISDAfix rates moved only as little as a basis point, because interest rate derivatives involve huge notional amounts. For example, for a \$100 million 10-year swap transaction, each change of one basis point amounts to a gain of about \$93,000.<sup>88</sup> On swaptions, Defendant Banks stood to gain even more because by "manipulating ISDAfix by as little as a quarter of a basis point, or 0.0025 percentage point," they "stood to earn millions."<sup>89</sup>

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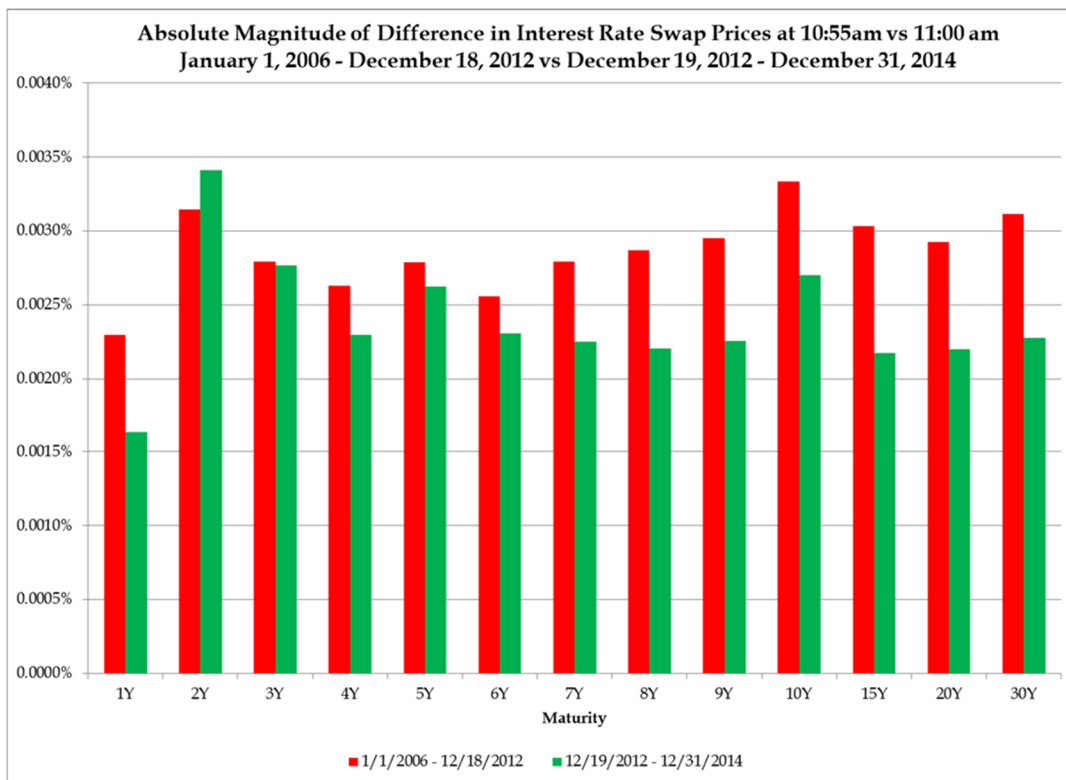
<sup>87</sup> Matthew Leising, *ICAP Brokers on 'Treasure Island' Said to Reap ISDAfix Rewards* Bloomberg (Apr. 10, 2013), <http://www.bloomberg.com/news/articles/2013-04-10/icap-brokers-on-treasure-island-said-to-reap-isdafix-rewards>; *see also* ICAP, *Half Year Results Six months to 30 September 2012*, ICAP.com, 8 (Nov. 14, 2012), [http://www.icap.com/investor-relations/reports-and-presentations/~/\\_media/Files/I/Icap-Corp/reports-and-presentations/year-2012-13/hy-presentation-30-sept-2012.pdf](http://www.icap.com/investor-relations/reports-and-presentations/~/_media/Files/I/Icap-Corp/reports-and-presentations/year-2012-13/hy-presentation-30-sept-2012.pdf).

<sup>88</sup> Mackenzie, *et al.*, *supra* note 7.

<sup>89</sup> Leising, *supra* note 49.

164. Plaintiffs' experts analyzed whether swap prices leading up to the polling window were being manipulated, in an effort to "bang the close" and affect market rates at 11:00 a.m. when ICAP puts forward the reference rates for ISDAfix. Specifically, they calculated the difference between the price at 10:55 a.m. and the price at 11:00 a.m., took the absolute value of this difference for each day, and then averaged these differences within two periods: from January 2006 through December 18, 2012, and from December 19, 2012 through December 2014. If up to December 18, 2012 prices were being manipulated either downwards or upwards in the last five minutes leading up to 11:00 a.m., but such manipulative conduct started to dissipate afterwards, then these absolute differences in prices at 10:55 a.m. versus 11:00 a.m. would have been larger up to December 18, 2012 than afterwards.

165. And this is in fact what the data shows. The figure below shows that for 12 out of the 13 tenors (the exception being 2Y), the differences between the 10:55 a.m. and the 11:00 a.m. prices are clearly reduced from before to after December 18, 2012 (*i.e.*, the red bars are taller than the green bars). This is consistent with a significant banging the close practice in either direction from 10:55 a.m. to 11:00 a.m. that was significantly reduced since December 19, 2012.



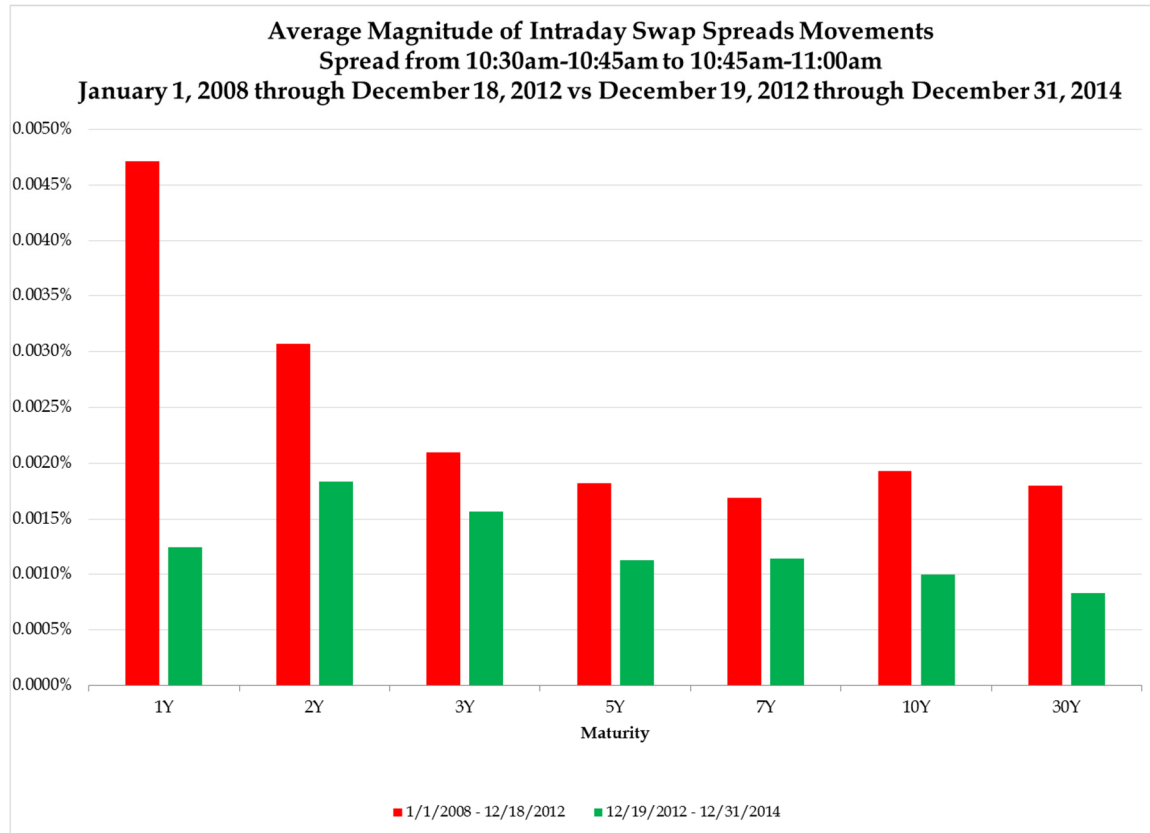
166. This practice of banging the close is further reinforced when comparing the difference between swaps rates and Treasury yields at the minute level. The difference between the ISDAfix rate for a given maturity and the treasury yield for the same maturity is known as the swap spread. Both represent fixed rate commitments, though reflecting differing credit and liquidity risks between the private and the public sectors. Despite some differences between the two rates, these tend to track each other on an intraday basis, meaning, market quotes for swap rates tend to move along with market quotes for treasury yields. Therefore, comparing swap rates to treasuries is a reasonable method to control for key market factors that affect both rates, and in this way evaluate whether movements in swap rates are reflective of changes in market forces.

167. Plaintiffs' experts compared how the intraday swap spread (defined as the swap rate minus the treasury yield rate at the same moment in time for a given tenor), changed on

average in terms of magnitude from the fifteen-minute interval 10:30 a.m. – 10:45 a.m. to the immediately following fifteen-minute interval 10:45 a.m. – 11:00 a.m., before and after December 18, 2012.

168. Large movements in swap spreads from one block of time to another around the fixing period could be a signal of artificiality as swap rates move distinctly from Treasury yields, and that is what Plaintiffs' experts found.

169. As shown in the graph below, the swap spread changed significantly prior to December 18, 2012 from the fifteen minutes covered by 10:30 a.m. – 10:45 a.m., to the fifteen minutes leading up to the polling window, *i.e.*, 10:45 a.m. – 11:00 a.m. (as illustrated by the red bars). But these changes in intraday swap spreads between these two sequential fifteen minute windows of time were very significantly reduced from the end of 2012 onwards (that is, the green bars are much lower than red). This is consistent with artificiality of intraday swap rates leading up to the polling window prior to December 2012 but not afterwards.



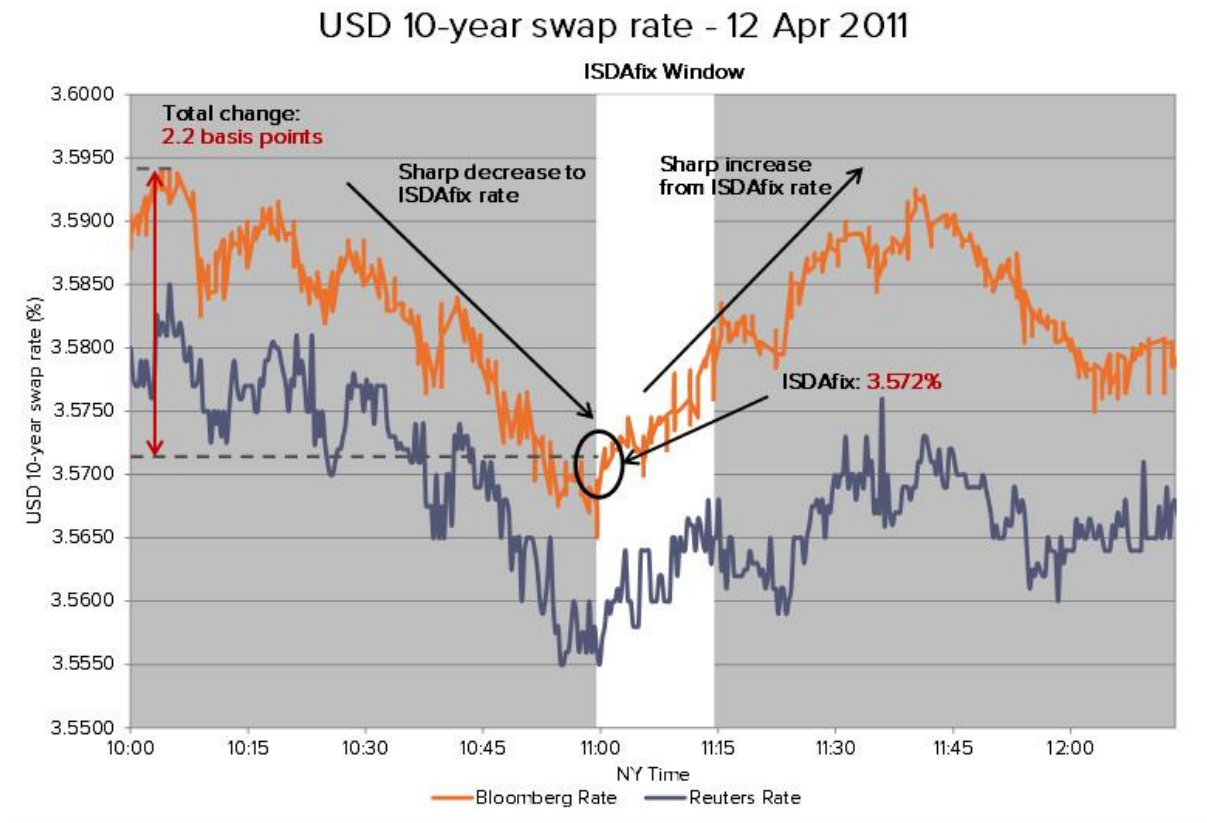
170. The analyses below illustrate some of these patterns for specific days.

171. The following chart, which tracks rates leading up to the polling window on April 12, 2011, illustrates Defendant Banks' banging the close strategy for a specific day. There is a sharp decrease in prices leading up to the 11:00 a.m. setting of the reference rate, after which the downward trend mysteriously ceases.<sup>90</sup> This is consistent with pushing through a large volume

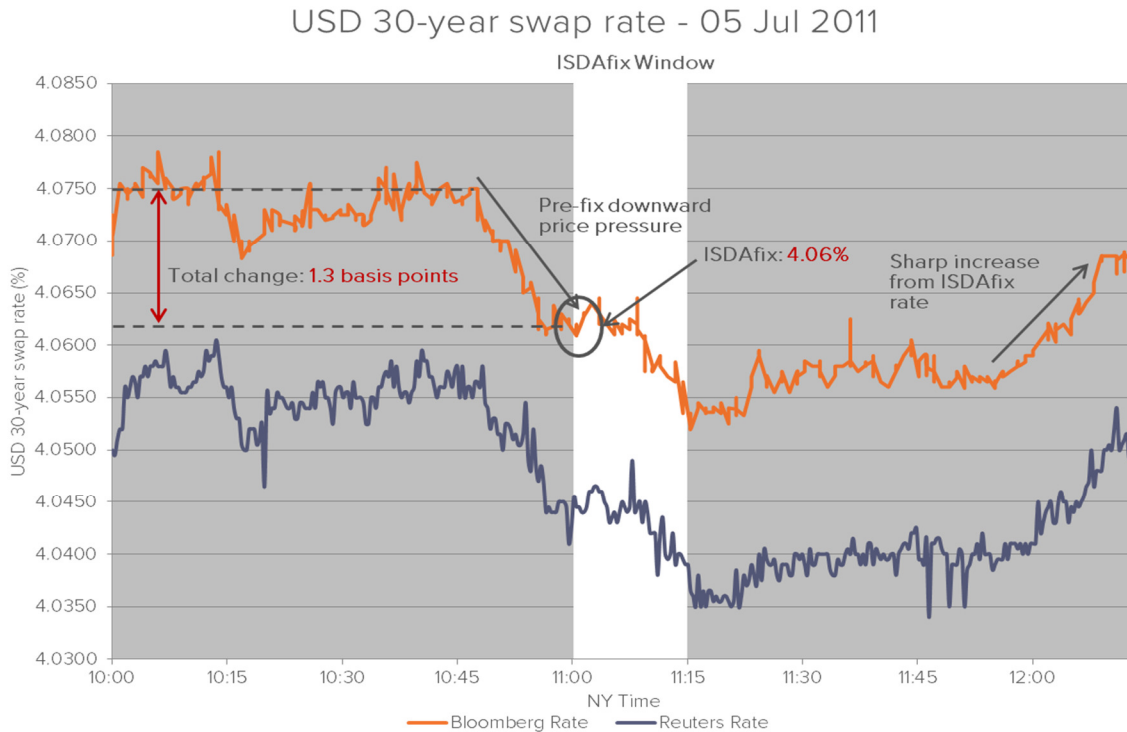
<sup>90</sup> The two lines represent historical intra-day swap prices quoted using two different sets of conventions of quoting swap rates. The orange line represents a swap rate quoted on a "semi-annual, 30/360" basis and is available through Bloomberg. The blue line represents a swap rate quoted on an "annual, act/360" basis and is available through Reuters. ISDAfix is quoted on the same basis as the orange Bloomberg rate, and the ISDAfix reference point and contributor quotes are linked to that rate. The two rates are very similar, and their trends will track each other with only a small, consistent gap in basis points. Plaintiffs present data using both where available to demonstrate the similarity between the two, but there is a greater historical availability for the Reuters rate, and in some charts only the Reuters data is available. Plaintiffs will note when the data presented is solely based off the Reuters rate.



of transactions and executable bids and offers at artificially low fixed rates before the polling process started in an effort to drive the ISDAfix rate down.

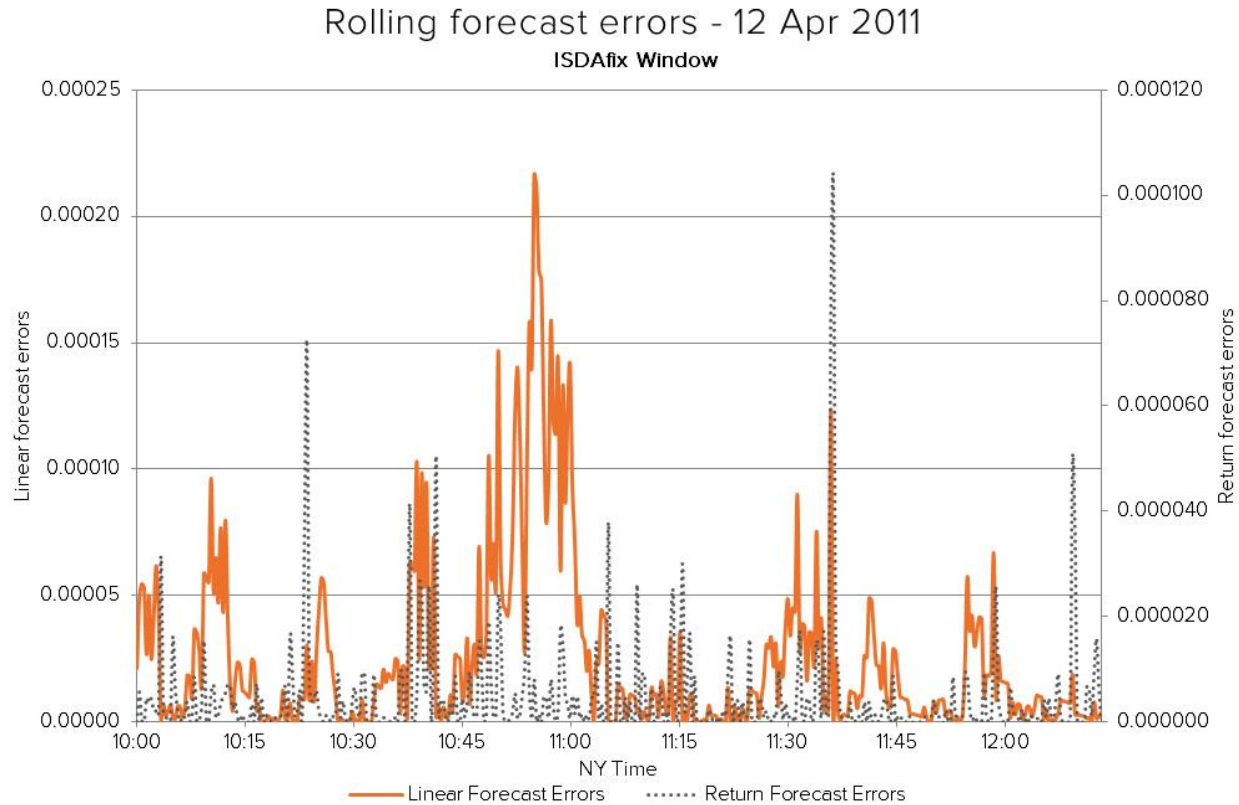


172. The following chart likewise shows a sharp drop in the 30-year swap rate just before the polling period. This is another example of Defendants’ efforts to execute a high volume of low-rate transactions and submit low-rate executable bids and offers in the minutes leading up to the polling period.



173. To see “banging the close” from another angle, Plaintiffs’ experts calculated “rolling forecast errors” associated with anomalous moves in the swap rate. This consists of a “linear forecast error,” which is the squared difference between the current swap rate and the average swap rate in the previous 30 minutes, and a “return forecast error,” which is calculated the same way using returns, as opposed to swap rates themselves. A higher linear forecast error means that the ISDAfix rate is changing at a more rapid pace.

174. Economic analysis confirms that often swap rates surrounding the polling period varied substantially from swap rates in the surrounding 30 minutes. The following chart shows how quickly rates were changing on April 12, 2011, a representative day during the Class Period. The large spike indicates that the 10-year rate was changing twice as quickly during the period leading up to the 11:00 a.m. setting of the reference rate, than it was at any other time of the morning. This again strongly suggests a calculated shift in transactional behavior.



**D. Defendants Conspired with ICAP to Delay the Publication of Price Information in Order to Manipulate the Reference Rate**

175. Defendants Banks not only manipulated prices on the swap market in order to manipulate the ISDAfix reference rate (and thus, the ISDAfix rates derived there from); they also manipulated the ISDAfix reference rate by conspiring with ICAP to delay entry of certain swap transactions on Screen 19901 until the polling period was over. This was done to keep any undesirable transactions from being part of the data from which the reference rate would be calculated – *i.e.*, those which, when incorporated into the reference rate, would move that rate away from the level at which Defendants intended to set ISDAfix.

176. During the Class Period, banks often went through ICAP if they wished to engage in a USD interest rate swap with another dealer. ICAP brokers manually entered rates onto a screen and were in full control of when rates were published. Typically, when ICAP brokered an

interest rate swap, it reported the swap rate for that transaction on Screen 19901 on a real-time basis.

177. The Defendant Banks conspired with ICAP to delay the publication of rates during the Class Period for certain interest rate derivative transactions that would move the swap rate in the opposite direction of how they were planning to manipulate ISDAfix.

178. Specifically, when one or more of the Defendant Banks wished to push an ISDAfix rate up or down, they would instruct ICAP brokers to delay publication of unfavorable transactions. By conspiring to delay publication until after 11:00 a.m., Defendants were able to ensure that unfavorable transactions did not impact the ISDAfix reference point. According to a former ICAP broker who witnessed the practice first hand, because “ICAP enters the prices manually onto the screen,” that “allow[ed] dealers to tell the brokers to delay putting trades into the system instead of in real time.”<sup>91</sup> The result was not only a distortion of the market for interest-rate swaps (as pricing information was being collusively withheld) but also, by way of the reference rate, manipulation of the ISDAfix rate.

179. Input of swap rates would not have been delayed unless ICAP decided to delay publication or ICAP was instructed to delay entry.

180. This practice was lucrative for Defendants because “[p]ublishing stale prices can potentially boost profits for banks in a market where trades are tied to tens of millions of dollars at a time.”<sup>92</sup> According to Bloomberg, “[i]f such a delay prevents the cost of the swap from

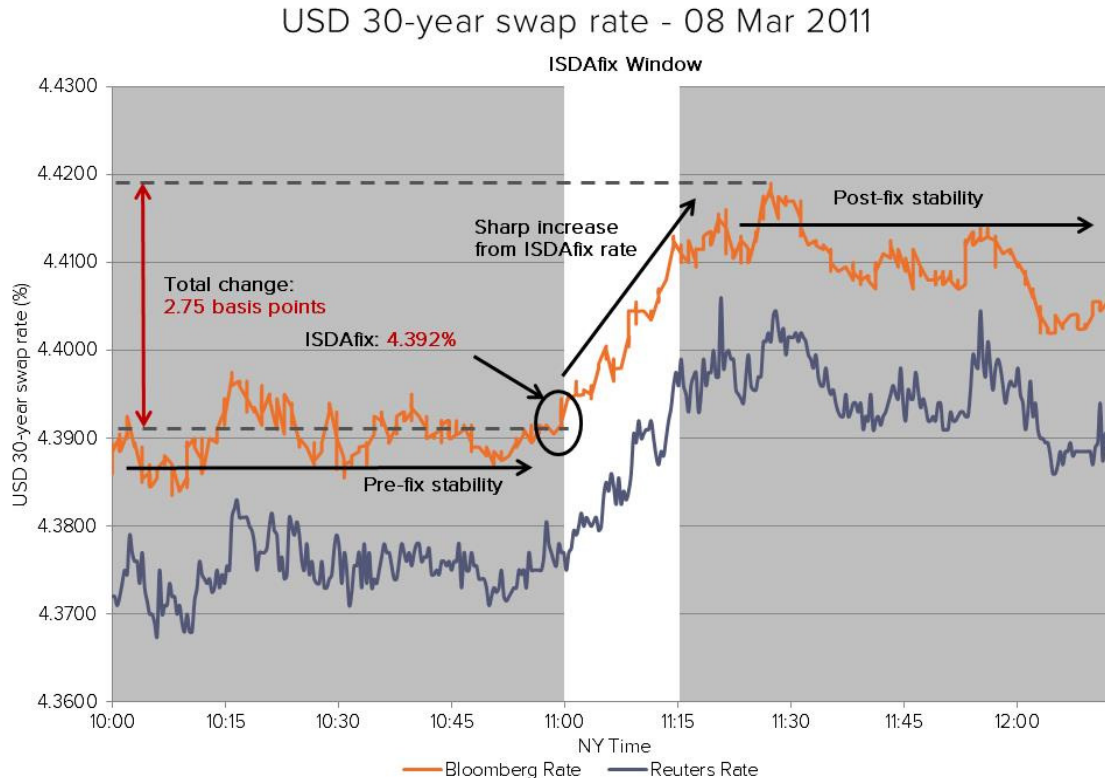
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<sup>91</sup> Leising, *supra* note 49.

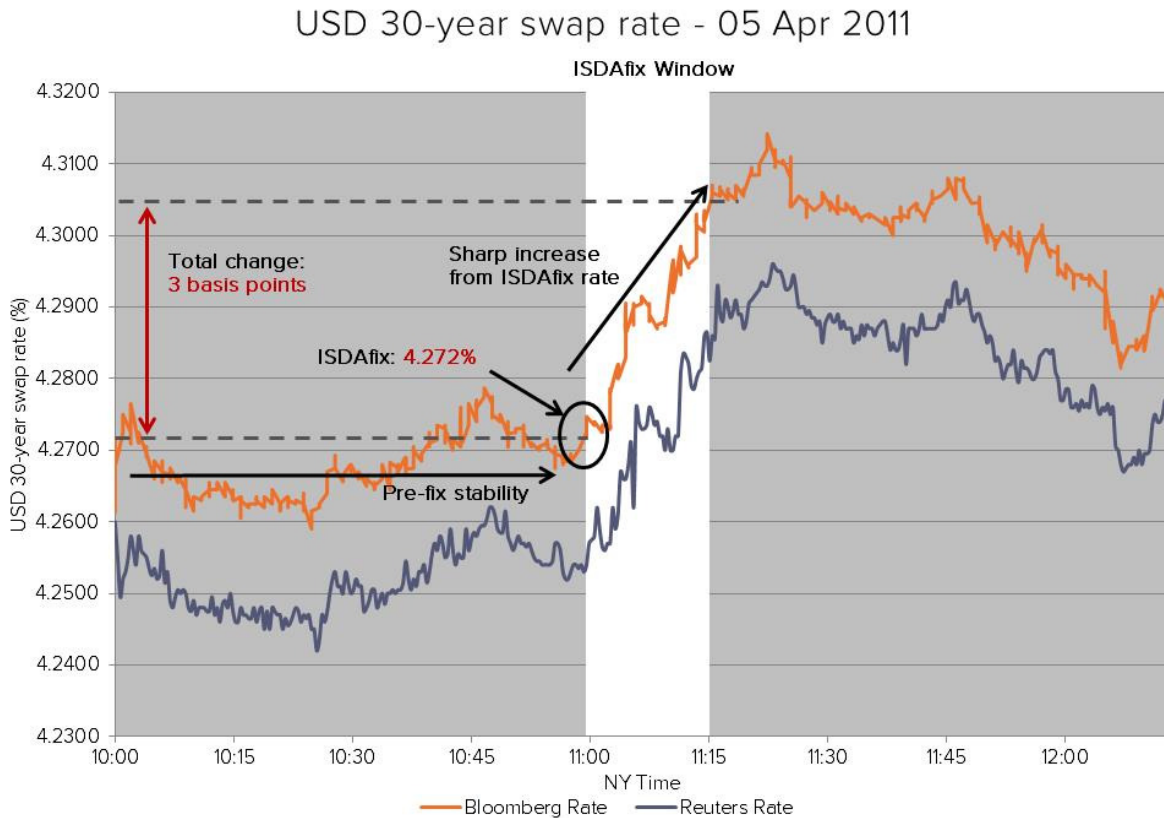
<sup>92</sup> Liam Vaughan, *Banks Drop Off IsdaFix Panel Amid Rate-Rigging Probes*, Bloomberg (Apr. 15, 2013), <http://www.bloomberg.com/news/2013-04-14/banks-drop-off-isdafix-panel-amid-rate-rigging-probes.html>.

moving one basis point, or 0.01 percentage point, that equals about \$1 million of profit for the dealer on a \$500 million swap that matures in 20 years.”<sup>93</sup>

181. Transaction patterns strongly indicate that ICAP delayed the input of unfavorable transactions. On numerous days, the swap rate remained stable until just after 11:00 a.m. EST, after which it shot up or plunged. Just as with “banging the close,” the fact that the pivot point for these changes in behavior is at 11:00 a.m. is fully consistent with manipulating swap prices in order to manipulate ISDAfix. The following charts detailing swap rates on March 8, 2011 and April 5, 2011 demonstrate this phenomenon:



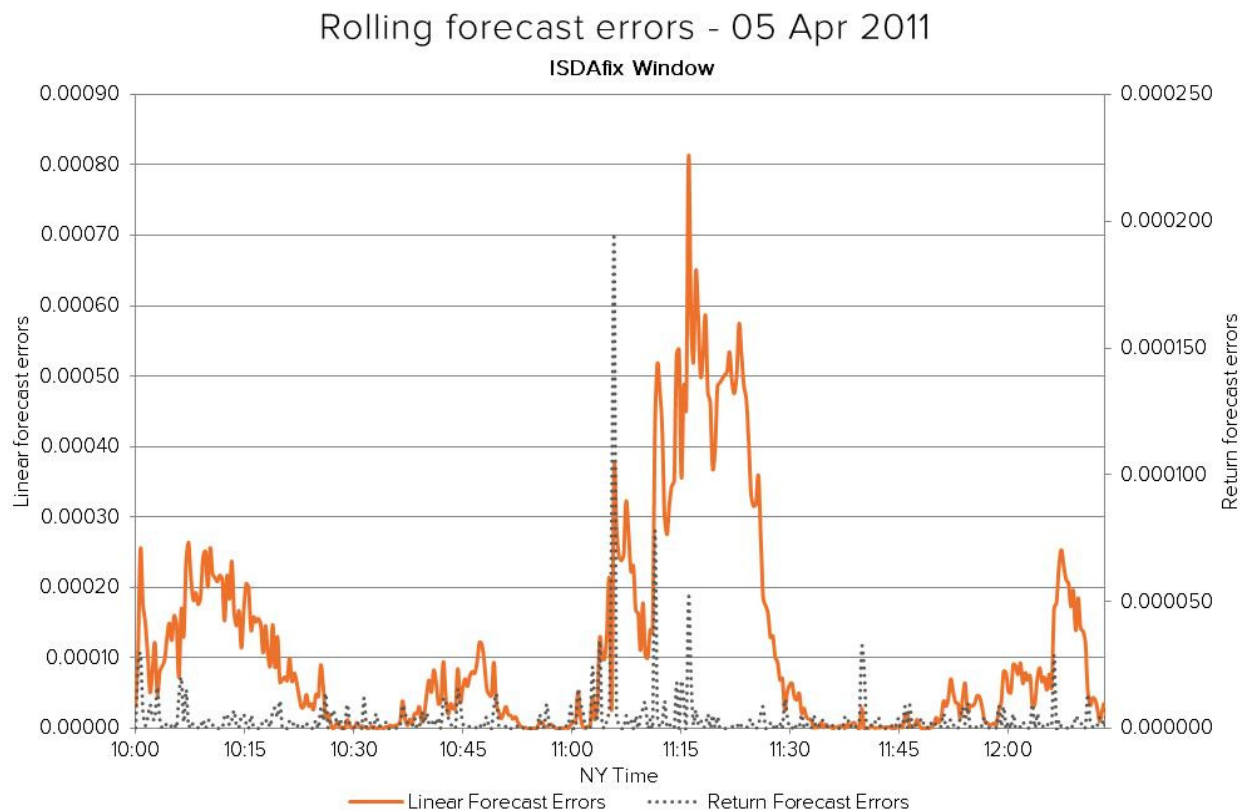
<sup>93</sup> Matthew Leising, *ISDAfix Probe Unveils Benchmark Affecting Bonds to Annuities* Bloomberg (Apr. 15, 2013), <http://www.bloomberg.com/news/2013-04-14/isdafix-probe-unveils-obscure-rate-affecting-bonds-to-annuities.html>.



182. In each of the above charts, the orange and blue lines represent the average swap rate at a given point in time as calculated by Bloomberg and Reuters, respectively. In both charts, the average swap rate remains relatively stable until just after 11:00 a.m., when ICAP releases the ISDAfix “reference point.” Immediately after the “reference point” is released (and thus there is little need to withhold reports of execution of transactions), the rate changes rapidly. This is precisely what one would expect to see if ICAP were manipulating the process by delaying input of certain data at the behest of the Defendant Banks. The net result is an artificially low rate for swaps and eventually an artificially low ISDAfix rate.

183. To again see this rapid change a different way, Plaintiffs’ experts performed an analysis of rolling forecast errors. Again, a high rolling forecast error means that there are substantial shifts in the swap rates at a given point in time. Plaintiffs’ experts calculated and

charted the squared difference between the swap rate/return rate at a given minute, and the swap rate/return rate in the preceding 30 minutes. This analysis revealed strong evidence of delayed input on the part of ICAP brokers.



184. In the above chart, one sees sharp movements in swap rates beginning just after 11:00 a.m., even though there is stability in the hour before and the hour after. The rolling forecast error is approximately three times higher during the period immediately after the reference point is set than it is at any other time. This suggests that swap rates accurately reflecting the market were not input until just after 11:00 a.m. When they were eventually input, swap rates began to drastically change, eventually stabilizing at a level substantially different than the ISDAfix rate for that day.

185. This practice was widespread until December 19, 2012, when UBS announced its settlement of an investigation into its role in LIBOR manipulation. In the UBS settlement, there

was, for the first time, a reference to inter-dealer brokers, like ICAP, being implicated in the LIBOR rate-fixing scandal. The U.K. FSA found that “UBS, through four of its Traders, *colluded with interdealer brokers* to attempt to influence JPY LIBOR submissions” made by Panel Banks.<sup>94</sup> The collusion was extensive; the FSA found UBS made “more than 1000 documented requests to 11 Brokers at six Broker Firms.”<sup>95</sup> Media reports disclosed that inter-dealer brokers worked with banks to publish false information on trading screens to facilitate a series of sham transactions for which the brokers received commissions, and to illicitly influence the rate submissions of other banks, all in an effort to manipulate the LIBOR rate.

**E. The Anomalies Suspiciously Started to Dissipate Around December 2012**

**1. The same tests used by the experts above show signs of a waning conspiracy by mid to late 2013**

186. As discussed above, Plaintiffs’ experts found evidence of thousands of instances of artificially cramming through a large volume of transactions around the fixing window during the Class Period across multiple tenors. Just as importantly, they also found that this evidence of manipulation began to dissipate in December 2012 – when reports of investigations began, and when (as discussed in Section II) Defendants began to stop rubberstamping the reference rate. This provides further evidence that the anomalies observed by Plaintiffs’ experts cannot be innocently explained by natural market phenomenon, such as independent market actors independently seeking to hedge themselves against ISDAfix’s eventual rate.

