UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE LIBOR-BASED FINANCIAL INSTRUMENTS ANTITRUST LITIGATION	MDL No. 2262
THIS DOCUMENT RELATES TO:	Master File No. 1:11-md-2262-NRB ECF Case
MAYOR AND CITY COUNCIL OF BALTIMORE and CITY OF NEW BRITAIN FIREFIGHTERS' AND POLICE BENEFIT FUND, on behalf of themselves and all others similarly situated Plaintiffs, v. CREDIT SUISSE GROUP AG, BANK OF AMERICA CORPORATION, BANK OF AMERICA, N.A., JP MORGAN CHASE & CO., JPMORGAN CHASE BANK, NATIONAL ASSOCIATION, HSBC HOLDINGS PLC, HSBC BANK PLC, BARCLAYS BANK PLC LLOYDS BANKING GROUP PLC, WESTLB AG, WESTDEUTSCHE IMMOBILIENBANK AG, UBS AG, THE ROYAL BANK OF SCOTLAND GROUP PLC, DEUTSCHE BANK AG, CITIBANK NA, CITIGROUP INC., COÖPERATIEVE CENTRALE RAIFFEISEN BOERENLEENBANK B.A., THE NORINCHU.K.IN BANK, THE BANK OF TOKYO-MITSUBISHI UFJ, LTD., HBOS PLC, and ROYAL BANK OF CANADA, Defendants.	**CONSOLIDATED AMENDED COMPLAINT** **JURY TRIAL DEMANDED**

1. Plaintiffs Mayor and City Council of Baltimore and City of New Britain Firefighters' and Police Benefit Fund (collectively, the "Baltimore Plaintiffs"), on behalf of themselves and all others similarly situated, by their counsel, assert claims for violations of

federal antitrust law against the Defendants identified below (collectively, "Defendants") arising from their manipulation of the London InterBank Offered Rate ("LIBOR") from on or before August 9, 2007 through at least February 2009 (the "Class Period").

2. The Baltimore Plaintiffs' claims are made on information and belief (except as to allegations specifically pertaining to the Baltimore Plaintiffs and their counsel, which are made on personal knowledge) based on the investigation conducted by and under the supervision of the Baltimore Plaintiffs' counsel. That investigation included reviewing and analyzing information concerning Defendants and LIBOR that the Baltimore Plaintiffs (through their counsel) obtained from, among other sources: (i) analyses by consulting experts engaged by plaintiffs in these coordinated proceedings; (ii) publicly available press releases, news articles, and other media reports (whether disseminated in print or by electronic media); (iii) filings Defendants made with the United States Securities and Exchange Commission ("SEC"); (iv) court documents submitted in LIBOR-related proceedings in Canada, Singapore, and Japan; and (v) scholarly literature concerning the potential manipulation of LIBOR during the Class Period. Additionally, pursuant to the Antitrust Criminal Penalty Enhancement and Reform Act (Pub. L. No. 108-237, tit. II, 118 Stat. 661, 665, extended by Pub. L. No. 111-190, 124 Stat. 1275), the conditional leniency applicant to the United States Department of Justice has commenced providing cooperation to the Baltimore Plaintiffs and is expected to continue doing so. Those sources collectively support the Baltimore Plaintiffs' allegations that Defendants collusively and systematically suppressed LIBOR during the Class Period so that the interest rates on LIBOR-based instruments that the Baltimore Plaintiffs purchased during that time were lower than they otherwise would have been absent Defendants' misconduct.

3. Except as alleged in this Complaint, neither the Baltimore Plaintiffs nor other

members of the public have access to the underlying facts relating to Defendants' improper activities. Rather, that information lies exclusively within the possession and control of Defendants and other insiders, which prevents the Baltimore Plaintiffs from further detailing Defendants' misconduct. Moreover, numerous pending government investigations—both domestically and abroad, including by the United States Department of Justice ("DOJ"), the Commodity Futures Trading Commission ("CFTC"), and the SEC—concerning potential LIBOR manipulation could yield information from Defendants' internal records or personnel that bears significantly on the Baltimore Plaintiffs' claims. Indeed, as one news report observed in detailing U.S. regulators' ongoing investigation, "[i]nternal bank emails may prove to be key evidence . . . because of the difficulty in proving that banks reported borrowing costs for LIBOR at one rate and obtained funding at another."[1] The Baltimore Plaintiffs thus believe further evidentiary support for their allegations will come to light after a reasonable opportunity for discovery.

NATURE OF THE ACTION

4. This case arises from a global conspiracy to manipulate LIBOR—the reference point for determining interest rates for trillions of dollars in financial instruments worldwide—by a cadre of prominent financial institutions.

5. Defendants, the banks that comprised the U.S. dollar LIBOR panel during the Class Period (as defined below), were motivated to suppress LIBOR for two primary reasons. First, well aware that the interest rate a bank pays (or expects to pay) on its debt is widely, if not universally, viewed as embodying the market's assessment of the risk associated with that bank, Defendants understated their borrowing costs (thereby suppressing LIBOR) to portray

[1] David Enrich, Carrick Mollenkamp & Jean Eaglesham, "U.S. Libor Probe Includes BofA, Citi, UBS," *MarketWatch*, March 17, 2011.

themselves as economically healthier than they actually were. Second, artificially suppressing LIBOR allowed Defendants to pay lower interest rates on LIBOR-based financial instruments that Defendants sold to investors, including the Baltimore Plaintiffs, during the Class Period.

6. Throughout the Class Period, Defendants conspired to, and did, manipulate LIBOR by misreporting the actual interest rates at which they expected they could borrow funds—*i.e.*, their true costs of borrowing—on a daily basis. By acting together and in concert to knowingly understate their true borrowing costs, Defendants caused LIBOR to be calculated or suppressed artificially low, reaping hundreds of millions, if not billions, of dollars in ill-gotten gains.

7. Investigations regarding LIBOR are ongoing in the United States, Switzerland, Japan, United Kingdom, Canada, the European Union, and Singapore by ten different governmental agencies, including the DOJ, the SEC, and the CFTC. Additionally, numerous employees, including supervisors, traders, and brokers, from various financial institutions have been accused of improper conduct related to LIBOR.

8. Defendants' manipulation of LIBOR allowed them to pay unduly low interest rates to investors, including Baltimore Plaintiffs, on LIBOR-based financial instruments during the Class Period. Accordingly, the Baltimore Plaintiffs seek relief for the damages they have suffered as a result of Defendants' violations of federal law. Baltimore Plaintiffs assert claims under the Sherman Act, 15 U.S.C. §§ 1, *et seq.* and the Clayton Act, 15 U.S.C. §§ 12, *et seq.*

JURISDICTION AND VENUE

9. This action arises under Section 1 of the Sherman Act, 15 U.S.C., § 1, and Sections 4 and 16 of the Clayton Act, 15 U.S.C. §§ 15 and 26.

10. This Court has jurisdiction under 28 U.S.C. §§ 1331 and 1337 and Sections 4 and 16 of the Clayton Act, 15 U.S.C. §§ 15 and 26.

11. Venue is proper in this District pursuant to Sections 4, 12 and 16 of the Clayton Act, 15 U.S.C. §§ 15, 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 the District, a substantial part of the events giving rise to Plaintiff's 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.

THE PARTIES

Plaintiffs

12. Plaintiff Mayor and City Council of Baltimore ("Baltimore") is an independent city in the State of Maryland. During the Class Period, Baltimore purchased hundreds of millions of dollars in interest rate swaps directly from at least one Defendant in which the rate of return was tied to LIBOR and was injured as a result of Defendants' anticompetitive conduct.

13. Plaintiff City of New Britain Firefighters' and Police Benefit Fund ("New Britain") is a pension fund located in Connecticut with the mission of providing retirement benefits to the city's employees and their spouses. During the Class Period, New Britain purchased tens of millions of dollars in interest rate swaps directly from at least one Defendant in which the rate of return was tied to LIBOR and was injured as a result of Defendants' anticompetitive conduct.

Defendants

14. Defendant Bank of America Corporation is a Delaware corporation headquartered in Charlotte, North Carolina. Defendant Bank of America, N.A.—a federally-chartered national banking association headquartered in Charlotte, North Carolina—is an indirect, wholly-owned subsidiary of Defendant Bank of America Corporation. Defendants Bank of America Corporation and Bank of America, N.A. are referenced collectively in this Complaint as "Bank

of America."

15. Defendant Bank of Tokyo-Mitsubishi UFJ Ltd. ("BTMU") is a Japanese company headquartered in Tokyo, Japan.

16. Defendant Barclays Bank plc ("Barclays") is a British public limited company headquartered in London, England.

17. Defendant Citigroup, Inc. is a Delaware corporation headquartered in New York, New York. Defendant Citibank, N.A.—a federally-chartered national banking association headquartered in New York, New York—is a wholly-owned subsidiary of Defendant Citigroup, Inc. Defendants Citigroup, Inc. and Citibank, N.A. are referenced collectively in this Complaint as "Citibank."

18. Defendant Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. ("Rabobank") is a financial services provider headquartered in Utrecht, the Netherlands.

19. Defendant Credit Suisse Group AG ("Credit Suisse") is a Swiss company headquartered in Zurich, Switzerland.

20. Defendant Deutsche Bank AG ("Deutsche Bank") is a German financial services company headquartered in Frankfurt, Germany.

21. Defendant HSBC Holdings plc is a United Kingdom public limited company headquartered in London, England. Defendant HSBC Bank plc—a United Kingdom public limited company headquartered in London, England—is a wholly-owned subsidiary of Defendant HSBC Holdings plc. Defendants HSBC Holdings plc and HSBC Bank plc are referenced collectively in this Complaint as "HSBC."

22. Defendant JPMorgan Chase & Co. is a Delaware corporation headquartered in New York, New York. Defendant JPMorgan Chase Bank, National Association—a federally-

chartered national banking association headquartered in New York, New York—is a wholly-owned subsidiary of Defendant JPMorgan Chase & Co. Defendants JPMorgan Chase & Co. and JPMorgan Chase Bank, National Association are referenced together in this Complaint as "JPMorgan Chase."

23. Defendant Lloyds Banking Group plc ("Lloyds") is a United Kingdom public limited company headquartered in London, England. Defendant Lloyds was formed in 2009 through the acquisition of Defendant HBOS plc ("HBOS")—a United Kingdom banking and insurance company headquartered in Edinburgh, Scotland—by Lloyds TSB Bank plc.

24. Defendant Royal Bank of Canada ("RBC") is a Canada company headquartered in Toronto, Canada.

25. Defendant The Norinchukin Bank ("Norinchukin") is a Japanese cooperative bank headquartered in Tokyo, Japan.

26. Defendant The Royal Bank of Scotland Group plc ("RBS") is a United Kingdom public limited company headquartered in Edinburgh, Scotland.

27. Defendant UBS AG ("UBS") is a Swiss company based in Basel and Zurich, Switzerland.

28. Defendant WestLB AG is a German joint stock company headquartered in Dusseldorf, Germany. Defendant Westdeutsche ImmobilienBank AG—a German company headquartered in Mainz, Germany—is a wholly-owned subsidiary of WestLB AG. Defendants WestLB AG and Westdeutsche ImmobilienBank AG are referenced together in this Complaint as "WestLB."

29. Defendants Bank of America, BTMU, Barclays, Citibank, Rabobank, Credit Suisse, Deutsche Bank, HSBC, JPMorgan Chase, Lloyds, HBOS, RBC, Norinchukin, RBS,

UBS, and WestLB (collectively, "Defendants") were members of the BBA's USD-LIBOR panel during the Class Period.

UNNAMED CO-CONSPIRATORS

30. Various other entities and individuals not named as Defendants in this Complaint participated as co-conspirators in the acts complained of and performed acts and made statements that aided and abetted and furthered the unlawful conduct alleged herein.

DEFINITIONS

31. LIBOR-Based Instruments are Derivative Instruments and Non-Derivative Instruments. LIBOR-Based Instruments may be indexed to one or more LIBOR currencies (*i.e.*, USD-LIBOR, Yen-LIBOR, and Euro-LIBOR). Only LIBOR-Based Instruments that were sold in over-the-counter transactions are at issue in the Baltimore Plaintiffs' Complaint.

32. Derivative Instruments include but are not limited to asset swaps, collateralized debt obligations, credit default swaps, forward rate agreements, inflation swaps, interest rate swaps, total return swaps, and options.

(a) Asset Swaps are a type of over-the-counter derivative in which one investor exchanges the cash flows of an asset or pool of assets for a different cash flow. This is done without affecting the underlying investment position. For instance, if a Defendant wanted to own a particular Euro-denominated fixed rate issue, but preferred to receive a floating rate US dollar cash flow, the Defendant could purchase the Euro-denominated bond and then enter into asset swap with another bank or investor to receive US Dollar LIBOR payments (+/- spread) in return for paying a fixed rate coupon in Euros to the bank or investor. Asset Swaps can be indexed to LIBOR.

(b) Collateralized Debt Obligations ("CDOs") are a type of structured asset

backed security (“ABS”). ABSs are derivatives and are sold in over-the-counter transactions. CDOs have multiple tranches, or levels of risk, and are issued by “special purpose entities.” They are collateralized by debt obligations including bonds and loans. Each tranche offers a varying degree of risk and return so as to meet investor demand. Interest and principal payments are made in order of seniority, so that junior tranches offer higher coupon payments (and interest rates) or lower prices to compensate for additional default risk; in general, "senior" tranches are considered the safest securities. In some cases, investors utilize leverage and hope to profit from the excess of the spread offered by the senior tranche and their cost of borrowing. This is because senior tranches pay a spread above LIBOR despite their AAA-ratings. CDOs can be indexed to LIBOR.

(c) Credit Default Swaps (“CDSs”) are a type of over-the-counter, credit-based derivative whereby the seller of the CDSs compensates the buyer of the CDS only if the underlying loan goes into default or has another “credit event.” The buyer of the CDS makes a series of payments (the CDS "fee" or "spread") to the seller and, in exchange, receives a payoff if the loan defaults. In the event of default, the buyer of the CDS receives compensation (usually the face value of the loan), and the seller of the CDS takes possession of the defaulted loan. However, anyone can purchase a CDS, even buyers who do not hold the loan instrument and who have no direct insurable interest in the loan (these are called "naked" CDSs).

(d) Forward Rate Agreements (“FRAs”) are a type of over-the-counter derivative based on a “forward contract.” The contract sets the rate of interest or the currency exchange rate to paid or received on an obligation beginning at a future start date. The contract will determine the rates to be used along with the termination date and notional value. On this type of agreement, it is only the differential that is paid on the notional amount of the contract. It

is paid on the effective date. The reference rate is fixed one or two days before the effective date, dependent on the market convention for the particular currency. An FRA differs from a swap in that a payment is only made once at maturity. FRAs can be indexed to LIBOR.

(e) Inflation Swaps are a type of over-the-counter derivative used to transfer inflation risk from one party to another through an exchange of cash flows. In an inflation swap, one party pays a fixed rate on a notional principal amount, while the other party pays a floating rate linked to an inflation index. The party paying the floating rate pays the inflation adjusted rate multiplied by the notional principal amount. Inflation Swaps can be indexed to LIBOR.

(f) Interest Rate Swaps are a type of over-the-counter derivative in which two parties agree to exchange interest rate cash flows, based on a specified notional amount from a fixed rate to a floating rate (or vice-versa) or from one floating rate to another. These are highly liquid financial derivatives. Interest rate swaps are commonly used for both hedging and speculating. In an interest rate swap, each party agrees to pay either a fixed or floating rate denominated in a particular currency to the other party. The fixed or floating rate is multiplied by a notional principal amount. This notional amount is typically not exchanged between counterparties, but is used only for calculating the size of cash flows to be exchanged. Interest Rate Swaps can be indexed to LIBOR.

(g) Total Return Swaps are a type of over-the-counter derivative based on financial contracts that transfer both the credit and market risk of an underlying asset. These derivatives allow one contracting party to derive the economic benefit of owning an asset without putting that asset on its balance sheet; the other contracting party, which retains the underlying asset on its balance sheet, is, in effect, buying protection against loss on that asset's value. Total Return Swaps can be indexed to LIBOR.

(h) Options are a type of over-the-counter derivative based on a contract between two parties for a future transaction on an asset. The other Derivative Instruments, defined above, can serve as the asset for an Option; an Option on a swap is commonly referred to as a "swaption". The buyer of an option gains the right, but not the obligation, to engage in that future transaction (buy or sell) while the seller of the option is obligated to fulfill the future transaction. In general, the option's price is the difference between the asset's reference price and the value of the underlying asset (*i.e.*, a stock, bond, currency contract, or futures contract) plus a spread. Thus, where the underlying asset is indexed to LIBOR, the Option's price is impacted by LIBOR.

33. Non-derivative instruments include but are not limited to floating rate notes. Floating rate notes evidence an amount of money owed to the buyer from the seller. The interest rate on floating rate notes is adjusted at contractually-set intervals and is based on a variable rate index, such as LIBOR. Thus, floating rate notes can be indexed to LIBOR.

CLASS ACTION ALLEGATIONS

34. The Baltimore Plaintiffs bring this action as a class action under Rules 23(a) and 23(b)(3) of the Federal Rules of Civil Procedure, on behalf of itself and all others similarly situated. The "Class" is defined as:

> All persons or entities (other than Defendants and their employees, affiliates, parents, and subsidiaries) that purchased in the United States, directly from a Defendant, a financial instrument that paid interest indexed to LIBOR ("LIBOR-Based Instrument") any time during the period August 2007 through May 2010 (the "Class Period").

35. The Class is so numerous that joinder of all members is impracticable. While the exact number of Class members is unknown at this time, the Baltimore Plaintiffs are informed and believe that at least thousands of geographically dispersed Class members purchased

LIBOR-Based Derivatives directly from Defendants during the Class Period.

36. The Baltimore Plaintiffs' claims are typical of the claims of the other members of the Class. The Baltimore Plaintiffs and the members of the Class sustained damages arising out of Defendants' common course of conduct in violation of law as complained herein. The injuries and damages of each member of the Class were directly caused by Defendants' wrongful conduct in violation of the antitrust laws as alleged herein.

37. The Baltimore Plaintiffs will fairly and adequately protect the interests of the members of the Class and has retained counsel competent and experienced in class action litigation, including antitrust class action litigation.