187. In addition to the charts set forth above, the graphs below exemplify how Defendants’ market manipulations abated after December 2012. These graphs represent the

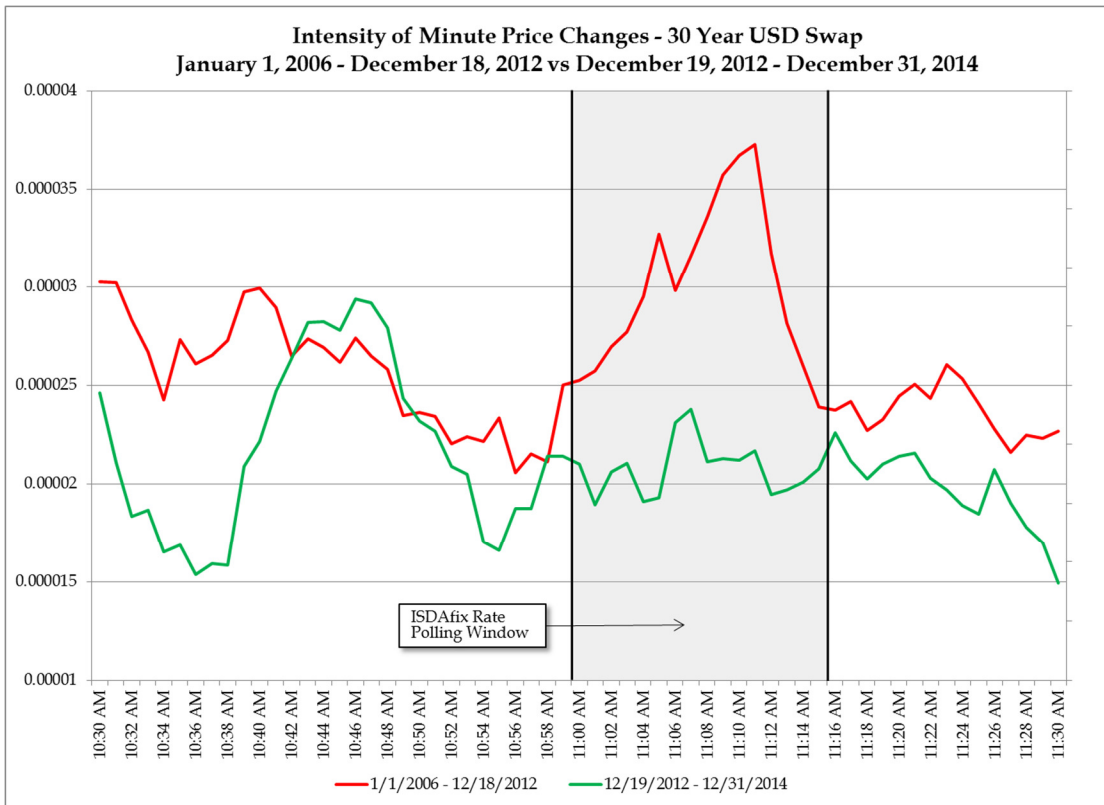
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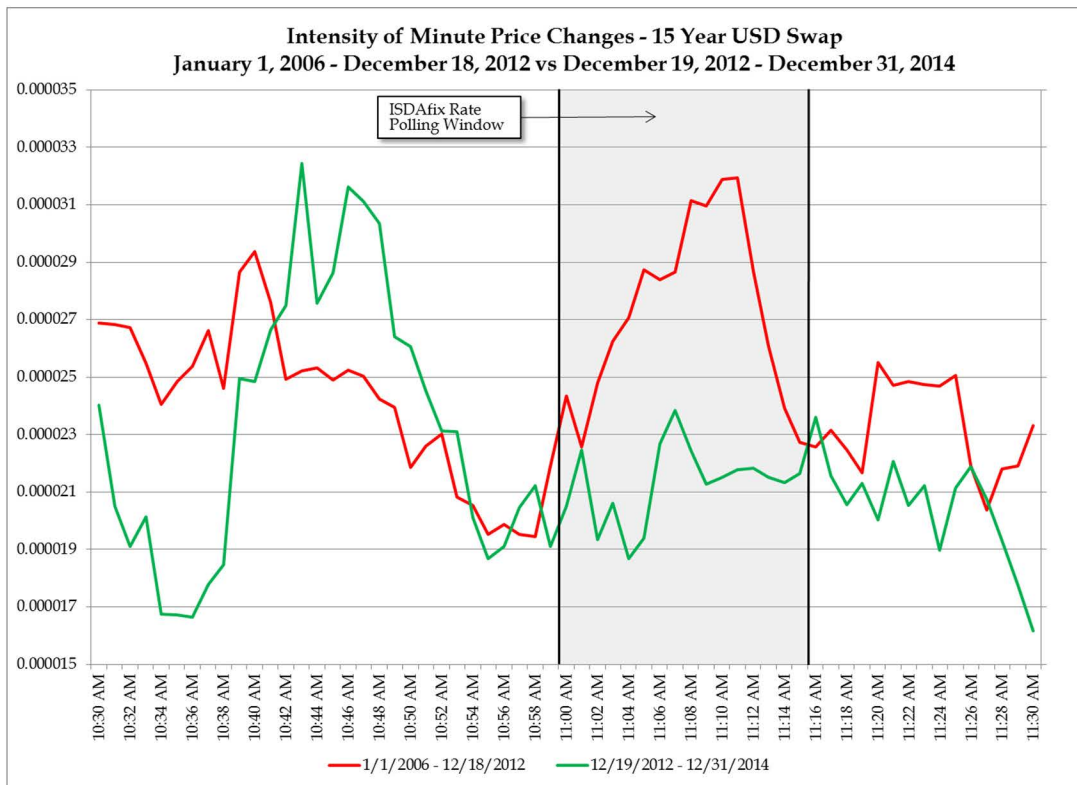
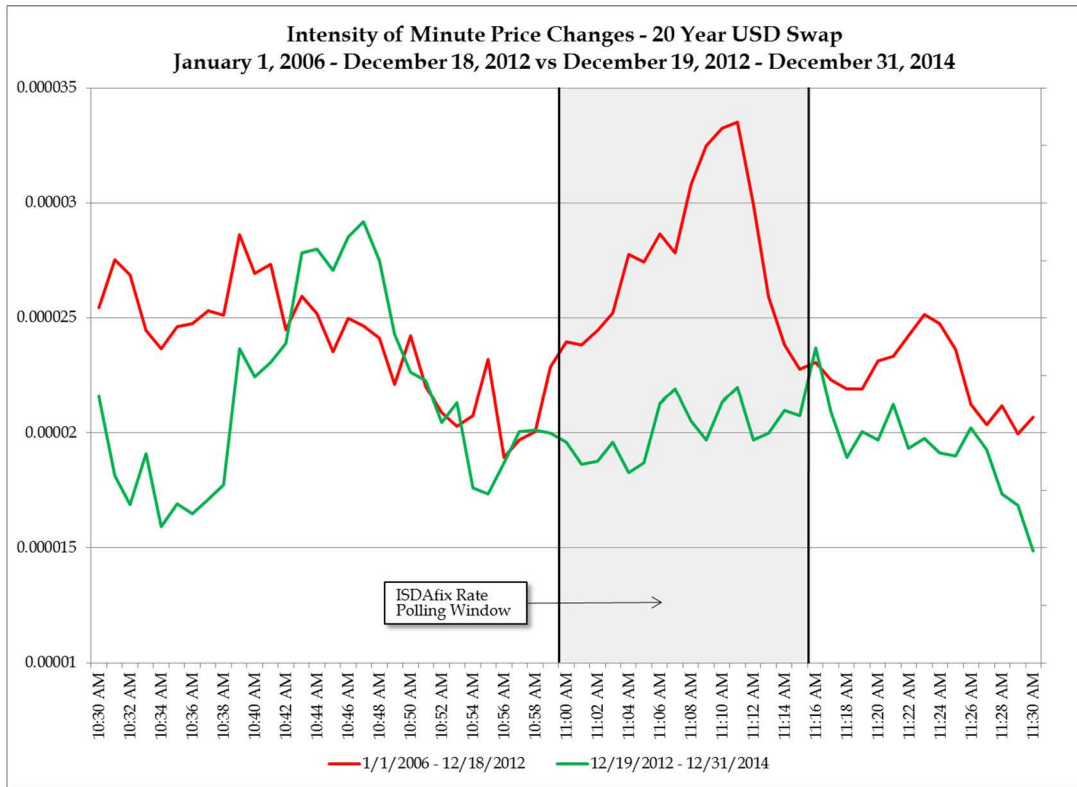
<sup>94</sup> FSA, *Final Notice to UBS AG* at 3 (Dec. 19, 2012), <http://www.fsa.gov.uk/static/pubs/final/ubs.pdf> (emphasis added).

<sup>95</sup> *Id.*



intensity of price changes for each minute from 10:30 to 11:30 a.m. for two time periods: before and after December 19, 2012. They illustrate how different prices on any given minute are from prices 10 minutes prior. Before December 19, 2012, prices are the most different at 11:10 a.m. compared to 11:00 a.m. – *i.e.*, prior to the minute when the reference rate had already been chosen by ICAP and thus Defendants could cease banging the close and/or having reports of transactions delayed. The market was volatile because the market was reacting to the cessation of the artificial movements caused by Defendants’ scheme. But after December 19, 2012, the volatility of the market is much more smooth after the reference rate was chosen – indicating that prices were not as artificial around the polling window, as they had been before Defendants came under regulatory scrutiny.





188. Plaintiffs' experts also calculated the intensity of price movements around the polling window by comparing the price at each minute of the day against prices prior to the fixing, after the fixing, and both prior to and after simultaneously. Prices were calculated by comparing the swap price at 11:00 a.m., for example, with the price 10 minutes before (a lagging comparison), 10 minutes later (a leading comparison), or the average of the two (a centered comparison). These measures were computed for every minute of every day, and averaged across each of the two time periods: before and after December 19, 2012.

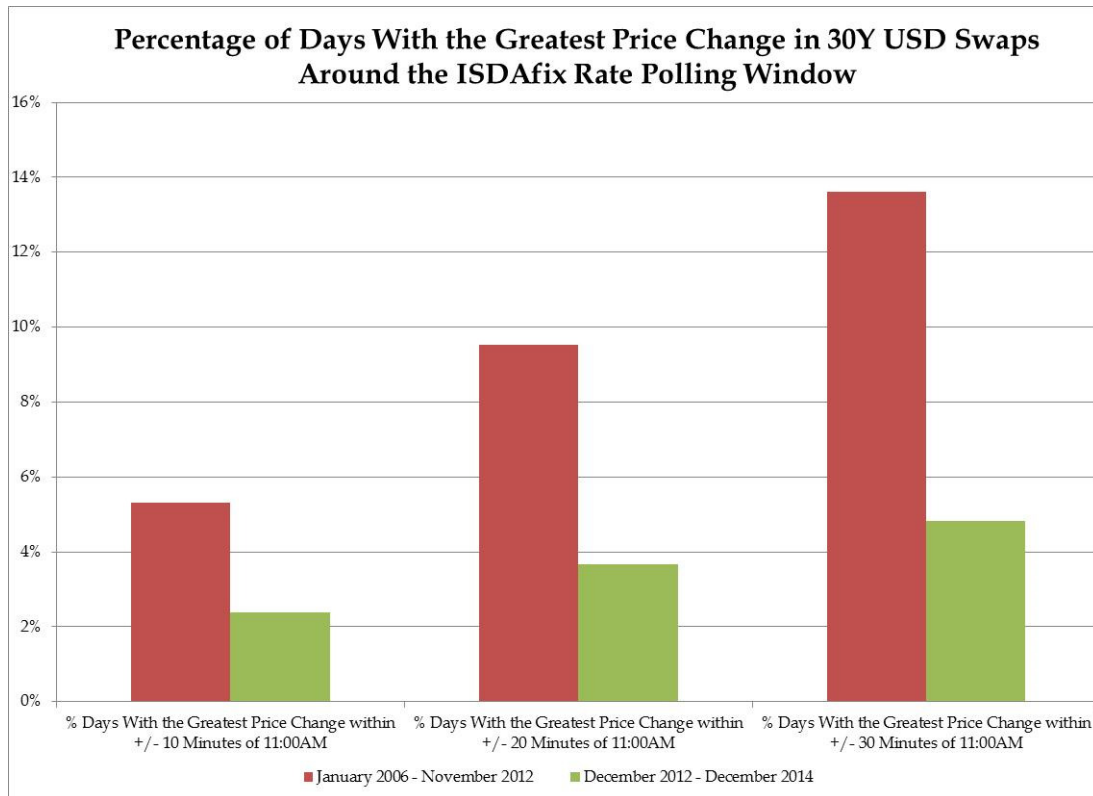
189. The "worst minute" of the day is defined as the minute for which the difference between the minute's price and a "nearby price" is the largest such difference of the day. The "nearby price" is the price either 10 minutes prior (lag comparison), 10 minutes after (lead comparison), or average of the two (center comparison). A high incidence of "worst minutes" at a certain time of day in a given period is consistent with price artificiality.

190. If price movements were randomly distributed across the 900 minutes of the day considered,<sup>96</sup> then (ignoring the possibility of ties) every minute of the day would be equally likely to be the "worst" minute of the day with a probability of 1/900 or 0.11%. For a block of 21 minutes not to contain the "worst" minute of the day, it would have to be the case that none of the 21 minutes was the worst. Assuming independence of events, the probability of not having the worst minute in a set of 21 minutes is  $(1-1/900)^{21}$ , or about 97.7%, meaning that the chance of finding the worst minute in a set of 21 minutes is 2.3%.

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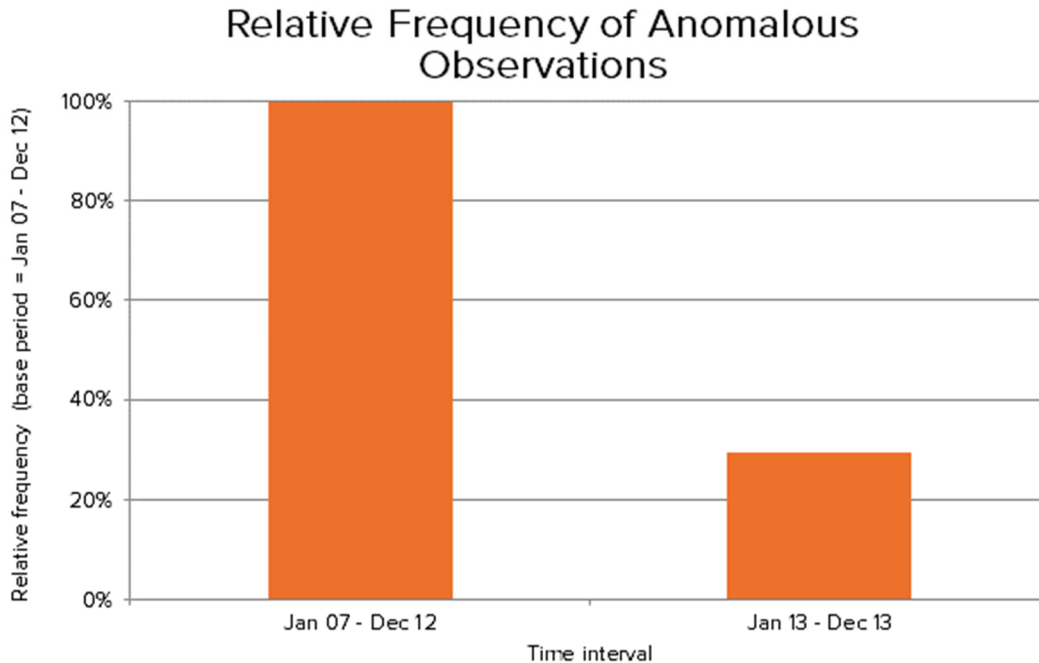
<sup>96</sup> The table below shows the incidence of worst minutes per year for all maturities. Given that data is often less robust early and late in the day, the analysis considers only prices from 7:00 a.m. through 10:00 p.m. N.Y. time on each day, representing a 15-hour period, or 900 minutes every day.

191. Instead, Plaintiffs’ experts found that the “worst minute” fell around the fixing window far more often than it “should” have – indicating the market was not operating normally during such times. But they also found that this anomaly dissipated after December 2012, as seen in the following chart.<sup>97</sup>

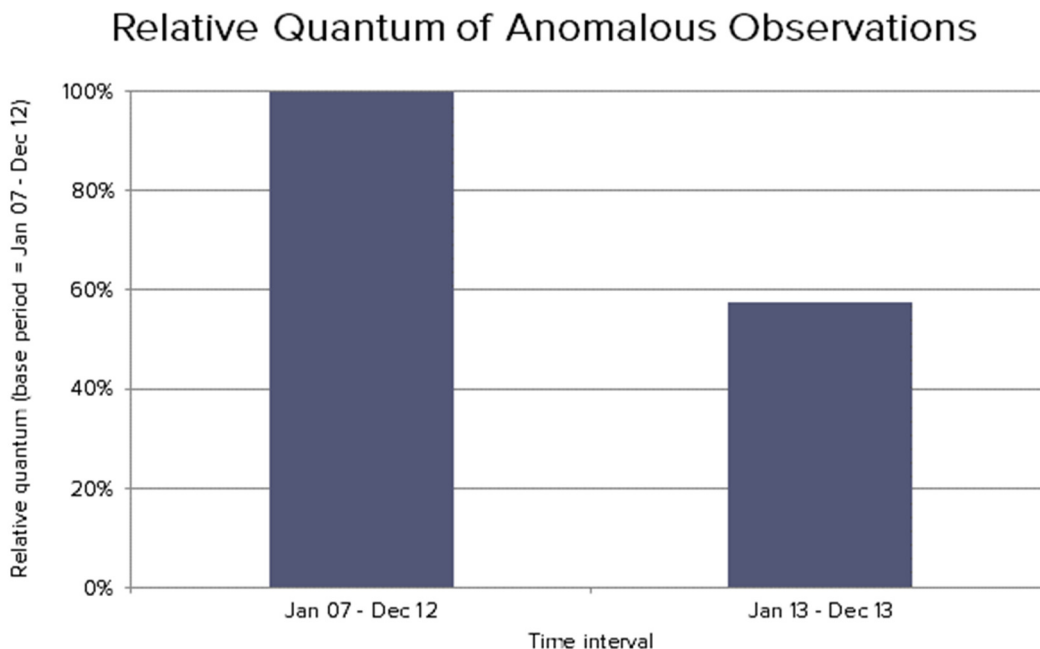


192. The following chart tracks a subset of such anomalies in the two periods, showing a relative comparison of how frequently there were anomalous movements either before or during the 11:00 a.m. fixing window. The data shows that there was roughly a **70% reduction** in anomalous movements of swap rates across 10-year and 30-year tenors around the fixing window after December 2012.

<sup>97</sup> Additional charts comparing how often the “worst minute” of the day occurred around the fixing window before and after December 2012 appear in Appendix R.



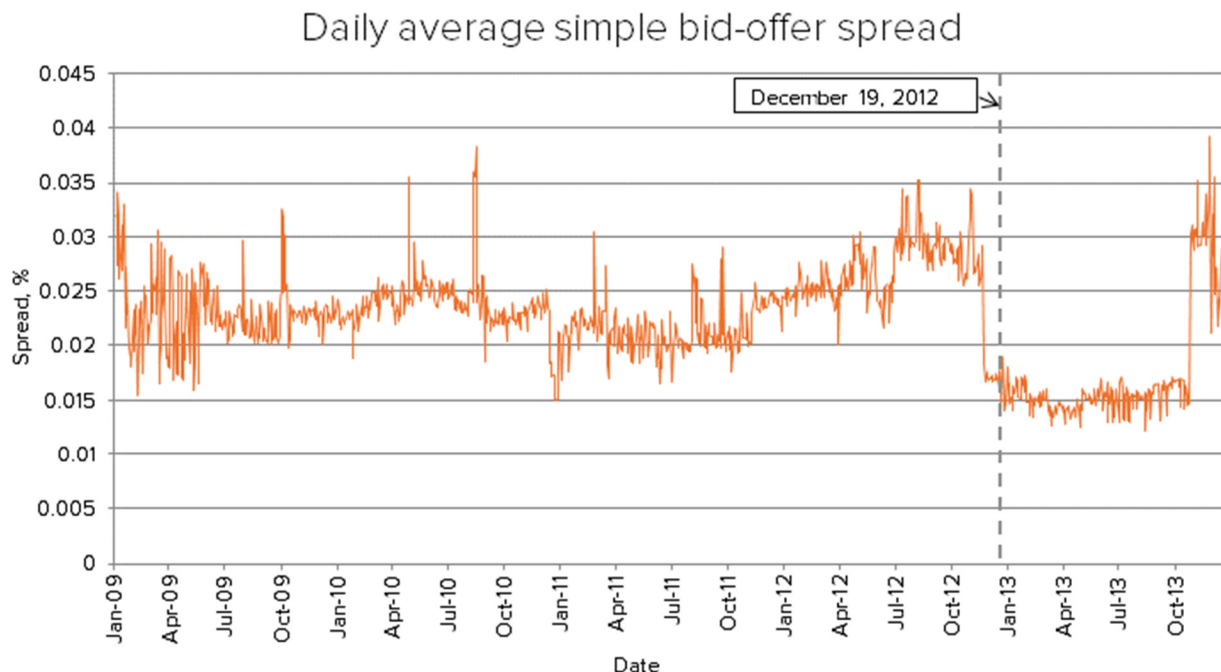
193. But it was not just the *number* of anomalies that changed pre- and post-December 2012. It was also the *size* of these anomalies. The data shows that such movements were over **40% smaller** during the period after December 2012 than the anomalous movements (again, across 10-year and 30-year swap tenors) during the period of January 2007 through December 2012. The following chart shows this visually.



194. By way of another example, as discussed above, Defendants conspired to withhold the reporting of certain transactions until just after 11:00 a.m. The sudden release of a pile of previously executed transactions would make it appear as though the Defendant Banks had distortedly large bid-offer spreads as those delayed transactions would be reported alongside later ones on different terms. Sure enough, as seen in the following chart,<sup>98</sup> the daily average spreads for 10-year USD swaps drops suddenly right around December 2012. The orange line also becomes less volatile, with fewer significant peaks and troughs.<sup>99</sup>

<sup>98</sup> The data in this chart is solely from the Reuters actual/360 swap rate data.

<sup>99</sup> The increase in spreads in October 2013 was likely caused by the combination of the federal government shutdown and the uncertainty surrounding the implementation of regulations under the Dodd-Frank Act. See Matthew Phillips, *The CFTC Is Drowning in Market Data*, Bloomberg Businessweek (Oct. 31, 2013), <http://www.businessweek.com/articles/2013-10-31/the-cftc-is-drowning-in-swaps-futures-trading-data>.

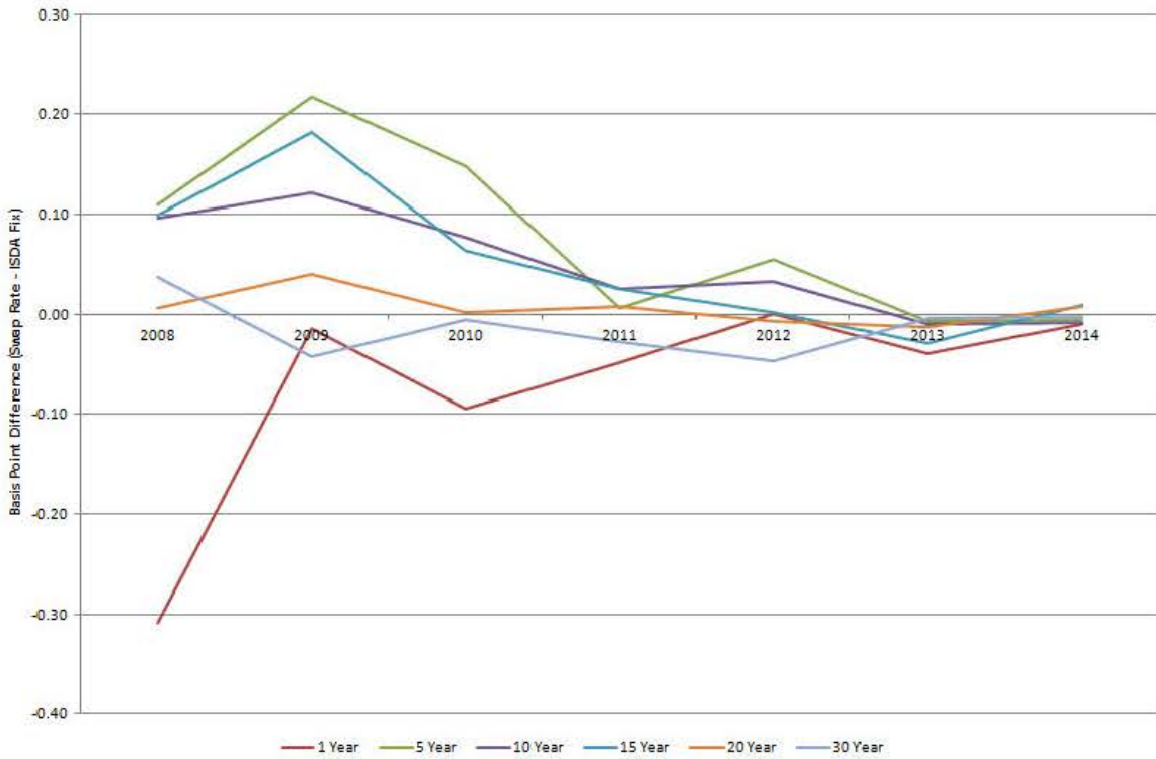


## 2. Other signs of changing behavior starting in December 2012

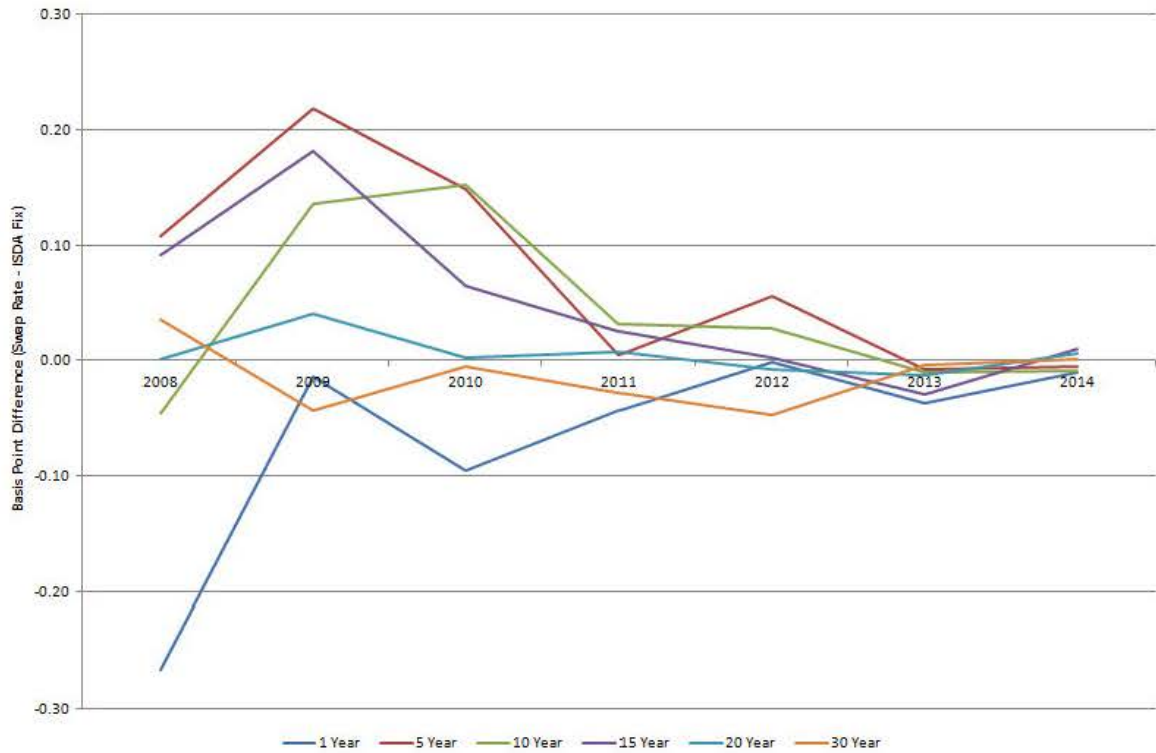
195. To confirm the artificiality of the market during the fixing window prior to December 2012, the following charts track the difference in market swap rates (as reported on Bloomberg<sup>100</sup>) shortly before 11:00 a.m., to the eventual ISDAfix rate. If ISDAfix was being honestly set at what a truly competitive market rate was, there should be little or no consistent gap between the two. The exact position of the various lines are not important for present purposes. What is important to note is that there is in fact a gap between ISDAfix and the market rate leading up to 11:00 a.m. – but one that dissipates as all the lines converge during 2013. And as discussed in Section II above, that is when the Defendant Banks began to stop rubberstamping the manipulated reference rate.

<sup>100</sup> The Bloomberg Composite Rate (CMP) is a “best market” calculation. At any given point in time, the composite bid rate is equal to the highest bid rate of all of the currently active, contributed, bank indications. The composite ask rate is equal to the lowest ask rate offered by these same active, contributed, bank indications.

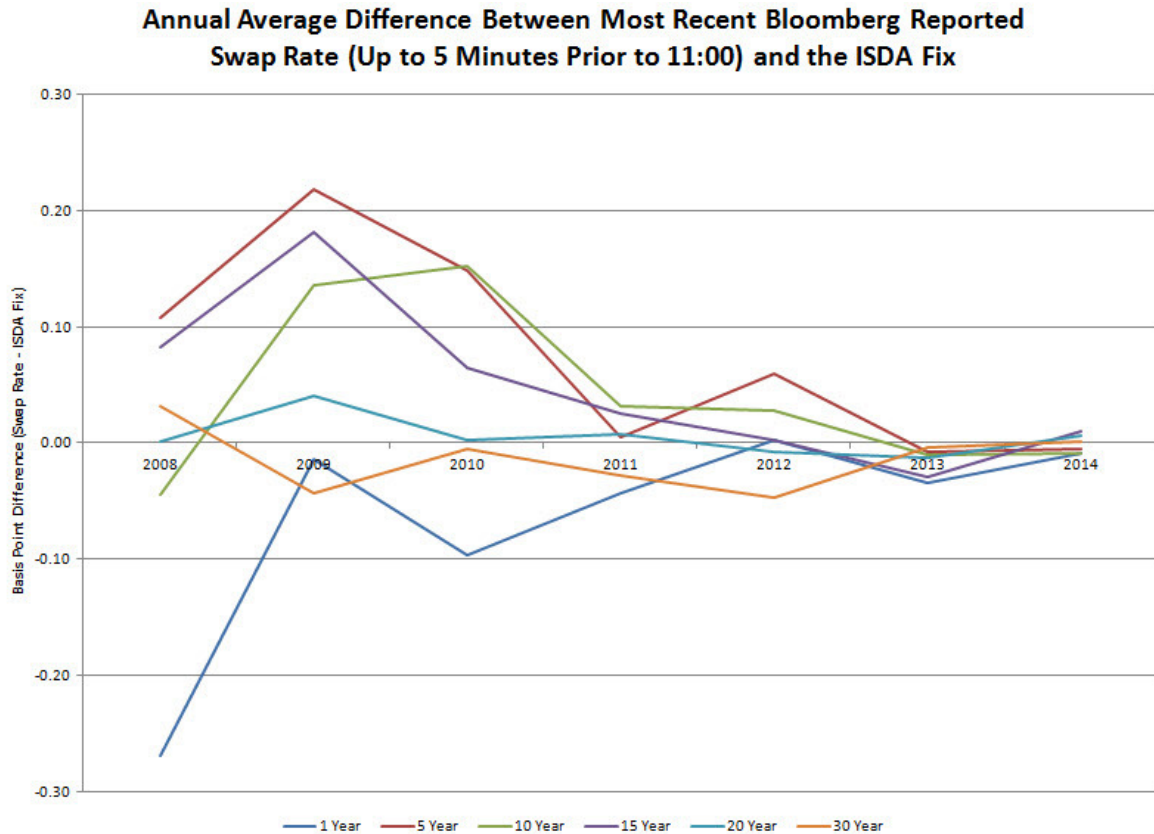
**Annual Average Difference Between Most Recent Bloomberg Reported Swap Rate (Up to 1 Minute Prior to 11:00) and the ISDA Fix**



**Annual Average Difference Between Most Recent Bloomberg Reported Swap Rate (Up to 2 Minutes Prior to 11:00) and the ISDA Fix**

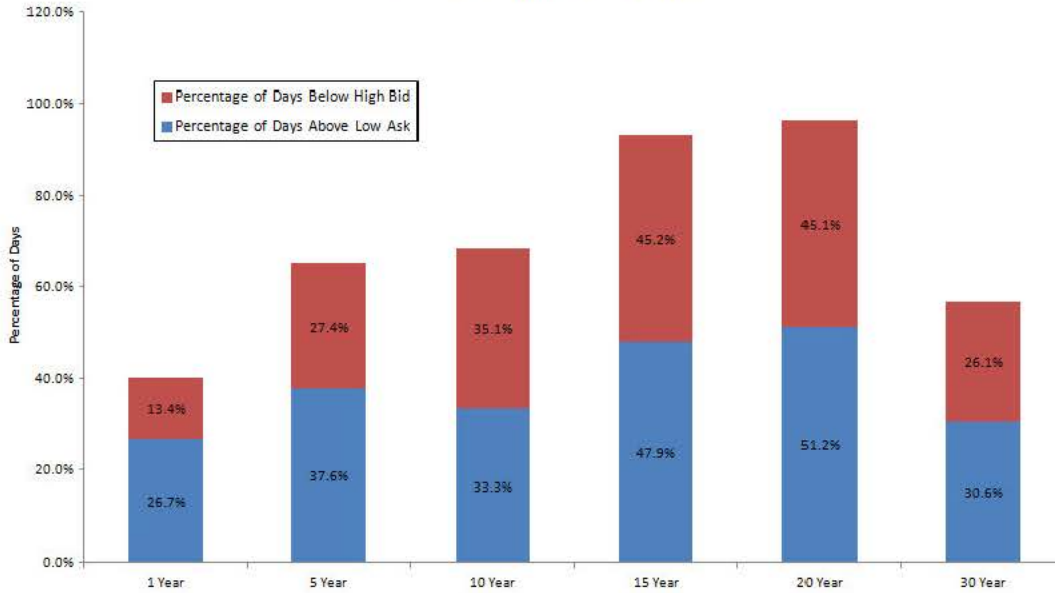






196. The following charts similarly compare the percentage of days where ISDAfix was above or below the “inside spread” for market rates as measured just before the reference rate was set. The inside spread is the lowest ask price and the highest bid price from the most recent prices prior to 11:00 a.m., shortly after which ICAP would circulate a reference rate and polling would begin. In other words, this analysis reveals how often the final ISDAfix rate was an outlier as compared to the market rates right before the polling window opened. As seen below (first using Bloomberg data, followed by data from Thomson Reuters), prior to December 2012, ISDAfix rates in fact regularly fell outside those bounds.

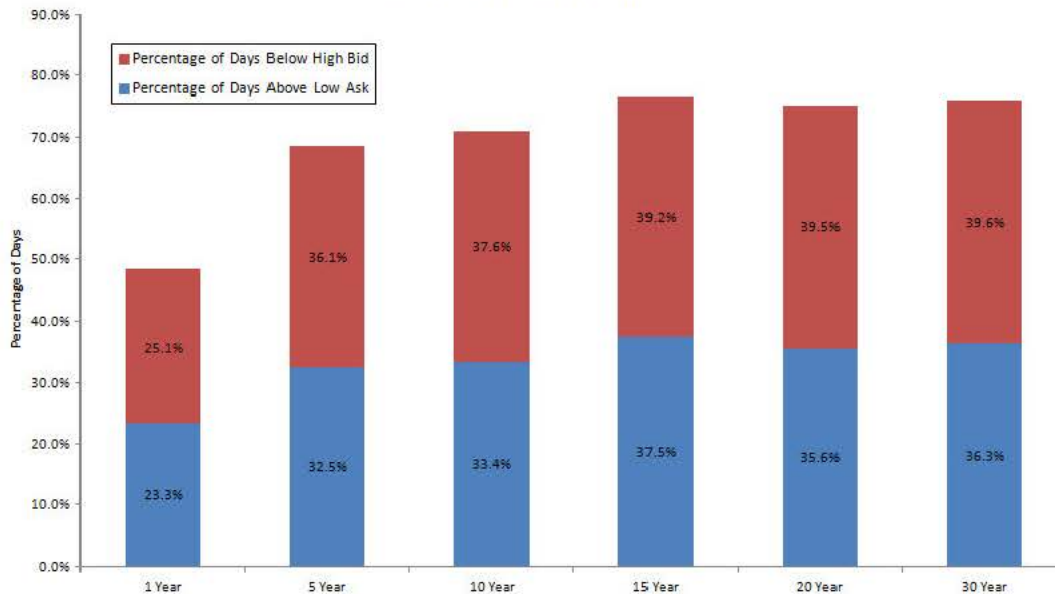
**Percentage of Days where ISDA Fix was Above or Below the Inside Spread  
in the Period up to One Minute Prior to 11:00  
2008 - December 18, 2012**



Source: Bloomberg.