38. Common questions of law and fact exist as to all members of the Class which predominate over any questions affecting solely individual members of the Class. Among the questions of law and fact common to the Class are:

(a) Whether Defendants conspired with others to artificially suppress LIBOR in violation of the Sherman Act;

(b) Whether Defendants' conduct had an anticompetitive and manipulative effect on LIBOR during the Class Period;

(c) Whether Defendants' conduct negatively affected the rates of return of LIBOR-Based Instruments purchased directly from the Defendants during the Class Period; an

(d) The appropriate measure of damages for the injury sustained by the Baltimore Plaintiffs and other members of the Class as a result of Defendants' unlawful activities.

39. A class action is superior to other available methods for the fair and efficient adjudication of this controversy because joinder of all Class members is impracticable. The

prosecution of separate actions by individual members of the Class would impose heavy burdens upon the courts and Defendants, and would create a risk of inconsistent or varying adjudications of the questions of law and fact common to the Class. A class action, on the other hand, would achieve substantial economies of time, effort and expense, and would assure uniformity of decision as to persons similarly situated without sacrificing procedural fairness or bringing about other undesirable results.

40. The interest of members of the Class in individually controlling the prosecution of separate actions is theoretical rather than practical. The Class has a high degree of cohesion, and prosecution of the action through representatives would be unobjectionable. The amounts at stake for Class members, while substantial in the aggregate, are not great enough individually to enable them to maintain separate suits against Defendants. The Baltimore Plaintiffs do not anticipate any difficulty in the management of this action as a class action.

FACTUAL ALLEGATIONS

41. As discussed in more detail below, the British Bankers' Association ("BBA") rate-setting cartel, described below, provides the means through which Defendants could manipulate LIBOR; banks were motivated to manipulate LIBOR to hide their precarious financial conditions and to financially benefit from a manipulated LIBOR; there is economic evidence that LIBOR was manipulated and could not have been so manipulated in the absence of a conspiracy; there are governmental investigations worldwide regarding LIBOR manipulation; there are news reports that LIBOR was manipulated; and there are admissions of manipulation with respect to yen LIBOR. The foregoing factors evidence a worldwide conspiracy regarding LIBOR manipulation.

A. LIBOR Is Administered By The BBA Rate-Setting Cartel

42. The BBA describes itself on its website as "the leading trade association for the

U.K. banking and financial services sector. We speak for over 200 member banks from 60 countries on the full range of U.K. and international banking issues."[2] The Defendants are among the member banks of the BBA. As the BBA itself concedes, it is not a regulatory body and has no regulatory function.[3] Its activities are not overseen by any U.K. or foreign regulatory agency. It is governed by a board of member banks that meets four times each year. The board is composed of senior executives from twelve banks, including Barclays Bank plc, Citibank NA, Credit Suisse, Deutsche Bank AG, HSBC Bank plc, J.P. Morgan Europe Ltd., and the Royal Bank of Scotland plc.[4] "This is a quaint, insider club which is clearly not fit for the 21st century," said Richard Werner, a finance professor at the University of Southampton, England.[5]

43. Commencing in January of 1986, the BBA began disseminating LIBOR, initially in three currencies: U.S. dollars, Japanese Yen, and pound sterling; LIBOR is now disseminated for ten currencies: the foregoing three, the Australian dollar, the Canadian dollar, the New Zealand dollar, the Danish krone, the Euro, the Swiss Franc, and the Swedish krone.

44. LIBOR is a daily benchmark interest rate at which designated contributor panel banks predict they can borrow unsecured funds from other banks in the London wholesale money market for fifteen different maturities ranging from overnight to one year. As "the primary benchmark for short term interest rates globally,"[6] LIBOR has occupied (and continues to occupy) a crucial role in the operation of financial markets. For example, market participants

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[2] http://www.bba.org.uk/about-us, last accessed on April 30, 2012.

[3] http://www.bba.org.uk/blog/article/bba-repeats-commitment-to-bba-libor, last accessed on April 30, 2012

[4] http://www.bba.org.uk/about-us, last accessed on April 30, 2012.

[5] http://www.bloomberg.com/news/2012-02-21/ubs-turning-whistleblower-in-libor-probe-pressures-rivals.html, last accessed on April 30, 2012.

[6] http://www.bbalibor.com/bbalibor-explained/the-basics, last accessed on April 19, 2012.

commonly set the interest rate on floating-rate notes as a spread against LIBOR (*e.g.*, "LIBOR + [X] bps")[7] and use LIBOR as a basis to determine the correct rate of return on short-term fixed-rate notes (by comparing the offered rate to LIBOR).

45. LIBOR thus affects the pricing of trillions of dollars' worth of financial transactions. In a May 21, 2009 press release, the BBA called LIBOR "the world's most important number."[8] Accordingly, it is well-established among market participants that confidence in LIBOR "matters, because the rate system plays a vital role in the economy."[9] Moreover, given the vast universe of financial instruments LIBOR impacts, "even a small manipulation" of the rate "could potentially distort capital allocations all over the world."[10]

46. LIBOR is set by the BBA and its member banks. Each of the ten aforementioned currencies is overseen by a separate LIBOR panel created by the BBA. During the Class Period, designated contributing panels ranged in size from eight banks for Australian dollar, Swedish krona, Danish krone, and New Zealand dollar panels to sixteen banks for U.S. dollar, pound sterling, Euro, and Japanese yen panels. There is substantial overlap in membership among the panels. For example, during the Class Period, nine of the sixteen banks that served on the U.S. dollar also served on the Japanese yen, Swiss franc and Euro LIBOR panels.[11] Similarly,

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[7] The term "bps" stands for basis points. 100 basis points equal 1%.

[8] http://www.bbalibor.com/news-releases/bba-libor-the-worlds-most-important-number-now-tweets-daily.

[9] Carrik Mollenkamp and Mark Whitehouse, "Study Casts Doubt on Key Rate --- WSJ Analysis Suggests Banks May Have Reported Flawed Interest Data for Libor," *The Wall Street Journal*, May 29, 2008.

[10] Rosa M. Abrantes-Metz and Albert D. Metz, "How Far Can Screens Go in Distinguishing Explicit from Tacit Collusion? New Evidence from the Libor Setting," *CPI Antitrust Chronicle*, March 2012.

[11] Those banks are Bank of Tokyo, Barclays, Citibank, Deutsche Bank, HSBC, JP Morgan Chase, Lloyds, Rabobank, RBS, and UBS

thirteen banks participated on both the dollar and yen LIBOR panels[12] and eleven banks participated on both the U.S. dollar and Swiss franc LIBOR panels.[13] It is a requirement of membership of a LIBOR contributor panel that the bank is regulated and authorized to trade on the London money market. As the BBA recently told Bloomberg: "As all contributor banks are regulated, they are responsible to their regulators, rather than us."[14]

47. According to the BBA's "LIBOR Governance and Scrutiny" report issued in 2008,[15] "[t]he BBA employs a full time manager to supervise on a day-to-day basis all aspects of LIBOR calculation and dissemination to the marketplace. The LIBOR manager works with a team of professionals both in-house and externally to ensure all processes operate to the highest standards." As the report goes on to explain, "Thomson Reuters...act as the 'designated distributor' of BBA LIBOR rates. All contributions to the LIBOR rate-setting process are collected by Thomson Reuters, who currently perform checking procedures, supervised by the LIBOR manager, on all the submissions before running the calculation and distributing the fixes."

48. During the Class Period, the BBA established LIBOR based on the rates that designated banks for each currency would have to pay for an unsecured loan for each designated

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[12] Those banks are Bank of America, Bank of Tokyo, Barclays, Citibank, Deutsche Bank, HSBC, JP Morgan Chase, Lloyds, Rabobank, RBS, Société Générale (beginning in 2009), UBS, and West LB.

[13] Those banks are Bank of Tokyo, Barclays, Citibank, Credit Suisse, Deutsche Bank, HSBC, JP Morgan Chase, Lloyds, Rabobank, RBS, and UBS.

[14] http://www.bba.org.uk/blog/article/bba-repeats-commitment-to-bba-libor, last accessed on April 30, 2012.

[15] http://www.bbalibor.com/news-releases/libor-gets-enhanced-governance-and-scrutiny-procedures, last accessed on April 30, 2012.

maturity period.[16] Every day, the banks responded to the BBA's question: "At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?" On its website, the BBA explains "a bank will know what its credit and liquidity risk profile is from rates at which it has dealt and can construct a curve to predict accurately the correct rate for currencies or maturities in which it has not been active." The banks informed the BBA of their costs of borrowing funds at different maturity dates *(e.g.*, one month, three months, six months). Contributed rates are ranked in descending order and the arithmetic mean of only the middle two quartiles is used to formulate the resulting BBA LIBOR calculation for that particular currency and maturity.[17] Thomson Reuters then publishes LIBOR, also reporting the quotes on which the BBA based its LIBOR calculation. "Libor has always been a lie, because it represents what banks would pay for funds rather than what they are actually paying," said Peter Hahn, a finance professor at London's Cass Business School and a former managing director at Citigroup. "People who have an incentive to make money from mispriced markets are able to misprice those markets, and that is a serious control problem."[18]

49. No regulatory agency oversees the setting of LIBOR by the BBA and its members. The resultant rates are not filed with, or subject to the approval of, any regulatory agency. The BBA has been quoted as saying it "calculates and produces BBA Libor at the request of our members for the good of the market."[19]

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[16] http://www.bbalibor.com/bbalibor-explained/the-basics, last accessed on April 30, 2012.

[17] http://www.bbalibor.com/technical-aspects/setting-bbalibor, last accessed March 30, 2012.

[18] http://www.bloomberg.com/news/2012-02-21/ubs-turning-whistleblower-in-libor-probe-pressures-rivals.html, last accessed on April 30, 2012.

[19] http://www.businessweek.com/news/2012-03-06/libor-links-deleted-as-bank-group-backs-away-from-tarnished-rate, last accessed on April 30, 2012.

50. The BBA's activities in setting LIBOR for various currencies reflect a global rate-setting cartel. As one commentator has noted, "LIBOR is not a real market rate of interest and is instead set by a cartel of mostly foreign banks operating in London with little or no oversight and no transparency. . . . The Wall Street Journal reported that the BBA is hesitant to change how LIBOR is calculated because it is worried about legal liability which is not a surprise. If the BBA admits that LIBOR isn't a market rate but a cartel rate that was established through price fixing, it will be subject to global lawsuits resulting from fraudulent behavior and misrepresentations. The likelihood of the BBA reforming itself, providing transparency and giving up its cartel monopoly is very low given the astronomical liability that will result."[20] Indeed, the BBA directly profits from the usage of LIBOR. Since 2009, it has operated BBA LIBOR, Ltd., which earns revenue from licensing the rate.

51. Throughout the Class Period, Defendants conspired to suppress LIBOR below the levels at which it would have been set had Defendants accurately reported their borrowing costs to the BBA. The Baltimore Plaintiffs' allegations that Defendants suppressed LIBOR are supported by: (i) Defendants' powerful incentives to mask their true borrowing costs and to reap unjustified revenues by setting artificially low interest rates on LIBOR-based financial instruments the Baltimore Plaintiffs and other investors purchased; (ii) an independent analysis by the Baltimore Plaintiffs' consulting experts, comparing LIBOR panel banks' daily individual quotes with the banks' probability of default, as measured by Kamakura Risk Information Services, as well as LIBOR-related analyses by consulting experts in these coordinated proceedings have engaged; (iii) publicly available economic analyses, by prominent academics and other commentators, of LIBOR's behavior during the Class Period compared with other

[20] http://www.thesunshinereport.net/marksunshine/?p=36, lat accessed April 30, 2012.

well-accepted, contemporaneous measures of Defendants' borrowing costs, as well as the notable tendency of Defendants' daily submitted LIBOR quotes to "bunch" near the bottom quartile of the collection of reported rates used to determine LIBOR; and (iv) revelations in connection with the numerous domestic and foreign governmental investigations into potential manipulation of USD-LIBOR and LIBOR for other currencies, most prominently Yen-LIBOR.

B. Defendants Possess Financial Incentives to Suppress LIBOR.

52. Defendants each had substantial financial incentives to manipulate LIBOR. First, Defendants were motivated, particularly given investors' serious concerns over the stability of the market in the wake of the financial crisis that emerged in 2007, to understate their borrowing costs—and thus the level of risk associated with the banks. Moreover, because no one bank would want to stand out as bearing a higher degree of risk than its fellow banks, each Defendant shared a powerful incentive to collude with its co-Defendants to ensure it was not the "odd man out." Indeed, analysts at Citigroup Global Markets—a subsidiary of Defendant Citigroup—acknowledged in an April 10, 2008 report:

> [T]he most obvious explanation for LIBOR being set so low is the prevailing fear of being perceived as a weak hand in this fragile market environment. If a bank is not held to transact at its posted LIBOR level, there is little incentive for it to post a rate that is more reflective of real lending levels, let alone one higher than its competitors. Because all LIBOR postings are publicly disclosed, any bank posting a high LIBOR level runs the risk of being perceived as needing funding. With markets in such a fragile state, this kind of perception could have dangerous consequences.[21]

Strategists at entities affiliated with other Defendants likewise confirmed that banks suppressed LIBOR. Echoing Peng's sentiment, William Porter, credit strategist at Credit Suisse, said in April 2008 that he believed the three-month USD-LIBOR was 0.4 percentage points below

[21] Scott Peng, Chintan (Monty) Gandhi, & Alexander Tyo, "Special Topic: Is LIBOR Broken?," April 10, 2008.

where it should be.[22] And the next month, Tim Bond, head of asset-allocation research of Barclays Capital—a subsidiary of Defendant Barclays—observed that banks routinely misstated borrowing costs to the BBA to avoid the perception that they faced difficulty raising funds as credit markets seized up.[23]

53. Second, by artificially suppressing LIBOR, Defendants paid lower interest rates on LIBOR-based financial instruments they sold to investors, including the Baltimore Plaintiffs, during the Class Period. Illustrating Defendants' motive to artificially suppress LIBOR, in 2009 Citibank reported it would make $936 million in net interest revenue if rates would fall by 25 bps per quarter over the next year and $1.935 billion if they fell 1% instantaneously. JPMorgan Chase likewise reported significant exposure to interest rates in 2009: The bank stated that if interest rates increased by 1%, it would lose over $500 million. HSBC and Lloyds also estimated they would earn hundreds of millions of additional dollars in 2008-2009 in response to lower interest rates and would lose comparable amounts in response to higher rates. These banks collectively earned billions in net interest revenues during the Class Period.

54. Defendants thus possessed reputational and financial incentives to manipulate LIBOR—which, as detailed below, they did.

C. Independent Analyses By The Plaintiffs' Consulting Experts Strongly Indicate Defendants Artificially Suppressed LIBOR During The Class Period.

55. The consulting experts in these coordinated proceedings have measured LIBOR against other recognized benchmarks for determining banks' borrowing costs. Employing well-

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[22] Carrick Mollenkamp, "Libor Surges After Scrutiny Does, Too," *The Wall Street Journal*, April 18, 2008.

[23] Gavin Finch and Elliott Gotkine, "Libor Banks Misstated Rates, Bond at Barclays Says," *Bloomberg*, May 29, 2008.

reasoned methodologies, these experts have demonstrated that Defendants artificially suppressed LIBOR during the Class Period. Despite any minor discrepancies in the analyses, the experts' common conclusion is clear: During the Class Period, LIBOR did not appropriately correspond with other measures of Defendants' borrowing costs, as indicated by: (i) the difference between Defendants' respective LIBOR quotes and their probabilities of default, and (ii) the spread between LIBOR and Eurodollar Deposit rates.

56. Additional independent expert analysis performed in connection with these proceedings indicates Libor suppression. At one date during the Class Period, when the BBA announced it would investigate the reporting of LIBOR, members of the LIBOR panel increased their rates in unison despite the lack of any market reason. Logically, the Defendants collectively feared that their LIBOR suppression would be uncovered. Bolstering this point is that since October 2011, when the European Commission raided most or all of Defendants in connection with the LIBOR probe, reported LIBOR has returned to its historic norm compared with the overall Eurodollar deposit market."

1. An Independent Analysis By Consulting Experts—Showing The Discrepancy Between Defendants' LIBOR Quotes And Their Respective Probabilities Of Default—Provides Strong Evidence of LIBOR Suppression During The Class Period.

57. Assessing the likelihood that LIBOR was suppressed during the Class Period, the Plaintiffs' expert consultants compared USD-LIBOR panel members' quotes from 2007 through 2008 to the daily default probability estimates for each of those banks—as determined, and updated daily for each maturity (term), by Kamakura Risk Information Services ("KRIS").[24] The study focused on identifying any periods of severe discrepancy between each bank's

[24] KRIS did not have PDs for Defendants WestLB, Rabobank, or Norinchukin, because those companies were not publicly traded. This PD analysis therefore does not include those banks.

probabilities of default ("PDs") and the LIBOR quotes the bank submitted to the BBA.

58. The KRIS reduced-form model estimates each bank's default risk on a daily basis by analyzing each bank's equity and bond prices, accounting information, and general economic conditions, such as the level of interest rates, unemployment rates, inflation rates, etc. On its website, KRIS states it "provides a full term structure of default for both corporate and sovereign credit names based upon a multiple models approach" and its default probabilities "are updated daily and cover more than 29,000 companies in 36 countries."[25]

59. PD provides a measure of a bank's credit (default) risk exposure, essentially the likelihood that the bank will default within a specified time period. PD can be estimated using statistical models, whereas LIBOR is a rate of return required by investors lending short-term funds to the bank. A finding of a statistically significant negative correlation coefficient between daily LIBOR quotes and PDs for a given bank over a given term period violates the fundamental relationship between risk and return that is the cornerstone of finance. That is, investors require a higher required rate of return as a premium for taking on additional risk exposure. This results in a positive relationship (correlation) between risk and return. An increase in the bank's PD indicates that the risk of default has increased, thereby causing investors to require a higher rate of return for loans to the bank—which should correspond with a higher LIBOR quote.

60. Accordingly, a finding of a statistically significant negative coefficient (of any size) between a bank's daily LIBOR quotes and its PDs shows that increases in PDs correspond with decreases in LIBOR quotes—which violates fundamental finance theory. This would indicate that banks are suppressing their LIBOR quotes to avoid revealing the higher rates that reflect their true (higher) probabilities of default. In other words, any finding of negative,

[25] *See* http://www.kris-online.com/, last accessed on April 23, 2012.

statistically significant correlation coefficients between a bank's PDs and its LIBOR quotes suggests LIBOR suppression by the bank over the analysis period.