Notes: The inside spread is defined as the lowest ask price and the highest bid price from the most recent quotes prior to 11:00. Days are considered above the inside spread when the ISDA fix is greater than the lowest ask and below the inside spread when it is lower than the highest bid.

**Percentage of Days where ISDA Fix was Above or Below the Inside Spread  
in the Period up to One Minute Prior to 11:00  
2008 - December 18, 2012**



Source: Thomson Reuters.

Notes: The inside spread is defined as the lowest ask price and the highest bid price from the most recent quotes prior to 11:00. Days are considered above the inside spread when the ISDA fix is greater than the lowest ask and below the inside spread when it is lower than the highest bid.

197. Of course, markets do move minute to minute. But if there was an innocent explanation for the gap between pre-11:00 a.m. market rates and ISDAfix, then one would

expect to see it continue with similar frequency in size. As seen in the line charts further above, it did not – the lines started to converge in 2013. The “inside spread” analysis shows the same break in the pattern. The following charts compare the ISDAfix rate with market rates before December 2012 (blue bar) and after (red bar). They show that, for all tenors, the average difference between the relevant ISDAfix rate and the highest or lowest market rates was significantly less following the regulatory scrutiny that commenced at the end of 2012. The first two graphs depict Bloomberg data, the second two use data from Thomson Reuters.

198. The differences illustrated below in the charts using Bloomberg data are statistically significant to the 95th percentile in the 1, 5, and 10 year tenors for the analysis of when ISDAfix is above the low ask, and statistically significant to the 95th percentile across all tenors for the analysis of when ISDAfix is below the high ask.

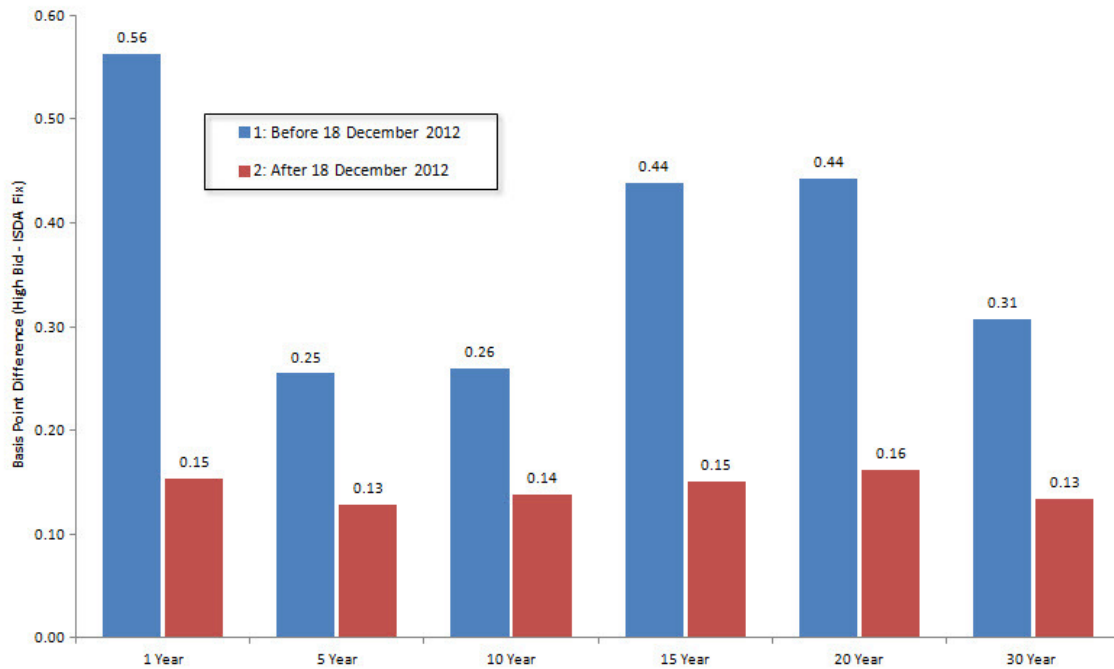
**Average Difference between the ISDA Fix and the Low Ask when ISDA Fix is Above the Low Ask of the Inside Spread**



Source: Bloomberg.

Notes: The inside spread is defined as the lowest ask price and the highest bid price from the most recent quotes prior to 11:00. Days are considered above the inside spread when the ISDA fix is greater than the lowest ask and below the inside spread when it is lower than the highest bid.

**Average Difference between the ISDA Fix and the High Bid when ISDA Fix is Below the High Bid of the Inside Spread**

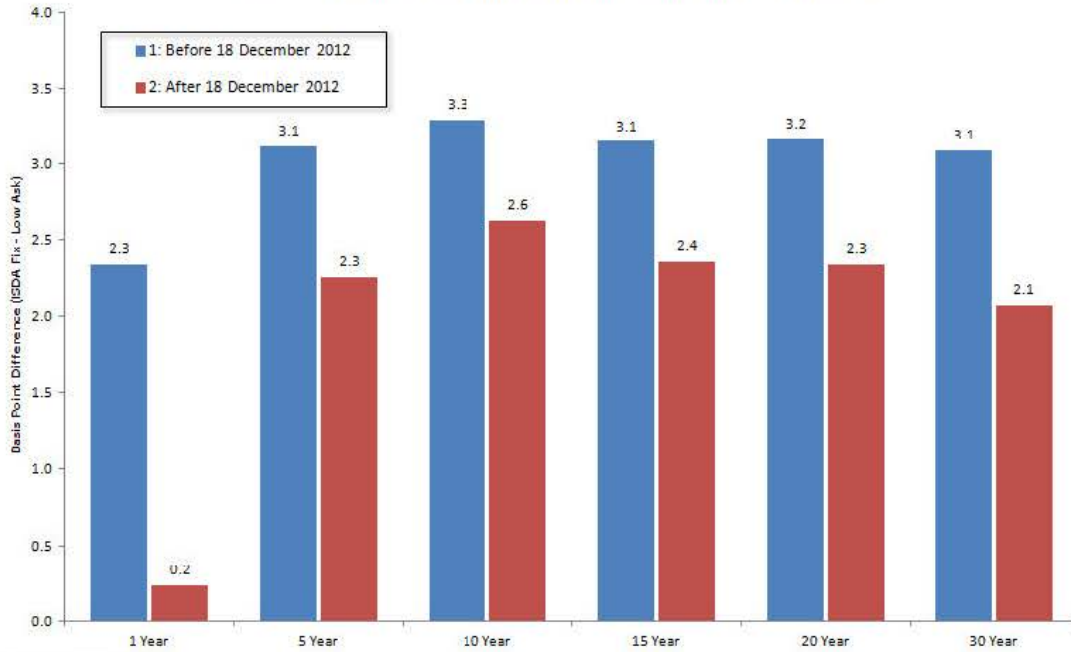


Source: Bloomberg.

Notes: The inside spread is defined as the lowest ask price and the highest bid price from the most recent quotes prior to 11:00. Days are considered above the inside spread when the ISDA fix is greater than the lowest ask and below the inside spread when it is lower than the highest bid.

199. The differences illustrated below in the charts using Thomson Reuters data are statistically significant to the 95th percentile in all tenors except one year in the analysis of when ISDAfix is above the low ask, and statistically significant to the 95th percentile across all tenors compared for which data was available for the analysis of when ISDAfix is below the high ask.

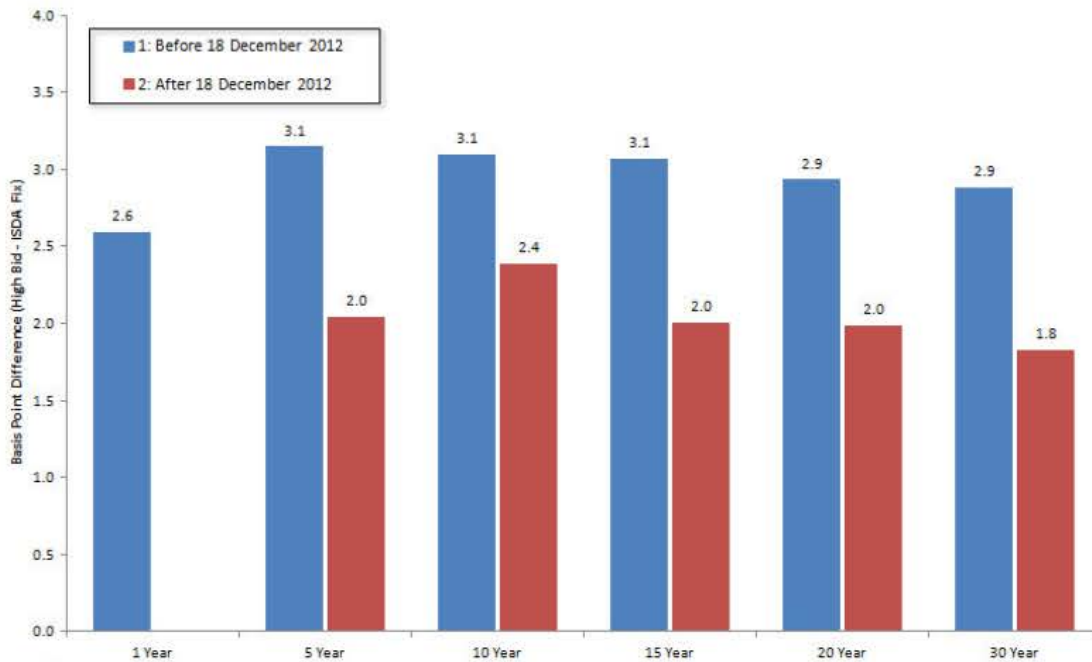
**Average Difference between the ISDA Fix and the Low Ask when ISDA Fix is Above the Low Ask of the Inside Spread**



Source: Thomson Reuters.

Notes: The inside spread is defined as the lowest ask price and the highest bid price from the most recent quotes prior to 11:00. Days are considered above the inside spread when the ISDA fix is greater than the lowest ask and below the inside spread when it is lower than the highest bid.

**Average Difference between the ISDA Fix and the High Bid when ISDA Fix is Below the High Bid of the Inside Spread**



Source: Thomson Reuters.

Notes: The inside spread is defined as the lowest ask price and the highest bid price from the most recent quotes prior to 11:00. Days are considered above the inside spread when the ISDA fix is greater than the lowest ask and below the inside spread when it is lower than the highest bid.

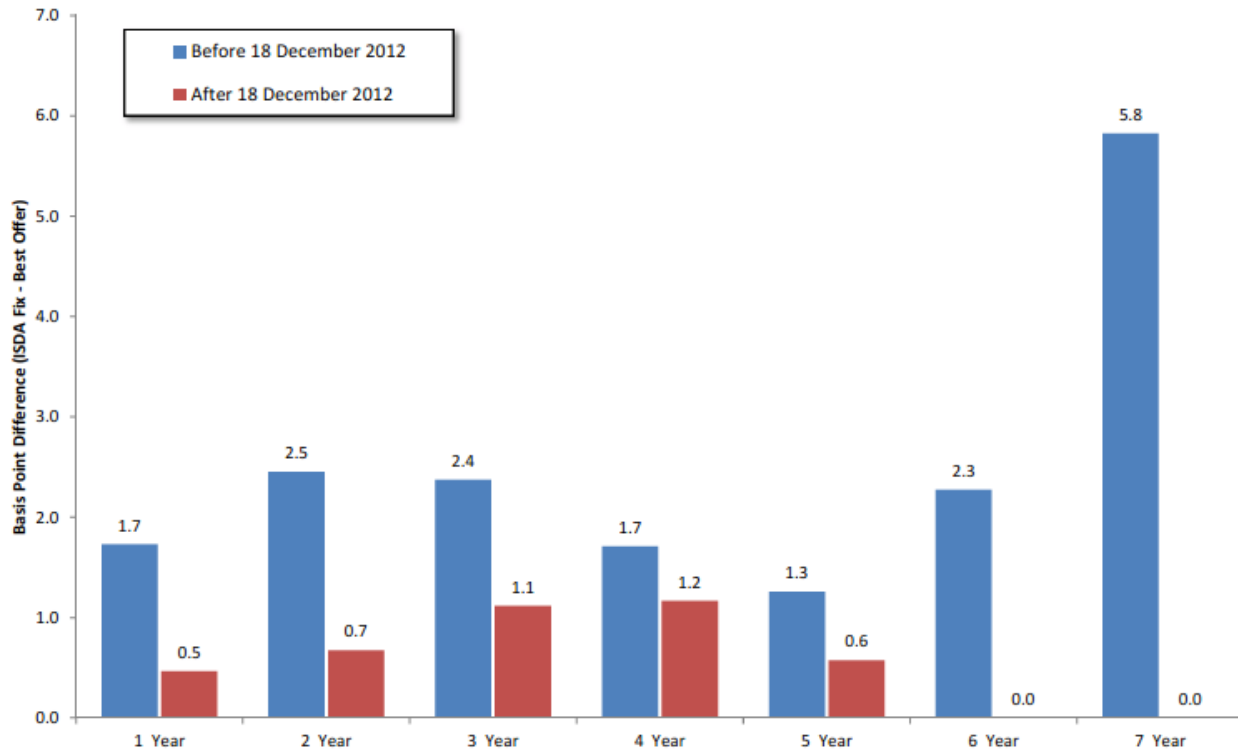
200. The same pattern can be seen by measuring the average difference between the ISDAfix rate and the best bid or offer immediately prior to the polling window before December 2012, and then again afterwards. The preceding charts are based on swap rates reported by either Bloomberg or Thomson Reuters; the following charts are based on Eurodollar futures traded on the CME, from which one can infer swap rates.<sup>101</sup> Without exception, the pre-December 18, 2012 average difference is always greater than for the subsequent period across all tenors analyzed. And for all tenors, the difference between the two periods is statistically significant to 95th percentile.<sup>102</sup>

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<sup>101</sup> Eurodollar futures are based on a \$1 million face value, 3-month maturity Eurodollar Time Deposit. A Eurodollar futures strip may be bought or sold by buying or selling a series of futures maturing in successively deferred months, often in combination with a cash investment in the near term. The purchase of this series or strip of Eurodollar futures locks-in an investment value over each subsequent 3-month period. Eurodollar futures are linked to the interest rate swap market as a source for pricing and a tool to hedge the risks associated with swaps. Market makers/dealers in over-the counter swaps are also primary Eurodollar Futures market participants. Investors often compare the value of “synthetic” investments created with Eurodollar futures strips to yields associated with comparable term investments. The CME makes available intraday bid and the offer prices on Eurodollar futures, which can be used to derive a point estimate of what ISDAfix should be at each maturity, as well as a bid-ask spread.

<sup>102</sup> These charts and their descriptions differ slightly from those in the First Consolidated Amended Complaint. In revisiting their work during the amendment of this Complaint, Plaintiffs determined the methodology used to predict swap rates from Eurodollar futures overestimated swap rates from June 10, 2013 onward because, after that date, a large majority of swaps were centrally cleared as required by applicable Dodd-Frank legislation. Central clearing reduces risk (compared to bilateral swap holdings, where there is counterparty risk), and therefore lowers rates. The revised charts presented here thus compare ISDAfix and the imputed best bid or imputed best offer only during an “after” period from December 18, 2012 to June 9, 2013 (instead of to September 19, 2014). The differences between the “before” and “after” periods are often now larger, especially for the 6 and 7 year tenors. In other words, the “corrected” data is even more incriminating for Defendants.

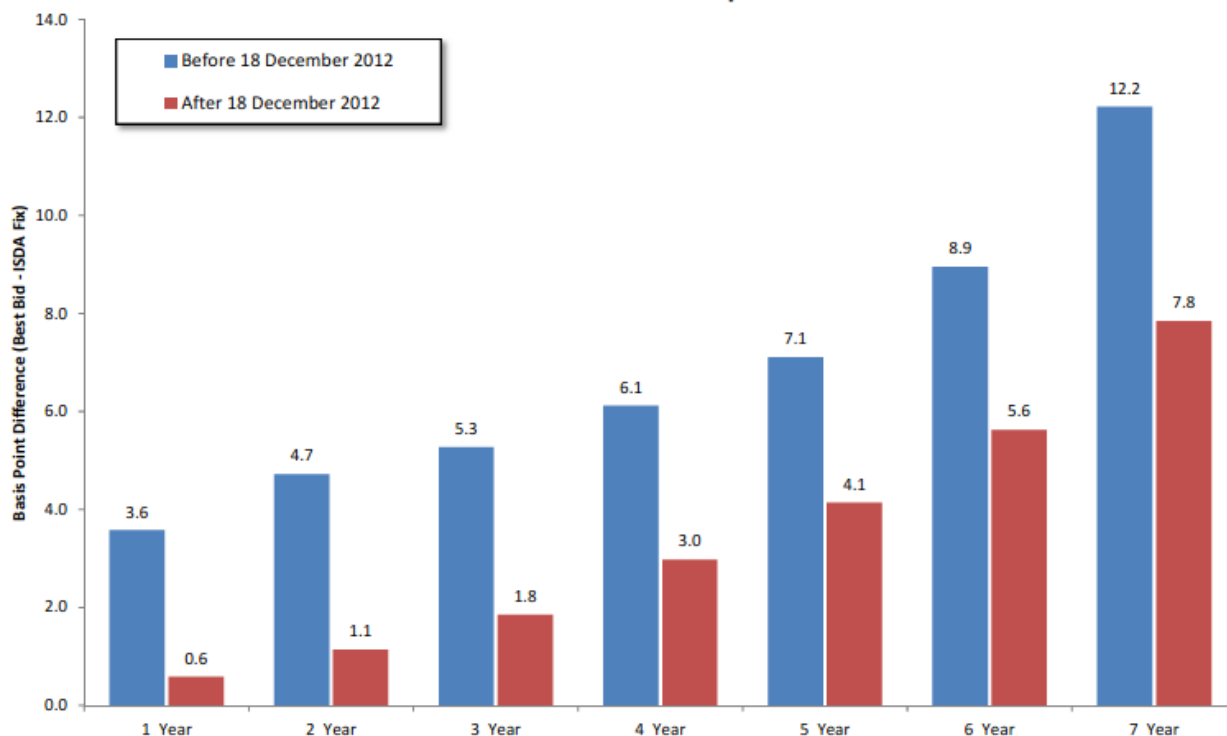
### Average Difference between the ISDA Fix and the Imputed Best Offer When ISDA Fix is Above the Imputed Best Offer



Source: CME BBO Data, for the period August 18, 2008 to June 9, 2013.

Note: Best bid and offer rates are imputed from Eurodollar trading data. The underlying Eurodollar bids and offers are the best bids and offers outstanding before 11 a.m. New York time.

**Average Difference between the ISDA Fix and the Imputed Best Bid  
When ISDA Fix is Below the Imputed Best Bid**



Source: CME BBO Data, for the period August 18, 2008 to June 9, 2013.

Note: Best bid and offer rates are imputed from Eurodollar trading data. The underlying Eurodollar bids and offers are the best bids and offers outstanding before 11 a.m. New York time.

201. Plaintiffs' experts performed other tests to rule out the possibility that the anomalies discussed above – and their abatement in 2013 – were the result of changes in the underlying market. One way to confirm that the gap between the final ISDAfix rates and market rates immediately prior to 11:00 a.m. were not driven by natural (and thus random) inter-minute shifts in the market is to track how often the movement was up versus down. Over a long enough time horizon, just as there is essentially no chance of obtaining 600, 700 or more heads if one flips a coin 1,000 times, the ISDAfix rate should not be disproportionately off in one direction or the other. To the contrary, ISDAfix rates were *unnaturally* more often “low” compared to what the market was doing right before the polling window.

202. Plaintiffs' experts performed other analyses to rule out natural market movements as an explanation for how ISDAfix departed from pre-11:00 a.m. market rates. One of the



cornerstones of efficient markets is that past price movements should not be able to predict future price movements. While market forces might be able to explain a particular price movement between 10:55 and 11:00 a.m. on a particular day, there should be no long-term statistical relationship between the direction of price movement over this five minute price from one day to the next. In other words, over a long time horizon, just because the market moved down between 10:55 a.m. and 11:00 a.m. on one day should not allow one to confidently predict it would do the same between 10:55 a.m. and 11:00 a.m. on the next day.

203. For this reason, one of the standard ways to evaluate the efficiency of a market is to test for “autocorrelation,” or the ability of past price movements to explain future price movements. An autocorrelation test is done by running a regression analysis that assesses whether an earlier (usually prior day) price movement has the ability to predict what happens the next day. Experts retained by Plaintiffs have performed such an analysis looking at whether the difference between the published ISDAfix rates versus prevailing prices just minutes prior to the fix are correlated from one day to the next.

204. In a market free of manipulation, one would expect the coefficients to be close to zero and statistically insignificant because there should be no relationship between price movements during the minutes prior to 11:00 a.m. from one day to the next.

205. In fact, where there was a difference between the market rates just before the polling window and the ISDAfix rate *prior to December 2012*, the size and direction of that difference on a given day *foreshadowed a difference of predictable magnitude, in the same direction, on the following day*. The odds of observing this relationship over an extended period across all of these maturities by random chance is infinitesimal. The only way a movement would occur repetitively in this way is if there is deliberate and artificial price pressure – *i.e.*, the

same forces or persons responsible for the intra-minute movements on one day, were making sure the same thing happened the next day.<sup>103</sup>

206. The asterisks in the table below denote where there was a statistically significant (*i.e.*, 95% confidence) correlation between the direction of one day's movement during the measured interval, and the next day. Nearly all maturities across nearly all intervals showed statistically significant positive correlation prior to December 19, 2012. After December 19, 2012, many fewer do. In other words, this test is yet another one that confirms that the swaps market was moving artificially during the same period Defendant Banks were rubberstamping the reference rate, but not during the period when Defendant Banks began to stop doing so.

**Regression Results Evaluating Whether Degree to which Fix Rate Differed from Prevailing Market Rates on Day T is Correlated with Same Measure on Day T+1 During Manipulation Period Compared to Post-Manipulation Period (Autocorrelation Test):**

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<sup>103</sup> Notably, according to Plaintiffs' experts, that the market behaved this abnormally confirms that the spikes in volatility around the setting window cannot be adequately explained by market actors independently trying to hedge themselves. If that were the case, over a long time horizon such as that studied here, one would not find such powerful correlation from day to day – nor would one expect to see a change in the correlation before and after December 2012.

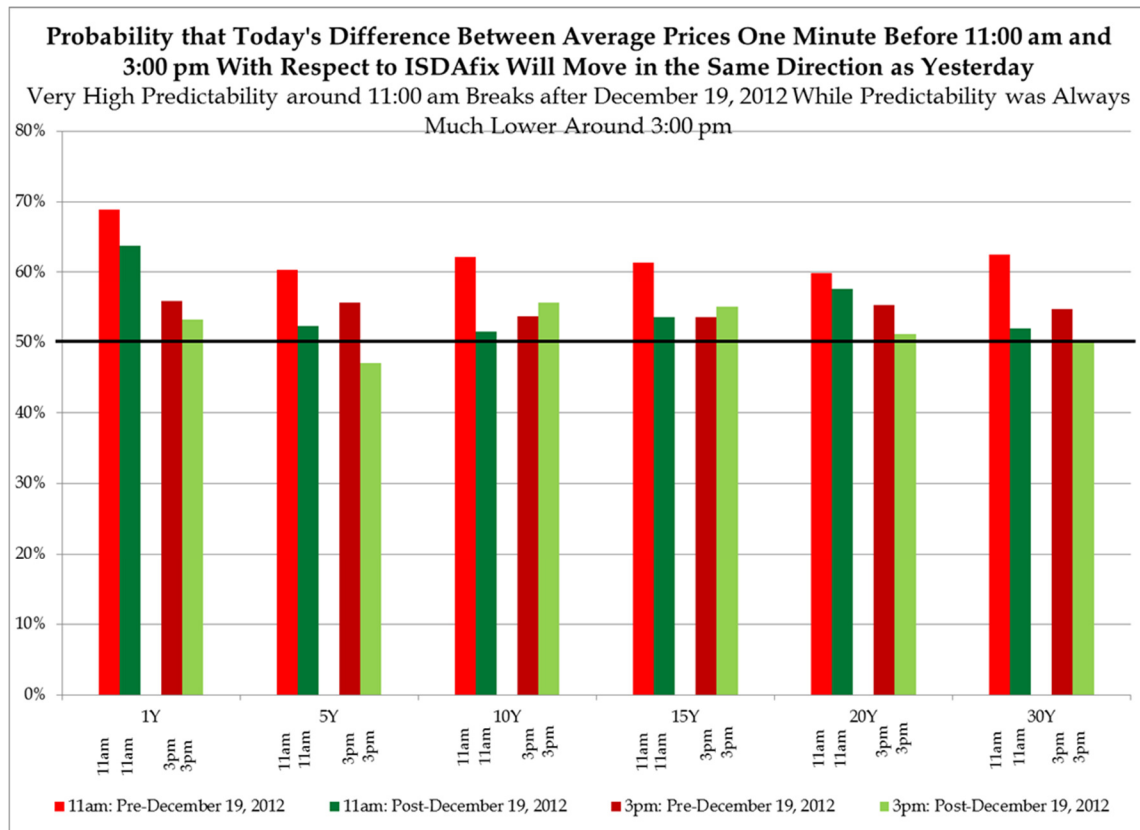
Fixing Price Compared to Prevailing Market Price:	Maturity	Manipulation Period			Post-Manipulation Period		
		Coefficient on Prior Day's Fixing Price Compared to Prevailing Price	t-stat	Significant at 95% Confidence Level	Coefficient on Prior Day's Fixing Price Compared to Prevailing Price	t-stat	Significant at 95% Confidence Level
1 minute prior to 11:00 a.m. fixing period	1 YR	0.323	10.01	**	0.088	1.65	
	5 YR	0.211	7.49	**	-0.072	-1.58	
	10 YR	0.311	8.75	**	-0.026	-0.56	
	15 YR	0.142	4.95	**	0.15	3.36	**
	20 YR	0.142	4.97	**	0.112	2.49	**
	30 YR	0.047	1.62		0.026	0.58	
2 minutes prior to 11:00 a.m. fixing period	1 YR	0.306	10.72	**	0.089	1.77	
	5 YR	0.217	7.71	**	-0.054	-1.2	
	10 YR	0.27	9.74	**	-0.056	-1.25	
	15 YR	0.162	5.69	**	0.145	3.25	**
	20 YR	0.167	5.93	**	0.07	1.56	
	30 YR	0.059	2.03	**	0.017	0.38	
3 minutes prior to 11:00 a.m. fixing period	1 YR	0.344	12.4	**	0.049	1.03	
	5 YR	0.191	6.74	**	-0.059	-1.31	
	10 YR	0.244	8.78	**	-0.051	-1.12	
	15 YR	0.158	5.57	**	0.166	3.73	**
	20 YR	0.15	5.28	**	0.081	1.8	
	30 YR	0.078	2.69	**	0.011	0.25	
5 minutes prior to 11:00 a.m. fixing period	1 YR	0.366	13.4	**	0.056	1.2	
	5 YR	0.154	5.43	**	-0.044	-0.97	
	10 YR	0.193	6.82	**	-0.03	-0.67	
	15 YR	0.131	4.59	**	0.139	3.11	**
	20 YR	0.141	4.96	**	0.064	1.42	
	30 YR	0.076	2.6	**	0.015	0.33	
30 minutes prior to 11:00 a.m. fixing period	1 YR	0.241	8.56	**	0.064	1.43	
	5 YR	0.095	3.29	**	0.01	0.22	
	10 YR	0.089	3.11	**	0.04	0.88	
	15 YR	0.114	4.01	**	0.089	1.98	**
	20 YR	0.103	3.65	**	0.088	1.97	**
	30 YR	0.035	1.19		0.052	1.16	

Manipulation Period: 1/1/08 – 12/18/12, Post-Manipulation Period: 12/19/12 – 12/15/14

\*\* Statistically Significant at greater than 95% Confidence Level

207. Plaintiffs' experts have confirmed that the patterns of market inefficiency and artificiality described above did not occur at other times of the day. When comparing the probability that the difference between prices at 10:59 a.m. and ISDAfix will take the same sign the following day, they found that to be at least 60% prior to December 19, 2012, while such probability became closer to 50% since then, as illustrated in the chart below by a much larger

first red bar than first green bar. When the same experiment is run at another time of the day, for prices at 2:59 p.m. against ISDAfix, the probability was closer to 50% prior to December 19, 2012 as it should under efficient markets, but it did not meaningfully change from before to after December 19, 2012. These results are consistent with intentional artificiality in prices leading up to 11:00 a.m. through 2012 but not leading up to 3:00 p.m.



#### **F. Evidence that Defendants Were Jointly Behind These Trading Anomalies**

208. There is extremely limited public data allowing Plaintiffs to link specific transactions to Defendant Banks. But it is nonetheless clear that they, jointly, were behind the attempts to move the swaps market to artificial price levels.

209. *First*, as discussed in Section I.A above, Defendants, as the dealers of cash-settled swaptions, had by far the strongest motive here. They stood to gain (or lose) far more from controlling USD ISDAfix than other market participants. Indeed, Defendants Bank of America,

Goldman Sachs, Citibank, and JPMorgan *alone* accounted for *over 90%* of the reported outstanding total notional amount of interest rate derivatives in the U.S. market over the course of the entire Class Period.

210. *Second*, Defendants also were uniquely situated to successfully manipulate ISDAfix. Only they, *collectively*, had the “ammo” to be able to consistently push through (or hold back) enough transactions to move the reference rate. No individual market participant – even a Defendant Bank – could or would have done so acting alone. It would have been too risky to push through off-market transactions unilaterally.

211. *Third*, that only the Defendant Banks had the motive and opportunity to move ICAP’s ISDAfix reference rate by manipulating the prices for swaps – and only if they were acting jointly – is confirmed by the fact that the final ISDAfix rates were actually based on a polling of the Defendant Banks. Only with a conspiracy in place to rubberstamp the reference rate would *anyone* have an incentive to try to manipulate the market for swaps around the fixing window. Without that back-end conspiracy in place, the risks of pushing through off-market trades would be unjustifiable, as the effects of doing so would likely be wiped out by the honest application of ICAP’s polling of the Defendant Banks.

212. *Fourth*, the Defendant Banks provided rubberstamps for the reference rates every day for years. The uniformity of the submissions confirms there was a conspiracy on the back-end. But there would have been no reason for Defendant Banks to agree to rubberstamp a given reference rate, in violation of ICAP’s procedures, unless the reference rate was exactly where they wanted it to be. This again confirms that Defendants’ joint actions are behind the trading anomalies in the market for swaps on the front-end.

213. *Fifth*, after December 2012, *all* of the Defendants' responses to ICAP started to vary far more often. After December 2012, the frequency and severity of anomalies in the swap markets also started to wane. That both signs of manipulation abated at the same time is powerful, further evidence that the same group of actors (Defendants) were behind the trading anomalies in the first place.

214. *Sixth*, merely rigging ISDAfix via false submissions to ICAP day after day would likely have been too obvious. ISDAfix could not stray *too* far from market rates (which were already manipulated leading up to 11:00 a.m.) without people likely noticing. And the Defendant Banks' submissions would be *even more clearly* signs of collusion if they matched to the fifth decimal point at some number *other than* the reference rate. Further, rigging ISDAfix merely by false submissions to ICAP would have required express, daily coordination among *all* submitting members. Such is a more complex method than just agreeing to (a) have all Banks rubberstamp the reference rate no matter what, thereby allowing (b) smaller subgroups of Banks to manipulate ISDAfix, through the swaps market and ICAP's willingness to further manipulate the reference rate, without the express coordination of all other conspiracy members every single day. Banks that were agnostic as to what ISDAfix should be on a given day could be simply left out of the loop, but nonetheless add value to the conspiracy by parroting the reference rate back to ICAP regardless of their unilateral, true, and actual pricing decisions in the market.

215. *Seventh*, the ISDAfix conspiracy makes sense, even if not every Defendant Bank shared the same interest in manipulation on a given day. What held the conspiracy together was not necessarily any one day's ISDAfix movement in particular, but rather the shared interest in having the power to move ISDAfix when it mattered to any sub-groups of participants the

most.<sup>104</sup> Whereas a bank may be agnostic to ISDAfix on a given day because of its portfolio, it was nonetheless willing to provide a rubberstamp that day knowing that its doing so would be repaid in kind on days when it took the lead in manipulating the swaps market and, through it, the reference rate.

#### **IV. PLAINTIFFS WERE INJURED AS A RESULT OF DEFENDANTS' MANIPULATION**

216. Plaintiffs – who entered into *thousands* of relevant transactions during the Class Period, including the example transactions listed in Appendix A – were injured by Defendants' manipulation of ISDAfix in the following ways. As discussed above, the manipulation here has already been found to be *pervasive* throughout the Class Period. *Thousands* of instances of active manipulation across multiple tenors have already been identified, only with the benefit of public information. That Defendants *almost daily* submitted identical rates, and other facts herein, support the allegation that in fact the conspiracy operated *every single day* in the Class Period. It is only with the completion of discovery, however, that the identification of which days were manipulated, in what amount, can be fully mapped out.

##### **A. ISDAfix Transactions**

217. ISDAfix Transactions directly or indirectly incorporate ISDAfix into their terms. Plaintiffs and members of the Class entered into or purchased numerous ISDAfix Transactions with Defendants throughout the Class Period. Thus, as ISDAfix was manipulated, the cash flows and/or value for these transactions were directly impacted, too.

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<sup>104</sup> How much a Defendant Bank has to pay to the purchaser of an in-the-money swaption typically depends entirely on the ISDAfix rate on the exercise date. That the final cash flows for such contracts turned entirely on one day's rate also further explains how the conspiracy could be held together – on many days, many members were likely agnostic to the desire of other conspiracy members to move the rate, even though between them all there was likely always at least some who had an interest in moving it.

218. For example, members of the Class who entered into fixed-for-floating rate swaps as fixed rate receivers were injured in any instance where the fixed rate payments were expressly linked to ISDAfix and ISDAfix was suppressed on a payment date. Plaintiffs' experts analyzed the non-standard constant maturity swap transaction entered into by Plaintiff Montgomery County with Defendant UBS on which Montgomery County was to receive periodic cash-flows computed as the 68% of the weighted average of six 5-year ISDAfix rates plus a spread of 5.5 basis points. Plaintiffs' experts identified 11 of the relevant periodic ISDAfix rates displaying an anomalous suppression of swap rates with an average quantum of over 2.5 basis points. This suppression led to a reduction in the value of the ISDAfix-linked cash-flows payable to Montgomery County. The relevant ISDA Master Agreement and Confirmation are attached as Appendix S.

219. Members of the Class who entered into fixed-for floating rate swaps as floating rate receivers were also injured in any instances where the floating rate payments were expressly linked to ISDAfix and ISDAfix was suppressed on a payment date. For example, Plaintiff Washington County entered into a payer swaption with Defendant JPMorgan dated May 26, 2005, with an option exercise date of June 1, 2012, and an effective date of September 1, 2012. As amended, JPMorgan was the floating rate payer on the underlying swap transaction, and required to pay Washington County on a floating rate formula of "the product of (i) 59.10% and (ii) USD-ISDA-SWAP Rate" for a designated maturity of 10 years. Washington Country accordingly suffered loss from any downward manipulation by Defendants of the 10-year ISDAfix rate on any of JPMorgan's floating rate payment dates. On the data currently available to them, Plaintiffs' experts have identified manipulation on numerous such dates. The relevant ISDA Master Agreement and Confirmation are attached as Appendix T.



220. Members of the Class who bought a cash-settled *payer* swaption from a Defendant Bank, where that swaption was in-the-money on the exercise date, received a lower cash settlement amount from a Defendant in any instance where Defendants manipulated the ISDAfix rate downward on or shortly prior to that date. This injury occurred because the cash settlement amount the buyer of an in-the-money cash-settled payer swaption is entitled to receive is the difference in value between the underlying swap transaction and an equivalent swap transaction available on the open market on the exercise date. Where the ISDAfix rate is lower on the exercise date than it would otherwise have been (absent manipulation), the amount of that difference will be smaller. Defendants' suppression of the ISDAfix rate thereby directly impacted an express term of the payer swaption contact between Members of the Class and Defendants, and thereby caused injury to Members of the Class.

221. Members of the Class who bought a cash-settled *receiver* swaption from a Defendant Bank, where that swaption was in-the-money on the exercise date, received a lower cash settlement amount from a Defendant in any instance in which Defendants manipulated the ISDAfix rate upward on or shortly prior to that date. Again, this injury occurred because the cash settlement amount the buyer of an in-the-money cash-settled receiver swaption is entitled to receive is the difference in value between the underlying swap transaction and an equivalent swap transaction available on the open market on the exercise date. Where the ISDAfix rate is higher on the exercise date than it would otherwise have been (absent manipulation), the amount of that difference will be smaller. Defendants' inflation of the ISDAfix rate thereby directly impacted an express term of the receiver swaption contact between members of the Class and Defendants, and thereby caused injury to members of the Class.

222. Members of the Class who transacted in notes or other debt instruments where payments were linked to one or more ISDAfix rates were also impacted. For example, Plaintiffs' experts analyzed an ISDAfix-linked note purchased by Plaintiff Uniqa from JPMorgan predecessor Bear Stearns in the form of a 15-year CMS spread certificate. Under the terms of the note, Uniqa was to receive a quarterly coupon resulting from 10-year ISDAfix minus 2-year ISDAfix times a notional amount of \$100,000 commencing April 2011. Plaintiffs' experts identified payment calculation days on which one of the two rates displayed anomalous movement, which led to a reduction of the spread and thus of the amount payable to Uniqa

223. By way of another example, Plaintiff Portigon AG and/or its predecessor entity and Nomura entered into a \$100,000,000 notional swaption on June 6, 2011. The swaption gave one party the right to enter into a floating-for-fixed interest rate swap at a future point in time, at a pre-agreed strike price set at the relevant ISDAfix rate. The premium paid was determined, at least in part, by reference to the prevailing swap rates. The cash payout on the exercise date of October 5, 2012 was determined by reference to the 10-year ISDAfix rate. The strike rate was 2.395%. This swaption was cash-settled on October 5, 2012, a day that has also been specifically identified as having seen anomalous movements in ISDAfix rates.

224. As expounded upon above, physically settled swaptions expressly incorporate ISDAfix rates, in the sense that industry standard documentation provides that they will be deemed exercised if ISDAfix rates are at a certain point on the exercise date. Plaintiffs and class members who held physically settled swaptions whose automatic exercise was triggered or avoided due to manipulations were also harmed by being stuck with a swap they may not have otherwise wanted, or by not getting a swap they would have otherwise been automatically entitled to.

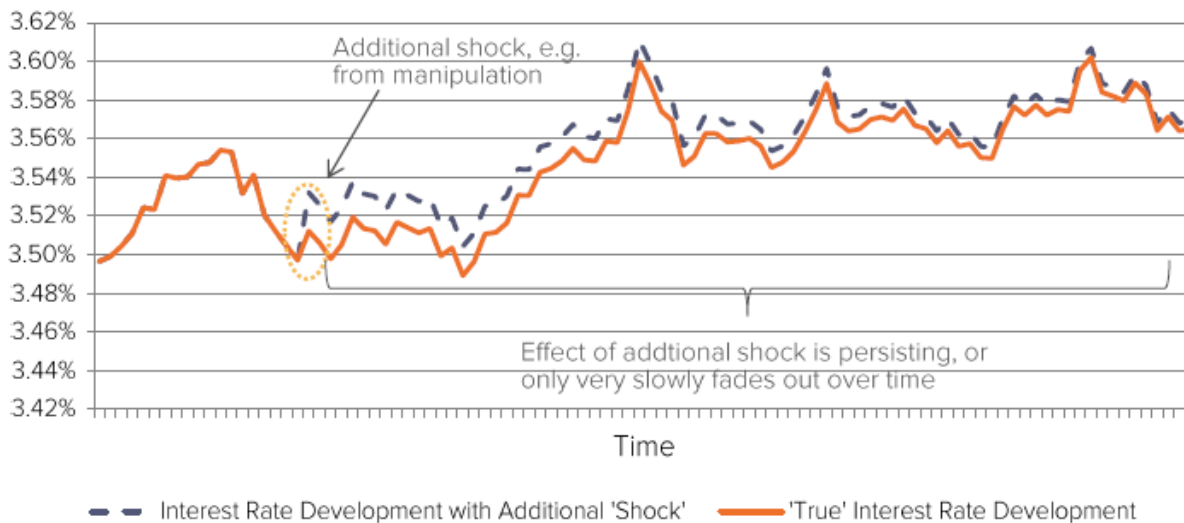
**B. Swaps and Other Derivatives that Do Not Expressly Incorporate ISDAfix**

225. Even plain vanilla swaps that did not contain ISDAfix as a contractual term were impacted by Defendants' scheme.

226. As discussed above, Defendants manipulated ISDAfix by first manipulating the reference rate. This was done through such manipulative trading practices as "banging the close" and the withholding of execution data until after the reference rate had been set. In other words, manipulating the prices in the market for swaps was a key component in Defendants' scheme to rig ISDAfix.

227. The pricing distortions caused by Defendants' conspiracy go beyond the literal minutes when Defendants "banged the close" or engaged in other manipulative conduct. Prices and pricing trends were distorted by Defendants' attempts to manipulate the reference rate ICAP would use as part of the ISDAfix setting process. Transactions that would have been spread out over the course of the day – or never happened at all – were instead bunched around the fixing window. Other transactions were either withheld, or their existence was hidden from the market until later. All this was done collectively to move prices in the market for swaps.

228. Further, when a market experiences a "shock," its path going forward could be shifted, even if the future *relative* movements would be the same. Plaintiffs' experts found that this was the case with swap rates during the relevant period. Employing a linear auto-regressive integrated moving average (ARMA) time series model, Plaintiffs' experts estimated the extent to which changes in the level of an interest rate for a given ISDAfix tenor persist when caused by an external "shock" (such as significant increase or decrease in that rate due to manipulation). As can be seen in the following with- and without-manipulation chart for the model, prices follow the same general path of ups and downs in each case – but there is a consistent gap between the two, indicating a lasting effect of the information "shock."



229. By measuring this relationship using two established, complementary statistical tests – “Augmented Dickey-Fuller” and “Kwiatkowski-Phillips-Schmidt-Shin” – Plaintiffs’ experts analyzed the degree of “non-stationarity” for interest rate swap prices.<sup>105</sup> That is, the degree to which any changes in price will impact the price over a given time period. Plaintiffs’ experts concluded, to a 95% level of statistical confidence, that the 30Y rate was non-stationary on 74% of days within the Class Period, the 10Y rate was non-stationary on 78% of days within the Class Period, and the 5Y rate was non-stationary on 68% of Class Period days. The majority of days in the Class Period therefore exhibited stochastic properties such that the impact of new information was observable for a significant amount of time, rather than the impact fading as other intra-day movements and information developed.

<sup>105</sup> For the foundational academic contributions outlining these statistical tests and explaining their complementarity, see D. Dicket and W. Fuller, *Distribution of the Estimators for Autoregressive Time Series With a Unit Root*, 74 *Journal of the American Statistical Association* 366, 427-31 (1979); D. Kwiatkowski, P. Phillips, P. Schmidt, and Y. Shin, *Testing the Null Hypothesis of Stationarity Against the Alternative of a Unit Root*, 54 *Journal of Econometrics* 159-78 (1992).

230. These results confirm that swap rates show a “memory effect.” Any manipulation during one part of the day (such as around 11:00 a.m.) thus had effects on the price of interest rate swaps over the course of that entire day.

231. Members of the Class who entered into fixed-for-floating rate swaps as fixed rate payers (or, equivalently, floating rate receivers) were injured in any instance in which Defendants manipulated the ISDAfix rate upward on or shortly prior to the date of entry. This injury occurred because the market rate payable under that swap was upwardly influenced by Defendants’ manipulation of ISDAfix, and members of the Class were thereby required to make higher fixed rate payments under the swap than they would have been in an unmanipulated market.

232. Members of the Class who entered into fixed-for-floating rate swaps as fixed rate receivers (or, equivalently, floating rate payers) were injured in any instance in which Defendants manipulated the ISDAfix rate downward on or shortly prior to the date of entry. This injury occurred because the market rate payable by the members of the Class under that swap was downwardly influenced by Defendants’ manipulation of ISDAfix, and the members of the Class were thereby entitled to receive lower fixed rate payments under the swap than they would have been in an unmanipulated market.

233. For example, Plaintiffs’ experts identified an anomalous suppression of 10-year swap rates on October 20, 2010, when Plaintiff Alaska Electrical entered into an interest rate swap with a notional value of \$1 million and a maturity of ten years as a fixed rate receiver. This anomalous activity had the effect of decreasing the fixed rate receivable by Plaintiff Alaska Electrical by up to 3.3 basis points.

234. Plaintiffs who entered into physically settled swaptions suffered harm as a result of Defendants' manipulation in two ways: First, if a physically settled payer swaption was traded on a date where Defendants manipulated the market for interest rate swaps to influence the ISDAfix price, then the strike price of that swaption would have been affected by that manipulation. As a result, the swaption buyer received a less favorable strike price for the premium they paid than they would in the absence of the Defendants' manipulation, and their transaction would become less valuable. If the swaption expires in the money, then while the swaption buyer would still make a profit on the trade, the less favorable strike would reduce such profits.

235. For example, Plaintiffs' experts identified an anomalous suppression of five-year swap rates on 24 May 2007, when Plaintiff Genesee bought a physically settled swaption with a notional of USD 1,200,000 and a maturity of 5 years as fixed rate receiver. This anomalous suppression would have had the impact of reducing the swaption's at-the-money strike price by an amount equal to the quantum of the anomalous suppression, in this case, two basis points. This swaption expired in-the-money and was exercised. Once exercised, the anomalous activity on the trade date would have damaged Genesee by having the effect of suppressing the fixed rate receivable by Genesee over the five-year life of the swap by two basis points.

236. Second, if a swaption was at the money or near the money in the final days before expiry, *i.e.*, the strike price was very close to current market levels, there would be considerable uncertainty as to whether or not the swaption will expire in the money and thus be exercised. If Defendants had sold such a swaption, they could ensure that it expired out of the money such that it would not be exercised against them by manipulating the ISDAfix rate on the swaption's expiry date. If the swaption would have expired in the money in the absence of the

manipulation, the buyer of the swaption would have suffered potentially significant damages as a result of the manipulation by making a misinformed decision and not entering into what should have been a profitable underlying swap position.

V. **DEFENDANTS' MISCONDUCT BREACHED THE TERMS OF THEIR ISDAFIX TRANSACTIONS**

237. Most, if not all, cash-settled swaptions (and other ISDAfix Transactions) were documented under the ISDA Master Agreement. ISDA Master Agreements are market-standard agreements that establish a framework for swaps and other derivative transactions between two counterparties, and oblige the parties to make payments on the terms of Confirmations entered in accordance with the Master Agreement.<sup>106</sup> The parties customize the ISDA Master Agreement through use of a Schedule, which contains elections, additions, and amendments. ISDA Master Agreements are also typically supplemented by a Credit Support Annex, which sets the terms of the counterparties' obligations to post collateral for net exposures under those agreements. Finally, Confirmations are used to document particular transactions.

238. Separate sets of definitions published by ISDA are used in Confirmations for transactions. For swaptions and many of the other types of derivative instruments that refer to ISDAfix, the relevant definitions are the 2006 ISDA Definitions.

239. Under the 2006 ISDA Definitions, the purchaser of an in-the-money cash-settled swaption is entitled to receive a "Cash Settlement Amount" in accordance with Section 18 of

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<sup>106</sup> Section 2(a) of the 1992 and 2002 ISDA Master Agreements (entitled "Obligations") provides: "(a) General Conditions: (i) Each party will make each payment or delivery specified in each Confirmation to be made by it, subject to the other provisions of this Agreement."

those same Definitions.<sup>107</sup> The 2006 ISDA Definitions also state that it is the responsibility of the “Calculation Agent” to “determin[e] any Cash Settlement Amount.”<sup>108</sup>

240. Under the 2006 ISDA Definitions, the “Fixed Rate Payer” under a “Swap Transaction” is obliged to pay a “Fixed Amount,” and the “Floating Rate Payer” under the same type of Transaction is obliged to pay a “Floating Amount” in accordance with Sections 5 and 6 of those same definitions.<sup>109</sup> The 2006 ISDA Definitions also state that it is the responsibility of the “Calculation Agent” to “calculat[e] any Floating Amount payable on each Payment Date or for each Calculation Period” and to “calculat[e] any Fixed Amount payable on each Payment Date or for each Calculation Period.”<sup>110</sup>

241. The 2006 ISDA Definitions further state that “[w]henever the Calculation Agent is required to act, make a determination or to exercise judgment in any other way, it will do so in good faith and in a commercially reasonable manner.”<sup>111</sup>

242. As standard market practice, the Schedules to the ISDA Master Agreements involved here specify that each Defendant Bank would act as “Calculation Agent” for the interest rate derivatives it entered into with Plaintiffs and the Class. As both the 2000 and 2006 ISDA Definitions expressly state, Defendant Banks, as Calculation Agents, had a duty to determine Cash Settlement Amounts, Floating Amounts, and Fixed Amounts in good faith and in a

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<sup>107</sup> ISDA, *2006 ISDA Definitions*, Section 14.1(a). Under the *2000 ISDA Definitions*, which parties could choose to apply to their transactions even after 2006, the purchaser of an in-the-money cash-settled swaption was entitled to receive a “Cash Settlement Amount” in accordance with Section 17 of those same Definitions, pursuant to Section 13.1(a).

<sup>108</sup> *Id.*, Section 4.14.

<sup>109</sup> *Id.*, Section 2.1 and 2.2. These obligations and the relevant sections are the same under the *2000 ISDA Definitions*.

<sup>110</sup> *Id.*, Section 4.14.

<sup>111</sup> *Id.*, Section 4.14.



commercially reasonable manner for every swaption or swap transaction they entered into. Defendant Banks breached such terms, and others, in each of their respective agreements when they determined Cash Settlement Amounts, Floating Amounts, and Fixed Amounts based on ISDAfix rates that Defendant Banks knew were manipulated.

243. The ISDA Master Agreements also have a term requiring that each party “comply in all material respects with all applicable laws . . . to which it may be subject if failure so to comply would materially impair its ability to perform its obligations under this Agreement.”<sup>112</sup> Defendant Banks breached such terms, and others, in each of their respective agreements when they violated numerous laws by colluding to manipulate and actually manipulating ISDAfix rates.

244. The Defendant Banks’ conduct also breached their implied duty of good faith and fair dealing created by their respective contractual relationships with Plaintiffs and the Class. The manipulation of ISDAfix rates allowed Defendant Banks either to make their own positions more profitable or to make their counterparties’ position worth less.

245. In sum, under the terms of the Class Members’ ISDA Master Agreements and standard ISDA definitions, in cash-settled swaptions ISDAfix was hard-wired into the transactions, and thus in carrying out the calculation and similar duties discussed above, the Defendant Banks were obligated to look to it in good faith and a commercially reasonable manner. Similarly, under the terms of the Class Members’ ISDA Master Agreements and standard ISDA definitions, in swaps where one leg was pegged to ISDAfix, ISDAfix was hard-wired into the transactions, and thus in carrying out the calculation and similar duties discussed

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<sup>112</sup> ISDA, *ISDA Master Agreements 1992 and 2002*, Section 4.

above, the Defendant Banks were obligated to look to it in good faith and a commercially reasonable manner.

**EQUITABLE TOLLING OF THE STATUTE OF LIMITATIONS DUE TO  
DEFENDANTS' CONCEALMENT OF THE CONSPIRACY**

246. Defendants actively and effectively concealed their collusion, as alleged herein, from Plaintiffs and the Class. As a result of Defendants' fraudulent concealment, all applicable statutes of limitations affecting Plaintiffs' and the Class' claims have been tolled.

247. Defendants' conspiracy was by its nature secretive and self-concealing. Defendants engaged in a form of price fixing, which is inherently self-concealing and could not be detected by Plaintiffs or other members of the Class. The secret nature of Defendants' conspiracy – which relied on non-public methods of communication, such as secure websites and private phone calls, to conceal their agreements to manipulate ISDAfix – prevented Plaintiffs from uncovering their unlawful conduct.

248. Moreover, Defendants actively conspired to conceal their unlawful conduct. Defendants actively and jointly undertook trading strategies designed to conceal their collusive conduct by, as alleged above, executing trading strategies to push the “reference point” used by ICAP to a particular level so as to conceal their submission of off-market quotes to ICAP. The Defendant Banks also conspired with ICAP to delay the publication of real transactions to conceal the rates at which they were then executing, so as to prevent their conspiracy from being uncovered.

249. Throughout the Class Period, Defendants, both individually and through ISDA (the trade association in which all were members), actively participated in the fraudulent concealment of the scheme by affirmatively misrepresenting the method by which the ISDAfix

was calculated. For example, an ISDA press release issued on September 12, 2006 announcing a new ISDAfix product, described ISDAfix as follows:<sup>113</sup>

ISDAFIX is a leading benchmark for fixed rates on interest rate swaps worldwide. The service provides average mid-market swap rates for a range of major currencies at selected maturities and is based on information collected by Reuters and ICAP.

250. ISDA also published documents purporting to explain in greater detail how ISDAfix was calculated on its website. The oldest version available to Plaintiffs, which was downloaded on June 30, 2012, represents the process as follows:<sup>114</sup>

### **How does ISDAFIX fix?**

#### *Rate Definition.*

The contributor is asked to provide a rate which is the mean of where that dealer would itself offer and bid a swap in the relevant maturity for a notional equivalent amount of US \$50 million or whatever amount is deemed market size in that currency for that tenor to an acknowledged dealer of good credit in the swap market. The rate should not be where the dealer sees mid-market away from itself, but should be a function of its own bid/offer spread.

\* \* \*

#### *Contributions collected by ICAP and the rate calculated by Thomson Reuters (USD, USD Spread):*

ICAP collects spread information from contributors via a secure website that contributors log into every morning. Contributors are asked to indicate the USD swap spread as of 11:00 am, in accordance with the criteria set by ISDA as detailed above. At 10:58 am, ICAP will send an email reminder to each contributor reminding them to contribute. At 11:02 am, ICAP will indicate on the secure website a USD swap spread and USD swap rate to serve as a reference point for contributors. This reference point is generated from two sources of information.

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<sup>113</sup> ISDA, *ISDA Adds Canadian Dollar to its Range of ISDAFIX Swap Rates* (Sept. 12, 2004), <http://www.isda.org/press/press091206.html>.

<sup>114</sup> ISDA, *How does ISDAFIX fix?, Rate Definition*, <https://web.archive.org/web/20120630173533/http://www2.isda.org/asset-classes/interest-rates-derivatives/isdafix>.

(1) Information contained on Reuters page 19901 at 11:00 am, which reflects the most recent swap spreads from completed trades and executable bids and offers in market size done/posted at ICAP.

(2) Information reflecting executed trades and executable bids and offers at 11 a.m. for US Treasury securities from ICAP's BrokerTec US Treasury electronic trading platform.

By their nature, because both sources of information reflect completed transactions and/or at-risk trading interest, ICAP considers them to be a useful and meaningful reference point for where the market may be at that point in time.

251. Substantially similar explanations were published by ISDA throughout the Class Period. In 2009, CME Group, the parent company of the Chicago Mercantile Exchange and other exchanges where ISDAfix-denominated products were traded, published the following description of how ISDAfix was purported to be calculated, which it stated was based on descriptions published at [www.ISDA.org](http://www.ISDA.org):<sup>115</sup>

ISDA Benchmark swap rates are based on a rigorously organized daily poll. For each currency an ICAP or Reuters' representative canvasses a panel of dealers for their par swap rate quotes as of a specified local midday time . . . for any given swap term to maturity, the rate provided by the contributing dealer to the ICAP or Reuters surveyor is the midpoint of where the dealer would itself offer and bid a swap . . . The contributing dealer's survey response is the midpoint of its own bid/offer spread. (It is not, *e.g.*, where the dealer sees the mid-market rates being quoted or dealt away from itself).

252. The Defendants, acting through ISDA, affirmatively misrepresented the calculation of ISDAfix until the end of the Class Period. The ISDA webpage purporting to explain calculation of ISDA remained publicly available until early 2014. In addition, as discussed in greater detail above, in the ISDA/European Commission Letter, publicly distributed on November 29, 2012, ISDA represented that the ISDAfix rate is calculated based on the mean rate that each member dealer "would itself offer and bid a swap in the relevant maturity . . . The

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<sup>115</sup> CME Group, *Interest Rate Swap Futures Reference Guide*, at 6, [http://www.cmegroup.com/trading/interest-rates/files/Swap\\_Futures\\_Reference\\_Guide.pdf](http://www.cmegroup.com/trading/interest-rates/files/Swap_Futures_Reference_Guide.pdf).

rate should not be where the dealer sees mid-market away from itself, but should be a function of its own bid/offer spread.”<sup>116</sup>

253. Some or all of the Defendants also published materially misleading descriptions of the ISDAfix determination in communications with potential investors in their own financial products. For example, in SEC filings dated May 2, 2008 and May 5, 2009, Defendant Barclays Bank represented, in identical language, that the ISDAfix was set as follows:<sup>117</sup>

ISDA is responsible for determining and publishing market swap rates. ISDA determines the rates by polling a representative sample of swap dealers each day (the polls are conducted on behalf of ISDA by ICAP plc or Reuters’ representatives either by telephone or electronic interface). ISDA then publishes the rates via Reuters and Bloomberg at various times throughout the day. The swap rates that are used for purposes of calculating the swap rate spread – which are known as ISDAfix rates – are published on Reuters page ISDAfix at 11:30 a.m. New York time.

254. Similarly, a Bank of America SEC filing dated June 15, 2012 purported to explain the method of calculating the ISDAfix as follows:<sup>118</sup>

The fixed rate of interest payable on the hypothetical swap is established by ISDAFIX. On a daily basis, ISDAFIX provided average mid-market swap rates at selected maturities in six major currencies. ISDAFIX rates are based on a mid-day and, in some markets, end-of-day polling of mid-market rates.

255. These statements by ISDA and certain Defendants were materially misleading because the data supplied by Defendants to calculate ISDAfix often did not correspond to the Defendants’ actual market prices, but was manipulated to advantage Defendants, and because the

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<sup>116</sup> ISDA, *ISDA Response to the European Commission’s Public Consultation on the Regulation of Indices*, at 7 (Nov. 29, 2012), <http://www2.isda.org/news/isda-response-to-the-european-commissions-public-consultation-on-the-regulation-of-indices>.

<sup>117</sup> Barclays Form 424B3 filing for *Barclays AIMS Algorithmic Inflation Momentum Switching™ Index Notes* (May 2, 2008); Barclays Form 424B3 filing for *Barclays TrendSTAR (USD) Index Notes* (May 27, 2009).

<sup>118</sup> Bank of America Form 424B3 filing for *Digital Return Notes Linked to CMS30* (June 15, 2012).

manipulations alleged herein caused ISDAfix interest rates to diverge significantly from “market swap rates” or “mid-market swap rates.” Each of these statements, and other similar statements, were published with the intention that members of the Class rely on them in making investment decisions. By virtue of their active participation in the conspiracy described herein, each of the Defendants was aware of the falsity of these statements. Investors did in fact rely on the representations of ISDA and the Defendants concerning the calculation of ISDAfix in determining to invest in ISDAfix Transactions.

256. Due to Defendants’ efforts to conceal their collusive conduct, Plaintiffs could not, through the exercise of reasonable diligence, have learned of facts indicating that Defendants were colluding to manipulate the ISDAfix rate until April 2013 at the earliest, when news sources first reported that the CFTC was investigating ICAP and the manner in which the ISDAfix rate is set. Even with the disclosure of the CFTC investigation, Plaintiffs at that time did not know the full scope or purpose of Defendants’ conspiracy.

257. Historical and individual submission data that might have given a vigilant would-be Plaintiff even a chance of exposing Defendants’ conspiracy was owned by ICAP and accessible only to those with access to the relevant platforms (*e.g.*, broker dealers). Any investigation was further discouraged by the prohibitive cost of the relevant data – for example, the data analyzed in connection with Plaintiffs’ investigation was available only for tens of thousands of dollars.

258. Additionally, even after investigations into the LIBOR scandal cast a spotlight on some of Defendants’ unlawful activities, Defendants did not fully break ranks, but instead continued to manipulate ISDAfix and engaged in ongoing efforts to keep their collusion hidden. It was only after subsequent investigations specifically into the manipulation of ISDAfix that

Defendants began to wind down their conspiracy. When Defendants were confronted by the media about the allegations against them, they denied them or refused to comment.<sup>119</sup>

259. Thus, while Plaintiffs regularly monitored their investments and conducted due diligence to try to avoid being harmed by financial misconduct, practically speaking, there were limits to what could be done, given that so much of the over-the-counter interest rate derivatives market was opaque and shrouded in Defendants' secrecy. Further, reasonable due diligence could not have uncovered Defendants' conspiracy because: (1) Defendants' trades and trading strategies are not public information; (2) Defendants' quotes to ISDAfix were not openly published; and (3) the bilateral, non-exchange traded nature of the interest rates swaps and ISDAfix Transactions at issue further obscures what Defendants were, and are, doing at any particular time.

260. Nor could Plaintiffs have conducted the economic analyses that demonstrate the effectiveness of the scheme at any earlier time, even if the data was openly published. The analyses that statistically demonstrate the effect of the ISDAfix conspiracy rely on a comparison of pricing data before and after December 19, 2012. The substantial differences in the behavior of both inputs to ISDAfix and the resulting published interest rates between the two periods demonstrate that a conspiracy to fix prices existed before December 19, 2012, and that it began to unravel after that time in response to the publication of news related to the conspiracy affecting LIBOR. This *comparison* could not have been conducted before mid-2013.

261. As a result of the self-concealing nature of the rate-fixing conspiracy, the active steps taken by Defendants to fraudulently misrepresent the calculation of ISDAfix rates and to

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<sup>119</sup> See, e.g., Philip Stafford, *ICAP defends role in setting benchmark rate*, Financial Times (May 14, 2013), <http://www.ft.com/intl/cms/s/0/a2a6c358-bc68-11e2-b344-00144feab7de.html>; Leising, *supra* note 16.

conceal their conspiracy, and the lack of public information concerning material aspects of the conspiracy, the statute of limitations was tolled for Plaintiffs' and the Class' claims.

### **CLASS ACTION ALLEGATIONS**

262. Plaintiffs bring this action on behalf of themselves and as a class action under Rules 23(a), (b)(2), and (b)(3) of the Federal Rules of Civil Procedure, seeking monetary damages on behalf of the following class (the "Class"):

All persons or entities who from January 1, 2006 to June 30, 2013 (the "Class Period"): (1) entered into, made or received payments on, or terminated USD interest-rate swaps with a Defendant (or any affiliate thereof); and/or (2) entered into, made or received payments on, settled, or terminated any ISDAfix Transaction with a Defendant (or any affiliate thereof).

Excluded from the Class are Defendants and their employees, affiliates, parents, subsidiaries, and co-conspirators, whether or not named in this Complaint, and the United States government.

263. Plaintiffs believe that there are thousands of members of each Class as described above, the exact number and their identities being known by Defendants, making each Class so numerous and geographically dispersed that joinder of all members is impracticable.

264. There are questions of law and fact common to each Class that relate to the existence of the conspiracy alleged, and the type and common pattern of injury sustained as a result thereof, including, but not limited to:

- a) whether Defendants and their co-conspirators engaged in a combination or conspiracy to fix, raise, maintain, stabilize, and/or otherwise manipulate ISDAfix rates and the price of, or cash flows from, interest rate swaps and/or ISDAfix Transactions in violation of the Sherman Act;
- b) the identity of the participants in the conspiracy;
- c) the duration of the conspiracy;



- d) the nature and character of the acts performed by Defendants and their co-conspirators in furtherance of the conspiracy;
- e) whether the conduct of Defendants and their co-conspirators, as alleged in this Complaint, caused injury to the business and property of Plaintiffs and other members of the Class;
- f) whether Defendants and their co-conspirators fraudulently concealed the conspiracy's existence from the Plaintiffs and the members of the Class;
- g) whether Defendants have acted or refused to act on grounds generally applicable to the Class, thereby making appropriate final injunctive relief or corresponding declaratory relief with respect to the Class as a whole;
- h) the appropriate injunctive and equitable relief for the Class;
- i) whether Defendants were unjustly enriched at the expense of Plaintiffs and the Class;
- j) whether Defendants breached their contracts with the Class;
- k) whether Defendants breached their duty of good faith and fair dealing with the Class;
- l) whether Defendants were aware of the existence of contracts that were tied to ISDAfix, and were substantially certain their manipulations would interfere with them; and
- m) the appropriate measure of damages sustained by Plaintiffs and other members of each Class.

265. During the Class Period, Plaintiffs purchased interest rate swaps, and/or ISDAfix Transactions that were valued, executed, had payments linked to, or were settled using rates that

were manipulated by Defendants, and their interests are coincident with and not antagonistic to those of the other members of the Class. Plaintiffs are members of the Class, have claims that are typical of the claims of the Class members, and will fairly and adequately protect the interests of the members of the Class. In addition, all Plaintiffs are represented by counsel who are competent and experienced in the prosecution of antitrust and class action litigation.

266. The prosecution of separate actions by individual members of the Class would create a risk of inconsistent or varying adjudications.

267. The questions of law and fact common to the members of the Class predominate over any questions affecting only individual members, including legal and factual issues relating to liability and damages.

268. A class action is superior to other available methods for the fair and efficient adjudication of this controversy. Treatment as a class action will permit a large number of similarly situated persons to adjudicate their common claims in a single forum simultaneously, efficiently and without the duplication of effort and expense that numerous individual actions would engender. The Class is readily definable and is one for which records should exist in the files of Defendants and their co-conspirators, and prosecution as a class action will eliminate the possibility of repetitious litigation. Class treatment will also permit the adjudication of relatively small claims by many members of the Class who otherwise could not afford to litigate an antitrust claim such as the ones asserted in this Complaint. This class action presents no difficulties of management that would preclude its maintenance as a class action.

**CLAIMS FOR RELIEF**

**FIRST CLAIM FOR RELIEF**

**(Conspiracy to Restrain Trade in Violation of §1 of the Sherman Act – Against All Defendants)**

269. Plaintiffs hereby incorporate each preceding and succeeding paragraph as though fully set forth herein.

270. Defendants and their unnamed co-conspirators entered into and engaged in a combination and conspiracy in an unreasonable and unlawful restraint of trade in violation of §1 of the Sherman Act, 15 U.S.C. §1, *et seq.*

271. As a direct, material, and proximate result of Defendants' violation of §1 of the Sherman Act, Plaintiffs and members of the Class have suffered injury to their business and property, within the meaning of §4 of the Clayton Act, throughout the Class Period.

272. Plaintiffs and members of the Class are entitled to treble damages for Defendants' violations of §1 of the Sherman Act under §4 of the Clayton Act.

273. Plaintiffs and members of the Class are also entitled to an injunction against Defendants, preventing and restraining the violations alleged above, under §16 of the Clayton Act.

**SECOND CLAIM FOR RELIEF<sup>120</sup>**

**(Breach of Contract – Against All Defendants Except ICAP)**

274. Plaintiffs hereby incorporate each preceding and succeeding paragraph as though fully set forth herein.

275. This claim is only based on those transactions where a Class Member received or made a payment during the Class Period on an ISDAfix Transaction entered into with a Defendant, whose cash flows were expressly tied to USD ISDAfix.

276. This claim is only for those transactions where a Defendant Bank (or its affiliates) was a counterparty and the claim on such transactions is only against that Defendant Bank.

277. The contracts of the Plaintiffs and the Class members were governed by ISDA Master Agreements.

278. ISDA Master Agreements are standardized contracts and the breached provisions are found in every ISDA Master Agreement. The specific provisions breached by Defendants' conduct are Section 2 of the 1992 and 2002 ISDA Master Agreements, together with Articles 13 and 17 of the 2000 ISDA Definitions, and Articles 14 and 18 of the 2006 ISDA Definitions in respect of swaptions, and Section 4.14 of the 2000 ISDA Definitions and the 2006 ISDA Definitions.

279. With respect to cash-settled swaptions and other ISDA Transactions governed by ISDA Master Agreement that settled by reference, or otherwise had cash flows tied to ISADfix rates, Defendant Banks had a contractual duty to act in good faith when determining the

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<sup>120</sup> In the Court's dismissal order (Dkt. 209), Nomura was dismissed from this Count merely because no named Plaintiff specifically alleged it had a contract with Nomura. However, named Plaintiffs now do specifically allege they had relevant ISDAfix Transactions with Nomura, and thus, for the avoidance of doubt, Nomura is intended to be a part of this Count despite its prior dismissal.

payments, if any, due to Plaintiffs and members of the Class. Defendant Banks, however, manipulated the benchmark which was used to make that determination. Despite knowing that the core benchmark for calculating the payments owed to Plaintiffs and Class member was set to artificial levels, the banks used the numbers generated by that manipulated benchmark to pay out less than Defendants truly owned, breaching their duty of good faith.

280. Defendant Banks and Plaintiffs and members of the Class entered into ISDA Master Agreements, which were accompanied by Schedules, Credit Support Annexes, and confirmations that used terms defined in the 2000 or 2006 ISDA Definitions.

281. Under the ISDA Master Agreement, accompanying documents, and the 2002 and 2006 ISDA Definitions, Defendant Banks, as Calculation Agents, had a duty to determine the Cash Settlement Amount due under their swaptions and amounts due under other interest rate derivatives that settled by reference, or otherwise had cash flows tied to ISDAfix rates in good faith and in a commercially reasonable manner. Defendant Banks breached this duty when they determined the Cash Settlement Amount and other amounts due with reference to an ISDAfix rate that they knew was regularly manipulated. Defendant Banks also were contractually obligated by the ISDA Master Agreements to “comply in all material respects with all applicable laws . . . to which it may be subject if failure so to comply would materially impair its ability to perform its obligations under this Agreement.” Defendant Banks breached this obligation by violating numerous laws through their collusion to manipulate and actual manipulation of ISDAfix rates.

282. Defendant Banks breached their ISDAfix Transaction contracts that settled by reference, or otherwise had cash flows tied to ISDAfix rates with Plaintiffs and members of the Class through their collusion to manipulate ISDAfix rates, their actual manipulation of ISDAfix

rates, their failure to disclose their knowledge that the ISDAfix rates were manipulated, and their collection of overpayments from (or making underpayments to) Plaintiffs and Class members based on the manipulated ISDAfix rates.

283. Because of the acts of Defendant Banks and their co-conspirators as alleged herein, Plaintiffs' swaptions and other ISDAfix Transactions that settled by reference, or otherwise had cash flows tied to ISDAfix rates were made less profitable or more expensive than they would have been in the absence of manipulation. As a result of Defendant Banks' breaches of their contracts, Plaintiffs and Class members suffered economic losses and damages in an amount to be determined at trial, and are entitled to be placed in the same situation as if Defendant Banks had fully performed under their ISDA Master Agreements. Plaintiffs and members of the Class seek to recover all losses caused by ISDAfix manipulation, including loss of interest, lost profits, and all losses on the swaptions and other interest rate derivatives that settled by reference, or otherwise had cash flows tied to ISDAfix rates that they directly transacted with a Defendant Bank as their counterparty. Plaintiffs and Class members have incurred reasonable out-of-pocket expenses, including legal and expert fees, to enforce and protect their rights under their contracts with Defendant Banks.

#### **FOURTH CLAIM FOR RELIEF**

##### **(Unjust Enrichment – Against All Defendants Except ICAP)<sup>121</sup>**

284. Plaintiffs hereby incorporate each preceding and succeeding paragraph as though fully set forth herein.

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<sup>121</sup> In the Court's dismissal order, Nomura was dismissed from this Count merely because no named Plaintiff specifically alleged it had the requisite contacts with Nomura. *See* Dkt. 209. However, named Plaintiffs now do specifically allege they had relevant ISDAfix Transactions with Nomura, and thus, for the avoidance of doubt, Nomura is intended to be a part of this Count despite its prior dismissal.