61. The magnitude of the correlation coefficient is impacted by the volatility of both PD and LIBOR for each bank during the time period. Thus, for example, if a bank has high volatility in its PDs, the absolute value of the correlation coefficient will tend to be lower (*i.e.*, less negative) as compared to an identical bank with low PD volatility. However, both may be equally engaged in LIBOR suppression if their correlation coefficients are statistically significant and negative.

62. The Plaintiffs' consulting experts used the KRIS database to test whether, for the period under study, each bank's daily sealed LIBOR quote correlates with the bank's estimated PD that day for the same maturity term (provided by KRIS). For example, the consultants examined the correlation between Bank of America's sealed quote for three-month LIBOR on each date with the three-month PD for Bank of America, as provided by the KRIS database on that same day. As explained above, standard finance theory implies that a positive correlation between a bank's PD and its LIBOR quote should exist—*i.e.*, as the bank's default risk (PD) increases, its borrowing rate (LIBOR quote) should increase, and *vice versa*. That is, using the above example, standard finance theory predicts a positive correlation between Bank of America's three-month PD and its three-month LIBOR quote. A finding of either a zero or negative correlation between a bank's PD and its LIBOR quote indicates the latter does not reflect the bank's default-risk probability, which evidences LIBOR suppression. A negative correlation means the two values have an inverse relationship; as one goes up, the other tends to go down. A statistically significant negative correlation between a bank's LIBOR quote and its PD is consistent with the bank's reducing its LIBOR quote in order to mask its higher risk

exposure during a period of financial crisis, such as during the 2007-2008 period. By submitting an artificially low LIBOR quote, the bank sends a false signal that it is less risky than it truly is.

63. The Plaintiffs' consulting experts found suppression over the 2007-2008 period for one-month, three-month, six-month, and 12-month LIBOR.

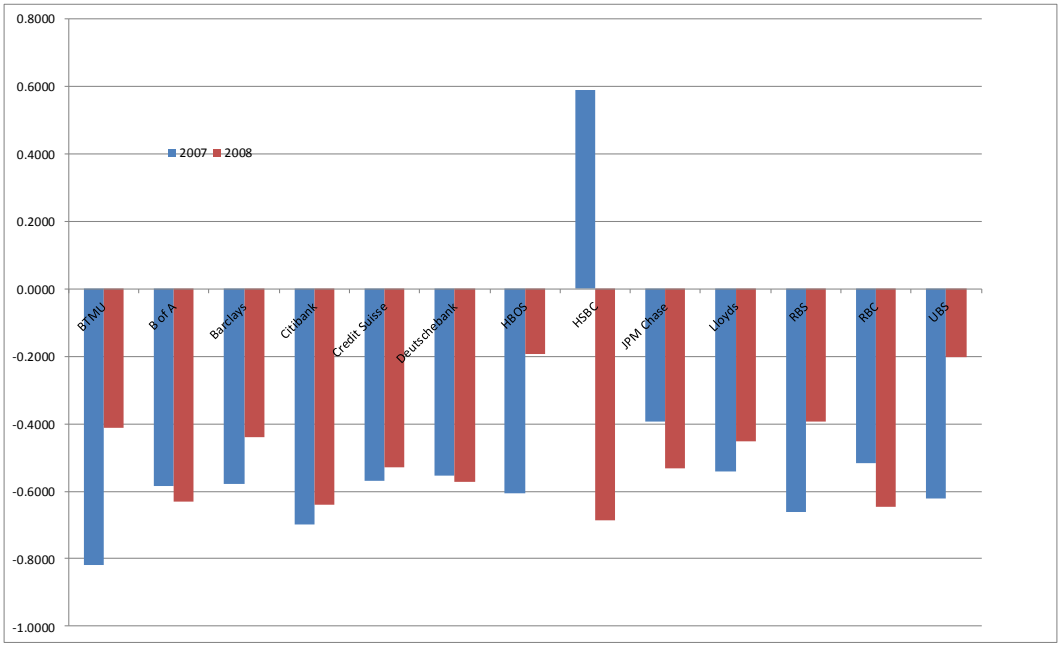
64. The LIBOR quotes for all the reporting banks (except HSBC) during 2007 were *negatively correlated* with their daily updated PDs (for the same maturity term) to a statistically significant degree. For example, the correlation between Bank of America's daily LIBOR quotes and its daily PDs, for example, was negative and statistically significant at a very high level for the one-month, three-month, six-month and 12-month terms, *i.e.*, between -0.5857 and -0.6093.[26] In other words, the data indicate that, contrary to fundamental finance theory, the higher a panel bank's PD was, the *lower* its LIBOR quote was.

65. Performing the same analysis with respect to the LIBOR panel banks' daily LIBOR quotes and PDs during 2008, the Plaintiffs' expert consultants found that for all of the banks, the submitted LIBOR quotes were negatively correlated with their PDs at the one-month and three-month maturities. Indeed, all of the banks were submitting unduly low LIBOR quotes at all maturities from August 9, 2007 until September 12, 2008, with only one exception: from September 15 through December 31, 2008, the period following the Lehman bankruptcy.

66. The following graphs illustrate the findings of this expert analysis—which demonstrates a striking negative correlation between USD-LIBOR panel banks' LIBOR quotes and PDs during 2007 and 2008, indicating they severely depressed LIBOR during that time.

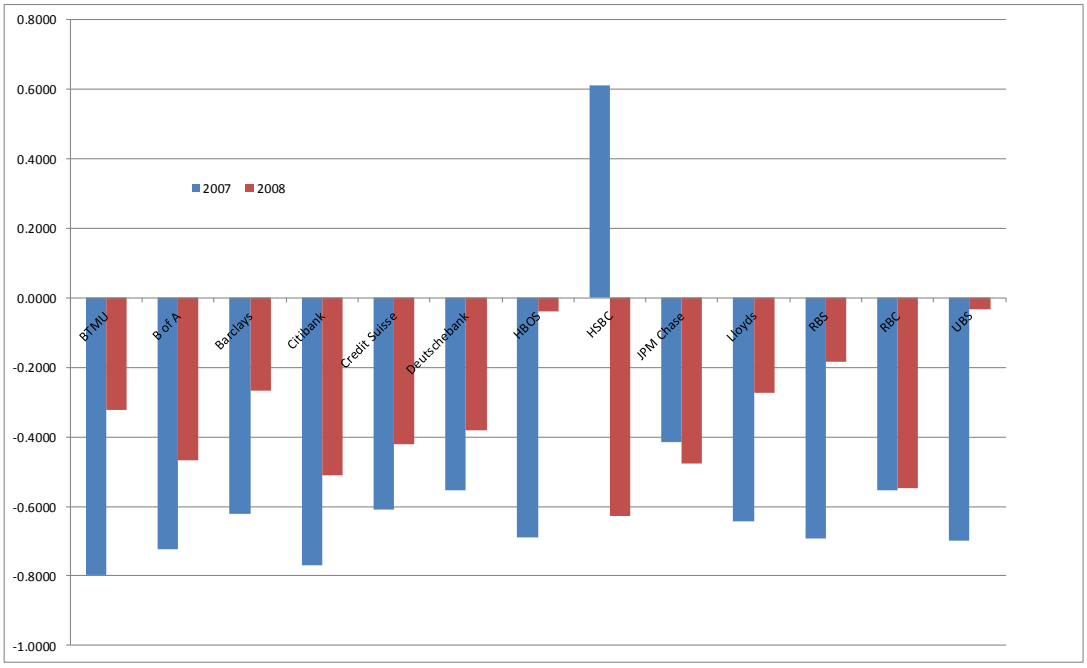
[26] Correlation coefficients range from a value of -1 to 1. A correlation coefficient of -0.50, for example, would imply that a 1% increase in PD would result in a 50-basis point decline in the bank's LIBOR quote.

Graph 1: Correlation Coefficients Between Each Bank's Daily LIBOR Bid and Probability of Default (PD), One-Month Term



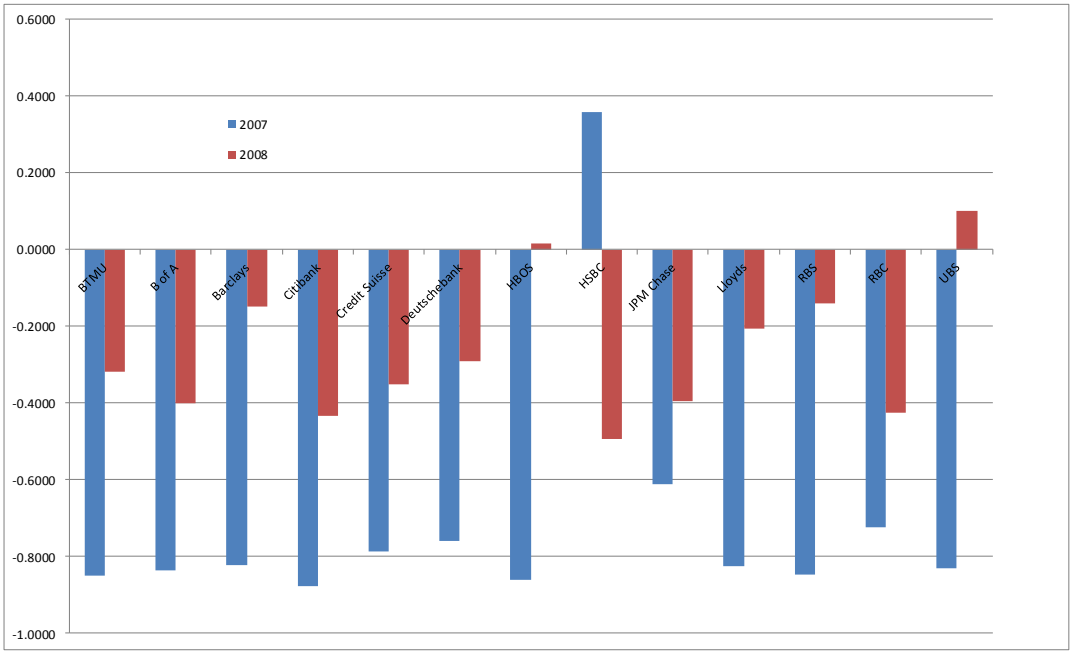
(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 2: Correlation Coefficients Between Each Bank's Daily LIBOR Bid and Probability of Default (PD), Three-Month Term



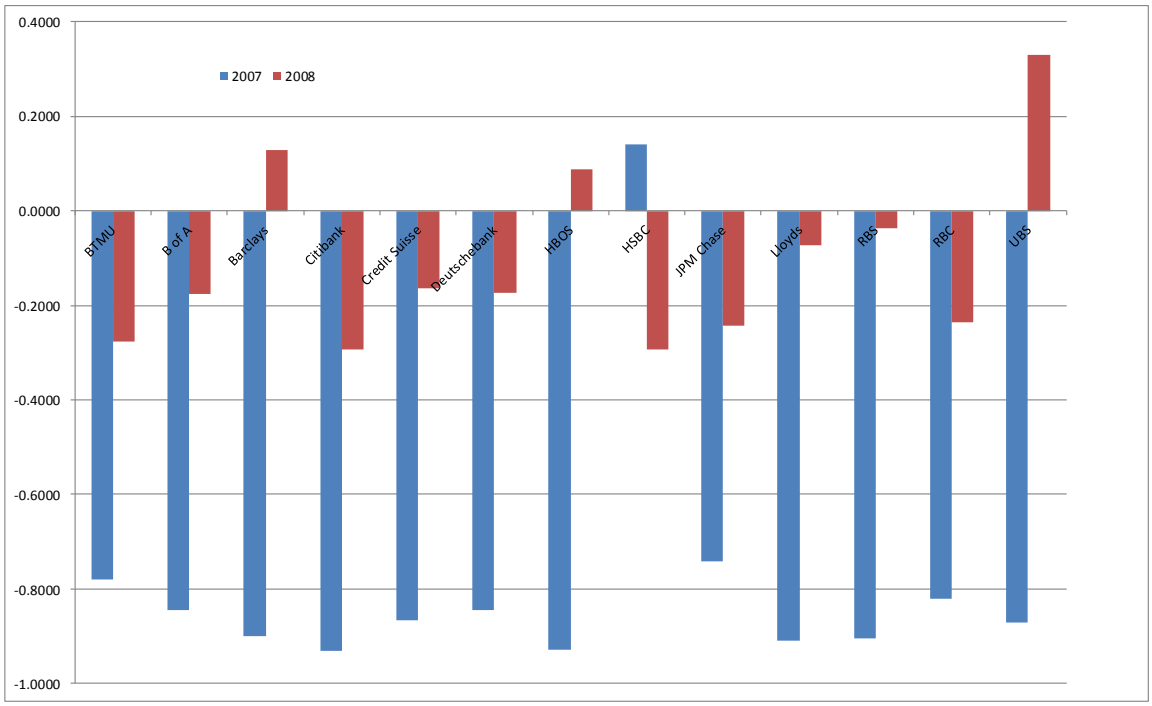
(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 3: Correlation Coefficients Between Each Bank's Daily LIBOR Bid and Probability of Default (PD), Six-Month Term



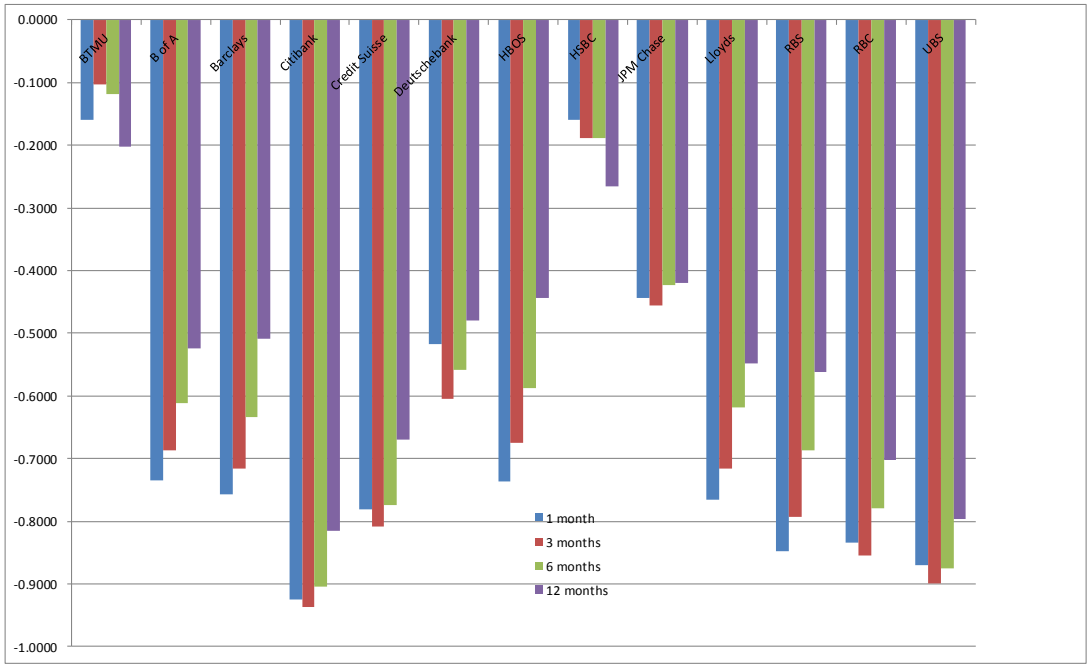
(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 4: Correlation Coefficients Between Each Bank's Daily LIBOR Bid and Probability of Default (PD), Twelve-Month Term



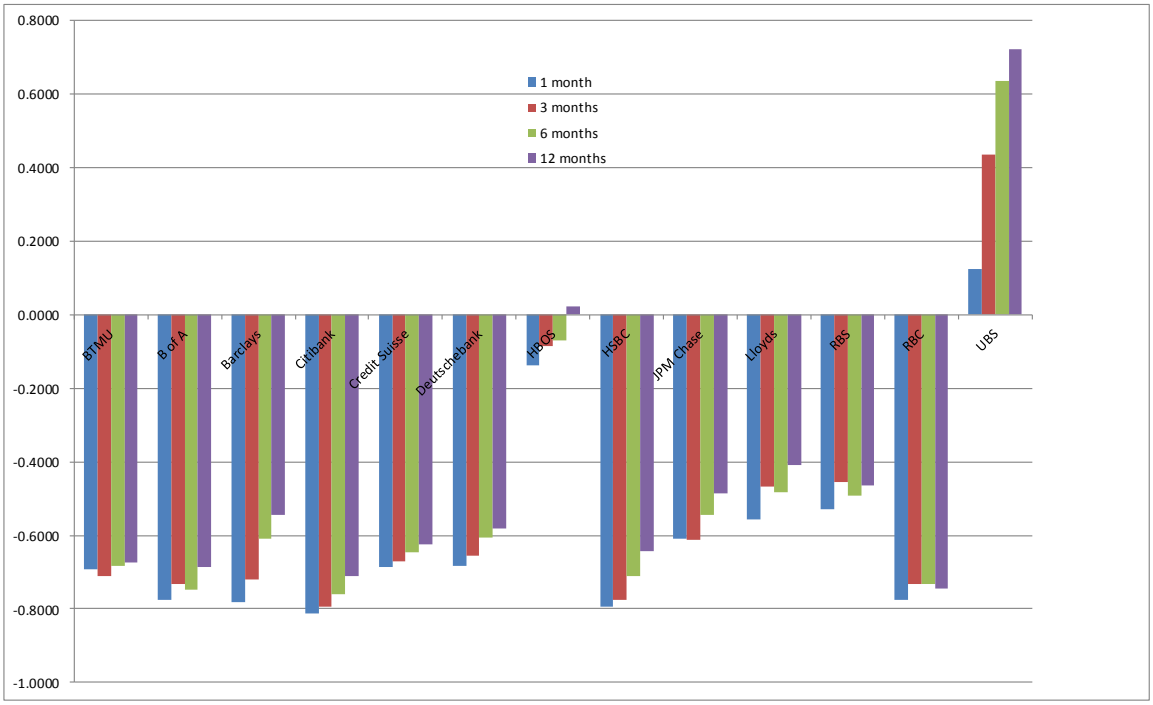
(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 5: Correlation Coefficients Between Each Bank's Daily LIBOR Bid and Probability of Default (PD), 9 August 2007 – 12 September 2008 Period



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 6: Correlation Coefficients Between Each Bank's Daily LIBOR Bid and Probability of Default (PD), 15 September 2008 – 31 December 2008 Period



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

2. The Discrepancy Between Libor And The Federal Reserve Eurodollar Deposit Rate During The Class Period Suggests Defendants Collusively Suppressed Libor

67. As demonstrated by the work of an independent consulting expert retained by counsel in these actions, analysis of the Eurodollar market strongly supports that Defendants suppressed their LIBOR quotes and colluded to suppress reported LIBOR. Moreover, this analysis further supports that Defendants colluded to control the amount of suppression over the Class Period.

68. The U.S. Federal Reserve prepares and publishes Eurodollar deposit rates for banks (the "Federal Reserve Eurodollar Deposit Rate"). These Eurodollar deposit rates are analogous to LIBOR in that they reflect the rates at which banks in the London Eurodollar money market lend U.S. dollars to one another, just as LIBOR is intended to reflect rates at which panel banks in the London interbank market lend U.S. dollars to one another. The Federal Reserve obtains its data from Bloomberg and the ICAP brokerage company.[27] Bloomberg Eurodollar deposit rate is similar to BBA's LIBOR except that the sampling is not limited to the 16 banks chosen by BBA. ICAP is a large broker-dealer in London in Eurodollar deposits.[28] ICAP surveys its client banks and updates its Eurodollar deposit rates about 9:30 each morning.

69. While Defendants could have access to the ICAP Eurodollar deposit rates prior to

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[27] See http://federalreserve.gov/releases/h15/data.htm, footnote 8, last accessed on April 23, 2012.

[28] "ICAP is the world's premier voice and electronic interdealer broker and the source of global market information and commentary for professionals in the international financial markets. The Group is active in the wholesale markets in interest rates, credit, energy, foreign exchange and equity derivatives. ICAP has an average daily transaction volume in excess of $1.5 trillion, more than 60% of which is electronic. ICAP plc was added to the FTSE 100 Index on 30 June 2006. For more information go to www.icap.com." See http://www.icapenergy.com/company/ (last accessed April 30, 2012)

submitting their individual LIBOR quotes at 11:00 each day, they would not — absent collusion — have access to other bank LIBOR quotes, which are confidential until submitted. Thus, even within the context of a suppressed LIBOR, absent collusion, individual panel banks would not know what quote other panel banks intended to submit relative to the Federal Reserve Eurodollar Deposit Rate.

70. The consulting expert determined that because of the nature of the relationship between the Federal Reserve Eurodollar Deposit Rate and LIBOR (detailed below), it would be unusual even for one bank to submit a LIBOR bid below the Federal Reserve's Eurodollar Deposit Rate. For all Defendants to submit bids below the Federal Reserve Eurodollar Deposit Rate would be extremely unusual, and is strong evidence of collusion among the banks.

71. Economic and statistical analysis strongly supports the use of the Federal Reserve Eurodollar Deposit rate as a benchmark for measuring the validity of LIBOR as reported by the panel banks. To measure how well the Federal Reserve Eurodollar Deposit Rate and LIBOR move together, for the purposes of this analysis, the difference between the two rates, the "Spread," is calculated as follows: Spread = BBA LIBOR – Federal Reserve Eurodollar Deposit Rate.

72. Since both LIBOR and the Federal Reserve Eurodollar Deposit Rate measure the lending cost to banks of Eurodollar deposits, important market and financial fundamentals, such as day-to-day changes in monetary policy, market risk and interest rates, as well as risk factors facing the banks generally (collectively "Market Fundamentals"), should be reflected similarly on both variables, and therefore should not affect the Spread. The BBA's LIBOR panel is intended to reflect the Eurodollar deposit market in London. By focusing on the Spread, the model therefore should be able to factor out normal and expected co-movements in banks'

LIBOR quotes that arise from changes in Market Fundamentals.

73. To analyze how well the Federal Reserve Eurodollar Deposit Rate captures changes in Market Fundamentals and absorbs variations in LIBOR that are driven by such fundamentals, consulting experts used regression analysis to measure the day-to-day changes in the Spread against changes in the T-Bill rate and the commercial paper rate. The evidence from these regressions strongly supports that day-to-day changes in the Federal Reserve Eurodollar Deposit Rate effectively capture day-to-day movements in LIBOR caused by Market Fundamentals. Thus, once the Federal Reserve Eurodollar Deposit Rate is subtracted to arrive at the Spread, remaining movements in LIBOR reflected in the Spread would be unrelated to movements in Market Fundamentals.

74. Because Market Fundamentals are fully captured by the Spread, absent manipulation, the Spread should always be zero or close to zero. Thus, as more fully discussed below, negative Spreads provide a strong basis to conclude that Defendants suppressed and colluded to artificially suppress LIBOR.[29]

75. Figures 1 and 2 show the relationship between LIBOR, the Federal Reserve Eurodollar Deposit Rate, and the Spread beginning in 2000 and ending in mid 2012. As can be seen, between January 5, 2000 and around August 7, 2007, Federal Reserve's Eurodollar Deposit Rate tracked LIBOR very closely and the Spread remained positive and very close to zero. This finding indicates that the Spread effectively captures shared risks of the banks sampled by BBA and by Bloomberg and ICAP. The validity of this finding is bolstered by the fact that the Spread

[29] It is important to note that to the extent panel banks submitting LIBOR quotes submit suppressed rates to the BBA, and these suppressed rates are also considered by Bloomberg or ICAP, then the resultant Federal Reserve Eurodollar Deposit rate would also be understated by the same suppression. Consequently, the Spread computed above could even understate the true magnitude of the suppression.

remained very close to zero in the face of multiple major financial dislocations, including the bursting of the dot-com bubble in 2000, the terrorist attacks of September 2001, and the 2001 U.S. economic recession. Likewise, the unusual downward movements in the Spread starting in August 2007 strongly evidences that LIBOR was being manipulated and suppressed during this period.[30]

[30] The Spread only became consistently positive around the end of October 2011, just after the European Commission raided banks in connection with LIBOR.

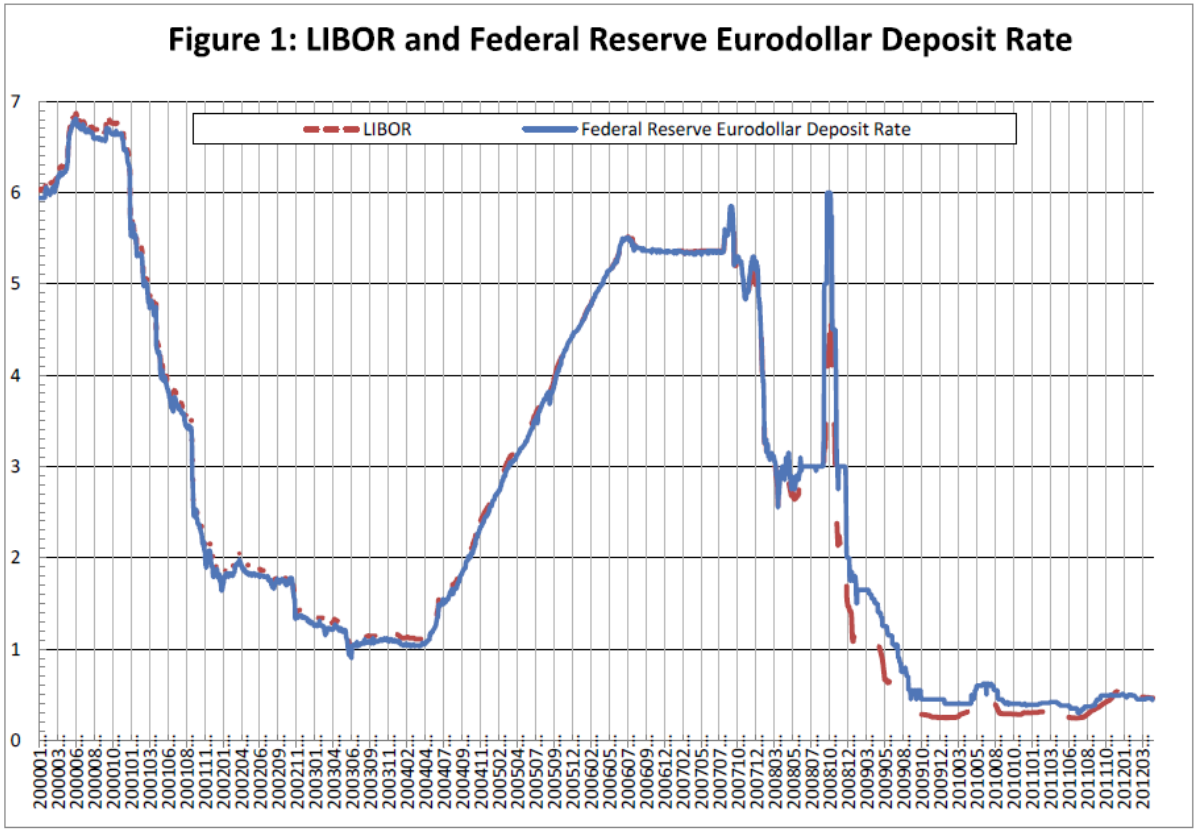
Figure 1: LIBOR and Federal Reserve Eurodollar Deposit Rate
LIBOR
Federal Reserve Eurodollar Deposit Rate
7
6
5
4
3
2
1
0
200001...
200003...
200006...
200008...
200010...
200101...
200103...
200106...
200108...
200111...
200201...
200204...
200206...
200209...
200211...
200301...
200304...
200306...
200309...
200311...
200402...
200404...
200407...
200409...
200411...
200502...
200504...
200507...
200509...
200512...
200602...
200605...
200607...
200609...
200612...
200702...
200705...
200707...
200710...
200712...
200803...
200805...
200807...
200810...
200812...
200903...
200905...
200908...
200910...
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201103...
201106...
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201110...
201201...
201203...

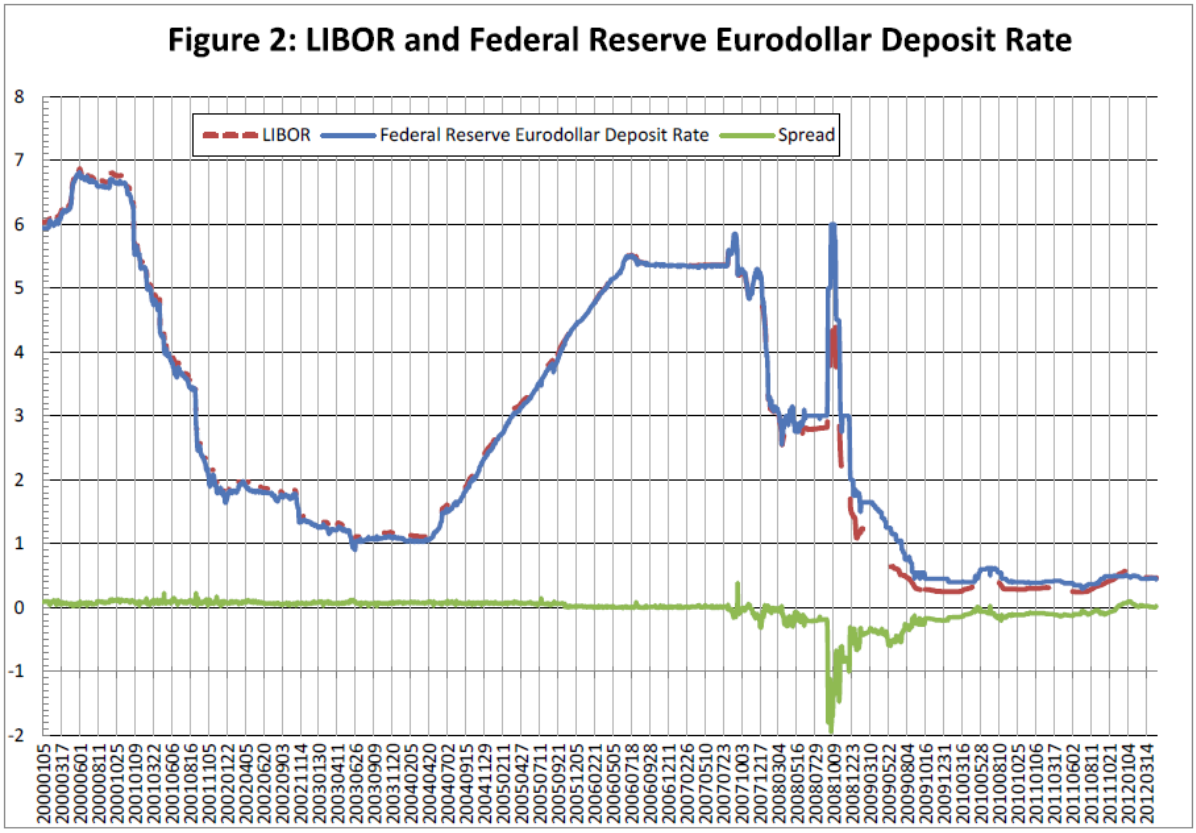
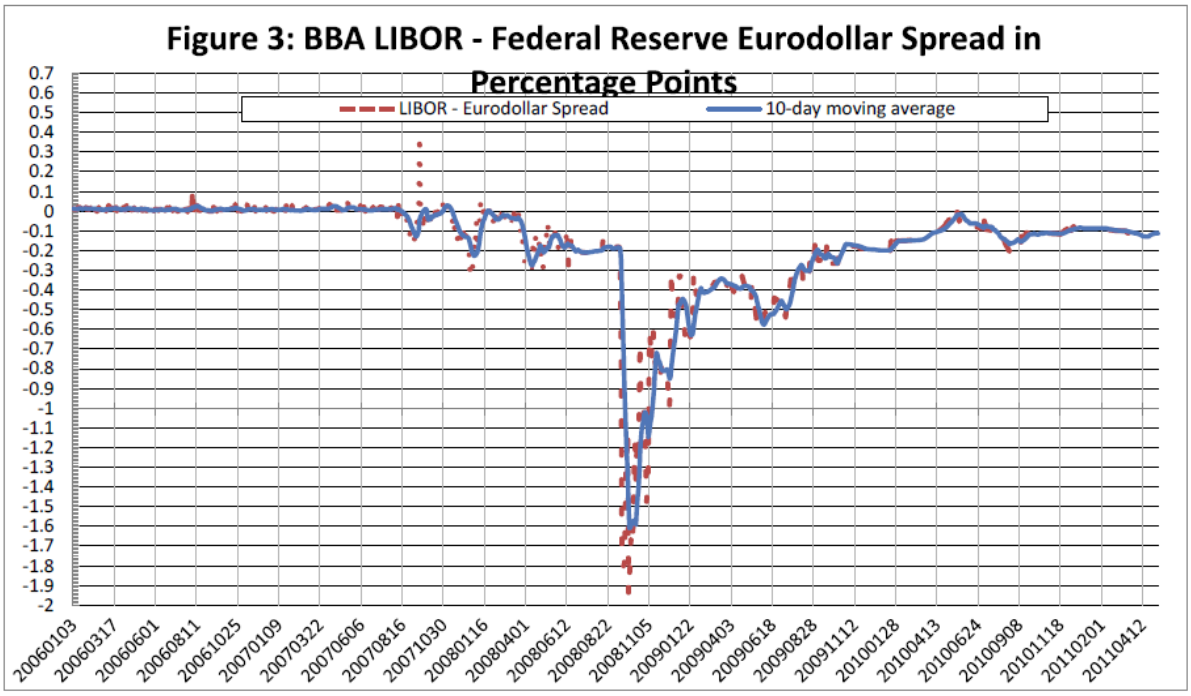


Figure 2: LIBOR and Federal Reserve Eurodollar Deposit Rate
LIBOR
Federal Reserve Eurodollar Deposit Rate
Spread
8
7
6
5
4
3
2
1
0
-1
-2
20000105
20000317
20000601
20000811
20001025
20010109
20010322
20010606
20010816
20011105
20020122
20020405
20020620
20020903
20021114
20030130
20030411
20030626
20030909
20031120
20040205
20040420
20040702
20040915
20041129
20050211
20050427
20050711
20050921
20051205
20060221
20060505
20060718
20060928
20061211
20070226
20070510
20070723
20071003
20071217
20080304
20080516
20080729
20081009
20081223
20090310
20090522
20090804
20091016
20091231
20100316
20100528
20100810
20101025
20110106
20110317
20110602
20110811
20111021
20120104
20120314

76. Figure 3 shows the Spread between 3-month maturity BBA LIBOR and the Federal Reserve Eurodollar Deposit rate (3-month maturity BBA LIBOR – Federal Reserve Eurodollar Deposit rate), from January 2006 through early April 2012.



77. The shorter period between January 3, 2006 and August 7, 2007 demonstrated above contains 393 trading days. In this sub-period, there were only 3 days when the Spread was negative. Furthermore, the magnitude of these negative Spreads were also very small: -0.9 basis point on June 14, 2006, -0.5 basis point on July 27, 2006 and -0.2 basis point on November 2, 2006.[31] This finding again strongly supports that the Federal Reserve Eurodollar Deposit Rate serves as a good benchmark to control for Market Fundamentals that determine LIBOR. The average magnitude of the Spread during this period equaled less than one basis point. This finding also strongly supports that the risks of the banks sampled by BBA and Bloomberg and

[31] One basis point is one-hundredth of a percentage point.

ICAP were similar.

78. By August 2007, however, the Spread began to move into negative territory. During the early part of August 2007, the Federal Reserve Eurodollar Deposit Rate stayed around 5.36%. On August 8, the Federal Reserve Eurodollar Deposit Rate increased by 5 basis points to 5.41%, while BBA LIBOR did not keep pace. The Spread turned negative 3 basis points on August 8, 2007. The Spread remained mostly negative after August 7 so that by August 15, 2007, the trailing 10-day moving-average of the Spread also turned negative. By August 31, 2007, the Federal Reserve Eurodollar Deposit rate kept increasing to 5.78%, while LIBOR was lagging. The negative Spread on August 31 grew to -16 basis points.