285. Defendant Banks were unjustly enriched at the expense of and to the detriment of Plaintiffs and members of the Class. As described above, the Defendant Banks knowingly acted in an unfair, unconscionable, and oppressive manner towards Plaintiffs and members of the Class by manipulating ISDAfix, in conscious and/or reckless disregard for Class members' rights.

286. Defendant Banks were unjustly enriched at the expense of the Plaintiffs and members of the Class when they paid Defendant Banks more than they otherwise would have (absent manipulation) and when the Defendant Banks paid them less than they otherwise would have (absent manipulation).

287. For instance, Defendant Banks were unjustly enriched at the expense of the Plaintiffs and members of the Class when they paid Defendant Banks more on the ISDAfix Transactions than they otherwise would have (absent manipulation) or received less from Defendants when selling swaps or other interest rate derivatives than they otherwise would have (absent manipulation). As discussed above, ISDAfix Transactions had their cash flows and/or value directly determined by ISDAfix, which was being manipulated by Defendants.

288. Defendant Banks were unjustly enriched at the expense of the Plaintiffs and members of the Class when they paid Defendant Banks more for vanilla swaps than they otherwise would have (absent manipulation) or received less from Defendants when selling swaps than they otherwise would have (absent manipulation).

289. Defendants were also unjustly enriched at many points during the life of a physically settled swaption, as also explained above.

290. Plaintiffs and members of the Class have no adequate remedy at law for these misappropriated gains. The Court should issue a constructive trust compelling counterparty Defendants to disgorge to Plaintiffs and members of the Class all unlawful or inequitable

proceeds counterparty Defendants received, and all funds counterparty Defendants unjustly retained that should have been paid to Plaintiffs and members of the Class. Plaintiffs and members of the Class are also entitled to rescission of the transactions or rescissory damages.

291. The counterparty banks worked in concert and entered into a civil conspiracy and corrupt agreement to manipulate ISDAfix. Whereas a particular Defendant may not have profited off one transaction when viewed in isolation, the conspiracy allowed all Defendants to profit. Accordingly, any Defendant not in privity on a given transaction are included in this Claim as co-conspirator.

292. As described above, all Defendants committed numerous overt acts in furtherance of that conspiracy and agreement, as detailed above, including coordinating anomalous trading activity during the fixing window, rubberstamping the resulting artificial reference rate, and by intentionally failing to disclose the material information that ISDAfix was being manipulated. Defendants acted with malice, and intended to injure investors and the Plaintiffs and members of the Class through the actions described herein.

293. Each Defendant was at all relevant times fully aware of the conspiracy and substantially furthered it as set forth above.

294. Plaintiffs and members of the Class seek restoration of the monies of which they were unfairly and improperly deprived, as described herein.

#### **PRAYER FOR RELIEF**

Plaintiffs demand relief as follows:

A. That the Court certify this lawsuit as a class action under Rules 23(a), (b)(2), and (b)(3) of the Federal Rules of Civil Procedure; that Plaintiffs be designated as class representatives of the Class, and that Plaintiffs' counsel be appointed as counsel for the Class;



B. That the unlawful conduct alleged herein be adjudged and decreed to violate §1 of the Sherman Antitrust Act, 15 U.S.C. §1;

C. That Defendants be permanently enjoined and restrained from continuing and maintaining the conspiracy alleged in the Complaint under Section 16 of the Clayton Antitrust Act, 15 U.S.C. §26;

D. That the Court award Plaintiffs and the Class damages against Defendants for their violations of federal antitrust laws, in an amount to be trebled under Section 4 of the Clayton Antitrust Act, 15 U.S.C. §15, plus interest;

E. That the Court award Plaintiffs and the Class damages against the counterparty Defendants for their breaches of contract, as well as their breaches of their implied duty of good faith and fair dealing;

F. That the Court order Defendants to disgorge to Plaintiffs any amounts by which Defendants were unjustly enriched directly at the expense of Plaintiffs;

G. That the Court award Plaintiffs their costs of suit, including reasonable attorneys' fees and expenses, including expert fees, as provided by law; and

H. That the Court direct such further relief it may deem just and proper.

**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiffs demand a jury trial as to all issues triable by a jury.

DATED: February 6, 2017

/s/ Daniel L. Brockett

Daniel L. Brockett  
Daniel Cunningham  
Marc L. Greenwald  
Steig D. Olson  
Jonathan B. Oblak  
Toby E. Futter  
**QUINN EMANUEL URQUHART  
& SULLIVAN, LLP**  
51 Madison Avenue, 22nd Floor  
New York, New York 10010-1601  
Telephone: (212) 849-7000  
Fax: (212) 849-7100  
danbrockett@quinnemanuel.com  
danielcunningham@quinnemanuel.com  
marcgreenwald@quinnemanuel.com  
steigolson@quinnemanuel.com  
jonoblak@quinnemanuel.com  
tobyfutter@quinnemanuel.com

Jeremy D. Andersen (*pro hac vice*)  
865 South Figueroa Street, 10th Floor  
Los Angeles, California 90017  
Telephone: (213) 443-3000  
Fax: (213) 443-3100  
jeremyandersen@quinnemanuel.com

*Counsel for Alaska Electrical Pension  
Fund; County of Washington,  
Pennsylvania; City of New Britain,  
Connecticut, and UNIQA Capital  
Markets GmbH*

Jay W. Eisenhofer  
**GRANT & EISENHOFER, P.A.**  
485 Lexington Avenue  
New York, NY 10017  
Telephone: (646) 722-8500  
Fax: (646) 722-8501  
jeisenhofer@gelaw.com

*Counsel for County of Montgomery,  
Pennsylvania*

/s/ Patrick J. Coughlin

Patrick J. Coughlin  
David W. Mitchell  
Brian O. O'Mara  
Randi D. Bandman  
Lonnie Browne  
**ROBBINS GELLER RUDMAN  
& DOWD LLP**  
655 West Broadway, Suite 1900  
San Diego, CA 92101  
Telephone: (619) 231-1058  
Fax: (619) 231-7423  
patc@rgrdlaw.com  
davidm@rgrdlaw.com  
bomara@rgrdlaw.com  
randib@rgrdlaw.com  
lbrowne@rgrdlaw.com

*Counsel for Alaska Electrical Pension  
Fund; County of Washington,  
Pennsylvania; City of New Britain,  
Connecticut; Erste  
Abwicklungsanstalt (EAA), and  
Portigon AG*

Stanley D. Bernstein  
**BERNSTEIN LIEBHARD LLP**  
10 East 40<sup>th</sup> Street, 22<sup>nd</sup> Floor  
New York, New York 10016  
Telephone: (212) 779-1414  
Fax: (212) 779-3218  
bernstein@bernlieb.com

*Counsel for Alaska Electrical Pension  
Fund; County of Washington,  
Pennsylvania; and City of New  
Britain, Connecticut*

/s/ David R. Scott

David R. Scott  
Christopher M. Burke  
Donald A. Broggi  
Sylvia M. Sokol  
Walter W. Noss  
Kristen M. Anderson  
Thomas K. Boardman  
Peter A. Barile III  
**SCOTT+SCOTT,  
ATTORNEYS AT LAW, LLP**  
The Chrysler Building  
405 Lexington Ave, 40<sup>th</sup> Floor  
New York, New York 10174-4099  
Telephone: (800) 404-7770  
Fax: (212) 223-6334  
david.scott@scott-scott.com  
cburke@scott-scott.com  
dbroggi@scott-scott.com  
ssokol@scott-scott.com  
wnoss@scott-scott.com  
kanderson@scott-scott.com  
tboardman@scott-scott.com  
pbarile@scott-scott.com

*Counsel for Alaska Electrical Pension  
Fund; County of Washington,  
Pennsylvania; and City of New  
Britain, Connecticut*

James E. Cecchi  
**CARELLA, BYRNE, CECCHI,  
OLSTEIN, BRODY &  
AGNELLO, P.C.**  
5 Becker Farm Road  
Roseland, NJ 07068  
Telephone: (973) 994-1700  
Fax: (973) 994-1744  
jcarella@carellabyrne.com

*Counsel for County of Montgomery,  
Pennsylvania*

Gregory S. Ascioffa  
Jay L. Himes  
David J. Goldsmith  
Robin A. Van Der Meulen  
Matthew J. Perez  
**LABATON SUCHAROW LLP**  
140 Broadway  
New York, New York 10005  
Telephone: (212) 907-0700  
Fax: (212) 818-0477  
gascioffa@labaton.com  
jhimes@labaton.com  
dgoldsmith@labaton.com  
rvandermeulen@labaton.com  
mperez@labaton.com

*Counsel for Genesee County  
Employees' Retirement System*

R. Bryant McCulley  
**McCULLEY McCLUER PLLC**  
2113 Middle Street  
Suite 208  
Sullivan's Island, SC 29482  
Telephone: (205) 238-6757  
Fax: (662) 368-5806  
bmcculley@mcculleymccluer.com

*Counsel for Pennsylvania Turnpike  
Commission*

Shelly L. Friedland (SF-2449)  
**TRIEF & OLK**  
150 East 58th Street  
34th Floor  
New York, NY 10155  
Telephone: (212) 486-6060  
Fax: (212) 317-2946  
sfriedland@triefandolk.com

*Counsel for Plaintiffs*

Stuart H. McCluer  
**McCULLEY McCLUER PLLC**  
1223 Jackson Avenue East  
Suite 200  
Oxford, MS 38655  
Telephone: (662) 550-4511  
Fax: (662) 368-5806  
smccluer@mcculleymccluer.com

*Counsel for Pennsylvania Turnpike  
Commission*

Michael C. Dell' Angelo  
**BERGER & MONTAGUE, P.C.**  
1622 Locust Street  
Philadelphia, PA 19103  
Telephone: (215) 875-3000  
Fax: (215) 875-4604  
mdellangelo@bm.net

*Counsel for Pennsylvania Turnpike  
Commission*

Matthew Duncan  
**FINE, KAPLAN AND BLACK,  
R.P.C.**  
1 South Broad St. 23rd Floor  
Philadelphia, PA 19107  
Telephone: (215) 567-6565  
Fax: (215) 568-5872  
md@finekaplan.com

*Counsel for Plaintiffs*

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
3	Washington County	Swaption	J.P. Morgan	26-May-05	1-Jun-12
4	Alaska Fund	Swap	Citigroup	4-Jan-06	
5	Alaska Fund	Swap	Morgan Stanley	6-Jan-06	
6	Alaska Fund	Swap	UBS	6-Jan-06	
7	Alaska Fund	Swap	Barclays	11-Jan-06	
8	Alaska Fund	Swap	Deutsche Bank	11-Jan-06	
9	Genesee County	Swap	Deutsche Bank	11-Jan-06	
10	Alaska Fund	Swaption	Deutsche Bank	13-Jan-06	13-Feb-06
11	Alaska Fund	Swap	Barclays	13-Jan-06	
12	Alaska Fund	Swap	Deutsche Bank	13-Jan-06	
13	Alaska Fund	Swap	Deutsche Bank	3-Feb-06	
14	Alaska Fund	Swap	Bank of America	8-Feb-06	
15	Alaska Fund	Swaption	Bank of America	9-Feb-06	2-Jan-07
16	Alaska Fund	Swaption	Bank of America	9-Feb-06	2-Jan-07
17	Alaska Fund	Swap	Bank of America	15-Feb-06	
18	Alaska Fund	Swap	Bank of America	24-Feb-06	
19	Alaska Fund	Swap	Bank of America	24-Feb-06	
20	Alaska Fund	Swap	Barclays	1-Mar-06	
21	Alaska Fund	Swap	Barclays	1-Mar-06	
22	Alaska Fund	Swap	Morgan Stanley	7-Mar-06	
23	Alaska Fund	Swap	Citigroup	9-Mar-06	
24	Alaska Fund	Swap	Barclays	15-Mar-06	
25	Alaska Fund	Swap	HSBC	21-Mar-06	
26	Alaska Fund	Swap	Deutsche Bank	21-Mar-06	
27	Uniq Capital Markets	Certificate	JP Morgan	29-Mar-06	
28	Alaska Fund	Swaption	Deutsche Bank	5-Apr-06	4-Apr-06
29	Genesee County	Swap	Deutsche Bank	11-Apr-06	
30	Genesee County	Swap	Deutsche Bank	11-Apr-06	
31	Alaska Fund	Swap	Morgan Stanley	21-Apr-06	
32	Alaska Fund	Swap	Morgan Stanley	21-Apr-06	
33	Alaska Fund	Swaption	RBS	2-May-06	6-Apr-06
34	Alaska Fund	Swaption	RBS	2-May-06	6-Apr-06
35	Alaska Fund	Swaption	J.P. Morgan	2-May-06	1-Jun-06
36	Alaska Fund	Swaption	J.P. Morgan	2-May-06	1-Jun-06
37	Alaska Fund	Swaption	Goldman Sachs	2-May-06	12-Oct-06
38	Alaska Fund	Swaption	Goldman Sachs	2-May-06	12-Oct-06
39	Alaska Fund	Swap	HSBC	12-May-06	
40	Alaska Fund	Swap	Morgan Stanley	12-May-06	
41	Alaska Fund	Swap	UBS	12-May-06	
42	Alaska Fund	Swap	UBS	12-May-06	
43	Alaska Fund	Swaption	Deutsche Bank	24-May-06	19-Apr-07
44	Alaska Fund	Swaption	Goldman Sachs	25-May-06	2-May-06
45	Alaska Fund	Swaption	Goldman Sachs	25-May-06	2-May-06
46	Alaska Fund	Swaption	Goldman Sachs	25-May-06	11-Oct-06
47	Alaska Fund	Swaption	Goldman Sachs	25-May-06	11-Oct-06
48	Alaska Fund	Swap	Bank of America	5-Jun-06	
49	Alaska Fund	Swap	Bank of America	5-Jun-06	
50	Alaska Fund	Swap	Deutsche Bank	5-Jun-06	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
51	Alaska Fund	Swap	Deutsche Bank	5-Jun-06	
52	Alaska Fund	Swap	Goldman Sachs	5-Jun-06	
53	Alaska Fund	Swap	Goldman Sachs	5-Jun-06	
54	Alaska Fund	Swap	Goldman Sachs	5-Jun-06	
55	Alaska Fund	Swap	Goldman Sachs	5-Jun-06	
56	Alaska Fund	Swaption	RBS	7-Jun-06	1-Jun-06
57	Alaska Fund	Swaption	RBS	7-Jun-06	1-Jun-06
58	Alaska Fund	Swap	Barclays	8-Jun-06	
59	Alaska Fund	Swap	Barclays	8-Jun-06	
60	Alaska Fund	Swap	Citigroup	8-Jun-06	
61	Alaska Fund	Swap	Citigroup	8-Jun-06	
62	Alaska Fund	Swap	Citigroup	8-Jun-06	
63	Alaska Fund	Swap	J.P. Morgan	8-Jun-06	
64	Alaska Fund	Swap	J.P. Morgan	8-Jun-06	
65	Alaska Fund	Swap	Morgan Stanley	8-Jun-06	
66	Alaska Fund	Swap	Morgan Stanley	8-Jun-06	
67	Montgomery County	Swap	UBS	8-Jun-06	
68	Alaska Fund	Swap	UBS	9-Jun-06	
69	Alaska Fund	Swap	RBS	9-Jun-06	
70	Alaska Fund	Swap	Bank of America	16-Jun-06	
71	Alaska Fund	Swap	Bank of America	16-Jun-06	
72	Alaska Fund	Swap	Citigroup	16-Jun-06	
73	Alaska Fund	Swap	Citigroup	16-Jun-06	
74	Alaska Fund	Swap	Barclays	21-Jun-06	
75	Alaska Fund	Swap	Barclays	21-Jun-06	
76	Alaska Fund	Swap	Goldman Sachs	27-Jun-06	
77	Alaska Fund	Swap	Goldman Sachs	27-Jun-06	
78	Alaska Fund	Swap	Deutsche Bank	28-Jun-06	
79	Alaska Fund	Swap	Deutsche Bank	28-Jun-06	
80	Alaska Fund	Swap	Deutsche Bank	28-Jun-06	
81	Alaska Fund	Swaption	RBS	30-Jun-06	25-Oct-06
82	Alaska Fund	Swaption	RBS	30-Jun-06	25-Oct-06
83	Genesee County	Swap	Goldman Sachs	5-Jul-06	
84	Genesee County	Swap	Goldman Sachs	5-Jul-06	
85	Genesee County	Swaption	Goldman Sachs	7-Jul-06	
86	Genesee County	Swap	Deutsche Bank	11-Jul-06	
87	Alaska Fund	Swap	RBS	14-Jul-06	
88	Genesee County	Swaption	Goldman Sachs	14-Jul-06	
89	Genesee County	Swaption	Goldman Sachs	14-Jul-06	
90	Genesee County	Swaption	Goldman Sachs	17-Jul-06	
91	Genesee County	Swaption	Goldman Sachs	17-Jul-06	
92	Alaska Fund	Swaption	RBS	19-Jul-06	25-Oct-06
93	Alaska Fund	Swaption	RBS	19-Jul-06	25-Oct-06
94	Alaska Fund	Swap	Deutsche Bank	19-Jul-06	
95	Alaska Fund	Swap	Deutsche Bank	19-Jul-06	
96	Alaska Fund	Swap	Merrill Lynch	19-Jul-06	
97	Alaska Fund	Swap	HSBC	19-Jul-06	
98	Genesee County	Swap	Deutsche Bank	19-Jul-06	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
99	Genesee County	Swap	Deutsche Bank	19-Jul-06	
100	Alaska Fund	Swap	Goldman Sachs	20-Jul-06	
101	Alaska Fund	Swap	Morgan Stanley	2-Aug-06	
102	Alaska Fund	Swap	UBS	2-Aug-06	
103	Alaska Fund	Swaption	RBS	3-Aug-06	7-Jun-07
104	Alaska Fund	Swaption	RBS	3-Aug-06	7-Jun-07
105	Alaska Fund	Swaption	Citigroup	3-Aug-06	29-Jun-07
106	Alaska Fund	Swaption	Citigroup	3-Aug-06	29-Jun-07
107	Alaska Fund	Swaption	RBS	7-Aug-06	2-Jul-07
108	Alaska Fund	Swaption	RBS	7-Aug-06	2-Jul-07
109	Alaska Fund	Swaption	RBS	8-Aug-06	2-Jul-07
110	Alaska Fund	Swaption	RBS	8-Aug-06	2-Jul-07
111	Alaska Fund	Swap	Goldman Sachs	9-Aug-06	
112	Alaska Fund	Swap	Goldman Sachs	17-Aug-06	
113	Alaska Fund	Swap	Goldman Sachs	17-Aug-06	
114	Alaska Fund	Swap	Goldman Sachs	17-Aug-06	
115	Alaska Fund	Swap	Deutsche Bank	18-Aug-06	
116	Alaska Fund	Swap	Goldman Sachs	22-Aug-06	
117	New Britain	Swap	Deutsche Bank	14-Sep-06	
118	Alaska Fund	Swaption	J.P. Morgan	18-Sep-06	2-Jul-07
119	Alaska Fund	Swaption	J.P. Morgan	18-Sep-06	2-Jul-07
120	Alaska Fund	Swap	Citigroup	22-Sep-06	
121	Alaska Fund	Swaption	RBS	4-Oct-06	7-Aug-06
122	Alaska Fund	Swaption	RBS	4-Oct-06	7-Aug-06
123	Alaska Fund	Swaption	RBS	6-Oct-06	2-Jul-07
124	Alaska Fund	Swaption	RBS	6-Oct-06	2-Jul-07
125	Genesee County	Swap	Goldman Sachs	10-Oct-06	
126	Genesee County	Swap	Deutsche Bank	11-Oct-06	
127	Genesee County	Swap	Deutsche Bank	11-Oct-06	
128	Genesee County	Swap	Goldman Sachs	16-Oct-06	
129	Genesee County	Swap	Goldman Sachs	16-Oct-06	
130	Genesee County	Swap	Goldman Sachs	16-Oct-06	
131	Genesee County	Swap	Goldman Sachs	16-Oct-06	
132	Genesee County	Swap	Goldman Sachs	16-Oct-06	
133	Genesee County	Swap	Goldman Sachs	17-Oct-06	
134	Genesee County	Swap	Goldman Sachs	17-Oct-06	
135	Genesee County	Swap	Goldman Sachs	17-Oct-06	
136	Genesee County	Swap	Goldman Sachs	17-Oct-06	
137	Alaska Fund	Swaption	J.P. Morgan	18-Oct-06	15-Jun-07
138	Alaska Fund	Swaption	J.P. Morgan	18-Oct-06	15-Jun-07
139	Alaska Fund	Swap	Deutsche Bank	18-Oct-06	
140	Alaska Fund	Swap	Deutsche Bank	18-Oct-06	
141	Alaska Fund	Swap	Goldman Sachs	18-Oct-06	
142	Genesee County	Swap	Deutsche Bank	23-Oct-06	
143	Alaska Fund	Swaption	Goldman Sachs	25-Oct-06	26-Mar-07
144	Alaska Fund	Swaption	Goldman Sachs	25-Oct-06	25-Oct-07
145	Alaska Fund	Swaption	RBS	25-Oct-06	20-Dec-07
146	Alaska Fund	Swaption	RBS	25-Oct-06	20-Dec-07

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
147	Alaska Fund	Swaption	J.P. Morgan	31-Oct-06	19-Oct-10
148	Alaska Fund	Swaption	J.P. Morgan	31-Oct-06	19-Oct-10
149	Alaska Fund	Swap	Goldman Sachs	31-Oct-06	
150	Alaska Fund	Swap	Deutsche Bank	1-Nov-06	
151	Alaska Fund	Swap	Deutsche Bank	1-Nov-06	
152	Alaska Fund	Swap	Morgan Stanley	1-Nov-06	
153	Alaska Fund	Swap	Citigroup	2-Nov-06	
154	Alaska Fund	Swaption	Bank of America	3-Nov-06	2-Jul-07
155	Alaska Fund	Swaption	Bank of America	3-Nov-06	2-Jul-07
156	Alaska Fund	Swap	RBS	3-Nov-06	
157	Alaska Fund	Swap	Merrill Lynch	15-Nov-06	
158	Alaska Fund	Swap	Citigroup	16-Nov-06	
159	Alaska Fund	Swap	Citigroup	16-Nov-06	
160	Alaska Fund	Swap	Merrill Lynch	17-Nov-06	
161	Alaska Fund	Swap	Goldman Sachs	30-Nov-06	
162	Alaska Fund	Swaption	J.P. Morgan	5-Dec-06	19-Oct-10
163	Alaska Fund	Swaption	J.P. Morgan	5-Dec-06	19-Oct-10
164	Alaska Fund	Swap	Bank of America	5-Dec-06	
165	Alaska Fund	Swap	Bank of America	5-Dec-06	
166	Alaska Fund	Swap	Citigroup	5-Dec-06	
167	Alaska Fund	Swap	Citigroup	5-Dec-06	
168	Alaska Fund	Swap	Deutsche Bank	5-Dec-06	
169	Alaska Fund	Swap	Deutsche Bank	5-Dec-06	
170	Alaska Fund	Swap	RBS	5-Dec-06	
171	Alaska Fund	Swap	RBS	5-Dec-06	
172	Alaska Fund	Swaption	Deutsche Bank	6-Dec-06	2-Jul-07
173	Alaska Fund	Swaption	RBS	6-Dec-06	2-Jul-07
174	Alaska Fund	Swap	Citigroup	6-Dec-06	
175	Alaska Fund	Swap	Citigroup	6-Dec-06	
176	Alaska Fund	Swap	Merrill Lynch	6-Dec-06	
177	Alaska Fund	Swap	Deutsche Bank	7-Dec-06	
178	Alaska Fund	Swap	Morgan Stanley	7-Dec-06	
179	Alaska Fund	Swap	Morgan Stanley	7-Dec-06	
180	Alaska Fund	Swap	RBS	7-Dec-06	
181	Alaska Fund	Swap	RBS	7-Dec-06	
182	Alaska Fund	Swap	Citigroup	11-Dec-06	
183	Alaska Fund	Swap	Citigroup	12-Dec-06	
184	Alaska Fund	Swap	Deutsche Bank	12-Dec-06	
185	Alaska Fund	Swap	Deutsche Bank	12-Dec-06	
186	Alaska Fund	Swap	RBS	12-Dec-06	
187	Alaska Fund	Swap	RBS	12-Dec-06	
188	Alaska Fund	Swap	RBS	12-Dec-06	
189	Alaska Fund	Swap	RBS	12-Dec-06	
190	Alaska Fund	Swap	Morgan Stanley	13-Dec-06	
191	Alaska Fund	Swap	RBS	14-Dec-06	
192	Alaska Fund	Swap	RBS	19-Dec-06	
193	Alaska Fund	Swap	RBS	19-Dec-06	
194	Alaska Fund	Swap	RBS	19-Dec-06	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
195	Alaska Fund	Swaption	Bank of America	22-Dec-06	8-Aug-07
196	Alaska Fund	Swaption	Bank of America	22-Dec-06	8-Aug-07
197	Alaska Fund	Swap	RBS	3-Jan-07	
198	Alaska Fund	Swap	Morgan Stanley	3-Jan-07	
199	Alaska Fund	Swap	Citigroup	4-Jan-07	
200	Alaska Fund	Swap	Citigroup	4-Jan-07	
201	Alaska Fund	Swap	Merrill Lynch	4-Jan-07	
202	Alaska Fund	Swaption	RBS	5-Jan-07	8-Aug-07
203	Alaska Fund	Swaption	RBS	5-Jan-07	8-Aug-07
204	Alaska Fund	Swap	Deutsche Bank	5-Jan-07	
205	Genesee County	Swap	Goldman Sachs	7-Jan-07	
206	Genesee County	Swap	Goldman Sachs	7-Jan-07	
207	Genesee County	Swap	Goldman Sachs	8-Jan-07	
208	Genesee County	Swap	Goldman Sachs	8-Jan-07	
209	Genesee County	Swap	Goldman Sachs	8-Jan-07	
210	Genesee County	Swap	Goldman Sachs	8-Jan-07	
211	Alaska Fund	Swap	Merrill Lynch	9-Jan-07	
212	Genesee County	Swap	Goldman Sachs	10-Jan-07	
213	Genesee County	Swap	Goldman Sachs	10-Jan-07	
214	Genesee County	Swap	Deutsche Bank	11-Jan-07	
215	Genesee County	Swap	Goldman Sachs	17-Jan-07	
216	Genesee County	Swap	Goldman Sachs	17-Jan-07	
217	Genesee County	Swap	Goldman Sachs	18-Jan-07	
218	Genesee County	Swap	Goldman Sachs	18-Jan-07	
219	Genesee County	Swap	Goldman Sachs	18-Jan-07	
220	Genesee County	Swap	Goldman Sachs	18-Jan-07	
221	Genesee County	Swap	Goldman Sachs	18-Jan-07	
222	Genesee County	Swap	Goldman Sachs	18-Jan-07	
223	Genesee County	Swaption	J.P. Morgan	18-Jan-07	18-Jan-08
224	Genesee County	Swap	Goldman Sachs	19-Jan-07	
225	Genesee County	Swap	Goldman Sachs	19-Jan-07	
226	Genesee County	Swap	Goldman Sachs	19-Jan-07	
227	Genesee County	Swap	Goldman Sachs	19-Jan-07	
228	Genesee County	Swap	Goldman Sachs	19-Jan-07	
229	Genesee County	Swap	Goldman Sachs	19-Jan-07	
230	Alaska Fund	Swaption	RBS	22-Jan-07	1-Feb-08
231	Alaska Fund	Swaption	RBS	22-Jan-07	1-Feb-08
232	Genesee County	Swap	Deutsche Bank	22-Jan-07	
233	Genesee County	Swap	Deutsche Bank	22-Jan-07	
234	Alaska Fund	Swap	Deutsche Bank	25-Jan-07	
235	Alaska Fund	Swap	Deutsche Bank	25-Jan-07	
236	Alaska Fund	Swap	Goldman Sachs	25-Jan-07	
237	Alaska Fund	Swap	Goldman Sachs	25-Jan-07	
238	Alaska Fund	Swaption	RBS	26-Jan-07	19-Apr-07
239	Alaska Fund	Swaption	RBS	26-Jan-07	19-Apr-07
240	Alaska Fund	Swaption	Bank of America	26-Jan-07	1-Feb-08
241	Alaska Fund	Swaption	Bank of America	26-Jan-07	1-Feb-08
242	Genesee County	Swap	Goldman Sachs	29-Jan-07	



	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
243	Genesee County	Swap	Goldman Sachs	29-Jan-07	
244	Genesee County	Swap	Goldman Sachs	31-Jan-07	
245	Genesee County	Swap	Goldman Sachs	31-Jan-07	
246	Alaska Fund	Swap	Bank of America	1-Feb-07	
247	Alaska Fund	Swaption	RBS	2-Feb-07	25-Jan-10
248	Alaska Fund	Swaption	RBS	2-Feb-07	25-Jan-10
249	Alaska Fund	Swap	Bank of America	9-Feb-07	
250	Alaska Fund	Swap	Deutsche Bank	9-Feb-07	
251	Genesee County	Swaption	Citigroup	11-Feb-07	
252	Alaska Fund	Swap	Deutsche Bank	12-Feb-07	
253	Alaska Fund	Swap	Morgan Stanley	12-Feb-07	
254	Alaska Fund	Swap	Merrill Lynch	14-Feb-07	
255	Alaska Fund	Swap	Merrill Lynch	14-Feb-07	
256	Alaska Fund	Swap	Deutsche Bank	15-Feb-07	
257	Alaska Fund	Swap	Deutsche Bank	15-Feb-07	
258	Alaska Fund	Swap	UBS	16-Feb-07	
259	Alaska Fund	Swap	Deutsche Bank	16-Feb-07	
260	Alaska Fund	Swaption	RBS	20-Feb-07	8-Aug-07
261	Alaska Fund	Swaption	RBS	20-Feb-07	8-Aug-07
262	Alaska Fund	Swap	Barclays	23-Feb-07	
263	Alaska Fund	Swap	Barclays	23-Feb-07	
264	Alaska Fund	Swap	Citigroup	26-Feb-07	
265	Alaska Fund	Swap	Citigroup	27-Feb-07	
266	Alaska Fund	Swap	Morgan Stanley	27-Feb-07	
267	Alaska Fund	Swap	Citigroup	28-Feb-07	
268	Alaska Fund	Swap	Citigroup	28-Feb-07	
269	Alaska Fund	Swaption	RBS	1-Mar-07	25-Jan-10
270	Alaska Fund	Swaption	RBS	1-Mar-07	25-Jan-10
271	Alaska Fund	Swap	Bank of America	1-Mar-07	
272	Alaska Fund	Swap	Barclays	1-Mar-07	
273	Alaska Fund	Swap	Deutsche Bank	1-Mar-07	
274	Alaska Fund	Swap	Goldman Sachs	1-Mar-07	
275	Genesee County	Swap	Goldman Sachs	1-Mar-07	
276	Genesee County	Swap	Goldman Sachs	1-Mar-07	
277	Alaska Fund	Swaption	RBS	2-Mar-07	25-Jan-10
278	Alaska Fund	Swaption	RBS	2-Mar-07	25-Jan-10
279	Alaska Fund	Swaption	Barclays	2-Mar-07	Unavailable
280	Alaska Fund	Swap	Deutsche Bank	2-Mar-07	
281	Alaska Fund	Swap	Goldman Sachs	2-Mar-07	
282	Alaska Fund	Swap	Morgan Stanley	2-Mar-07	
283	Alaska Fund	Swaption	Barclays	6-Mar-07	25-Jan-10
284	Alaska Fund	Swaption	Barclays	6-Mar-07	25-Jan-10
285	Alaska Fund	Swap	Citigroup	6-Mar-07	
286	Alaska Fund	Swap	Morgan Stanley	6-Mar-07	
287	Alaska Fund	Swap	RBS	6-Mar-07	
288	Alaska Fund	Swap	Barclays	7-Mar-07	
289	Alaska Fund	Swap	Barclays	7-Mar-07	
290	Alaska Fund	Swap	RBS	7-Mar-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
291	Genesee County	Swap	Goldman Sachs	10-Mar-07	
292	Genesee County	Swap	Goldman Sachs	10-Mar-07	
293	Alaska Fund	Swaption	RBS	12-Mar-07	26-Mar-07
294	Alaska Fund	Swaption	RBS	12-Mar-07	26-Mar-07
295	Alaska Fund	Swaption	RBS	12-Mar-07	20-Jun-07
296	Alaska Fund	Swaption	RBS	12-Mar-07	31-Mar-08
297	Alaska Fund	Swaption	RBS	13-Mar-07	2-Jul-07
298	Alaska Fund	Swaption	RBS	13-Mar-07	2-Jul-07
299	Alaska Fund	Swaption	Deutsche Bank	13-Mar-07	31-Mar-08
300	Alaska Fund	Swaption	RBS	13-Mar-07	31-Mar-08
301	Alaska Fund	Swaption	J.P. Morgan	19-Mar-07	7-Jun-07
302	Alaska Fund	Swaption	J.P. Morgan	19-Mar-07	7-Jun-07
303	Alaska Fund	Swaption	J.P. Morgan	19-Mar-07	31-Mar-08
304	Alaska Fund	Swaption	J.P. Morgan	19-Mar-07	31-Mar-08
305	Alaska Fund	Swaption	J.P. Morgan	19-Mar-07	31-Mar-08
306	Alaska Fund	Swaption	J.P. Morgan	19-Mar-07	4-May-10
307	Alaska Fund	Swap	Bank of America	21-Mar-07	
308	Alaska Fund	Swap	Citigroup	22-Mar-07	
309	Alaska Fund	Swap	Citigroup	22-Mar-07	
310	Alaska Fund	Swaption	J.P. Morgan	23-Mar-07	29-Jun-07
311	Alaska Fund	Swap	Goldman Sachs	26-Mar-07	
312	Alaska Fund	Swap	Goldman Sachs	26-Mar-07	
313	Alaska Fund	Swap	Goldman Sachs	28-Mar-07	
314	Alaska Fund	Swaption	J.P. Morgan	29-Mar-07	27-Apr-07
315	Alaska Fund	Swap	RBS	29-Mar-07	
316	Alaska Fund	Swaption	RBS	4-Apr-07	27-Apr-07
317	Alaska Fund	Swaption	RBS	4-Apr-07	27-Apr-07
318	Alaska Fund	Swaption	RBS	4-Apr-07	27-Apr-07
319	Alaska Fund	Swaption	RBS	4-Apr-07	27-Apr-07
320	Alaska Fund	Swap	Merrill Lynch	4-Apr-07	
321	Alaska Fund	Swap	Merrill Lynch	4-Apr-07	
322	Genesee County	Swap	Goldman Sachs	10-Apr-07	
323	Genesee County	Swap	Goldman Sachs	10-Apr-07	
324	Genesee County	Swap	Deutsche Bank	11-Apr-07	
325	Genesee County	Swap	Deutsche Bank	11-Apr-07	
326	Genesee County	Swap	Goldman Sachs	12-Apr-07	
327	Genesee County	Swap	Goldman Sachs	16-Apr-07	
328	Genesee County	Swap	Goldman Sachs	16-Apr-07	
329	Genesee County	Swap	Goldman Sachs	18-Apr-07	
330	Genesee County	Swap	Goldman Sachs	18-Apr-07	
331	Genesee County	Swap	Goldman Sachs	18-Apr-07	
332	Genesee County	Swap	Goldman Sachs	19-Apr-07	
333	Genesee County	Swap	Goldman Sachs	19-Apr-07	
334	Genesee County	Swap	Goldman Sachs	19-Apr-07	
335	Genesee County	Swap	Goldman Sachs	19-Apr-07	
336	Genesee County	Swap	Deutsche Bank	23-Apr-07	
337	Alaska Fund	Swaption	J.P. Morgan	25-Apr-07	27-Apr-07
338	Alaska Fund	Swap	Goldman Sachs	27-Apr-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
339	Genesee County	Swap	Goldman Sachs	30-Apr-07	
340	Genesee County	Swap	Goldman Sachs	2-May-07	
341	Alaska Fund	Swap	Citigroup	7-May-07	
342	Alaska Fund	Swaption	RBS	14-May-07	27-Apr-07
343	Alaska Fund	Swaption	RBS	14-May-07	29-Jun-07
344	Alaska Fund	Swaption	Bank of America	14-May-07	26-Sep-08
345	Alaska Fund	Swaption	Bank of America	14-May-07	26-Sep-08
346	Alaska Fund	Swaption		15-May-07	20-Jun-07
347	Alaska Fund	Swaption	Bank of America	16-May-07	2-Jul-07
348	Alaska Fund	Swaption	Bank of America	16-May-07	2-Jul-07
349	Alaska Fund	Swaption	Bank of America	16-May-07	26-Sep-08
350	Alaska Fund	Swaption	Bank of America	16-May-07	26-Sep-08
351	Alaska Fund	Swap	Bank of America	22-May-07	
352	Alaska Fund	Swap	Bank of America	22-May-07	
353	Alaska Fund	Swap	Bank of America	22-May-07	
354	Alaska Fund	Swap	Bank of America	22-May-07	
355	Alaska Fund	Swap	Bank of America	22-May-07	
356	Alaska Fund	Swaption	RBS	23-May-07	20-Jun-07
357	Alaska Fund	Swaption	Barclays	23-May-07	26-Sep-08
358	Alaska Fund	Swaption	RBS	23-May-07	26-Sep-08
359	Alaska Fund	Swaption	RBS	23-May-07	26-Sep-08
360	Alaska Fund	Swaption	RBS	23-May-07	26-Sep-08
361	Genesee County	Swaption	Goldman Sachs	24-May-07	27-Nov-07
362	Alaska Fund	Swaption	RBS	25-May-07	15-Dec-07
363	Alaska Fund	Swaption	RBS	25-May-07	15-Dec-07
364	Alaska Fund	Swaption	RBS	25-May-07	15-Dec-08
365	Alaska Fund	Swaption	RBS	25-May-07	15-Dec-08
366	Alaska Fund	Swaption	RBS	30-May-07	20-Jun-07
367	Alaska Fund	Swaption	RBS	30-May-07	2-Jul-07
368	Alaska Fund	Swaption	RBS	30-May-07	2-Jul-07
369	Alaska Fund	Swaption	RBS	30-May-07	15-Dec-08
370	Alaska Fund	Swaption	RBS	30-May-07	15-Dec-08
371	Alaska Fund	Swaption	RBS	1-Jun-07	20-Jun-07
372	Alaska Fund	Swaption	RBS	1-Jun-07	20-Jun-07
373	Alaska Fund	Swaption	RBS	1-Jun-07	2-Jul-07
374	Alaska Fund	Swaption	RBS	1-Jun-07	2-Jul-07
375	Alaska Fund	Swaption	RBS	1-Jun-07	2-Jul-07
376	Alaska Fund	Swaption	RBS	1-Jun-07	2-Jul-07
377	Alaska Fund	Swaption	RBS	1-Jun-07	2-Jul-07
378	Alaska Fund	Swaption	RBS	1-Jun-07	2-Jul-07
379	Genesee County	Swap	J.P. Morgan	6-Jun-07	
380	Genesee County	Swap	J.P. Morgan	6-Jun-07	
381	Alaska Fund	Swap	RBS	7-Jun-07	
382	Alaska Fund	Swaption	J.P. Morgan	8-Jun-07	7-Jun-10
383	Alaska Fund	Swaption	J.P. Morgan	8-Jun-07	7-Jun-10
384	Alaska Fund	Swap	Goldman Sachs	8-Jun-07	
385	Alaska Fund	Swap	UBS	8-Jun-07	
386	Genesee County	Swap	Goldman Sachs	8-Jun-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
387	Genesee County	Swap	Goldman Sachs	8-Jun-07	
388	Alaska Fund	Swaption	J.P. Morgan	14-Jun-07	7-Jun-10
389	Alaska Fund	Swaption	J.P. Morgan	14-Jun-07	7-Jun-10
390	Alaska Fund	Swap	Deutsche Bank	14-Jun-07	
391	Alaska Fund	Swap	Deutsche Bank	14-Jun-07	
392	Alaska Fund	Swap	Deutsche Bank	14-Jun-07	
393	Alaska Fund	Swap	Deutsche Bank	14-Jun-07	
394	Alaska Fund	Swap	Morgan Stanley	14-Jun-07	
395	Alaska Fund	Swap	Morgan Stanley	14-Jun-07	
396	Alaska Fund	Swap	RBS	14-Jun-07	
397	Alaska Fund	Swap	RBS	14-Jun-07	
398	Alaska Fund	Swap	RBS	14-Jun-07	
399	Alaska Fund	Swap	RBS	14-Jun-07	
400	Alaska Fund	Swap	Deutsche Bank	15-Jun-07	
401	Alaska Fund	Swap	Deutsche Bank	15-Jun-07	
402	Alaska Fund	Swap	RBS	15-Jun-07	
403	Alaska Fund	Swap	RBS	15-Jun-07	
404	Alaska Fund	Swap	RBS	15-Jun-07	
405	Alaska Fund	Swaption	Morgan Stanley	18-Jun-07	24-Aug-07
406	Alaska Fund	Swaption	RBS	18-Jun-07	15-Dec-08
407	Alaska Fund	Swaption	RBS	18-Jun-07	15-Dec-08
408	Alaska Fund	Swap	RBS	18-Jun-07	
409	Alaska Fund	Swap	RBS	18-Jun-07	
410	Alaska Fund	Swap	RBS	18-Jun-07	
411	Alaska Fund	Swap	RBS	18-Jun-07	
412	Alaska Fund	Swaption	Citigroup	20-Jun-07	9-Jul-07
413	Alaska Fund	Swaption	Citigroup	20-Jun-07	9-Jul-07
414	Alaska Fund	Swaption	Citigroup	20-Jun-07	9-Jul-07
415	Alaska Fund	Swaption	Citigroup	20-Jun-07	9-Jul-07
416	Alaska Fund	Swap	Merrill Lynch	20-Jun-07	
417	Alaska Fund	Swap	Goldman Sachs	21-Jun-07	
418	Alaska Fund	Swap	Goldman Sachs	21-Jun-07	
419	Alaska Fund	Swaption	J.P. Morgan	22-Jun-07	7-Jun-10
420	Alaska Fund	Swaption	J.P. Morgan	22-Jun-07	7-Jun-10
421	Alaska Fund	Swaption	J.P. Morgan	22-Jun-07	7-Jun-10
422	Alaska Fund	Swaption	J.P. Morgan	22-Jun-07	7-Jun-10
423	Alaska Fund	Swap	Deutsche Bank	22-Jun-07	
424	Alaska Fund	Swap	RBS	22-Jun-07	
425	Alaska Fund	Swap	RBS	22-Jun-07	
426	Alaska Fund	Swap	RBS	22-Jun-07	
427	Alaska Fund	Swap	RBS	25-Jun-07	
428	Alaska Fund	Swap	Merrill Lynch	26-Jun-07	
429	Alaska Fund	Swap	Goldman Sachs	28-Jun-07	
430	Pennsylvania Turnpike	Swap	JP Morgan	1-Jul-07	
431	Pennsylvania Turnpike	Swap	Merrill Lynch	1-Jul-07	
432	Pennsylvania Turnpike	Swap	UBS	1-Jul-07	
433	Alaska Fund	Swaption	Citigroup	2-Jul-07	20-Aug-07
434	Alaska Fund	Swaption	RBS	2-Jul-07	20-Aug-07