79. The Spread remained negative over the next year. Between August 31, 2007 and September 15, 2008, the Spread remained negative on 234 of the 255 days, or 91.7% of the days. The magnitude of the negative Spread averaged about -12 basis points. During this approximately one year period, the negative Spread exceeded -25 basis points on 18 days.

80. A big shock to LIBOR (and the Spread) came just after Lehman Brothers filed for bankruptcy on September 15, 2008, leading to significantly increased concerns about the health of all banks. The increased concerns about the health of the banks were reflected in substantial increases in the Federal Reserve Eurodollar Deposit Rate. On September 15, 2008, the Federal Reserve Eurodollar Deposit Rate equaled 3.0%, increasing to 3.2%, 3.75%, and 5% on September 16, 17 and 18, respectively. By September 30, the Federal Reserve Eurodollar Deposit Rate doubled to 6%.

81. In spite of increased risks and worries about the banks after the Lehman bankruptcy filing, LIBOR did not keep pace with the Federal Reserve Eurodollar Deposit Rate during this period of heightened concerns, causing the Spread to become more negative. On

September 16, 2008, the negative Spread nearly doubled to -32 basis points. The next day, on September 17, the negative Spread doubled again reaching -69 basis points. On September 18, the negative Spread more than doubled once again reaching -180 basis points. Finally, on September 30, 2008, the negative Spread reached -195 basis points.

82. Thus, between September 15, 2008 and September 30, 2008, the Federal Reserve Eurodollar Deposit Rate increased by 300 basis points to reflect increasing concerns about the banks, while LIBOR increased by less than one-half, or by 123 basis points during the same period. This diversion in the behavior of the two rates strongly supports the finding that Defendants intensified their collusive suppression of the LIBOR, and did so to understate their borrowing costs in the face of increasing concerns about the health of the banks.

83. The Spread remained negative for more than one and a half years following the Lehman filing, until May 17, 2010. As concerns about banks' financial health eased, so did the magnitude of the suppression of LIBOR. As stated earlier, Federal Reserve's Eurodollar Deposit Rate reached 6% on September 30, 2008. With the easing of the financial crisis, Federal Reserve's Eurodollar Deposit Rate fell to 0.45% on May 17, 2010. The average suppression of LIBOR between October 1, 2008 and May 17, 2010 equaled negative 38 basis points. The Spread finally turned positive for the first time during the post-Lehman period on May 17, 2010. Following this date, the Spread again became negative, with the magnitude of the Spread averaging around -10 basis points. The dramatic period of negative Spread during the Class Period, following years of uniform behavior between each individual Defendant Bank's LIBOR quote and the Federal Reserve Eurodollar Deposit Rate, is also graphically demonstrated by Figures 4 to 19 below on a bank by bank basis. Every Spread during the period August 8, 2007 to May 17, 2010 is statistically significant at the extremely high 99% confidence level.

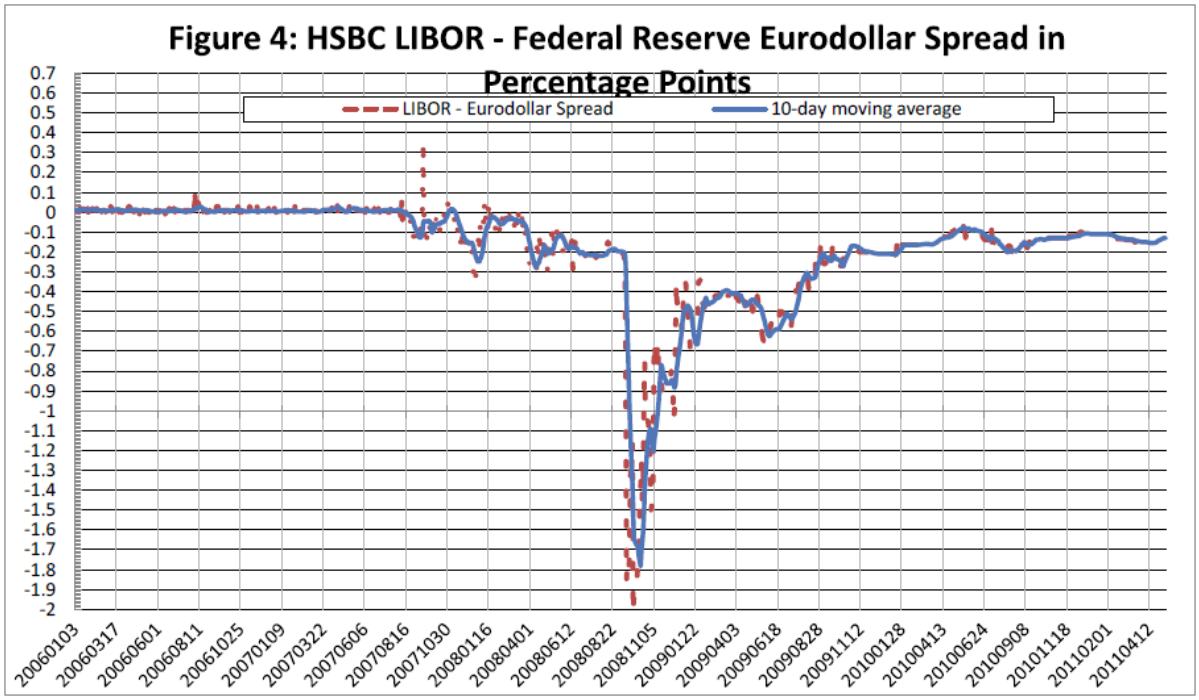


Figure 4: HSBC LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
20071030
20080116
20080401
20080612
20080822
20081105
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20100413
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20110201
20110412

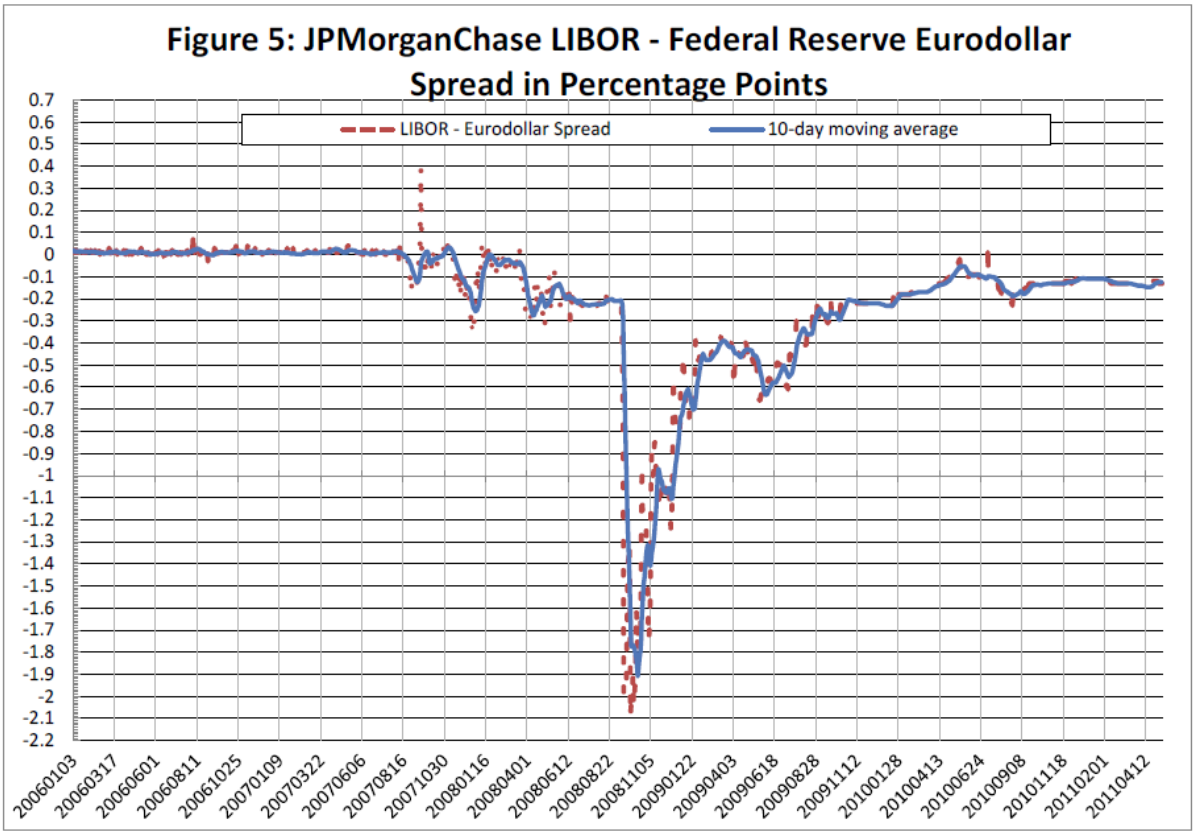
Figure 5: JPMorganChase LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
20060317
20060601
20060811
20061025
20070109
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20070606
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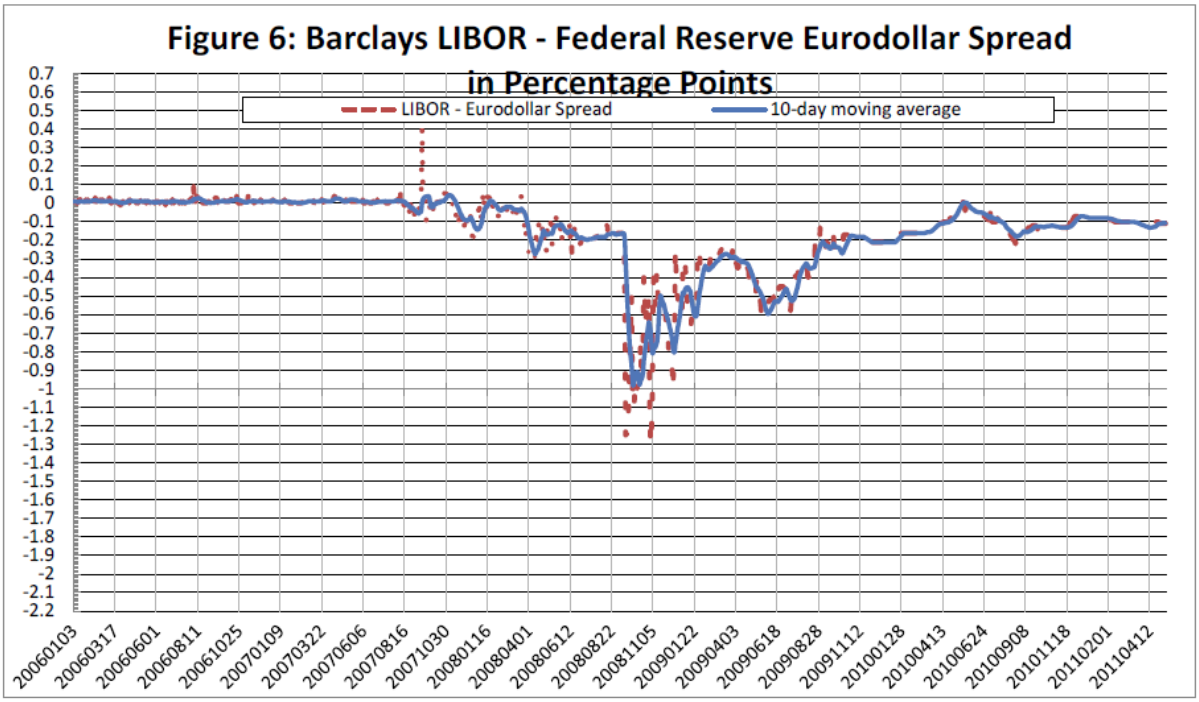
Figure 6: Barclays LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
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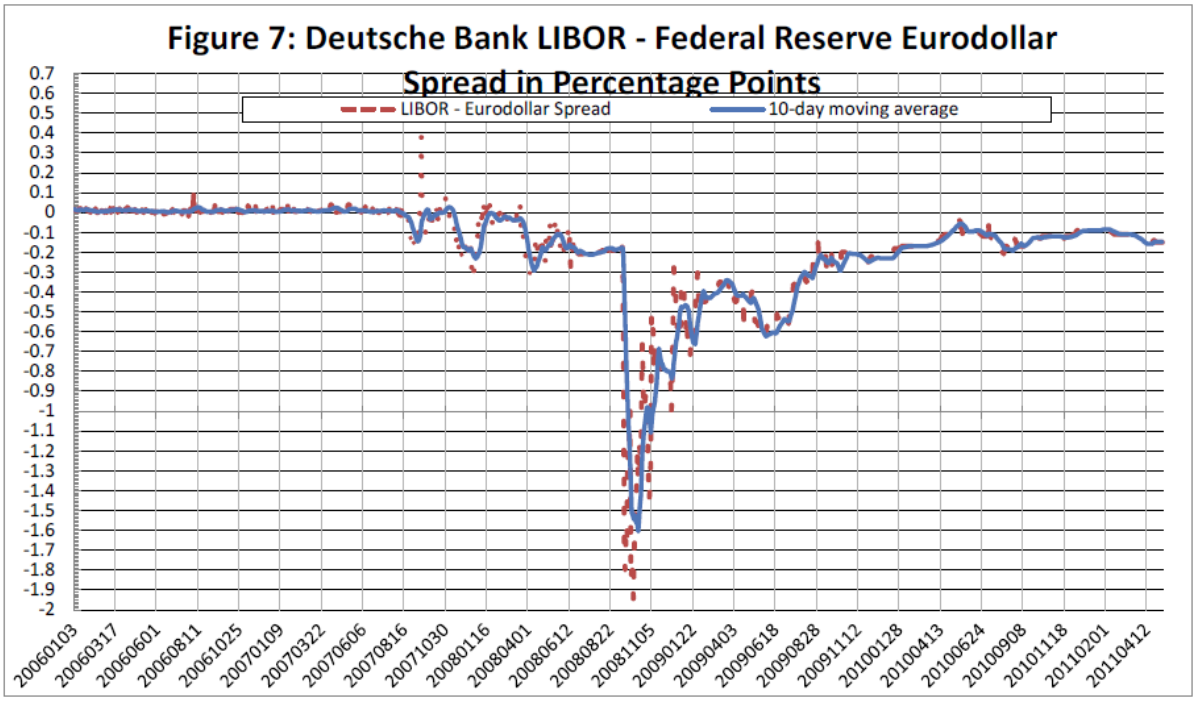
Figure 7: Deutsche Bank LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
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20080401
20080612
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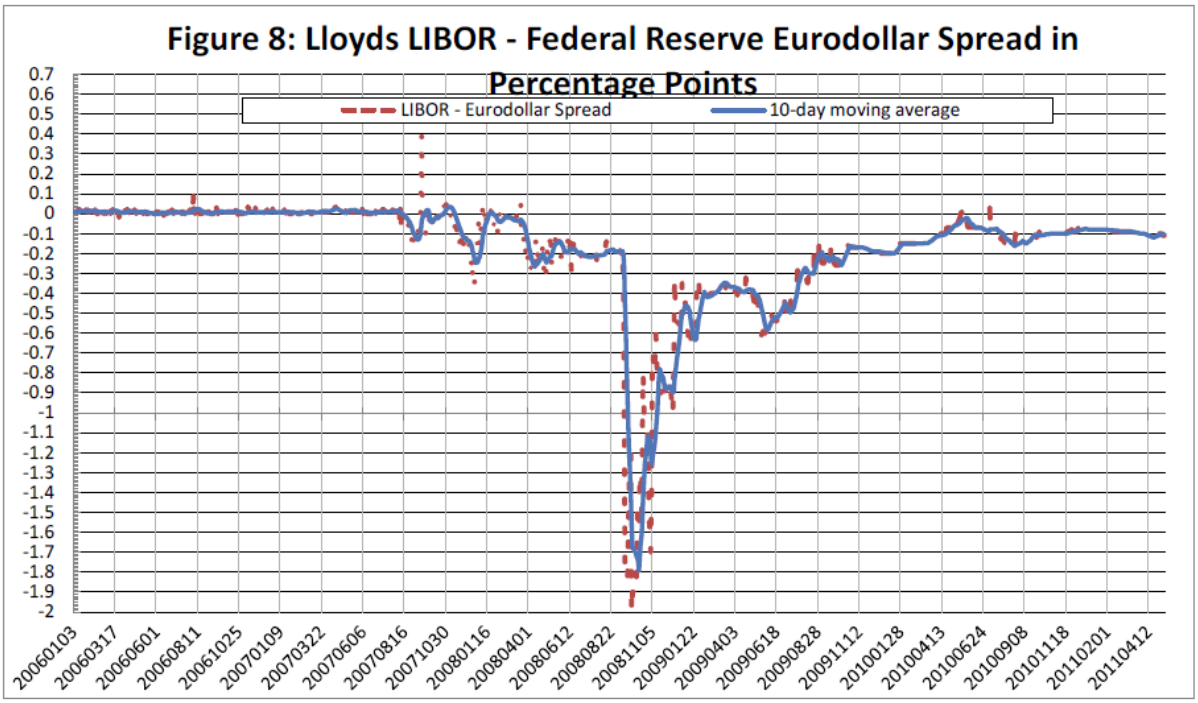
Figure 8: Lloyds LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
20071030
20080116
20080401
20080612
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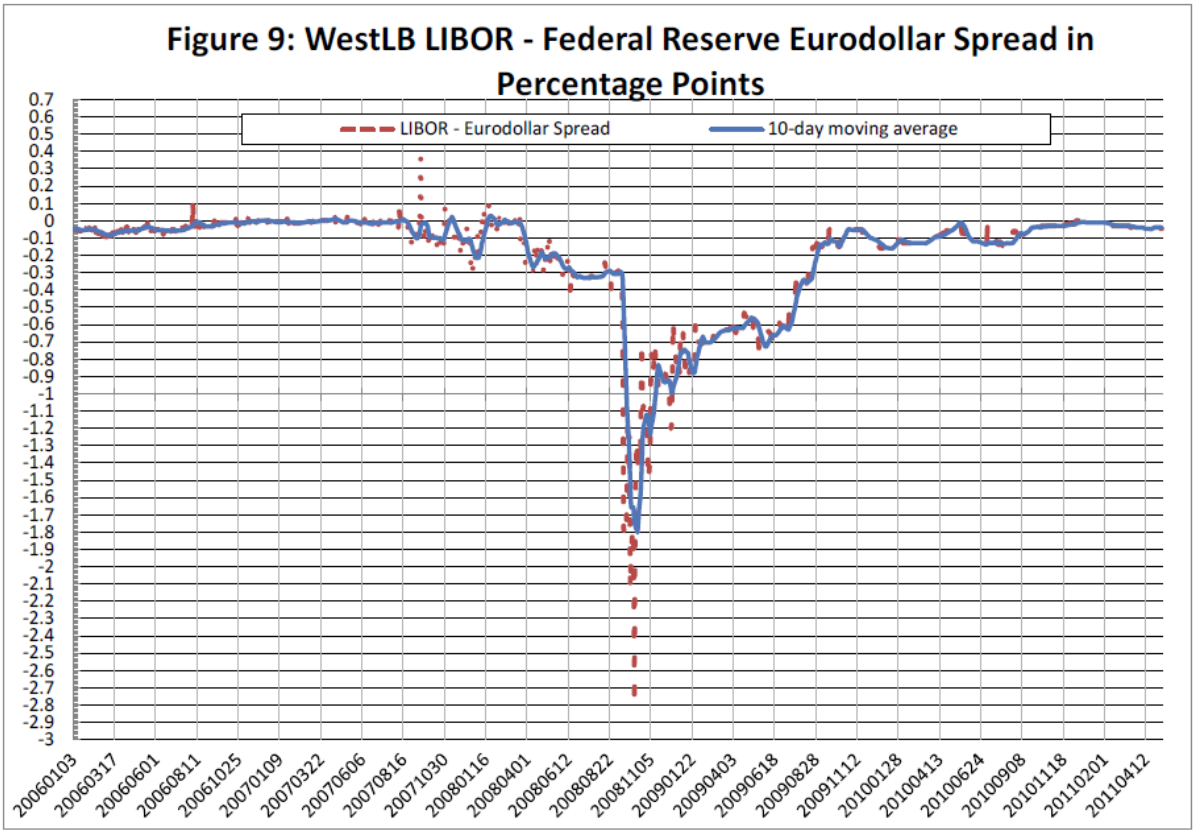
Figure 9: WestLB LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
-2.3
-2.4
-2.5
-2.6
-2.7
-2.8
-2.9
-3
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20061025
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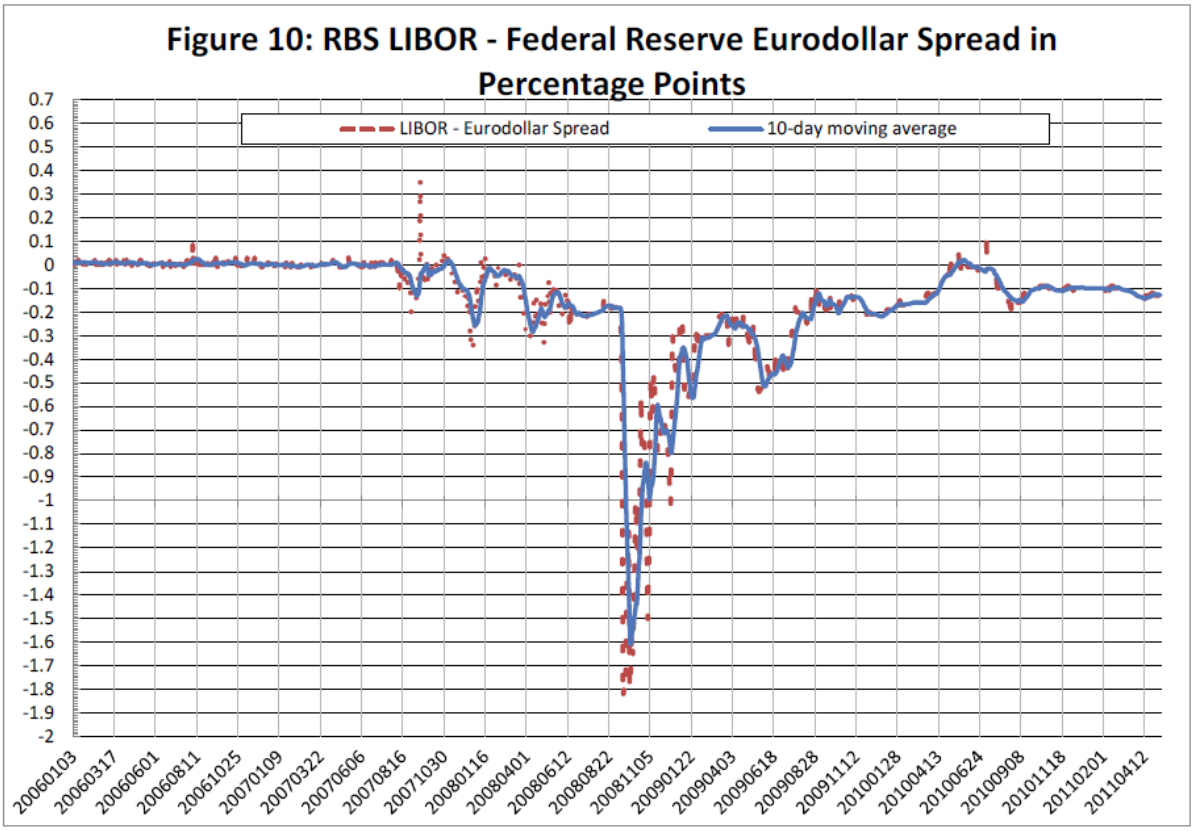
Figure 10: RBS LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
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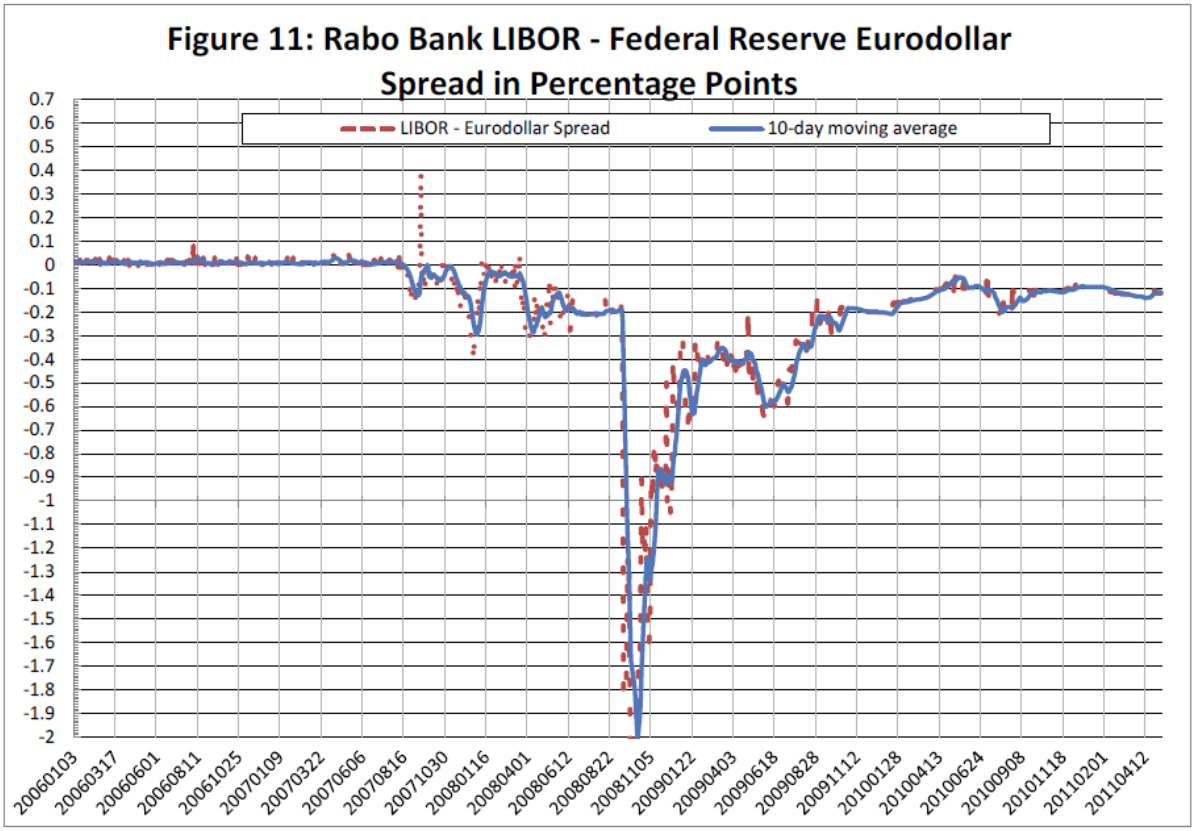
Figure 11: Rabo Bank LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
20060103
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20061025
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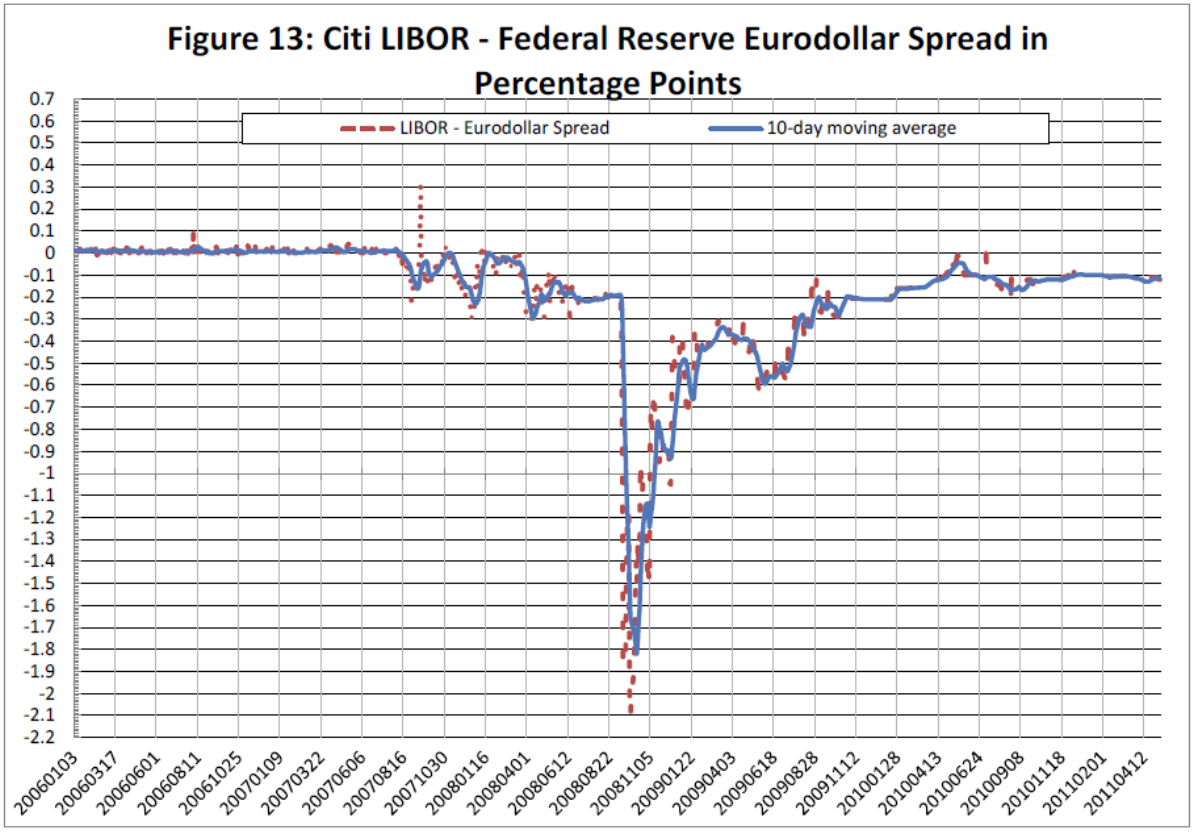
Figure 13: Citi LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
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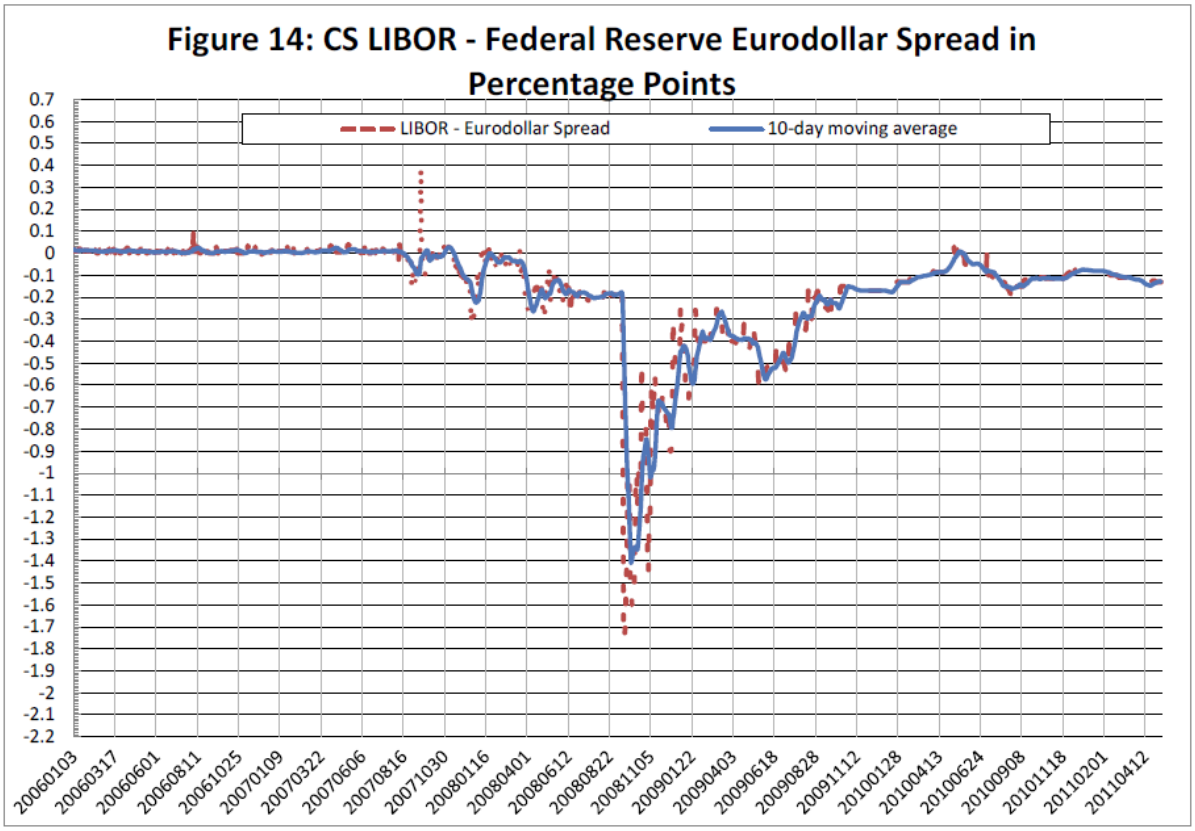
Figure 14: CS LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
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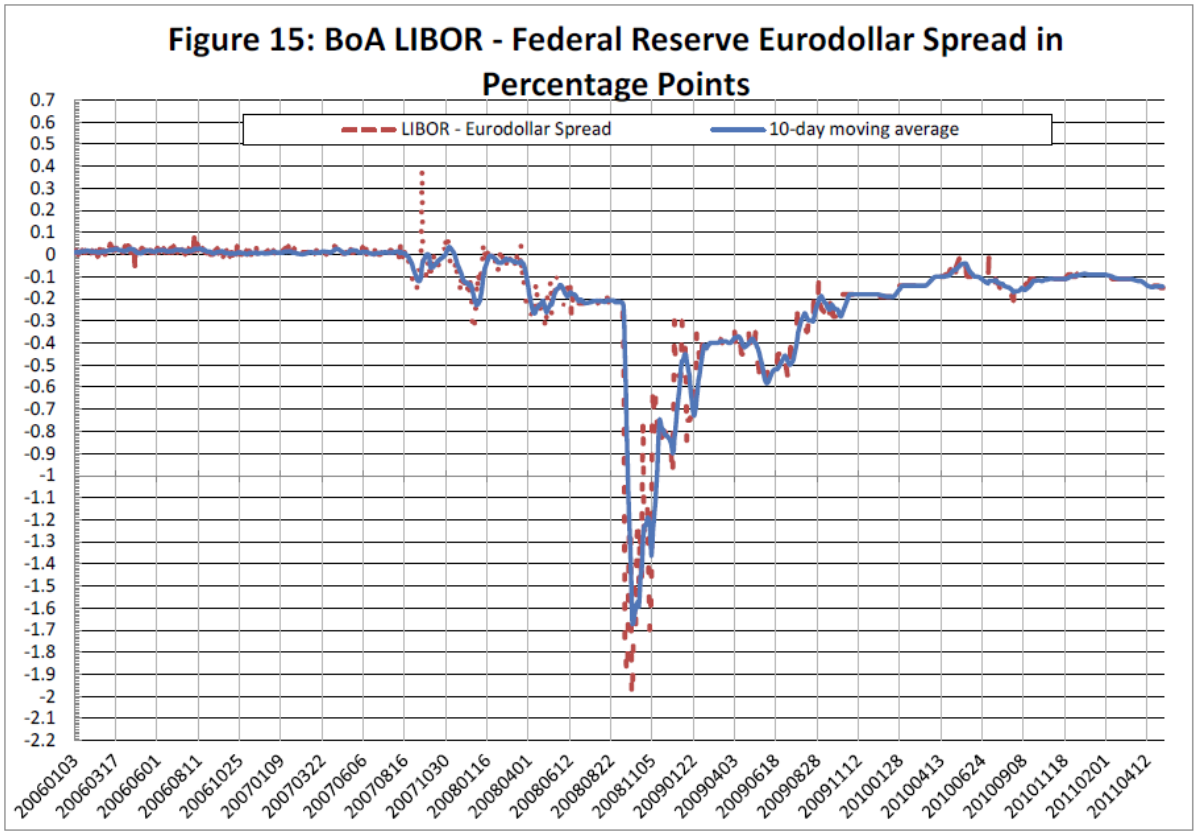
Figure 15: BoA LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
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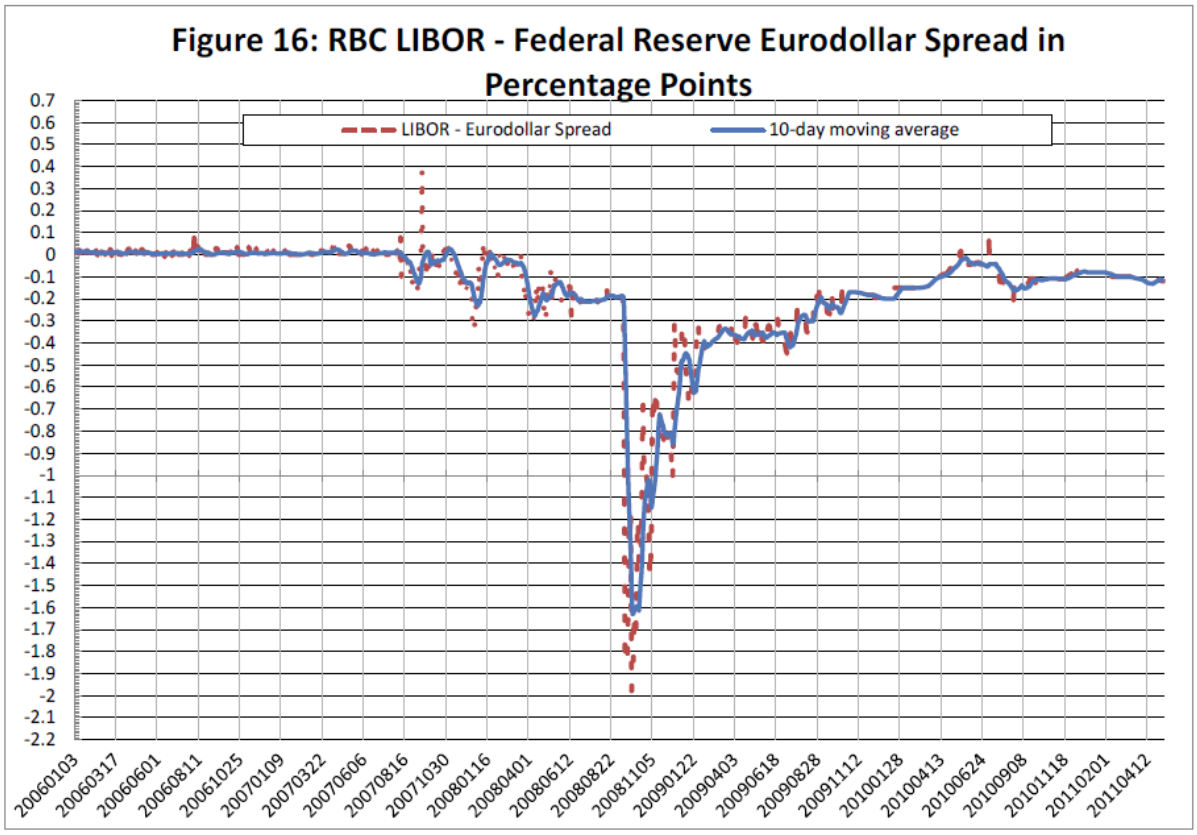
Figure 16: RBC LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
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20060103
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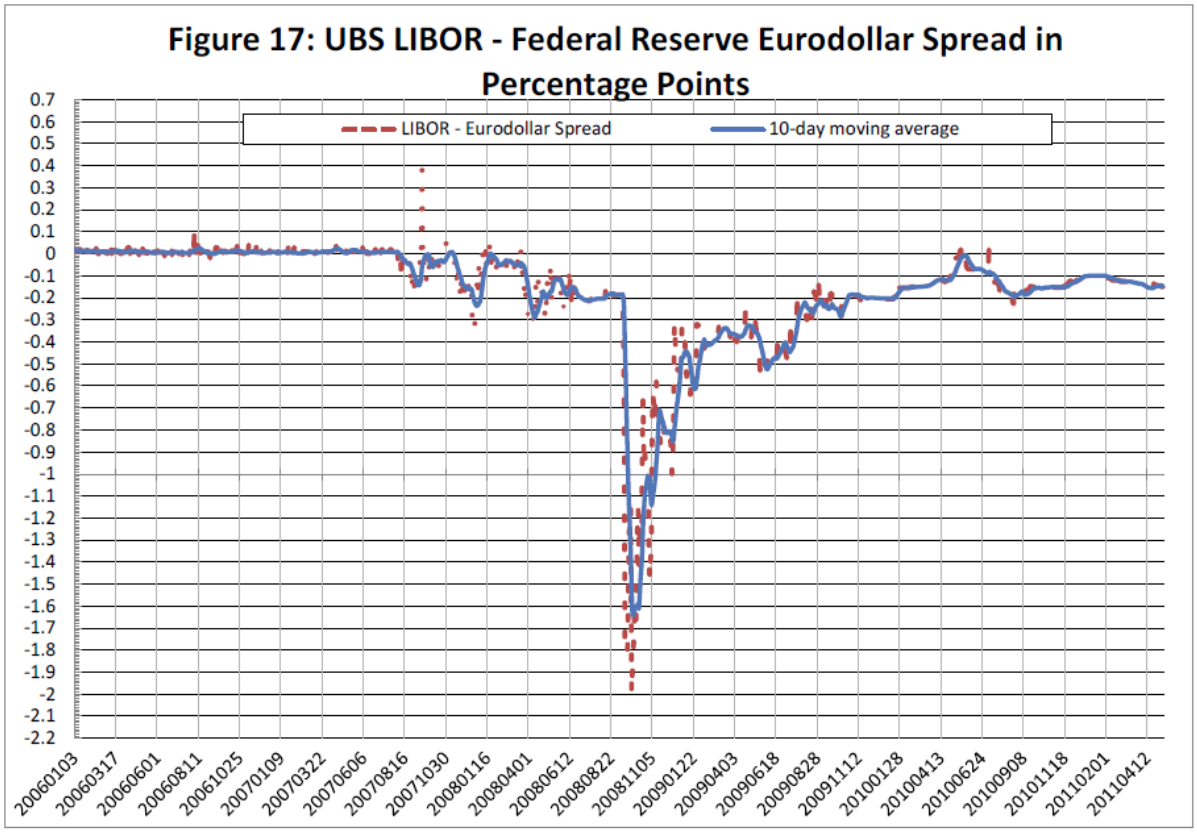
Figure 17: UBS LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
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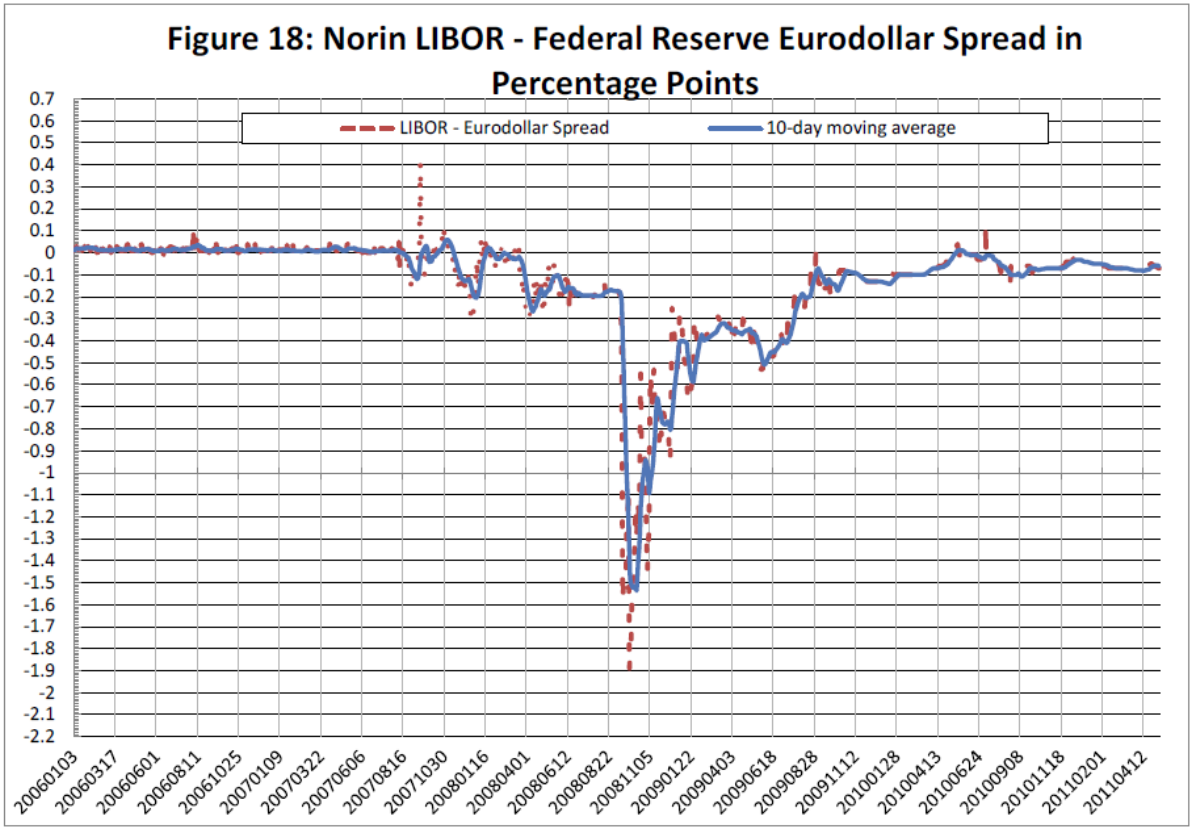
Figure 18: Norin LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
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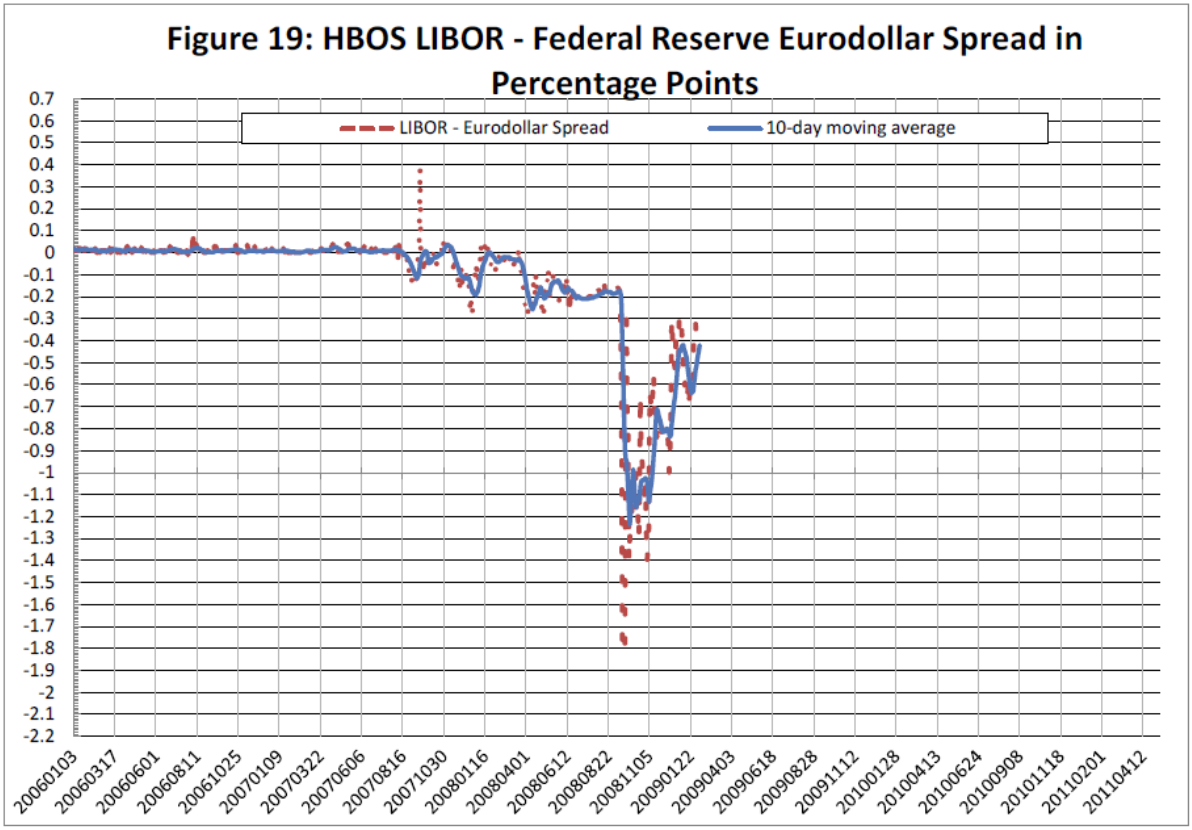