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
435	Alaska Fund	Swap	Citigroup	2-Jul-07	
436	Alaska Fund	Swap	Deutsche Bank	2-Jul-07	
437	Alaska Fund	Swap	Deutsche Bank	2-Jul-07	
438	Alaska Fund	Swap	Deutsche Bank	2-Jul-07	
439	Alaska Fund	Swap	RBS	2-Jul-07	
440	Alaska Fund	Swap	J.P. Morgan	3-Jul-07	
441	Alaska Fund	Swap	J.P. Morgan	3-Jul-07	
442	Alaska Fund	Swap	Merrill Lynch	3-Jul-07	
443	Alaska Fund	Swap	RBS	6-Jul-07	
444	Genesee County	Swap	Goldman Sachs	7-Jul-07	
445	Genesee County	Swap	Goldman Sachs	7-Jul-07	
446	Alaska Fund	Swaption	Citigroup	9-Jul-07	20-Aug-07
447	Alaska Fund	Swap	Citigroup	9-Jul-07	
448	Alaska Fund	Swap	Citigroup	9-Jul-07	
449	Genesee County	Swap	Goldman Sachs	9-Jul-07	
450	Genesee County	Swap	Goldman Sachs	9-Jul-07	
451	Alaska Fund	Swap	Bank of America	10-Jul-07	
452	Genesee County	Swap	Goldman Sachs	10-Jul-07	
453	Genesee County	Swap	Goldman Sachs	10-Jul-07	
454	Genesee County	Swap	Goldman Sachs	10-Jul-07	
455	Genesee County	Swap	Goldman Sachs	10-Jul-07	
456	Genesee County	Swap	Deutsche Bank	11-Jul-07	
457	Alaska Fund	Swap	RBS	12-Jul-07	
458	Genesee County	Swap	Goldman Sachs	12-Jul-07	
459	Genesee County	Swap	Goldman Sachs	12-Jul-07	
460	Alaska Fund	Swap	Deutsche Bank	13-Jul-07	
461	Alaska Fund	Swap	Deutsche Bank	13-Jul-07	
462	Alaska Fund	Swap	Deutsche Bank	16-Jul-07	
463	Alaska Fund	Swap	Deutsche Bank	16-Jul-07	
464	Genesee County	Swap	Goldman Sachs	18-Jul-07	
465	Genesee County	Swap	Goldman Sachs	18-Jul-07	
466	Alaska Fund	Swap	J.P. Morgan	19-Jul-07	
467	Alaska Fund	Swap	J.P. Morgan	19-Jul-07	
468	Alaska Fund	Swap	Merrill Lynch	19-Jul-07	
469	Genesee County	Swap	Goldman Sachs	19-Jul-07	
470	Genesee County	Swap	Goldman Sachs	19-Jul-07	
471	Genesee County	Swap	Deutsche Bank	22-Jul-07	
472	Genesee County	Swap	Deutsche Bank	22-Jul-07	
473	Alaska Fund	Swap	Credit Suisse	23-Jul-07	
474	Genesee County	Swap	Deutsche Bank	23-Jul-07	
475	Genesee County	Swap	Deutsche Bank	23-Jul-07	
476	Alaska Fund	Swap	Citigroup	25-Jul-07	
477	Alaska Fund	Swap	Citigroup	25-Jul-07	
478	Alaska Fund	Swap	Citigroup	26-Jul-07	
479	Genesee County	Swap	Goldman Sachs	30-Jul-07	
480	Genesee County	Swap	Goldman Sachs	30-Jul-07	
481	Alaska Fund	Swap	RBS	31-Jul-07	
482	Genesee County	Swap	Goldman Sachs	31-Jul-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
483	Genesee County	Swap	Goldman Sachs	31-Jul-07	
484	Genesee County	Swap	Goldman Sachs	1-Aug-07	
485	Genesee County	Swap	Goldman Sachs	1-Aug-07	
486	Genesee County	Swap	Goldman Sachs	2-Aug-07	
487	Genesee County	Swap	Goldman Sachs	2-Aug-07	
488	Alaska Fund	Swap	Bank of America	8-Aug-07	
489	Alaska Fund	Swap	Bank of America	8-Aug-07	
490	Alaska Fund	Swap	Bank of America	8-Aug-07	
491	Alaska Fund	Swap	Bank of America	8-Aug-07	
492	Alaska Fund	Swap	Bank of America	9-Aug-07	
493	Alaska Fund	Swap	Bank of America	9-Aug-07	
494	Alaska Fund	Swap	Bank of America	9-Aug-07	
495	Alaska Fund	Swap	Morgan Stanley	9-Aug-07	
496	Alaska Fund	Swap	Morgan Stanley	9-Aug-07	
497	Alaska Fund	Swap	Bank of America	10-Aug-07	
498	Alaska Fund	Swap	Deutsche Bank	10-Aug-07	
499	Alaska Fund	Swap	Bank of America	15-Aug-07	
500	Alaska Fund	Swap	Bank of America	15-Aug-07	
501	Alaska Fund	Swap	Bank of America	15-Aug-07	
502	Alaska Fund	Swap	RBS	15-Aug-07	
503	Alaska Fund	Swap	Deutsche Bank	16-Aug-07	
504	Alaska Fund	Swap	Goldman Sachs	16-Aug-07	
505	Genesee County	Swap	Goldman Sachs	16-Aug-07	
506	Genesee County	Swap	Goldman Sachs	16-Aug-07	
507	Alaska Fund	Swap	Citigroup	17-Aug-07	
508	Alaska Fund	Swap	Credit Suisse	17-Aug-07	
509	Alaska Fund	Swap	Goldman Sachs	17-Aug-07	
510	Genesee County	Swap	Goldman Sachs	17-Aug-07	
511	Genesee County	Swap	Goldman Sachs	17-Aug-07	
512	Alaska Fund	Swap	Goldman Sachs	20-Aug-07	
513	Alaska Fund	Swap	RBS	21-Aug-07	
514	Alaska Fund	Swap	RBS	21-Aug-07	
515	Alaska Fund	Swaption	Citigroup	22-Aug-07	23-Nov-07
516	Alaska Fund	Swap	Barclays	22-Aug-07	
517	Alaska Fund	Swap	Deutsche Bank	22-Aug-07	
518	Alaska Fund	Swap	Morgan Stanley	22-Aug-07	
519	Genesee County	Swap	Goldman Sachs	22-Aug-07	
520	Genesee County	Swap	Goldman Sachs	22-Aug-07	
521	Alaska Fund	Swap	Citigroup	23-Aug-07	
522	Alaska Fund	Swap	RBS	23-Aug-07	
523	Alaska Fund	Swap	Morgan Stanley	24-Aug-07	
524	Alaska Fund	Swaption	Morgan Stanley	24-Aug-07	
525	Genesee County	Swap	Goldman Sachs	24-Aug-07	
526	Genesee County	Swap	Goldman Sachs	24-Aug-07	
527	Genesee County	Swap	Goldman Sachs	24-Aug-07	
528	Genesee County	Swap	Goldman Sachs	24-Aug-07	
529	Genesee County	Swap	Goldman Sachs	24-Aug-07	
530	Genesee County	Swap	Goldman Sachs	24-Aug-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
531	Genesee County	Swap	Goldman Sachs	24-Aug-07	
532	Genesee County	Swap	Goldman Sachs	24-Aug-07	
533	Genesee County	Swap	Goldman Sachs	24-Aug-07	
534	Genesee County	Swap	Goldman Sachs	24-Aug-07	
535	Genesee County	Swap	Goldman Sachs	24-Aug-07	
536	Genesee County	Swap	Goldman Sachs	24-Aug-07	
537	Genesee County	Swap	Goldman Sachs	27-Aug-07	
538	Genesee County	Swap	Goldman Sachs	27-Aug-07	
539	Genesee County	Swap	Goldman Sachs	27-Aug-07	
540	Genesee County	Swap	Goldman Sachs	27-Aug-07	
541	Genesee County	Swap	Goldman Sachs	27-Aug-07	
542	Genesee County	Swap	Goldman Sachs	27-Aug-07	
543	Alaska Fund	Swap	Goldman Sachs	30-Aug-07	
544	Alaska Fund	Swap	Morgan Stanley	31-Aug-07	
545	Genesee County	Swap	J.P. Morgan	10-Sep-07	
546	Alaska Fund	Swap	Goldman Sachs	11-Sep-07	
547	Alaska Fund	Swap	Barclays	12-Sep-07	
548	Alaska Fund	Swap	Morgan Stanley	12-Sep-07	
549	Alaska Fund	Swap	Morgan Stanley	12-Sep-07	
550	Genesee County	Swap	Goldman Sachs	12-Sep-07	
551	Genesee County	Swap	Goldman Sachs	12-Sep-07	
552	Alaska Fund	Swaption	J.P. Morgan	14-Sep-07	16-Jun-08
553	Alaska Fund	Swaption	J.P. Morgan	14-Sep-07	16-Jun-08
554	Alaska Fund	Swaption	J.P. Morgan	14-Sep-07	16-Mar-09
555	Alaska Fund	Swaption	J.P. Morgan	14-Sep-07	16-Mar-09
556	Alaska Fund	Swap	J.P. Morgan	14-Sep-07	
557	Genesee County	Swap	Goldman Sachs	17-Sep-07	
558	Genesee County	Swap	Goldman Sachs	17-Sep-07	
559	Genesee County	Swap	Goldman Sachs	17-Sep-07	
560	Genesee County	Swap	Goldman Sachs	17-Sep-07	
561	Alaska Fund	Swap	RBS	18-Sep-07	
562	Alaska Fund	Swaption	Citigroup	19-Sep-07	16-Mar-09
563	Alaska Fund	Swap	Citigroup	19-Sep-07	
564	Alaska Fund	Swap	RBS	19-Sep-07	
565	Alaska Fund	Swap	Barclays	20-Sep-07	
566	Alaska Fund	Swap	Citigroup	20-Sep-07	
567	Alaska Fund	Swap	Citigroup	20-Sep-07	
568	Alaska Fund	Swap	Morgan Stanley	20-Sep-07	
569	Alaska Fund	Swap	Goldman Sachs	20-Sep-07	
570	Alaska Fund	Swap	UBS	20-Sep-07	
571	Alaska Fund	Swap	Citigroup	24-Sep-07	
572	Alaska Fund	Swap	Citigroup	24-Sep-07	
573	Alaska Fund	Swap	Morgan Stanley	24-Sep-07	
574	Genesee County	Swap	Goldman Sachs	24-Sep-07	
575	Genesee County	Swap	Goldman Sachs	24-Sep-07	
576	Alaska Fund	Swaption	J.P. Morgan	26-Sep-07	Unavailable
577	Alaska Fund	Swaption	J.P. Morgan	26-Sep-07	Unavailable
578	Alaska Fund	Swap	Morgan Stanley	26-Sep-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
579	Alaska Fund	Swap	Credit Suisse	27-Sep-07	
580	Alaska Fund	Swap	Bank of America	28-Sep-07	
581	Alaska Fund	Swap	Deutsche Bank	28-Sep-07	
582	Genesee County	Swap	J.P. Morgan	1-Oct-07	
583	Genesee County	Swap	J.P. Morgan	1-Oct-07	
584	Alaska Fund	Swap	Merrill Lynch	2-Oct-07	
585	Alaska Fund	Swap	Merrill Lynch	2-Oct-07	
586	Alaska Fund	Swap	Merrill Lynch	2-Oct-07	
587	Genesee County	Swap	Goldman Sachs	2-Oct-07	
588	Genesee County	Swap	Goldman Sachs	2-Oct-07	
589	Genesee County	Swap	Deutsche Bank	3-Oct-07	
590	Genesee County	Swap	Deutsche Bank	3-Oct-07	
591	Alaska Fund	Swap	Bank of America	5-Oct-07	
592	Alaska Fund	Swap	Goldman Sachs	5-Oct-07	
593	Alaska Fund	Swap	Goldman Sachs	5-Oct-07	
594	Alaska Fund	Swap	Goldman Sachs	5-Oct-07	
595	Alaska Fund	Swap	Goldman Sachs	5-Oct-07	
596	Alaska Fund	Swap	Goldman Sachs	5-Oct-07	
597	Alaska Fund	Swap	Goldman Sachs	5-Oct-07	
598	Alaska Fund	Swap	Goldman Sachs	5-Oct-07	
599	Genesee County	Swap	Goldman Sachs	9-Oct-07	
600	Genesee County	Swap	Goldman Sachs	9-Oct-07	
601	Genesee County	Swap	Goldman Sachs	9-Oct-07	
602	Alaska Fund	Swap	Goldman Sachs	10-Oct-07	
603	Alaska Fund	Swap	Goldman Sachs	10-Oct-07	
604	Alaska Fund	Swap	Morgan Stanley	10-Oct-07	
605	Genesee County	Swap	Goldman Sachs	10-Oct-07	
606	Alaska Fund	Swap	Merrill Lynch	11-Oct-07	
607	Genesee County	Swap	Deutsche Bank	11-Oct-07	
608	Genesee County	Swap	Deutsche Bank	11-Oct-07	
609	Alaska Fund	Swap	J.P. Morgan	12-Oct-07	
610	Alaska Fund	Swap	Merrill Lynch	12-Oct-07	
611	Genesee County	Swap	Goldman Sachs	12-Oct-07	
612	Genesee County	Swap	Goldman Sachs	18-Oct-07	
613	Genesee County	Swap	Goldman Sachs	18-Oct-07	
614	Genesee County	Swap	Goldman Sachs	18-Oct-07	
615	Genesee County	Swap	Goldman Sachs	19-Oct-07	
616	Genesee County	Swap	Goldman Sachs	19-Oct-07	
617	Genesee County	Swap	Goldman Sachs	19-Oct-07	
618	Genesee County	Swap	Goldman Sachs	19-Oct-07	
619	Genesee County	Swap	Deutsche Bank	22-Oct-07	
620	Alaska Fund	Swaption	RBS	25-Oct-07	25-Oct-07
621	Alaska Fund	Swap	Bank of America	25-Oct-07	
622	Alaska Fund	Swap	Bank of America	25-Oct-07	
623	Alaska Fund	Swap	Bank of America	25-Oct-07	
624	Alaska Fund	Swap	Deutsche Bank	25-Oct-07	
625	Alaska Fund	Swap	RBS	25-Oct-07	
626	Alaska Fund	Swap	Barclays	31-Oct-07	



	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
627	Genesee County	Swap	Goldman Sachs	31-Oct-07	
628	Alaska Fund	Swap	Barclays	1-Nov-07	
629	Alaska Fund	Swap	Merrill Lynch	1-Nov-07	
630	Alaska Fund	Swap	UBS	1-Nov-07	
631	Genesee County	Swap	Goldman Sachs	1-Nov-07	
632	Genesee County	Swap	Goldman Sachs	1-Nov-07	
633	Alaska Fund	Swap	Bank of America	2-Nov-07	
634	Genesee County	Swap	Goldman Sachs	2-Nov-07	
635	Genesee County	Swaption	Citigroup	2-Nov-07	
636	Genesee County	Swaption	Citigroup	2-Nov-07	
637	EAA/Portigon	Swaption	Wells Fargo	6-Nov-07	7-Nov-11
638	Genesee County	Swaption	Barclays	6-Nov-07	
639	Genesee County	Swaption	Barclays	6-Nov-07	
640	Genesee County	Swaption	Credit Suisse	6-Nov-07	
641	Genesee County	Swaption	Credit Suisse	6-Nov-07	
642	Alaska Fund	Swap	Goldman Sachs	15-Nov-07	
643	Alaska Fund	Swap	RBS	15-Nov-07	
644	Pennsylvania Turnpike	Swap	JP Morgan	15-Nov-07	
645	Genesee County	Swap	Barclays	16-Nov-07	
646	Genesee County	Swap	Barclays	16-Nov-07	
647	Genesee County	Swap	Barclays	16-Nov-07	
648	Genesee County	Swap	Barclays	16-Nov-07	
649	Alaska Fund	Swaption	Barclays	19-Nov-07	Unavailable
650	Alaska Fund	Swap	Bank of America	20-Nov-07	
651	Alaska Fund	Swap	RBS	20-Nov-07	
652	Genesee County	Swap	Goldman Sachs	20-Nov-07	
653	Genesee County	Swap	Goldman Sachs	20-Nov-07	
654	Genesee County	Swap	Goldman Sachs	20-Nov-07	
655	Genesee County	Swap	Goldman Sachs	21-Nov-07	
656	Genesee County	Swaption	Goldman Sachs	21-Nov-07	22-Feb-08
657	Genesee County	Swaption	RBS	21-Nov-07	
658	Alaska Fund	Swap	Citigroup	23-Nov-07	
659	Alaska Fund	Swaption	RBS	26-Nov-07	14-Sep-09
660	Alaska Fund	Swaption	RBS	26-Nov-07	14-Sep-09
661	Genesee County	Swap	Goldman Sachs	26-Nov-07	
662	Genesee County	Swap	Goldman Sachs	26-Nov-07	
663	Alaska Fund	Swap	Barclays	28-Nov-07	
664	Alaska Fund	Swap	Barclays	28-Nov-07	
665	Genesee County	Swaption	RBS	28-Nov-07	2-May-08
666	Genesee County	Swaption	RBS	28-Nov-07	2-May-08
667	Alaska Fund	Swaption	Goldman Sachs	29-Nov-07	20-Nov-07
668	Alaska Fund	Swaption	J.P. Morgan	29-Nov-07	20-Nov-07
669	Alaska Fund	Swap	Deutsche Bank	29-Nov-07	
670	Alaska Fund	Swap	Deutsche Bank	29-Nov-07	
671	Alaska Fund	Swap	J.P. Morgan	30-Nov-07	
672	Alaska Fund	Swap	J.P. Morgan	30-Nov-07	
673	Alaska Fund	Swap	J.P. Morgan	30-Nov-07	
674	Alaska Fund	Swap	RBS	3-Dec-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
675	Alaska Fund	Swap	RBS	3-Dec-07	
676	Alaska Fund	Swap	Merrill Lynch	4-Dec-07	
677	Alaska Fund	Swap	Merrill Lynch	4-Dec-07	
678	Alaska Fund	Swap	Morgan Stanley	4-Dec-07	
679	Alaska Fund	Swap	UBS	4-Dec-07	
680	Alaska Fund	Swap	Bank of America	5-Dec-07	
681	Alaska Fund	Swap	Bank of America	5-Dec-07	
682	Alaska Fund	Swap	Barclays	5-Dec-07	
683	Alaska Fund	Swap	Barclays	5-Dec-07	
684	Alaska Fund	Swap	Barclays	5-Dec-07	
685	Alaska Fund	Swap	Barclays	5-Dec-07	
686	Alaska Fund	Swap	RBS	5-Dec-07	
687	Alaska Fund	Swap	RBS	5-Dec-07	
688	Alaska Fund	Swap	RBS	5-Dec-07	
689	Alaska Fund	Swap	RBS	5-Dec-07	
690	Alaska Fund	Swap	Barclays	6-Dec-07	
691	Alaska Fund	Swap	Barclays	6-Dec-07	
692	Alaska Fund	Swap	Barclays	6-Dec-07	
693	Alaska Fund	Swap	Barclays	6-Dec-07	
694	Alaska Fund	Swap	Deutsche Bank	6-Dec-07	
695	Alaska Fund	Swap	Deutsche Bank	6-Dec-07	
696	Alaska Fund	Swap	Barclays	7-Dec-07	
697	Alaska Fund	Swap	Barclays	7-Dec-07	
698	Alaska Fund	Swap	Merrill Lynch	7-Dec-07	
699	Alaska Fund	Swap	Morgan Stanley	7-Dec-07	
700	Alaska Fund	Swap	RBS	7-Dec-07	
701	Alaska Fund	Swap	RBS	7-Dec-07	
702	Alaska Fund	Swap	RBS	7-Dec-07	
703	Alaska Fund	Swap	RBS	10-Dec-07	
704	Alaska Fund	Swap	RBS	10-Dec-07	
705	Alaska Fund	Swap	RBS	10-Dec-07	
706	Alaska Fund	Swap	RBS	10-Dec-07	
707	Alaska Fund	Swap	RBS	10-Dec-07	
708	Genesee County	Swap	J.P. Morgan	10-Dec-07	
709	Genesee County	Swap	J.P. Morgan	10-Dec-07	
710	Genesee County	Swap	J.P. Morgan	10-Dec-07	
711	Genesee County	Swap	J.P. Morgan	10-Dec-07	
712	Alaska Fund	Swap	Barclays	12-Dec-07	
713	Alaska Fund	Swap	Barclays	12-Dec-07	
714	Alaska Fund	Swap	Deutsche Bank	12-Dec-07	
715	Alaska Fund	Swap	Deutsche Bank	12-Dec-07	
716	Alaska Fund	Swap	Morgan Stanley	12-Dec-07	
717	Alaska Fund	Swap	Morgan Stanley	12-Dec-07	
718	Alaska Fund	Swap	Bank of America	13-Dec-07	
719	Alaska Fund	Swap	Barclays	13-Dec-07	
720	Alaska Fund	Swap	J.P. Morgan	13-Dec-07	
721	Alaska Fund	Swap	J.P. Morgan	13-Dec-07	
722	Alaska Fund	Swap	J.P. Morgan	13-Dec-07	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
723	Alaska Fund	Swap	J.P. Morgan	13-Dec-07	
724	Alaska Fund	Swap	J.P. Morgan	13-Dec-07	
725	Alaska Fund	Swap	J.P. Morgan	13-Dec-07	
726	Alaska Fund	Swap	RBS	13-Dec-07	
727	Alaska Fund	Swap	RBS	13-Dec-07	
728	Alaska Fund	Swap	RBS	13-Dec-07	
729	Alaska Fund	Swap	RBS	13-Dec-07	
730	Alaska Fund	Swap	RBS	13-Dec-07	
731	Alaska Fund	Swap	RBS	13-Dec-07	
732	Alaska Fund	Swap	RBS	13-Dec-07	
733	Alaska Fund	Swap	Bank of America	14-Dec-07	
734	Alaska Fund	Swap	Goldman Sachs	14-Dec-07	
735	Alaska Fund	Swap	Bank of America	14-Dec-07	
736	Alaska Fund	Swap	Bank of America	14-Dec-07	
737	Alaska Fund	Swap	Bank of America	14-Dec-07	
738	Alaska Fund	Swap	Morgan Stanley	14-Dec-07	
739	Alaska Fund	Swap	Morgan Stanley	14-Dec-07	
740	Alaska Fund	Swap	Morgan Stanley	14-Dec-07	
741	Alaska Fund	Swap	Morgan Stanley	14-Dec-07	
742	Genesee County	Swap	Goldman Sachs	14-Dec-07	
743	Genesee County	Swap	Goldman Sachs	14-Dec-07	
744	Genesee County	Swap	Goldman Sachs	14-Dec-07	
745	Genesee County	Swap	Goldman Sachs	14-Dec-07	
746	Genesee County	Swap	Goldman Sachs	14-Dec-07	
747	Alaska Fund	Swap	Merrill Lynch	17-Dec-07	
748	Alaska Fund	Swap	Merrill Lynch	17-Dec-07	
749	Alaska Fund	Swap	Merrill Lynch	17-Dec-07	
750	Alaska Fund	Swap	Merrill Lynch	17-Dec-07	
751	Alaska Fund	Swap	RBS	17-Dec-07	
752	Alaska Fund	Swap	J.P. Morgan	18-Dec-07	
753	Alaska Fund	Swap	Morgan Stanley	18-Dec-07	
754	Alaska Fund	Swap	Morgan Stanley	18-Dec-07	
755	Alaska Fund	Swap	Merrill Lynch	20-Dec-07	
756	Alaska Fund	Swap	Merrill Lynch	20-Dec-07	
757	Genesee County	Swap	Goldman Sachs	20-Dec-07	
758	Genesee County	Swap	Goldman Sachs	20-Dec-07	
759	Genesee County	Swap	Goldman Sachs	20-Dec-07	
760	Genesee County	Swap	Goldman Sachs	20-Dec-07	
761	Genesee County	Swap	Goldman Sachs	20-Dec-07	
762	Genesee County	Swap	Goldman Sachs	20-Dec-07	
763	Genesee County	Swap	Goldman Sachs	20-Dec-07	
764	Genesee County	Swap	Goldman Sachs	20-Dec-07	
765	Genesee County	Swap	Goldman Sachs	20-Dec-07	
766	Genesee County	Swap	Goldman Sachs	20-Dec-07	
767	Alaska Fund	Swap	Merrill Lynch	21-Dec-07	
768	Alaska Fund	Swap	Barclays	4-Jan-08	
769	Genesee County	Swap	Goldman Sachs	7-Jan-08	
770	Genesee County	Swap	Goldman Sachs	7-Jan-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
771	Genesee County	Swap	Goldman Sachs	7-Jan-08	
772	Alaska Fund	Swap	Bank of America	8-Jan-08	
773	Alaska Fund	Swap	Deutsche Bank	8-Jan-08	
774	Alaska Fund	Swap	UBS	8-Jan-08	
775	Alaska Fund	Swap	UBS	8-Jan-08	
776	Genesee County	Swaption	RBS	8-Jan-08	
777	Genesee County	Swaption	RBS	8-Jan-08	
778	Alaska Fund	Swaption	Barclays	9-Jan-08	1-Feb-08
779	Alaska Fund	Swaption	Barclays	9-Jan-08	1-Feb-08
780	Alaska Fund	Swaption	RBS	9-Jan-08	2-Jul-09
781	Alaska Fund	Swaption	RBS	9-Jan-08	2-Jul-09
782	Alaska Fund	Swap	Bank of America	10-Jan-08	
783	Alaska Fund	Swap	Bank of America	10-Jan-08	
784	Genesee County	Swap	Deutsche Bank	11-Jan-08	
785	Alaska Fund	Swaption	Bank of America	14-Jan-08	1-Feb-08
786	Alaska Fund	Swaption	Bank of America	14-Jan-08	1-Feb-08
787	Alaska Fund	Swap	Bank of America	14-Jan-08	
788	Alaska Fund	Swap	RBS	14-Jan-08	
789	Alaska Fund	Swap	RBS	14-Jan-08	
790	Alaska Fund	Swap	RBS	14-Jan-08	
791	New Britain	Swap	Deutsche Bank	16-Jan-08	
792	New Britain	Swap	Deutsche Bank	16-Jan-08	
793	New Britain	Swap	Deutsche Bank	16-Jan-08	
794	New Britain	Swap	Deutsche Bank	16-Jan-08	
795	Alaska Fund	Swap	Morgan Stanley	17-Jan-08	
796	Genesee County	Swap	Goldman Sachs	18-Jan-08	
797	Genesee County	Swap	Goldman Sachs	18-Jan-08	
798	Genesee County	Swaption	J.P. Morgan	18-Jan-08	21-Mar-08
799	Genesee County	Swaption	J.P. Morgan	18-Jan-08	
800	Genesee County	Swaption	J.P. Morgan	18-Jan-08	
801	Alaska Fund	Swap	Merrill Lynch	22-Jan-08	
802	Alaska Fund	Swap	Morgan Stanley	22-Jan-08	
803	Genesee County	Swap	Deutsche Bank	22-Jan-08	
804	Genesee County	Swap	Deutsche Bank	22-Jan-08	
805	Genesee County	Swap	Deutsche Bank	22-Jan-08	
806	Genesee County	Swap	Deutsche Bank	22-Jan-08	
807	Genesee County	Swap	Goldman Sachs	22-Jan-08	
808	Genesee County	Swap	Goldman Sachs	22-Jan-08	
809	Alaska Fund	Swap	Bank of America	23-Jan-08	
810	Alaska Fund	Swap	Citigroup	23-Jan-08	
811	Alaska Fund	Swap	RBS	23-Jan-08	
812	Alaska Fund	Swap	Citigroup	24-Jan-08	
813	Alaska Fund	Swap	RBS	24-Jan-08	
814	Alaska Fund	Swap	RBS	24-Jan-08	
815	Alaska Fund	Swap	RBS	24-Jan-08	
816	Uniq Capital Markets	Certificate	Goldman Sachs	24-Jan-08	
817	Alaska Fund	Swaption	RBS	25-Jan-08	1-Feb-08
818	Alaska Fund	Swaption	RBS	25-Jan-08	1-Feb-08