84. As the following chart demonstrates, the average Spread for each of the individual Defendants was uniformly negative throughout the entire Class Period, strongly supporting that each of these banks was suppressing its LIBOR quotes, and colluding to suppress reported LIBOR.

BANK NAME	**Average Spread between August 8, 2007 through May 17, 2010**
1. Bank of Tokyo-Mitsb.	-25 basis points
2. Bank of America	-30 basis points
3. Barclays	-25 basis points
4. Citi	-32 basis points
5. CSFB	-27 basis points
6. Deutsche Bank	-31 basis points
7. HBOS	-29 basis points
8. HSBC	-32 basis points
9. JP Morgan Chase	-35 basis points
10. Lloyds	-30 basis points

11. Norin Bank	-25 basis points
12. Rabo Bank	-32 basis points
13. Royal Bank of Canada	-28 basis points
14. Royal Bank of Scotland	-26 basis points
15. UBS	-29 basis points
16. West	-35 basis points

85. Moreover, as set forth in the following chart, during the critical two week period following the bankruptcy of Lehman Brothers, each of Defendants dramatically increased its collusive suppression of LIBOR.

BANK NAME	**Average Spread between September 16, 2008 and September 30, 2008**
1. Bank of Tokyo-Mitsb.	-120 basis points
2. Bank of America	-144 basis points
3. Barclays	-87 basis points
4. Citi	-142 basis points
5. CS	-122 basis points
6. Deutsche Bank	-129 basis points
7. HBOS	-110 basis points
8. HSBC	-141 basis points
9. JP Morgan Chase	-153 basis points
10. Lloyds	-146 basis points
11. Norin Bank	-126 basis points
12. Rabo Bank	-143 basis points
13. Royal Bank of Canada	-140 basis points
14. Royal Bank of Scotland	-140 basis points
15. UBS	-141 basis points
16. West	-138 basis points

86. Every Spread during the period from September 16, 2008 to September 30, 2008 is statistically significant at the extremely high 99% confidence level.

87. Plaintiffs' consulting expert finds the results reflected in these two tables to be powerful and statistically significant evidence of Defendants' collusive suppression of LIBOR during the Class Period.

88. As detailed above, analysis based on well accepted statistical methodologies strongly supports that suppression of LIBOR occurred during the Class Period, accomplished through the collusive conduct of Defendants. The sustained period during which the Federal Reserve Eurodollar Deposit – LIBOR Spread fell and remained starkly negative, as seen in Figure 2 above, accounting as it does for Market Fundamentals, is not plausibly achievable absent collusion among Defendants. The intensified suppression from September 16, 2008 to September 30, 2008 (following the Lehman bankruptcy), in defiance of economic expectations, provides further powerful support for the suppression of LIBOR achieved through collusion by Defendants. Because no Defendant Bank – absent collusive conduct – could know what LIBOR quote another panel bank actually intended to submit prior to those numbers being made public after 11:00 each morning, the fact that all Defendants submitted LIBOR quotes below the Federal Reserve Eurodollar Deposit Rate over the Class Period further strongly supports the participation of each Defendant Bank in the suppressive and collusive scheme.

D. Empirical Analyses By Academics And Other Commentators Further Indicate LIBOR Suppression Occurred.

89. In addition to the independent expert work detailed above, publicly available analyses by academics and other commentators likewise support the Baltimore Plaintiffs' allegations. While those studies used various comparative benchmarks and did not employ uniform methodologies, they collectively indicate LIBOR was artificially suppressed during the Class Period.

1. The discrepancy between Defendants' reported LIBOR quotes and their CDS spreads indicates the banks misrepresented their borrowing costs to the BBA.

90. One economic indicator that Defendants suppressed USD-LIBOR during the Class Period is the variance between their LIBOR quotes and their contemporaneous cost of

buying default insurance—*i.e.*, a credit-default swap ("CDS")—on debt they issued during that period.

91. The spread serves as a measure of the perceived risk of default by the entity issuing the underlying bond or receiving the loan—the greater the risk of default the underlying bond or loan bears, the greater the CDS spread. In the case of a CDS for which the underlying instrument consists of an interbank loan where a USD-LIBOR panel bank is the borrower, the greater the perceived risk the panel bank will default on the loan, the higher the applicable CDS spread, as this higher spread represents the cost of insuring against the increased risk of a default on the underlying loan.

92. As one commentator has observed, "The cost of bank default insurance has generally been positively correlated with LIBOR. That is, in times when banks were thought to be healthy, both the cost of bank insurance and LIBOR decreased or remained low, but when banks were thought to be in poor condition, both increased."[32] During the Class Period, however, those historically-correlated indicia of banks' borrowing costs diverged significantly.

93. That discrepancy was detailed in a May 29, 2008 *Wall Street Journal* article reporting the results of a study it had commissioned. The *Journal*'s analysis indicated numerous banks caused LIBOR, "which is supposed to reflect the average rate at which banks lend to each other," to "act as if the banking system was doing better than it was at critical junctures in the financial crisis."[33] The *Journal* found that beginning in January 2008, "the two measures began to diverge, with reported LIBOR rates failing to reflect rising default-insurance costs."

94. The *Journal* observed that the widest gaps existed with respect to the LIBOR

[32] Justin Wong, "LIBOR Left in Limbo; A Call for More Reform," 13 *North Carolina Banking Institute* 365, 371 (2009) (footnotes omitted).

[33] *See* Carrick Mollenkamp and Mark Whitehouse, "Study Casts Doubt on Key Rate --- WSJ Analysis Suggests Banks May Have Reported Flawed Interest Data for Libor."

quotes of Defendants Citibank, WestLB, HBOS, JPMorgan Chase, and UBS. According to the *Journal*'s analysis, Citibank's LIBOR quotes differed the most from what the CDS market suggested the bank's borrowing cost was. On average, the rates at which Citibank reported it could borrow dollars for three months (*i.e.*, its three-month LIBOR quote) were about 87 basis points *lower* than the rates calculated using CDS data. WestLB, HBOS, JPMorgan Chase, and UBS likewise exhibited significant LIBOR-CDS discrepancies—of 70, 57, 43, and 42 basis points, respectively—while Defendants Credit Suisse, Deutsche Bank, Barclays, HSBC, Lloyds, and RBS each exhibited discrepancies of about 30 basis points. The study's authors concluded "one possible explanation for this gap is that banks understated their borrowing rates."