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
819	Alaska Fund	Swap	RBS	25-Jan-08	
820	Alaska Fund	Swap	RBS	25-Jan-08	
821	Alaska Fund	Swap	RBS	25-Jan-08	
822	Alaska Fund	Swap	Citigroup	30-Jan-08	
823	Alaska Fund	Swaption	J.P. Morgan	30-Jan-08	
824	New Britain	Swap	Deutsche Bank	1-Feb-08	
825	Genesee County	Swap	Goldman Sachs	2-Feb-08	
826	Genesee County	Swap	Goldman Sachs	2-Feb-08	
827	Genesee County	Swap	Goldman Sachs	4-Feb-08	
828	Genesee County	Swap	Goldman Sachs	4-Feb-08	
829	Genesee County	Swap	Goldman Sachs	5-Feb-08	
830	Alaska Fund	Swap	Barclays	6-Feb-08	
831	Alaska Fund	Swap	Barclays	7-Feb-08	
832	Alaska Fund	Swap	Deutsche Bank	8-Feb-08	
833	Alaska Fund	Swap	Barclays	8-Feb-08	
834	Alaska Fund	Swap	Morgan Stanley	8-Feb-08	
835	Alaska Fund	Swap	Deutsche Bank	14-Feb-08	
836	Alaska Fund	Swap	Goldman Sachs	14-Feb-08	
837	Alaska Fund	Swap	Merrill Lynch	14-Feb-08	
838	Alaska Fund	Swap	RBS	14-Feb-08	
839	Alaska Fund	Swaption	RBS	15-Feb-08	22-Jan-08
840	Alaska Fund	Swaption	RBS	15-Feb-08	22-Jan-08
841	Alaska Fund	Swap	Citigroup	15-Feb-08	
842	Genesee County	Swaption	J.P. Morgan	15-Feb-08	
843	Genesee County	Swaption	J.P. Morgan	15-Feb-08	21-Mar-08
844	Alaska Fund	Swaption	Barclays	19-Feb-08	22-Jan-08
845	Alaska Fund	Swaption	Barclays	19-Feb-08	22-Jan-08
846	Alaska Fund	Swaption	RBS	19-Feb-08	22-Jan-08
847	Alaska Fund	Swaption	RBS	19-Feb-08	22-Jan-08
848	Alaska Fund	Swap	Merrill Lynch	20-Feb-08	
849	Alaska Fund	Swap	Morgan Stanley	20-Feb-08	
850	Genesee County	Swap	Goldman Sachs	20-Feb-08	
851	Genesee County	Swap	Goldman Sachs	20-Feb-08	
852	Genesee County	Swap	Goldman Sachs	20-Feb-08	
853	Genesee County	Swap	Goldman Sachs	20-Feb-08	
854	Genesee County	Swap	Goldman Sachs	21-Feb-08	
855	Genesee County	Swap	Goldman Sachs	21-Feb-08	
856	Alaska Fund	Swaption	RBS	22-Feb-08	22-Jan-08
857	Alaska Fund	Swaption	RBS	22-Feb-08	22-Jan-08
858	Alaska Fund	Swaption	RBS	22-Feb-08	20-Mar-08
859	Alaska Fund	Swaption	RBS	22-Feb-08	20-Mar-08
860	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
861	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
862	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
863	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
864	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
865	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
866	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
867	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
868	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
869	Alaska Fund	Swaption	RBS	22-Feb-08	15-Dec-08
870	Alaska Fund	Swap	J.P. Morgan	22-Feb-08	
871	Alaska Fund	Swap	J.P. Morgan	22-Feb-08	
872	Alaska Fund	Swap	J.P. Morgan	22-Feb-08	
873	Genesee County	Swap	J.P. Morgan	25-Feb-08	
874	Genesee County	Swap	J.P. Morgan	25-Feb-08	
875	Genesee County	Swap	J.P. Morgan	25-Feb-08	
876	Genesee County	Swap	J.P. Morgan	25-Feb-08	
877	Alaska Fund	Swaption	RBS	26-Feb-08	15-Dec-08
878	Alaska Fund	Swaption	RBS	26-Feb-08	15-Dec-08
879	Alaska Fund	Swaption	Barclays	26-Feb-08	2-Feb-09
880	Alaska Fund	Swaption	Barclays	26-Feb-08	2-Feb-09
881	Alaska Fund	Swap	Deutsche Bank	26-Feb-08	
882	Alaska Fund	Swap	Deutsche Bank	26-Feb-08	
883	Alaska Fund	Swap	Deutsche Bank	26-Feb-08	
884	Alaska Fund	Swap	Deutsche Bank	26-Feb-08	
885	Alaska Fund	Swap	Deutsche Bank	26-Feb-08	
886	Genesee County	Swap	J.P. Morgan	26-Feb-08	
887	Genesee County	Swap	J.P. Morgan	26-Feb-08	
888	Alaska Fund	Swaption	J.P. Morgan	27-Feb-08	16-Jun-08
889	Alaska Fund	Swaption	Merrill Lynch	27-Feb-08	19-Dec-08
890	Alaska Fund	Swap	Merrill Lynch	27-Feb-08	
891	Genesee County	Swap	J.P. Morgan	27-Feb-08	
892	Genesee County	Swap	J.P. Morgan	27-Feb-08	
893	Alaska Fund	Swap	Barclays	28-Feb-08	
894	Alaska Fund	Swap	RBS	28-Feb-08	
895	Alaska Fund	Swap	Barclays	29-Feb-08	
896	Alaska Fund	Swap	Morgan Stanley	29-Feb-08	
897	Alaska Fund	Swap	Merrill Lynch	4-Mar-08	
898	Alaska Fund	Swap	UBS	5-Mar-08	
899	Genesee County	Swap	J.P. Morgan	5-Mar-08	
900	Genesee County	Swap	J.P. Morgan	5-Mar-08	
901	Alaska Fund	Swaption	RBS	6-Mar-08	31-Mar-08
902	Alaska Fund	Swaption	RBS	6-Mar-08	31-Mar-08
903	Alaska Fund	Swaption	RBS	6-Mar-08	31-Mar-08
904	Alaska Fund	Swaption	RBS	6-Mar-08	31-Mar-08
905	Alaska Fund	Swaption	RBS	6-Mar-08	31-Mar-08
906	Alaska Fund	Swaption	RBS	6-Mar-08	31-Mar-08
907	Alaska Fund	Swaption	Bank of America	6-Mar-08	26-Sep-08
908	Alaska Fund	Swaption	Bank of America	6-Mar-08	26-Sep-08
909	Alaska Fund	Swaption	Bank of America	6-Mar-08	26-Sep-08
910	Alaska Fund	Swaption	Bank of America	6-Mar-08	26-Sep-08
911	Alaska Fund	Swaption	RBS	6-Mar-08	26-Sep-08
912	Alaska Fund	Swaption	RBS	6-Mar-08	26-Sep-08
913	Alaska Fund	Swaption	RBS	6-Mar-08	15-Dec-08
914	Alaska Fund	Swaption	RBS	6-Mar-08	15-Dec-08

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
915	Alaska Fund	Swap	Barclays	6-Mar-08	
916	Alaska Fund	Swap	BNP Paribas	6-Mar-08	
917	Alaska Fund	Swap	Deutsche Bank	6-Mar-08	
918	Alaska Fund	Swap	Deutsche Bank	6-Mar-08	
919	Alaska Fund	Swap	RBS	6-Mar-08	
920	Genesee County	Swap	J.P. Morgan	6-Mar-08	
921	Genesee County	Swap	J.P. Morgan	6-Mar-08	
922	Genesee County	Swap	J.P. Morgan	10-Mar-08	
923	Genesee County	Swap	J.P. Morgan	10-Mar-08	
924	Genesee County	Swap	J.P. Morgan	10-Mar-08	
925	Genesee County	Swap	Goldman Sachs	11-Mar-08	
926	Genesee County	Swap	Goldman Sachs	11-Mar-08	
927	Alaska Fund	Swaption	RBS	12-Mar-08	15-Dec-08
928	Alaska Fund	Swaption	RBS	12-Mar-08	15-Dec-08
929	Alaska Fund	Swaption	RBS	12-Mar-08	15-Dec-08
930	Alaska Fund	Swaption	RBS	12-Mar-08	15-Dec-08
931	Alaska Fund	Swaption	RBS	12-Mar-08	2-Feb-09
932	Alaska Fund	Swaption	RBS	12-Mar-08	2-Feb-09
933	Alaska Fund	Swap	RBS	12-Mar-08	
934	Genesee County	Swap	Goldman Sachs	13-Mar-08	
935	Genesee County	Swap	Goldman Sachs	13-Mar-08	
936	Genesee County	Swap	Goldman Sachs	13-Mar-08	
937	Genesee County	Swap	Goldman Sachs	13-Mar-08	
938	Alaska Fund	Swap	RBS	17-Mar-08	
939	Genesee County	Swap	Goldman Sachs	17-Mar-08	
940	Genesee County	Swap	Goldman Sachs	17-Mar-08	
941	Alaska Fund	Swap	RBS	18-Mar-08	
942	Genesee County	Swap	J.P. Morgan	18-Mar-08	
943	Genesee County	Swap	J.P. Morgan	18-Mar-08	
944	Alaska Fund	Swap	Barclays	19-Mar-08	
945	Alaska Fund	Swap	Goldman Sachs	19-Mar-08	
946	Alaska Fund	Swap	UBS	25-Mar-08	
947	Alaska Fund	Swap	Merrill Lynch	27-Mar-08	
948	Genesee County	Swap	Goldman Sachs	1-Apr-08	
949	Genesee County	Swap	Goldman Sachs	1-Apr-08	
950	Genesee County	Swap	Goldman Sachs	1-Apr-08	
951	Genesee County	Swap	Goldman Sachs	1-Apr-08	
952	Alaska Fund	Swap	Citigroup	3-Apr-08	
953	Alaska Fund	Swap	Citigroup	3-Apr-08	
954	Genesee County	Swap	Deutsche Bank	3-Apr-08	
955	Genesee County	Swap	Deutsche Bank	3-Apr-08	
956	Genesee County	Swap	J.P. Morgan	3-Apr-08	
957	Genesee County	Swap	J.P. Morgan	3-Apr-08	
958	Genesee County	Swap	J.P. Morgan	3-Apr-08	
959	Genesee County	Swap	J.P. Morgan	3-Apr-08	
960	Genesee County	Swap	J.P. Morgan	3-Apr-08	
961	Genesee County	Swap	J.P. Morgan	3-Apr-08	
962	Genesee County	Swap	Deutsche Bank	3-Apr-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
963	Genesee County	Swap	Deutsche Bank	3-Apr-08	
964	Alaska Fund	Swap	Bank of America	4-Apr-08	
965	Alaska Fund	Swap	Citigroup	4-Apr-08	
966	Alaska Fund	Swap	RBS	4-Apr-08	
967	Alaska Fund	Swap	RBS	4-Apr-08	
968	Alaska Fund	Swap	RBS	4-Apr-08	
969	Alaska Fund	Swap	RBS	4-Apr-08	
970	Alaska Fund	Swap	RBS	4-Apr-08	
971	Alaska Fund	Swap	RBS	4-Apr-08	
972	Alaska Fund	Swap	RBS	4-Apr-08	
973	Alaska Fund	Swap	RBS	4-Apr-08	
974	Genesee County	Swap	Goldman Sachs	4-Apr-08	
975	Genesee County	Swap	Goldman Sachs	4-Apr-08	
976	Genesee County	Swap	Goldman Sachs	4-Apr-08	
977	Genesee County	Swap	Goldman Sachs	4-Apr-08	
978	Genesee County	Swap	Goldman Sachs	4-Apr-08	
979	Genesee County	Swap	Goldman Sachs	4-Apr-08	
980	Alaska Fund	Swap	Bank of America	7-Apr-08	
981	Alaska Fund	Swap	Bank of America	7-Apr-08	
982	Alaska Fund	Swap	Bank of America	7-Apr-08	
983	Alaska Fund	Swap	Bank of America	7-Apr-08	
984	Alaska Fund	Swap	Bank of America	7-Apr-08	
985	Alaska Fund	Swap	Bank of America	7-Apr-08	
986	Alaska Fund	Swap	Citigroup	7-Apr-08	
987	Genesee County	Swap	Goldman Sachs	7-Apr-08	
988	Genesee County	Swap	Deutsche Bank	8-Apr-08	
989	Genesee County	Swap	Deutsche Bank	8-Apr-08	
990	Genesee County	Swap	Deutsche Bank	8-Apr-08	
991	Genesee County	Swap	Deutsche Bank	8-Apr-08	
992	Genesee County	Swap	Goldman Sachs	8-Apr-08	
993	Genesee County	Swap	Goldman Sachs	8-Apr-08	
994	Genesee County	Swap	Goldman Sachs	8-Apr-08	
995	Genesee County	Swap	Goldman Sachs	8-Apr-08	
996	Alaska Fund	Swap	Merrill Lynch	9-Apr-08	
997	Alaska Fund	Swap	Merrill Lynch	9-Apr-08	
998	Alaska Fund	Swap	Bank of America	9-Apr-08	
999	Alaska Fund	Swap	Bank of America	9-Apr-08	
1000	Alaska Fund	Swap	Morgan Stanley	9-Apr-08	
1001	Genesee County	Swap	Goldman Sachs	9-Apr-08	
1002	Genesee County	Swap	Goldman Sachs	9-Apr-08	
1003	Genesee County	Swap	Deutsche Bank	11-Apr-08	
1004	Genesee County	Swap	Deutsche Bank	11-Apr-08	
1005	Alaska Fund	Swap	Bank of America	15-Apr-08	
1006	Alaska Fund	Swap	Bank of America	15-Apr-08	
1007	Genesee County	Swap	Barclays	15-Apr-08	
1008	Genesee County	Swap	Barclays	15-Apr-08	
1009	Alaska Fund	Swap	Bank of America	16-Apr-08	
1010	Alaska Fund	Swap	Deutsche Bank	17-Apr-08	



	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1011	Alaska Fund	Swap	Morgan Stanley	17-Apr-08	
1012	Alaska Fund	Swap	Morgan Stanley	17-Apr-08	
1013	Alaska Fund	Swap	Barclays	17-Apr-08	
1014	Alaska Fund	Swap	Barclays	17-Apr-08	
1015	Alaska Fund	Swap	Barclays	17-Apr-08	
1016	Alaska Fund	Swap	Barclays	17-Apr-08	
1017	Alaska Fund	Swap	Barclays	17-Apr-08	
1018	Alaska Fund	Swap	Barclays	17-Apr-08	
1019	Alaska Fund	Swaption	RBS	18-Apr-08	15-Dec-08
1020	Alaska Fund	Swaption	RBS	18-Apr-08	15-Dec-08
1021	Alaska Fund	Swaption	RBS	18-Apr-08	15-Dec-08
1022	Alaska Fund	Swaption	RBS	18-Apr-08	15-Dec-08
1023	Alaska Fund	Swaption	RBS	18-Apr-08	15-Dec-08
1024	Alaska Fund	Swaption	RBS	18-Apr-08	15-Dec-08
1025	Alaska Fund	Swap	Deutsche Bank	18-Apr-08	
1026	Alaska Fund	Swap	Deutsche Bank	18-Apr-08	
1027	Alaska Fund	Swap	Deutsche Bank	18-Apr-08	
1028	Genesee County	Swap	Goldman Sachs	18-Apr-08	
1029	Genesee County	Swap	Goldman Sachs	18-Apr-08	
1030	Genesee County	Swap	Goldman Sachs	18-Apr-08	
1031	Genesee County	Swap	Goldman Sachs	18-Apr-08	
1032	Genesee County	Swap	Goldman Sachs	18-Apr-08	
1033	Genesee County	Swap	Goldman Sachs	18-Apr-08	
1034	Genesee County	Swap	Goldman Sachs	18-Apr-08	
1035	Genesee County	Swap	Goldman Sachs	19-Apr-08	
1036	Genesee County	Swap	Goldman Sachs	19-Apr-08	
1037	Genesee County	Swap	Goldman Sachs	19-Apr-08	
1038	Genesee County	Swap	Goldman Sachs	19-Apr-08	
1039	Genesee County	Swap	Deutsche Bank	21-Apr-08	
1040	Genesee County	Swap	Goldman Sachs	21-Apr-08	
1041	Genesee County	Swap	Goldman Sachs	21-Apr-08	
1042	Genesee County	Swap	Goldman Sachs	21-Apr-08	
1043	Genesee County	Swap	Goldman Sachs	21-Apr-08	
1044	Genesee County	Swap	Goldman Sachs	21-Apr-08	
1045	Genesee County	Swap	Goldman Sachs	21-Apr-08	
1046	Genesee County	Swap	Goldman Sachs	22-Apr-08	
1047	Genesee County	Swap	Goldman Sachs	22-Apr-08	
1048	Genesee County	Swap	Barclays	24-Apr-08	
1049	Genesee County	Swap	Barclays	24-Apr-08	
1050	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1051	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1052	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1053	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1054	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1055	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1056	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1057	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1058	Genesee County	Swap	Goldman Sachs	24-Apr-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1059	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1060	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1061	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1062	Genesee County	Swap	Goldman Sachs	24-Apr-08	
1063	Genesee County	Swap	J.P. Morgan	28-Apr-08	
1064	Genesee County	Swap	J.P. Morgan	28-Apr-08	
1065	Genesee County	Swap	J.P. Morgan	28-Apr-08	
1066	Genesee County	Swap	J.P. Morgan	28-Apr-08	
1067	Genesee County	Swap	J.P. Morgan	28-Apr-08	
1068	Genesee County	Swap	J.P. Morgan	28-Apr-08	
1069	New Britain	Swap	Deutsche Bank	29-Apr-08	
1070	New Britain	Swap	Deutsche Bank	29-Apr-08	
1071	Alaska Fund	Swap	Citigroup	1-May-08	
1072	Alaska Fund	Swap	Citigroup	1-May-08	
1073	Alaska Fund	Swap	Citigroup	1-May-08	
1074	Alaska Fund	Swap	Citigroup	1-May-08	
1075	Alaska Fund	Swap	Citigroup	1-May-08	
1076	Alaska Fund	Swap	Citigroup	1-May-08	
1077	Alaska Fund	Swap	Citigroup	1-May-08	
1078	Alaska Fund	Swap	Citigroup	1-May-08	
1079	Alaska Fund	Swap	Morgan Stanley	5-May-08	
1080	Alaska Fund	Swap	UBS	5-May-08	
1081	Alaska Fund	Swap	RBS	5-May-08	
1082	Alaska Fund	Swap	UBS	5-May-08	
1083	Alaska Fund	Swap	Deutsche Bank	6-May-08	
1084	Alaska Fund	Swap	Deutsche Bank	6-May-08	
1085	Alaska Fund	Swap	RBS	6-May-08	
1086	Alaska Fund	Swap	RBS	6-May-08	
1087	Alaska Fund	Swap	Merrill Lynch	7-May-08	
1088	Alaska Fund	Swap	Merrill Lynch	7-May-08	
1089	Alaska Fund	Swaption	Citigroup	8-May-08	18-Sep-09
1090	Alaska Fund	Swaption	Citigroup	8-May-08	18-Sep-09
1091	Genesee County	Swap	Deutsche Bank	9-May-08	
1092	Genesee County	Swap	Deutsche Bank	9-May-08	
1093	Alaska Fund	Swap	Merrill Lynch	15-May-08	
1094	Alaska Fund	Swap	Merrill Lynch	15-May-08	
1095	Alaska Fund	Swap	Merrill Lynch	15-May-08	
1096	Alaska Fund	Swap	RBS	15-May-08	
1097	Alaska Fund	Swap	RBS	15-May-08	
1098	Genesee County	Swap	Barclays	15-May-08	
1099	Genesee County	Swap	Barclays	15-May-08	
1100	Alaska Fund	Swap	Citigroup	16-May-08	
1101	Alaska Fund	Swap	Citigroup	16-May-08	
1102	Alaska Fund	Swap	RBS	16-May-08	
1103	Alaska Fund	Swap	BNP Paribas	16-May-08	
1104	Alaska Fund	Swap	Morgan Stanley	16-May-08	
1105	Alaska Fund	Swap	Morgan Stanley	16-May-08	
1106	Alaska Fund	Swap	Morgan Stanley	16-May-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1107	Alaska Fund	Swap	Morgan Stanley	16-May-08	
1108	Alaska Fund	Swap	BNP Paribas	16-May-08	
1109	Alaska Fund	Swap	BNP Paribas	16-May-08	
1110	Alaska Fund	Swap	Bank of America	19-May-08	
1111	Alaska Fund	Swap	Bank of America	19-May-08	
1112	Alaska Fund	Swap	Citigroup	19-May-08	
1113	Alaska Fund	Swap	Morgan Stanley	19-May-08	
1114	Alaska Fund	Swap	Barclays	19-May-08	
1115	Alaska Fund	Swap	Morgan Stanley	19-May-08	
1116	Alaska Fund	Swap	Merrill Lynch	20-May-08	
1117	Alaska Fund	Swap	Merrill Lynch	20-May-08	
1118	Alaska Fund	Swap	Merrill Lynch	20-May-08	
1119	Alaska Fund	Swap	Merrill Lynch	20-May-08	
1120	Alaska Fund	Swap	Morgan Stanley	20-May-08	
1121	Alaska Fund	Swap	Morgan Stanley	20-May-08	
1122	Alaska Fund	Swap	Morgan Stanley	20-May-08	
1123	Alaska Fund	Swap	Morgan Stanley	20-May-08	
1124	Alaska Fund	Swap	Morgan Stanley	20-May-08	
1125	Alaska Fund	Swap	Morgan Stanley	20-May-08	
1126	Alaska Fund	Swap	Morgan Stanley	20-May-08	
1127	Alaska Fund	Swap	Citigroup	21-May-08	
1128	Alaska Fund	Swap	Citigroup	21-May-08	
1129	Alaska Fund	Swap	Citigroup	21-May-08	
1130	Alaska Fund	Swap	Citigroup	21-May-08	
1131	Alaska Fund	Swap	Morgan Stanley	21-May-08	
1132	Alaska Fund	Swap	Morgan Stanley	21-May-08	
1133	Alaska Fund	Swap	Merrill Lynch	21-May-08	
1134	Alaska Fund	Swap	Merrill Lynch	21-May-08	
1135	Alaska Fund	Swap	Citigroup	27-May-08	
1136	Alaska Fund	Swap	Morgan Stanley	27-May-08	
1137	Alaska Fund	Swap	Deutsche Bank	27-May-08	
1138	Alaska Fund	Swap	UBS	27-May-08	
1139	Alaska Fund	Swap	Merrill Lynch	28-May-08	
1140	Alaska Fund	Swap	Merrill Lynch	28-May-08	
1141	Alaska Fund	Swap	RBS	28-May-08	
1142	Alaska Fund	Swap	RBS	28-May-08	
1143	Alaska Fund	Swap	RBS	28-May-08	
1144	Alaska Fund	Swap	Goldman Sachs	29-May-08	
1145	Alaska Fund	Swap	Goldman Sachs	29-May-08	
1146	Alaska Fund	Swap	Morgan Stanley	29-May-08	
1147	Alaska Fund	Swap	Bank of America	29-May-08	
1148	Alaska Fund	Swap	Bank of America	29-May-08	
1149	Genesee County	Swap	Credit Suisse	29-May-08	
1150	Genesee County	Swap	Credit Suisse	29-May-08	
1151	Genesee County	Swap	Credit Suisse	29-May-08	
1152	Genesee County	Swap	Credit Suisse	29-May-08	
1153	Genesee County	Swap	Barclays	30-May-08	
1154	Genesee County	Swap	Barclays	30-May-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1155	Genesee County	Swap	Barclays	30-May-08	
1156	Genesee County	Swap	Barclays	30-May-08	
1157	Genesee County	Swap	Barclays	30-May-08	
1158	Genesee County	Swap	Barclays	30-May-08	
1159	Genesee County	Swap	Barclays	30-May-08	
1160	Genesee County	Swap	Barclays	30-May-08	
1161	Alaska Fund	Swap	Barclays	2-Jun-08	
1162	Alaska Fund	Swap	Barclays	2-Jun-08	
1163	Alaska Fund	Swap	Barclays	2-Jun-08	
1164	Alaska Fund	Swap	Barclays	2-Jun-08	
1165	Alaska Fund	Swap	RBS	2-Jun-08	
1166	Alaska Fund	Swap	JP Morgan	2-Jun-08	
1167	Alaska Fund	Swap	JP Morgan	2-Jun-08	
1168	Alaska Fund	Swap	Morgan Stanley	2-Jun-08	
1169	Alaska Fund	Swap	Citigroup	3-Jun-08	
1170	Alaska Fund	Swap	Citigroup	3-Jun-08	
1171	Alaska Fund	Swap	JP Morgan	3-Jun-08	
1172	Alaska Fund	Swap	Morgan Stanley	3-Jun-08	
1173	Alaska Fund	Swap	Morgan Stanley	4-Jun-08	
1174	Alaska Fund	Swap	Morgan Stanley	6-Jun-08	
1175	Alaska Fund	Swap	Morgan Stanley	6-Jun-08	
1176	Genesee County	Swap	J.P. Morgan	9-Jun-08	
1177	Genesee County	Swap	J.P. Morgan	9-Jun-08	
1178	Genesee County	Swap	J.P. Morgan	9-Jun-08	
1179	Genesee County	Swap	J.P. Morgan	9-Jun-08	
1180	Genesee County	Swap	J.P. Morgan	9-Jun-08	
1181	Genesee County	Swap	J.P. Morgan	9-Jun-08	
1182	Genesee County	Swap	J.P. Morgan	10-Jun-08	
1183	Genesee County	Swap	J.P. Morgan	10-Jun-08	
1184	Genesee County	Swap	J.P. Morgan	10-Jun-08	
1185	Genesee County	Swap	J.P. Morgan	10-Jun-08	
1186	Alaska Fund	Swap	Barclays	12-Jun-08	
1187	Alaska Fund	Swap	Merrill Lynch	12-Jun-08	
1188	Alaska Fund	Swap	Merrill Lynch	12-Jun-08	
1189	Alaska Fund	Swap	RBS	12-Jun-08	
1190	Alaska Fund	Swap	RBS	12-Jun-08	
1191	Alaska Fund	Swap	RBS	12-Jun-08	
1192	Alaska Fund	Swap	HSBC	25-Jun-08	
1193	Alaska Fund	Swap	Goldman Sachs	25-Jun-08	
1194	Alaska Fund	Swap	UBS	26-Jun-08	
1195	Alaska Fund	Swap	Morgan Stanley	1-Jul-08	
1196	Alaska Fund	Swap	Deutsche Bank	2-Jul-08	
1197	Alaska Fund	Swap	Deutsche Bank	2-Jul-08	
1198	Alaska Fund	Swap	Deutsche Bank	2-Jul-08	
1199	Alaska Fund	Swap	Deutsche Bank	2-Jul-08	
1200	Alaska Fund	Swap	Deutsche Bank	2-Jul-08	
1201	Alaska Fund	Swap	Deutsche Bank	2-Jul-08	
1202	Alaska Fund	Swap	Deutsche Bank	2-Jul-08	

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1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1203	Alaska Fund	Swap	Goldman Sachs	2-Jul-08	
1204	Alaska Fund	Swap	Deutsche Bank	7-Jul-08	
1205	Alaska Fund	Swap	RBS	7-Jul-08	
1206	Alaska Fund	Swap	RBS	7-Jul-08	
1207	Alaska Fund	Swap	Morgan Stanley	7-Jul-08	
1208	Alaska Fund	Swap	Morgan Stanley	7-Jul-08	
1209	Alaska Fund	Swap	Morgan Stanley	7-Jul-08	
1210	Genesee County	Swap	Goldman Sachs	7-Jul-08	
1211	Genesee County	Swap	Goldman Sachs	7-Jul-08	
1212	Alaska Fund	Swap	RBS	11-Jul-08	
1213	Alaska Fund	Swap	RBS	11-Jul-08	
1214	Genesee County	Swap	Deutsche Bank	11-Jul-08	
1215	Alaska Fund	Swap	RBS	15-Jul-08	
1216	Alaska Fund	Swap	RBS	15-Jul-08	
1217	Alaska Fund	Swap	Merrill Lynch	16-Jul-08	
1218	Alaska Fund	Swap	Deutsche Bank	17-Jul-08	
1219	Alaska Fund	Swap	Deutsche Bank	17-Jul-08	
1220	Alaska Fund	Swap	HSBC	17-Jul-08	
1221	Alaska Fund	Swap	Goldman Sachs	17-Jul-08	
1222	Alaska Fund	Swap	Goldman Sachs	17-Jul-08	
1223	Alaska Fund	Swap	Goldman Sachs	17-Jul-08	
1224	Alaska Fund	Swap	Morgan Stanley	17-Jul-08	
1225	Alaska Fund	Swap	Citigroup	17-Jul-08	
1226	Alaska Fund	Swap	Citigroup	17-Jul-08	
1227	Alaska Fund	Swap	UBS	17-Jul-08	
1228	Alaska Fund	Swap	UBS	17-Jul-08	
1229	Alaska Fund	Swap	Barclays	17-Jul-08	
1230	Alaska Fund	Swap	Morgan Stanley	18-Jul-08	
1231	Alaska Fund	Swap	RBS	18-Jul-08	
1232	Alaska Fund	Swap	Morgan Stanley	18-Jul-08	
1233	Alaska Fund	Swap	RBS	18-Jul-08	
1234	Alaska Fund	Swap	RBS	18-Jul-08	
1235	Alaska Fund	Swap	RBS	18-Jul-08	
1236	Alaska Fund	Swap	RBS	18-Jul-08	
1237	Genesee County	Swap	Goldman Sachs	18-Jul-08	
1238	Alaska Fund	Swap	Merrill Lynch	21-Jul-08	
1239	Alaska Fund	Swap	UBS	21-Jul-08	
1240	Alaska Fund	Swap	UBS	21-Jul-08	
1241	Genesee County	Swap	Goldman Sachs	21-Jul-08	
1242	Alaska Fund	Swap	Merrill Lynch	22-Jul-08	
1243	Alaska Fund	Swap	UBS	22-Jul-08	
1244	Alaska Fund	Swap	Morgan Stanley	30-Jul-08	
1245	Alaska Fund	Swap	Morgan Stanley	30-Jul-08	
1246	Alaska Fund	Swap	Morgan Stanley	30-Jul-08	
1247	Alaska Fund	Swap	Morgan Stanley	30-Jul-08	
1248	Alaska Fund	Swap	Morgan Stanley	30-Jul-08	
1249	Alaska Fund	Swap	RBS	30-Jul-08	
1250	Alaska Fund	Swap	RBS	30-Jul-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1251	Alaska Fund	Swap	RBS	30-Jul-08	
1252	Alaska Fund	Swap	Morgan Stanley	4-Aug-08	
1253	Alaska Fund	Swap	Barclays	6-Aug-08	
1254	Genesee County	Swap	Barclays	19-Aug-08	
1255	Alaska Fund	Swaption	Merrill Lynch	22-Aug-08	19-Dec-08
1256	Alaska Fund	Swaption	Citigroup	22-Aug-08	16-Mar-09
1257	Alaska Fund	Swaption	J.P. Morgan	22-Aug-08	16-Mar-09
1258	Alaska Fund	Swap	Morgan Stanley	22-Aug-08	
1259	Alaska Fund	Swap	RBS	22-Aug-08	
1260	Alaska Fund	Swap	Morgan Stanley	28-Aug-08	
1261	Genesee County	Swap	Barclays	29-Aug-08	
1262	Genesee County	Swap	Barclays	29-Aug-08	
1263	Genesee County	Swap	J.P. Morgan	8-Sep-08	
1264	Genesee County	Swap	Deutsche Bank	10-Sep-08	
1265	Genesee County	Swap	Deutsche Bank	10-Sep-08	
1266	Genesee County	Swap	Deutsche Bank	10-Sep-08	
1267	Genesee County	Swap	Deutsche Bank	10-Sep-08	
1268	Genesee County	Swap	Goldman Sachs	11-Sep-08	
1269	Genesee County	Swap	Goldman Sachs	11-Sep-08	
1270	Genesee County	Swap	Goldman Sachs	11-Sep-08	
1271	Genesee County	Swap	Goldman Sachs	11-Sep-08	
1272	Genesee County	Swap	Barclays	12-Sep-08	
1273	Genesee County	Swap	Barclays	12-Sep-08	
1274	Genesee County	Swap	Deutsche Bank	12-Sep-08	
1275	Genesee County	Swap	Deutsche Bank	12-Sep-08	
1276	Genesee County	Swap	Deutsche Bank	12-Sep-08	
1277	Genesee County	Swap	Deutsche Bank	12-Sep-08	
1278	Genesee County	Swap	Goldman Sachs	12-Sep-08	
1279	Genesee County	Swap	Goldman Sachs	12-Sep-08	
1280	Genesee County	Swap	Goldman Sachs	12-Sep-08	
1281	Genesee County	Swap	Goldman Sachs	12-Sep-08	
1282	Genesee County	Swap	J.P. Morgan	12-Sep-08	
1283	Genesee County	Swap	J.P. Morgan	12-Sep-08	
1284	Genesee County	Swap	J.P. Morgan	12-Sep-08	
1285	Genesee County	Swap	J.P. Morgan	12-Sep-08	
1286	Alaska Fund	Swap	Goldman Sachs	15-Sep-08	
1287	Alaska Fund	Swap	Morgan Stanley	15-Sep-08	
1288	Alaska Fund	Swap	RBS	15-Sep-08	
1289	Genesee County	Swap	Credit Suisse	15-Sep-08	
1290	Genesee County	Swap	Credit Suisse	15-Sep-08	
1291	Genesee County	Swap	Credit Suisse	15-Sep-08	
1292	Genesee County	Swap	Credit Suisse	15-Sep-08	
1293	Alaska Fund	Swap	Credit Suisse	22-Sep-08	
1294	Alaska Fund	Swap	Goldman Sachs	23-Sep-08	
1295	Alaska Fund	Swap	RBS	23-Sep-08	
1296	Genesee County	Swap	Credit Suisse	23-Sep-08	
1297	Genesee County	Swap	Credit Suisse	23-Sep-08	
1298	Genesee County	Swap	Credit Suisse	23-Sep-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1299	Genesee County	Swap	Credit Suisse	23-Sep-08	
1300	Alaska Fund	Swap	Citigroup	24-Sep-08	
1301	Alaska Fund	Swap	Morgan Stanley	24-Sep-08	
1302	Alaska Fund	Swap	RBS	24-Sep-08	
1303	Alaska Fund	Swap	RBS	24-Sep-08	
1304	Genesee County	Swap	Goldman Sachs	7-Oct-08	
1305	Genesee County	Swap	Goldman Sachs	8-Oct-08	
1306	Genesee County	Swap	Goldman Sachs	8-Oct-08	
1307	Genesee County	Swap	Deutsche Bank	11-Oct-08	
1308	Genesee County	Swap	Deutsche Bank	11-Oct-08	
1309	Genesee County	Swap	Deutsche Bank	14-Oct-08	
1310	Genesee County	Swap	Deutsche Bank	14-Oct-08	
1311	Genesee County	Swap	Deutsche Bank	14-Oct-08	
1312	Genesee County	Swap	Deutsche Bank	14-Oct-08	
1313	Genesee County	Swap	Barclays	16-Oct-08	
1314	Genesee County	Swap	Barclays	16-Oct-08	
1315	Genesee County	Swap	Barclays	16-Oct-08	
1316	Genesee County	Swap	Barclays	16-Oct-08	
1317	Genesee County	Swap	Deutsche Bank	16-Oct-08	
1318	Genesee County	Swap	Deutsche Bank	16-Oct-08	
1319	Genesee County	Swap	Citigroup	16-Oct-08	
1320	Genesee County	Swap	Citigroup	16-Oct-08	
1321	Genesee County	Swap	Citigroup	16-Oct-08	
1322	Genesee County	Swap	Citigroup	16-Oct-08	
1323	Genesee County	Swap	Goldman Sachs	18-Oct-08	
1324	Genesee County	Swap	Goldman Sachs	18-Oct-08	
1325	Genesee County	Swap	Goldman Sachs	18-Oct-08	
1326	Genesee County	Swap	Goldman Sachs	18-Oct-08	
1327	Genesee County	Swap	Goldman Sachs	18-Oct-08	
1328	Genesee County	Swap	Goldman Sachs	18-Oct-08	
1329	Genesee County	Swap	Goldman Sachs	19-Oct-08	
1330	Genesee County	Swap	Goldman Sachs	19-Oct-08	
1331	Genesee County	Swap	Goldman Sachs	19-Oct-08	
1332	Genesee County	Swap	Goldman Sachs	19-Oct-08	
1333	Genesee County	Swap	Goldman Sachs	19-Oct-08	
1334	Genesee County	Swap	Goldman Sachs	19-Oct-08	
1335	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1336	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1337	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1338	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1339	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1340	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1341	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1342	Genesee County	Swap	Goldman Sachs	20-Oct-08	
1343	Genesee County	Swaption	JP Morgan	23-Oct-08	
1344	Genesee County	Swap	Barclays	27-Oct-08	
1345	Genesee County	Swap	Barclays	27-Oct-08	
1346	Genesee County	Swap	Deutsche Bank	27-Oct-08	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1347	Genesee County	Swap	Deutsche Bank	27-Oct-08	
1348	Genesee County	Swap	Goldman Sachs	27-Oct-08	
1349	Genesee County	Swap	Goldman Sachs	27-Oct-08	
1350	Genesee County	Swap	Goldman Sachs	27-Oct-08	
1351	Genesee County	Swap	Goldman Sachs	27-Oct-08	
1352	Genesee County	Swap	Barclays	28-Oct-08	
1353	Genesee County	Swap	Barclays	28-Oct-08	
1354	Genesee County	Swap	Barclays	28-Oct-08	
1355	Genesee County	Swap	Barclays	28-Oct-08	
1356	Genesee County	Swap	Deutsche Bank	28-Oct-08	
1357	Genesee County	Swap	Deutsche Bank	28-Oct-08	
1358	Genesee County	Swap	Goldman Sachs	28-Oct-08	
1359	Genesee County	Swap	Goldman Sachs	28-Oct-08	
1360	Genesee County	Swap	Goldman Sachs	29-Oct-08	
1361	Genesee County	Swap	Goldman Sachs	29-Oct-08	
1362	Genesee County	Swap	Credit Suisse	5-Nov-08	
1363	Genesee County	Swap	Credit Suisse	5-Nov-08	
1364	Genesee County	Swap	Credit Suisse	5-Nov-08	
1365	Genesee County	Swap	Credit Suisse	5-Nov-08	
1366	Alaska Fund	Swap	Barclays	7-Nov-08	
1367	Alaska Fund	Swap	Barclays	7-Nov-08	
1368	Alaska Fund	Swap	RBS	7-Nov-08	
1369	Alaska Fund	Swap	RBS	7-Nov-08	
1370	Alaska Fund	Swap	RBS	7-Nov-08	
1371	Alaska Fund	Swap	RBS	7-Nov-08	
1372	Genesee County	Swap	Barclays	19-Nov-08	
1373	Genesee County	Swap	Barclays	19-Nov-08	
1374	Genesee County	Swap	Deutsche Bank	24-Nov-08	
1375	Genesee County	Swap	Deutsche Bank	24-Nov-08	
1376	Genesee County	Swap	J.P. Morgan	24-Nov-08	
1377	Genesee County	Swap	J.P. Morgan	24-Nov-08	
1378	Genesee County	Swap	Barclays	28-Nov-08	
1379	Genesee County	Swap	Barclays	28-Nov-08	
1380	Genesee County	Swap	Barclays	28-Nov-08	
1381	Genesee County	Swap	Barclays	28-Nov-08	
1382	Genesee County	Swap	Barclays	28-Nov-08	
1383	Genesee County	Swap	Barclays	28-Nov-08	
1384	Genesee County	Swap	Barclays	28-Nov-08	
1385	Genesee County	Swap	Barclays	28-Nov-08	
1386	Genesee County	Swap	Barclays	30-Nov-08	
1387	Genesee County	Swap	Barclays	30-Nov-08	
1388	Genesee County	Swap	Barclays	30-Nov-08	
1389	Genesee County	Swap	Barclays	30-Nov-08	
1390	Genesee County	Swap	Barclays	2-Dec-08	
1391	Genesee County	Swap	Barclays	2-Dec-08	
1392	Genesee County	Swap	Deutsche Bank	2-Dec-08	
1393	Genesee County	Swap	Deutsche Bank	2-Dec-08	
1394	Genesee County	Swap	Citigroup	2-Dec-08	



	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1395	Genesee County	Swap	Citigroup	2-Dec-08	
1396	Genesee County	Swap	Citigroup	2-Dec-08	
1397	Genesee County	Swap	Citigroup	2-Dec-08	
1398	Genesee County	Swap	J.P. Morgan	8-Dec-08	
1399	Genesee County	Swap	J.P. Morgan	8-Dec-08	
1400	Alaska Fund	Swap	UBS	10-Dec-08	
1401	Alaska Fund	Swap	UBS	10-Dec-08	
1402	Genesee County	Swap	J.P. Morgan	10-Dec-08	
1403	Genesee County	Swap	J.P. Morgan	10-Dec-08	
1404	Alaska Fund	Swap	RBS	11-Dec-08	
1405	Alaska Fund	Swap	RBS	11-Dec-08	
1406	Alaska Fund	Swap	Barclays	15-Dec-08	
1407	Alaska Fund	Swap	Barclays	15-Dec-08	
1408	Alaska Fund	Swap	Barclays	15-Dec-08	
1409	Alaska Fund	Swap	Merrill Lynch	15-Dec-08	
1410	Alaska Fund	Swap	Merrill Lynch	15-Dec-08	
1411	Alaska Fund	Swap	Merrill Lynch	15-Dec-08	
1412	Alaska Fund	Swap	Merrill Lynch	15-Dec-08	
1413	Alaska Fund	Swaption	Barclays	17-Dec-08	22-May-09
1414	Alaska Fund	Swaption	Deutsche Bank	17-Dec-08	22-May-09
1415	Alaska Fund	Swaption	Barclays	18-Dec-08	22-May-09
1416	Alaska Fund	Swaption	Deutsche Bank	18-Dec-08	22-May-09
1417	Alaska Fund	Swaption	RBS	18-Dec-08	22-May-09
1418	Alaska Fund	Swaption	Merrill Lynch	19-Dec-08	22-Sep-08
1419	Alaska Fund	Swaption	J.P. Morgan	19-Dec-08	22-Dec-08
1420	Alaska Fund	Swaption	Goldman Sachs	19-Dec-08	22-May-09
1421	Genesee County	Swap	Barclays	19-Dec-08	
1422	Genesee County	Swap	Barclays	19-Dec-08	
1423	Alaska Fund	Swap	RBS	22-Dec-08	
1424	Alaska Fund	Swap	RBS	22-Dec-08	
1425	Alaska Fund	Swap	Citigroup	5-Jan-09	
1426	Alaska Fund	Swap	Citigroup	5-Jan-09	
1427	Alaska Fund	Swap	Citigroup	5-Jan-09	
1428	Genesee County	Swap	Deutsche Bank	6-Jan-09	
1429	Genesee County	Swap	Deutsche Bank	6-Jan-09	
1430	Alaska Fund	Swap	Deutsche Bank	7-Jan-09	
1431	Genesee County	Swap	Goldman Sachs	7-Jan-09	
1432	Genesee County	Swap	Goldman Sachs	7-Jan-09	
1433	Genesee County	Swap	Goldman Sachs	7-Jan-09	
1434	Genesee County	Swap	Goldman Sachs	7-Jan-09	
1435	Alaska Fund	Swaption	Morgan Stanley	8-Jan-09	18-Sep-09
1436	Genesee County	Swap	Goldman Sachs	8-Jan-09	
1437	Genesee County	Swap	Goldman Sachs	8-Jan-09	
1438	Genesee County	Swap	Deutsche Bank	11-Jan-09	
1439	Genesee County	Swap	Deutsche Bank	11-Jan-09	
1440	Genesee County	Swap	Deutsche Bank	12-Jan-09	
1441	Genesee County	Swap	Barclays	30-Jan-09	
1442	Genesee County	Swap	Barclays	30-Jan-09	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1443	Genesee County	Swap	Barclays	30-Jan-09	
1444	Genesee County	Swap	Barclays	30-Jan-09	
1445	Genesee County	Swap	Deutsche Bank	30-Jan-09	
1446	Genesee County	Swap	Deutsche Bank	30-Jan-09	
1447	Genesee County	Swap	Deutsche Bank	30-Jan-09	
1448	Genesee County	Swap	Deutsche Bank	30-Jan-09	
1449	Genesee County	Swap	Goldman Sachs	30-Jan-09	
1450	Genesee County	Swap	Goldman Sachs	30-Jan-09	
1451	Genesee County	Swap	Goldman Sachs	30-Jan-09	
1452	Genesee County	Swap	Goldman Sachs	30-Jan-09	
1453	Alaska Fund	Swaption	Barclays	2-Feb-09	22-Dec-08
1454	Alaska Fund	Swaption	Barclays	2-Feb-09	22-Dec-08
1455	Alaska Fund	Swaption	Barclays	2-Feb-09	22-Dec-08
1456	Alaska Fund	Swaption	Barclays	2-Feb-09	22-Dec-08
1457	Alaska Fund	Swap	Barclays	2-Feb-09	
1458	Alaska Fund	Swap	Barclays	2-Feb-09	
1459	Alaska Fund	Swap	Morgan Stanley	2-Feb-09	
1460	Alaska Fund	Swap	RBS	2-Feb-09	
1461	Alaska Fund	Swap	RBS	2-Feb-09	
1462	Genesee County	Swap	Barclays	11-Feb-09	
1463	Genesee County	Swap	Barclays	11-Feb-09	
1464	Genesee County	Swap	Deutsche Bank	11-Feb-09	
1465	Genesee County	Swap	Deutsche Bank	11-Feb-09	
1466	Genesee County	Swap	Goldman Sachs	11-Feb-09	
1467	Genesee County	Swap	Goldman Sachs	11-Feb-09	
1468	Genesee County	Swap	Goldman Sachs	17-Feb-09	
1469	Genesee County	Swap	Goldman Sachs	17-Feb-09	
1470	Genesee County	Swap	Barclays	19-Feb-09	
1471	Genesee County	Swap	J.P. Morgan	26-Feb-09	
1472	Genesee County	Swap	J.P. Morgan	26-Feb-09	
1473	Genesee County	Swap	Barclays	27-Feb-09	
1474	Genesee County	Swap	Barclays	27-Feb-09	
1475	Genesee County	Swap	Barclays	27-Feb-09	
1476	Genesee County	Swap	Barclays	27-Feb-09	
1477	Genesee County	Swap	Barclays	27-Feb-09	
1478	Genesee County	Swap	Barclays	27-Feb-09	
1479	Genesee County	Swap	Barclays	2-Mar-09	
1480	Genesee County	Swap	Barclays	2-Mar-09	
1481	Genesee County	Swap	Citigroup	2-Mar-09	
1482	Genesee County	Swap	Citigroup	2-Mar-09	
1483	Alaska Fund	Swaption	Barclays	13-Mar-09	20-May-09
1484	Genesee County	Swap	Deutsche Bank	13-Mar-09	
1485	Genesee County	Swap	Deutsche Bank	13-Mar-09	
1486	Genesee County	Swap	Goldman Sachs	13-Mar-09	
1487	Genesee County	Swap	Goldman Sachs	13-Mar-09	
1488	Genesee County	Swap	Deutsche Bank	19-Mar-09	
1489	Genesee County	Swap	Deutsche Bank	19-Mar-09	
1490	Alaska Fund	Swap	Credit Suisse	23-Mar-09	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1491	Alaska Fund	Swap	Credit Suisse	23-Mar-09	
1492	Alaska Fund	Swap	Credit Suisse	23-Mar-09	
1493	Alaska Fund	Swap	RBS	23-Mar-09	
1494	Alaska Fund	Swap	RBS	23-Mar-09	
1495	Genesee County	Swap	Barclays	25-Mar-09	
1496	Genesee County	Swap	Barclays	25-Mar-09	
1497	Genesee County	Swap	Barclays	25-Mar-09	
1498	Genesee County	Swap	Barclays	25-Mar-09	
1499	Genesee County	Swap	Barclays	26-Mar-09	
1500	Genesee County	Swap	Barclays	26-Mar-09	
1501	Genesee County	Swap	Barclays	26-Mar-09	
1502	Genesee County	Swap	Barclays	26-Mar-09	
1503	Genesee County	Swap	Goldman Sachs	27-Mar-09	
1504	Genesee County	Swap	Goldman Sachs	27-Mar-09	
1505	Genesee County	Swap	Barclays	30-Mar-09	
1506	Genesee County	Swap	Barclays	30-Mar-09	
1507	Genesee County	Swap	Barclays	30-Mar-09	
1508	Genesee County	Swap	Barclays	30-Mar-09	
1509	Genesee County	Swap	Barclays	30-Mar-09	
1510	Genesee County	Swap	Barclays	30-Mar-09	
1511	Alaska Fund	Swap	RBS	31-Mar-09	
1512	Alaska Fund	Swap	Morgan Stanley	1-Apr-09	
1513	Genesee County	Swap	Goldman Sachs	2-Apr-09	
1514	Genesee County	Swap	Goldman Sachs	2-Apr-09	
1515	Genesee County	Swap	Goldman Sachs	2-Apr-09	
1516	Genesee County	Swap	Goldman Sachs	2-Apr-09	
1517	Alaska Fund	Swap	UBS	3-Apr-09	
1518	Alaska Fund	Swaption	RBS	14-Apr-09	22-May-09
1519	Alaska Fund	Swaption	RBS	14-Apr-09	2-Jul-09
1520	Alaska Fund	Swaption	RBS	14-Apr-09	3-Aug-09
1521	Alaska Fund	Swaption	RBS	14-Apr-09	3-Aug-09
1522	Alaska Fund	Swaption	RBS	14-Apr-09	3-Aug-09
1523	Alaska Fund	Swap	Citigroup	14-Apr-09	
1524	Alaska Fund	Swaption	Citigroup	15-Apr-09	18-Sep-09
1525	Alaska Fund	Swaption	Citigroup	16-Apr-09	22-Dec-08
1526	Alaska Fund	Swaption	RBS	16-Apr-09	22-Jun-09
1527	Alaska Fund	Swaption	Citigroup	16-Apr-09	18-Sep-09
1528	Alaska Fund	Swaption	Citigroup	16-Apr-09	18-Sep-09
1529	Alaska Fund	Swaption	Morgan Stanley	16-Apr-09	18-Sep-09
1530	Genesee County	Swap	Goldman Sachs	16-Apr-09	
1531	Genesee County	Swap	Goldman Sachs	16-Apr-09	
1532	Genesee County	Swap	Morgan Stanley	16-Apr-09	
1533	Genesee County	Swap	Morgan Stanley	16-Apr-09	
1534	Alaska Fund	Swaption	Citigroup	17-Apr-09	18-Sep-09
1535	Alaska Fund	Swap	RBS	30-Apr-09	
1536	Alaska Fund	Swap	RBS	30-Apr-09	
1537	Alaska Fund	Swap	Barclays	12-May-09	
1538	Alaska Fund	Swaption	Merrill Lynch	22-May-09	20-May-09

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1539	Alaska Fund	Swaption	RBS	22-May-09	20-May-09
1540	Genesee County	Swap	Goldman Sachs	9-Jun-09	
1541	Genesee County	Swap	Goldman Sachs	9-Jun-09	
1542	Alaska Fund	Swap	RBS	22-Jun-09	
1543	EAA/Portigon	Swaption	Wells Fargo	22-Jun-09	24-Jun-13
1544	Alaska Fund	Swaption	Morgan Stanley	26-Jun-09	18-Sep-09
1545	Alaska Fund	Swap	Morgan Stanley	1-Jul-09	
1546	Alaska Fund	Swap	RBS	2-Jul-09	
1547	Alaska Fund	Swap	RBS	2-Jul-09	
1548	Alaska Fund	Swap	Barclays	30-Jul-09	
1549	Alaska Fund	Swap	RBS	3-Aug-09	
1550	Alaska Fund	Swaption	Deutsche Bank	10-Aug-09	15-Jun-10
1551	Alaska Fund	Swaption	J.P. Morgan	12-Aug-09	31-Aug-10
1552	Alaska Fund	Swaption	RBS	19-Aug-09	20-May-09
1553	Alaska Fund	Swaption	Barclays	19-Aug-09	23-Nov-09
1554	Alaska Fund	Swaption	J.P. Morgan	19-Aug-09	23-Nov-09
1555	Alaska Fund	Swaption	Citigroup	19-Aug-09	31-Aug-10
1556	Alaska Fund	Swaption	Citigroup	3-Sep-09	23-Nov-09
1557	Alaska Fund	Swaption	RBS	9-Sep-09	31-Aug-10
1558	Alaska Fund	Swaption	Citigroup	15-Sep-09	18-Sep-09
1559	Genesee County	Swap	Barclays	23-Sep-09	
1560	Genesee County	Swap	Barclays	23-Sep-09	
1561	Genesee County	Swap	Barclays	23-Sep-09	
1562	Genesee County	Swap	Barclays	23-Sep-09	
1563	Genesee County	Swap	Morgan Stanley	23-Sep-09	
1564	Genesee County	Swap	Morgan Stanley	23-Sep-09	
1565	Alaska Fund	Swap	Morgan Stanley	25-Sep-09	
1566	Alaska Fund	Swap	Morgan Stanley	28-Sep-09	
1567	Alaska Fund	Swaption	Morgan Stanley	10-Nov-09	19-Apr-10
1568	Alaska Fund	Swaption	Deutsche Bank	13-Nov-09	19-Apr-10
1569	Alaska Fund	Swaption	Deutsche Bank	13-Nov-09	19-Apr-10
1570	Alaska Fund	Swaption	Morgan Stanley	1-Dec-09	19-Apr-10
1571	Alaska Fund	Swaption	Morgan Stanley	1-Dec-09	19-Apr-10
1572	Alaska Fund	Swap	RBS	23-Dec-09	
1573	Alaska Fund	Swap	Goldman Sachs	23-Dec-09	
1574	Alaska Fund	Swap	RBS	30-Dec-09	
1575	Alaska Fund	Swap	HSBC	7-Jan-10	
1576	Alaska Fund	Swap	Barclays	8-Jan-10	
1577	Alaska Fund	Swaption	Citigroup	1-Feb-10	14-Jun-10
1578	Alaska Fund	Swap	Barclays	1-Feb-10	
1579	Alaska Fund	Swap	Barclays	3-Feb-10	
1580	Alaska Fund	Swap	Barclays	3-Feb-10	
1581	Alaska Fund	Swap	HSBC	3-Feb-10	
1582	Alaska Fund	Swaption	Goldman Sachs	9-Feb-10	31-Aug-10
1583	Alaska Fund	Swaption	Morgan Stanley	18-Feb-10	16-Jun-10
1584	Alaska Fund	Swaption	RBS	24-Feb-10	29-Oct-10
1585	Alaska Fund	Swaption	RBS	24-Feb-10	29-Oct-10
1586	Alaska Fund	Swaption	Deutsche Bank	3-Mar-10	1-Dec-10

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1587	Alaska Fund	Swaption	RBS	5-Mar-10	1-Dec-10
1588	Alaska Fund	Swaption	Morgan Stanley	10-Mar-10	14-Jun-10
1589	Alaska Fund	Swaption	Morgan Stanley	10-Mar-10	14-Jun-10
1590	Alaska Fund	Swaption	Barclays	11-Mar-10	31-Aug-10
1591	Alaska Fund	Swaption	Barclays	11-Mar-10	31-Aug-10
1592	Alaska Fund	Swaption	Morgan Stanley	12-Apr-10	16-Jun-10
1593	Alaska Fund	Swaption	Morgan Stanley	19-Apr-10	
1594	Alaska Fund	Swaption	Morgan Stanley	19-Apr-10	
1595	Alaska Fund	Swaption	Morgan Stanley	19-Apr-10	
1596	Alaska Fund	Swap	Barclays	30-Apr-10	
1597	Alaska Fund	Swap	Deutsche Bank	10-May-10	
1598	Alaska Fund	Swap	Deutsche Bank	11-May-10	
1599	Alaska Fund	Swap	Bank of America	13-May-10	
1600	Alaska Fund	Swap	Morgan Stanley	14-May-10	
1601	Alaska Fund	Swaption	Citigroup	20-May-10	14-Jun-10
1602	Alaska Fund	Swaption	Morgan Stanley	20-May-10	14-Jun-10
1603	Alaska Fund	Swap	HSBC	10-Jun-10	
1604	Alaska Fund	Swap	Citigroup	14-Jun-10	
1605	Alaska Fund	Swaption	Morgan Stanley	14-Jun-10	
1606	Alaska Fund	Swap	HSBC	16-Jun-10	
1607	Alaska Fund	Swap	Citigroup	23-Jun-10	
1608	Alaska Fund	Swaption	Citigroup	20-Jul-10	18-Jun-12
1609	Alaska Fund	Swaption	Citigroup	21-Jul-10	18-Jun-12
1610	Alaska Fund	Swaption	Citigroup	22-Jul-10	18-Jun-12
1611	Alaska Fund	Swaption	RBS	22-Jul-10	18-Jun-12
1612	Alaska Fund	Swaption	Deutsche Bank	3-Aug-10	18-Jun-12
1613	Alaska Fund	Swaption	RBS	3-Aug-10	18-Jun-12
1614	Alaska Fund	Swaption	RBS	4-Aug-10	29-Oct-10
1615	Alaska Fund	Swaption	RBS	4-Aug-10	29-Oct-10
1616	Alaska Fund	Swap	Bank of America	16-Aug-10	
1617	Alaska Fund	Swap	Deutsche Bank	16-Aug-10	
1618	Alaska Fund	Swap	HSBC	23-Aug-10	
1619	Alaska Fund	Swap	HSBC	23-Aug-10	
1620	Alaska Fund	Swap	Barclays	26-Aug-10	
1621	Alaska Fund	Swap	HSBC	26-Aug-10	
1622	Alaska Fund	Swap	Barclays	31-Aug-10	
1623	Alaska Fund	Swap	RBS	31-Aug-10	
1624	Alaska Fund	Swap	Barclays	2-Sep-10	
1625	Alaska Fund	Swap	RBS	8-Sep-10	
1626	Alaska Fund	Swap	Credit Suisse	10-Sep-10	
1627	Alaska Fund	Swaption	Citigroup	15-Sep-10	13-Dec-10
1628	Alaska Fund	Swaption	Citigroup	15-Sep-10	13-Dec-10
1629	Alaska Fund	Swaption	J.P. Morgan	15-Sep-10	13-Dec-10
1630	Alaska Fund	Swaption	J.P. Morgan	15-Sep-10	13-Dec-10
1631	Alaska Fund	Swaption	RBS	15-Sep-10	24-Sep-12
1632	Alaska Fund	Swaption	RBS	16-Sep-10	24-Sep-12
1633	Alaska Fund	Swaption	RBS	20-Sep-10	24-Sep-12
1634	Alaska Fund	Swaption	Morgan Stanley	21-Sep-10	13-Dec-10

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	<b>Plaintiff</b>	<b>Type</b>	<b>Counterparty</b>	<b>Date</b>	<b>Exercise Date (Swaptions Only)</b>
1635	Alaska Fund	Swaption	Morgan Stanley	21-Sep-10	13-Dec-10
1636	Alaska Fund	Swaption	RBS	21-Sep-10	24-Sep-12
1637	Alaska Fund	Swaption	BNP Paribas	23-Sep-10	13-Dec-10
1638	Alaska Fund	Swaption	BNP Paribas	23-Sep-10	13-Dec-10
1639	Alaska Fund	Swaption	RBS	23-Sep-10	24-Sep-12
1640	Alaska Fund	Swaption	RBS	24-Sep-10	24-Sep-12
1641	Uniqa Capital Markets	Swap	Barclays	24-Sep-10	
1642	Alaska Fund	Swaption	Bank of America	27-Sep-10	24-Sep-12
1643	Alaska Fund	Swaption	Citigroup	27-Sep-10	24-Sep-12
1644	Alaska Fund	Swaption	Bank of America	28-Sep-10	13-Dec-10
1645	Alaska Fund	Swaption	Bank of America	28-Sep-10	13-Dec-10
1646	Alaska Fund	Swaption	Morgan Stanley	28-Sep-10	24-Sep-12
1647	Alaska Fund	Swaption	RBS	29-Sep-10	24-Sep-12
1648	Uniqa Capital Markets	Swap	Barclays	30-Sep-10	
1649	Alaska Fund	Swaption	RBS	1-Oct-10	24-Sep-12
1650	Alaska Fund	Swaption	Credit Suisse	5-Oct-10	13-Dec-10
1651	Alaska Fund	Swaption	Credit Suisse	5-Oct-10	13-Dec-10
1652	Alaska Fund	Swaption	Citigroup	6-Oct-10	13-Dec-10
1653	Alaska Fund	Swaption	Citigroup	6-Oct-10	13-Dec-10
1654	Alaska Fund	Swap	Morgan Stanley	6-Oct-10	
1655	Alaska Fund	Swap	RBS	6-Oct-10	
1656	Alaska Fund	Swap	RBS	6-Oct-10	
1657	Alaska Fund	Swap	RBS	6-Oct-10	
1658	Alaska Fund	Swap	Citigroup	20-Oct-10	
1659	Alaska Fund	Swap	RBS	29-Oct-10	
1660	Alaska Fund	Swap	RBS	29-Oct-10	
1661	Alaska Fund	Swap	Citigroup	1-Nov-10	
1662	Alaska Fund	Swap	Citigroup	1-Nov-10	
1663	Alaska Fund	Swap	RBS	5-Nov-10	
1664	Alaska Fund	Swap	Bank of America	13-Dec-10	
1665	Alaska Fund	Swap	BNP Paribas	13-Dec-10	
1666	Alaska Fund	Swap	Citigroup	13-Dec-10	
1667	Alaska Fund	Swap	Citigroup	13-Dec-10	
1668	Alaska Fund	Swap	Credit Suisse	13-Dec-10	
1669	Alaska Fund	Swap	J.P. Morgan	13-Dec-10	
1670	Alaska Fund	Swap	Morgan Stanley	13-Dec-10	
1671	Alaska Fund	Swaption	Morgan Stanley	13-Dec-10	
1672	Alaska Fund	Swap	Morgan Stanley	13-Dec-10	
1673	Alaska Fund	Swaption	BNP Paribas	13-Dec-10	
1674	Alaska Fund	Swap	BNP Paribas	20-Dec-10	
1675	Alaska Fund	Swap	Bank of America	20-Dec-10	
1676	Alaska Fund	Swap	Bank of America	20-Dec-10	
1677	Alaska Fund	Swap	Barclays	20-Dec-10	
1678	Alaska Fund	Swap	Barclays	20-Dec-10	
1679	Alaska Fund	Swap	Barclays	20-Dec-10	
1680	Alaska Fund	Swap	Barclays	20-Dec-10	
1681	Pennsylvania Turnpike	Swap	Deutsche Bank	1-Jan-11	
1682	Pennsylvania Turnpike	Swap	Deutsche Bank	1-Jan-11	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1683	Alaska Fund	Swap	Citigroup	26-Jan-11	
1684	Alaska Fund	Swap	RBS	26-Jan-11	
1685	Alaska Fund	Swap	UBS	27-Jan-11	
1686	Alaska Fund	Swap	RBS	1-Feb-11	
1687	Alaska Fund	Swap	Credit Suisse	8-Feb-11	
1688	Alaska Fund	Swaption	RBS	14-Mar-11	23-May-11
1689	Alaska Fund	Swaption	RBS	14-Mar-11	23-May-11
1690	Alaska Fund	Swap	Citigroup	13-Apr-11	
1691	Alaska Fund	Swaption	RBS	20-Apr-11	30-Apr-12
1692	Alaska Fund	Swaption	RBS	20-Apr-11	30-Apr-12
1693	Alaska Fund	Swaption	Goldman Sachs	21-Apr-11	30-Apr-12
1694	Alaska Fund	Swaption	Goldman Sachs	21-Apr-11	30-Apr-12
1695	Alaska Fund	Swaption	RBS	28-Apr-11	11-Oct-11
1696	Alaska Fund	Swaption	RBS	28-Apr-11	11-Oct-11
1697	Alaska Fund	Swaption	Morgan Stanley	3-May-11	11-Oct-11
1698	Alaska Fund	Swaption	Morgan Stanley	3-May-11	11-Oct-11
1699	Alaska Fund	Swap	RBS	18-May-11	
1700	Alaska Fund	Swaption	Credit Suisse	25-May-11	24-Aug-11
1701	Alaska Fund	Swaption	Credit Suisse	25-May-11	24-Aug-11
1702	Alaska Fund	Swap	Citigroup	27-May-11	
1703	EAA/Portigon	Swaption	Nomura	6-Jun-11	5-Oct-12
1704	Alaska Fund	Swap	Bank of America	11-Aug-11	
1705	Alaska Fund	Swap	Bank of America	11-Aug-11	
1706	Alaska Fund	Swap	Bank of America	23-Aug-11	
1707	Alaska Fund	Swap	Credit Suisse	24-Aug-11	
1708	Alaska Fund	Swap	Goldman Sachs	12-Sep-11	
1709	Alaska Fund	Swap	Morgan Stanley	12-Sep-11	
1710	Alaska Fund	Swap	HSBC	14-Sep-11	
1711	Alaska Fund	Swap	Credit Suisse	20-Sep-11	
1712	Alaska Fund	Swap	Credit Suisse	20-Sep-11	
1713	Alaska Fund	Swap	Credit Suisse	29-Sep-11	
1714	Alaska Fund	Swap	UBS	29-Sep-11	
1715	Alaska Fund	Swap	Bank of America	30-Sep-11	
1716	Alaska Fund	Swap	Barclays	30-Sep-11	
1717	Alaska Fund	Swap	BNP Paribas	6-Oct-11	
1718	Alaska Fund	Swap	Citigroup	6-Oct-11	
1719	Alaska Fund	Swap	RBS	6-Oct-11	
1720	Alaska Fund	Swap	Credit Suisse	7-Oct-11	
1721	Alaska Fund	Swap	Credit Suisse	7-Oct-11	
1722	Alaska Fund	Swaption	Goldman Sachs	11-Oct-11	11-Oct-12
1723	Alaska Fund	Swaption	Goldman Sachs	11-Oct-11	11-Oct-12
1724	Alaska Fund	Swaption	J.P. Morgan	11-Oct-11	11-Oct-12
1725	Alaska Fund	Swaption	J.P. Morgan	11-Oct-11	11-Oct-12
1726	Alaska Fund	Swaption	Morgan Stanley	11-Oct-11	11-Oct-12
1727	Alaska Fund	Swaption	Morgan Stanley	11-Oct-11	11-Oct-12
1728	Alaska Fund	Swap	Morgan Stanley	11-Oct-11	
1729	Alaska Fund	Swap	RBS	11-Oct-11	
1730	Alaska Fund	Swap	Morgan Stanley	11-Oct-11	

	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1731	Alaska Fund	Swaption	Morgan Stanley	11-Oct-11	
1732	Alaska Fund	Swaption	Morgan Stanley	11-Oct-11	
1733	Alaska Fund	Swap	Credit Suisse	17-Oct-11	
1734	Alaska Fund	Swap	Morgan Stanley	17-Oct-11	
1735	Alaska Fund	Swap	Barclays	25-Oct-11	
1736	Alaska Fund	Swap	RBS	25-Oct-11	
1737	Alaska Fund	Swap	Barclays	1-Nov-11	
1738	Alaska Fund	Swap	Credit Suisse	1-Nov-11	
1739	Alaska Fund	Swap	Citigroup	11-Nov-11	
1740	Alaska Fund	Swap	Deutsche Bank	11-Nov-11	
1741	Alaska Fund	Swaption	Morgan Stanley	14-Nov-11	21-Dec-11
1742	Alaska Fund	Swaption	Morgan Stanley	14-Nov-11	14-Nov-12
1743	Alaska Fund	Swap	Citigroup	14-Nov-11	
1744	Alaska Fund	Swap	Credit Suisse	14-Nov-11	
1745	Alaska Fund	Swap	Barclays	12-Dec-11	
1746	Alaska Fund	Swap	Goldman Sachs	12-Dec-11	
1747	Alaska Fund	Swap	Barclays	10-Feb-12	
1748	Alaska Fund	Swap	HSBC	10-Feb-12	
1749	Alaska Fund	Swap	UBS	10-Feb-12	
1750	Alaska Fund	Swap	UBS	10-Feb-12	
1751	Alaska Fund	Swaption	Bank of America	5-Mar-12	21-Dec-11
1752	Alaska Fund	Swaption	Citigroup	5-Mar-12	24-Sep-12
1753	Alaska Fund	Swaption	Morgan Stanley	5-Mar-12	24-Sep-12
1754	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1755	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1756	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1757	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1758	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1759	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1760	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1761	Alaska Fund	Swaption	RBS	5-Mar-12	24-Sep-12
1762	Alaska Fund	Swaption	Deutsche Bank	22-Mar-12	18-Mar-13
1763	Alaska Fund	Swaption	Deutsche Bank	22-Mar-12	18-Mar-13
1764	Alaska Fund	Swaption	Deutsche Bank	26-Mar-12	18-Mar-13
1765	Alaska Fund	Swaption	Deutsche Bank	26-Mar-12	18-Mar-13
1766	Alaska Fund	Swaption	Bank of America	27-Mar-12	18-Mar-13
1767	Alaska Fund	Swaption	Bank of America	27-Mar-12	18-Mar-13
1768	Alaska Fund	Swaption	Deutsche Bank	28-Mar-12	18-Mar-13
1769	Alaska Fund	Swaption	Deutsche Bank	28-Mar-12	18-Mar-13
1770	Alaska Fund	Swaption	Deutsche Bank	29-Mar-12	18-Mar-13
1771	Alaska Fund	Swaption	Deutsche Bank	29-Mar-12	18-Mar-13
1772	Alaska Fund	Swap	HSBC	17-Apr-12	
1773	Alaska Fund	Swap	Barclays	17-Apr-12	
1774	Alaska Fund	Swap	UBS	30-Apr-12	
1775	Alaska Fund	Swap	Goldman Sachs	30-Apr-12	
1776	Alaska Fund	Swap	RBS	30-Apr-12	
1777	Alaska Fund	Swap	Goldman Sachs	30-Apr-12	
1778	Alaska Fund	Swap	Morgan Stanley	5-Jun-12	



	B	C	D	E	F
1	<b>APPENDIX A</b>				
2	Plaintiff	Type	Counterparty	Date	Exercise Date (Swaptions Only)
1779	Alaska Fund	Swaption	RBS	9-Aug-12	11-Oct-12
1780	Alaska Fund	Swaption	RBS	9-Aug-12	11-Oct-12
1781	Alaska Fund	Swaption	RBS	10-Aug-12	11-Oct-12
1782	Alaska Fund	Swaption	RBS	10-Aug-12	11-Oct-12
1783	Alaska Fund	Swaption	Bank of America	13-Aug-12	11-Oct-12
1784	Alaska Fund	Swaption	Bank of America	13-Aug-12	11-Oct-12
1785	Alaska Fund	Swaption	UBS	13-Aug-12	11-Oct-12
1786	Alaska Fund	Swaption	UBS	13-Aug-12	11-Oct-12
1787	Alaska Fund	Swaption	Morgan Stanley	14-Aug-12	11-Oct-12
1788	Alaska Fund	Swaption	Morgan Stanley	14-Aug-12	11-Oct-12
1789	Alaska Fund	Swaption	Bank of America	15-Aug-12	11-Oct-12
1790	Alaska Fund	Swaption	Bank of America	15-Aug-12	11-Oct-12
1791	Alaska Fund	Swaption	Credit Suisse	15-Aug-12	11-Oct-12
1792	Alaska Fund	Swaption	Credit Suisse	15-Aug-12	11-Oct-12
1793	Alaska Fund	Swaption	RBS	16-Aug-12	11-Oct-12
1794	Alaska Fund	Swaption	RBS	16-Aug-12	11-Oct-12
1795	Alaska Fund	Swaption	Goldman Sachs	9-Oct-12	11-Oct-12
1796	Alaska Fund	Swaption	J.P. Morgan	9-Oct-12	11-Oct-12
1797	Alaska Fund	Swaption	Morgan Stanley	9-Oct-12	11-Oct-12
1798	Alaska Fund	Swap	UBS	11-Oct-12	
1799	Alaska Fund	Swap	RBS	11-Oct-12	
1800	Alaska Fund	Swap	UBS	11-Oct-12	
1801	Alaska Fund	Swaption	Morgan Stanley	11-Oct-12	
1802	Alaska Fund	Swaption	Morgan Stanley	11-Oct-12	
1803	Alaska Fund	Swaption	Morgan Stanley	11-Oct-12	
1804	Alaska Fund	Swap	UBS	12-Oct-12	
1805	Alaska Fund	Swap	UBS	12-Oct-12	
1806	Alaska Fund	Swap	Barclays	16-Oct-12	
1807	Alaska Fund	Swap	RBS	16-Oct-12	
1808	Alaska Fund	Swap	Barclays	25-Oct-12	
1809	Alaska Fund	Swap	Citigroup	25-Oct-12	
1810	Alaska Fund	Swap	UBS	25-Oct-12	
1811	Alaska Fund	Swap	Morgan Stanley	14-Nov-12	
1812	Alaska Fund	Swaption	Morgan Stanley	14-Nov-12	
1813	Alaska Fund	Swap	Deutsche Bank	3-Jan-13	
1814	Alaska Fund	Swap	J.P. Morgan	10-Jan-13	
1815	Alaska Fund	Swap	UBS	10-Jan-13	
1816	Alaska Fund	Swap	UBS	10-Jan-13	
1817	Alaska Fund	Swap	Barclays	14-Jan-13	
1818	Alaska Fund	Swap	HSBC	14-Jan-13	
1819	Alaska Fund	Swap	HSBC	15-Jan-13	
1820	Alaska Fund	Swap	HSBC	15-Jan-13	
1821	Alaska Fund	Swap	HSBC	15-Jan-13	
1822	Alaska Fund	Swap	Deutsche Bank	16-Jan-13	