95. Citing another example of suspicious conduct, the *Journal* observed that on the afternoon of March 10, 2008, investors in the CDS market were betting that WestLB—hit especially hard by the credit crisis—was nearly twice as likely to renege on its debts as Credit Suisse, which was perceived to be in better shape, yet the next morning the two banks submitted identical LIBOR quotes.

96. Additionally, having compared the banks' LIBOR quotes to their actual costs of borrowing in the commercial-paper market, the *Journal* reported, for example, that in mid-April 2008, UBS paid 2.85% to borrow dollars for three months, but on April 16, 2008, the bank quoted a borrowing cost of 2.73% to the BBA.

97. The *Journal* further noted an uncanny equivalence between the LIBOR panel banks' quotes: the three-month borrowing rates the banks reported remained within a range of only 0.06 of a percentage point, even though at the time their CDS insurance costs (premiums) varied far more widely, reflecting the market's differing views as to the banks' creditworthiness. According to Stanford University professor Darrell Duffie, with whom the authors of the *Journal*

article consulted, the unity of the banks' LIBOR quotes was "far too similar to be believed."

98. David Juran, a statistics professor at Columbia University who reviewed the *Journal*'s methodology, similarly concluded that the *Journal's* calculations demonstrate "very convincingly" that reported LIBOR is lower, to a statistically significant degree, than what the market thinks it should be.

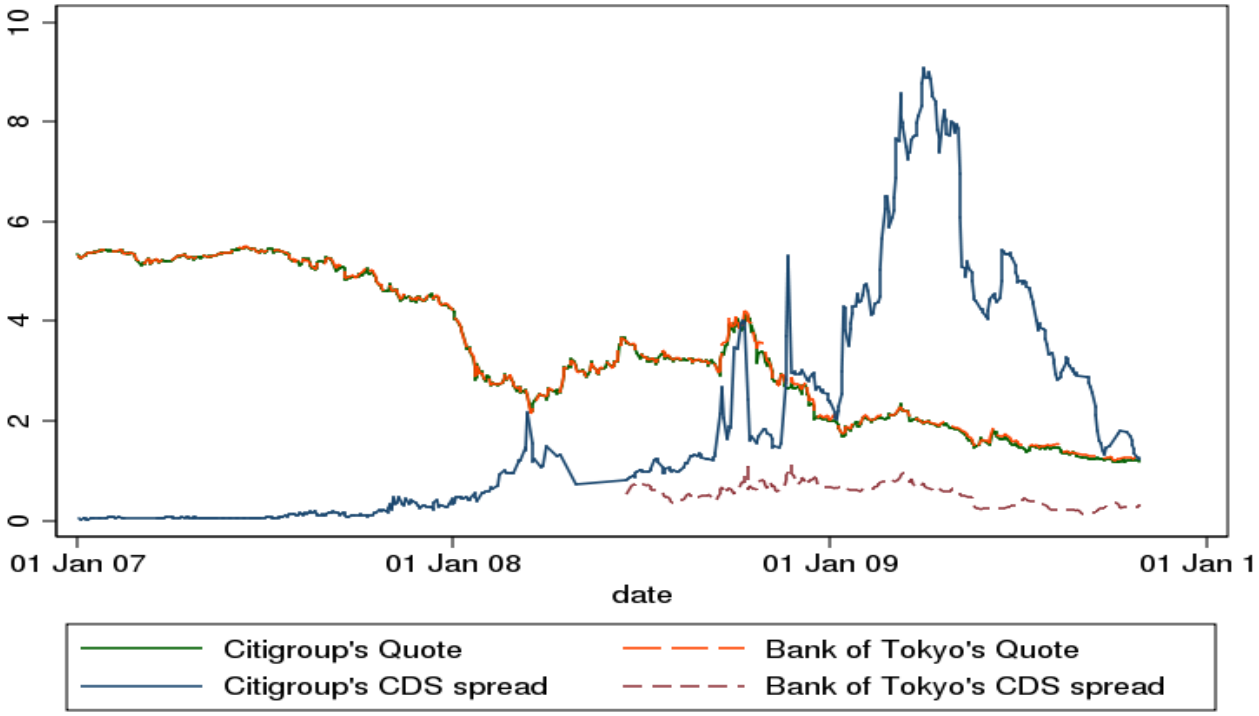
99. Calculating an alternate borrowing rate incorporating CDS spreads, the *Journal* estimated that misreporting of LIBOR had a $45 billion effect on the market, representing the amount borrowers (the banks) did not pay to lenders (investors in debt instruments issued by the banks) that they would otherwise have had to pay.

100. According to the *Journal*, three independent academics, including Professor Duffie, reviewed its methodology and findings, at the paper's request. All three deemed the *Journal*'s approach "reasonable."

101. Further economic analysis supports the correlation seen in the *Journal*'s report. A study by Connan Snider and Thomas Youle—of the economics departments at UCLA and the University of Minnesota, respectively—released in April 2010 concluded LIBOR did not accurately reflect average bank borrowing costs, its "ostensible target."[34] Noting that "[i]n a competitive interbank lending market, banks' borrowing costs should be significantly related to their perceived credit risk," Snider and Youle posited that if LIBOR quotes "express true, competitively determined borrowing costs," they should "be related to measures of credit risks, such as the cost of default insurance." According to Snider and Youle's analysis, however, quotes provided by USD-LIBOR panel banks in fact deviated from their costs of borrowing as reflected in CDS spreads.

[34] Connan Snider and Thomas Youle, "Does the LIBOR reflect banks' borrowing costs?", April 2, 2010.

102. Comparing, for example, the 12-month USD-LIBOR quotes from Citigroup and Bank of Tokyo together with each banks' corresponding one-year senior CDS spreads, Snider and Youle observed (as illustrated in the graph below) "that while Citigroup has a substantially higher CDS spread than [Bank of Tokyo], it submits a slightly lower Libor quote." Accordingly, the authors explain, while the CDS spreads "suggest that the market perceives Citigroup as riskier than [Bank of Tokyo], as it is more expensive to insure against the event of Citigroup's default," the banks' LIBOR quotes "tell the opposite story."

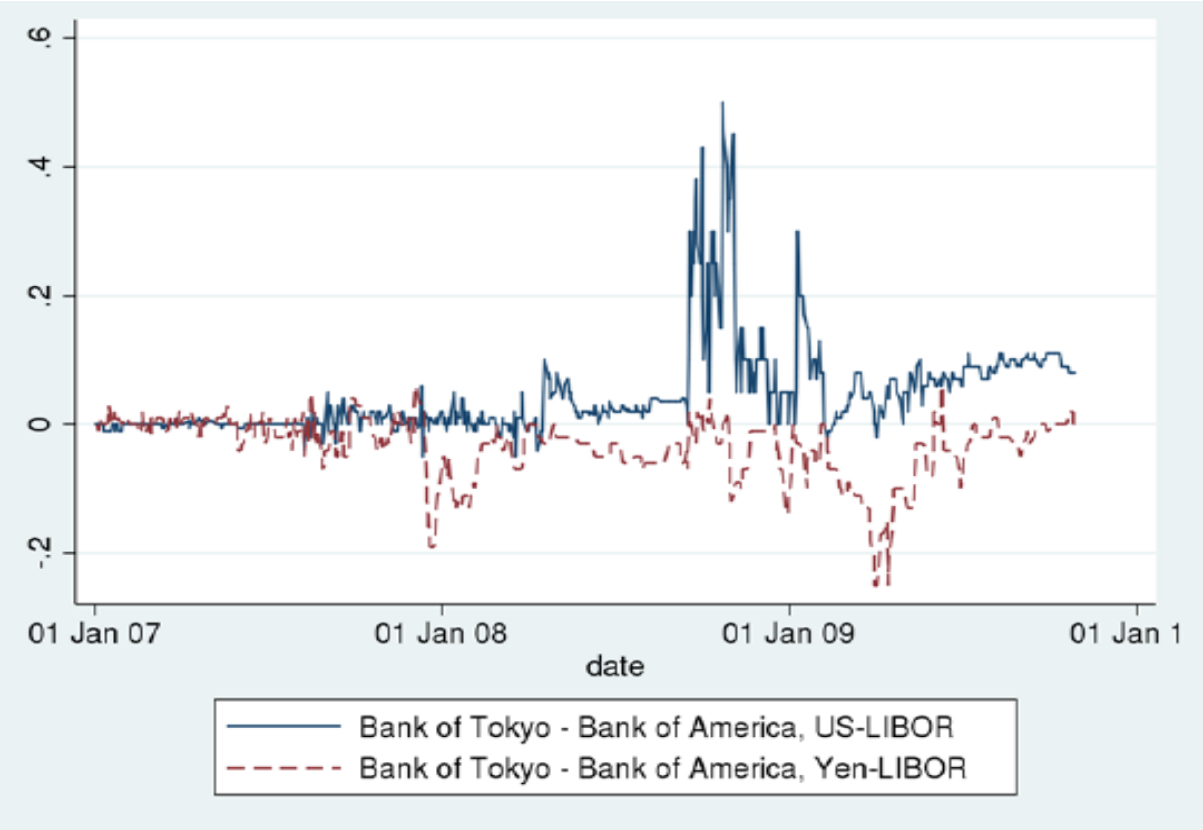


103. Snider and Youle further noted the level of Citigroup's CDS spreads relative to its
Snider and Youle further noted the level of Citigroup's CDS spreads relative to its
LIBOR quotes was "puzzling." The authors explained, "Given that purchasing credit protection for a loan makes the loan risk free, one would expect [the] difference between the loan rate and the CDS spread to roughly equal the risk free rate. This corresponds to the idea that a loan's interest rate contains a credit premium, here measured by the CDS spread." But the authors observed

that Citigroup's quote was often "significantly below its CDS spread," implying "there were interbank lenders willing to lend to Citigroup at rates which, after purchasing credit protection, would earn them *a guaranteed 5 percent loss*." (Emphasis added). That discrepancy contravenes basic rules of economics and finance, thus indicating Citibank misreports its borrowing costs to the BBA.

2. <u>Cross-currency discrepancies in Defendants' LIBOR quotes indicate they suppressed USD-LIBOR.</u>

104. Defendants' LIBOR quotes also displayed inexplicable "cross-currency rank reversals." That is, as detailed in Snider and Youle's paper referenced above, at least some Defendants reported lower rates on USD-LIBOR than did other panel members but, for other currencies, provided higher rates than did those same fellow banks. Both BAC and BTMU, for instance, quoted rates for USD-LIBOR and Yen-LIBOR during the period under study, yet BAC quoted a lower rate than BTMU for USD-LIBOR and a *higher* rate than BTMU for Yen-LIBOR. Other Defendants included in Snider and Youle's analysis—Barclays, Citigroup, and JPMorgan Chase—displayed similar anomalies across currencies, as the graphs below illustrate. Citigroup, for example, often reported rates at the top of the Yen-LIBOR scale while simultaneously quoting rates at the bottom of the USD-LIBOR scale. Because, Snider and Youle explain, "the same bank is participating in each currency," the credit risk "is the same for loans in either currency"; thus these "rank reversals" demonstrate that differences in the banks' LIBOR quotes "are not primarily due to differences in credit risk, something we would expect of their true borrowing costs."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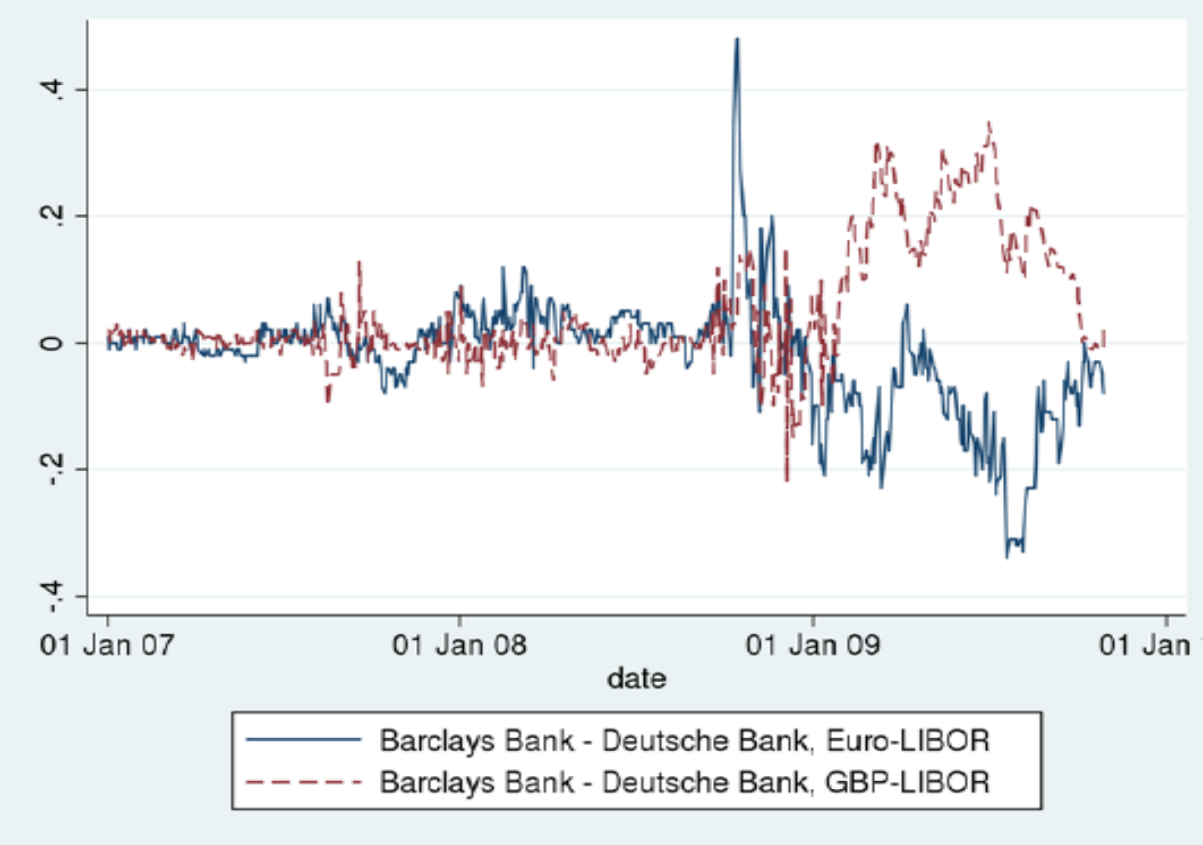
Bank of Tokyo - Bank of America, US-LIBOR
Bank of Tokyo - Bank of America, Yen-LIBOR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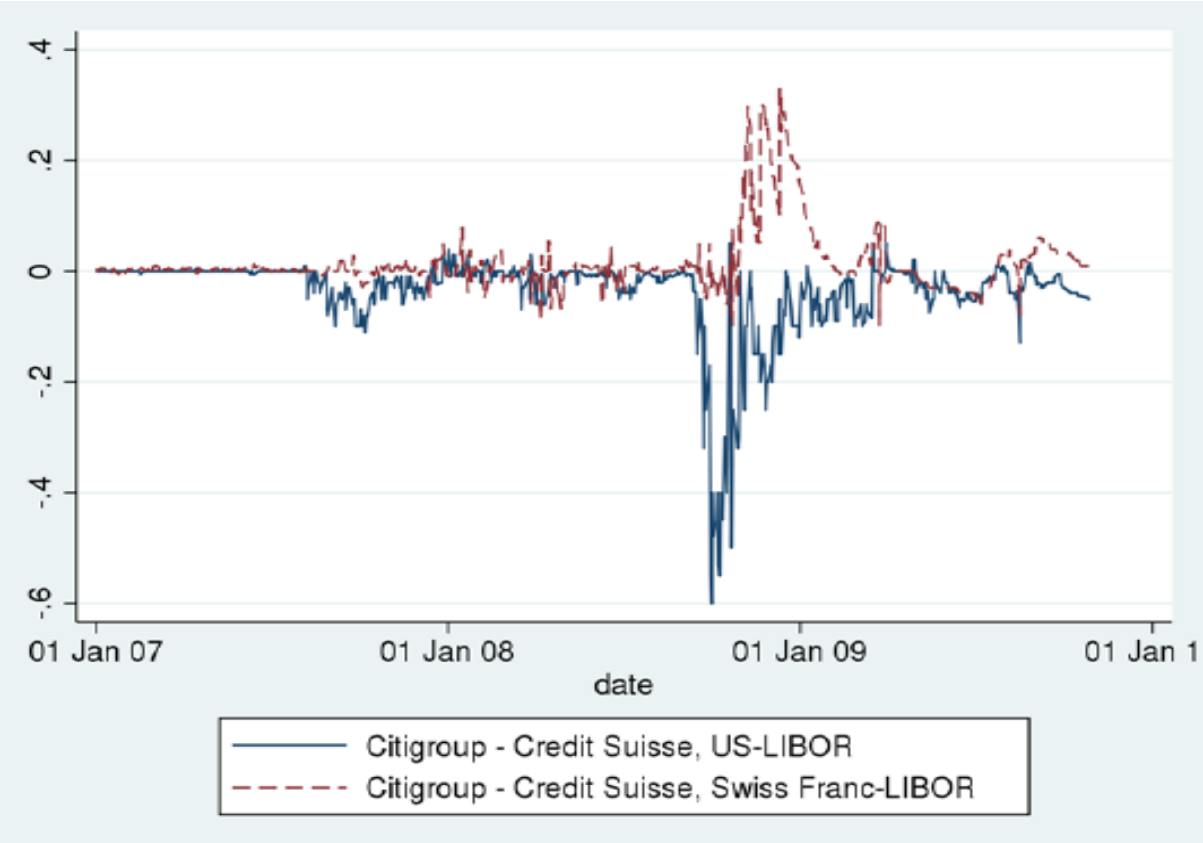
Barclays Bank - Deutsche Bank, Euro-LIBOR
Barclays Bank - Deutsche Bank, GBP-LIBOR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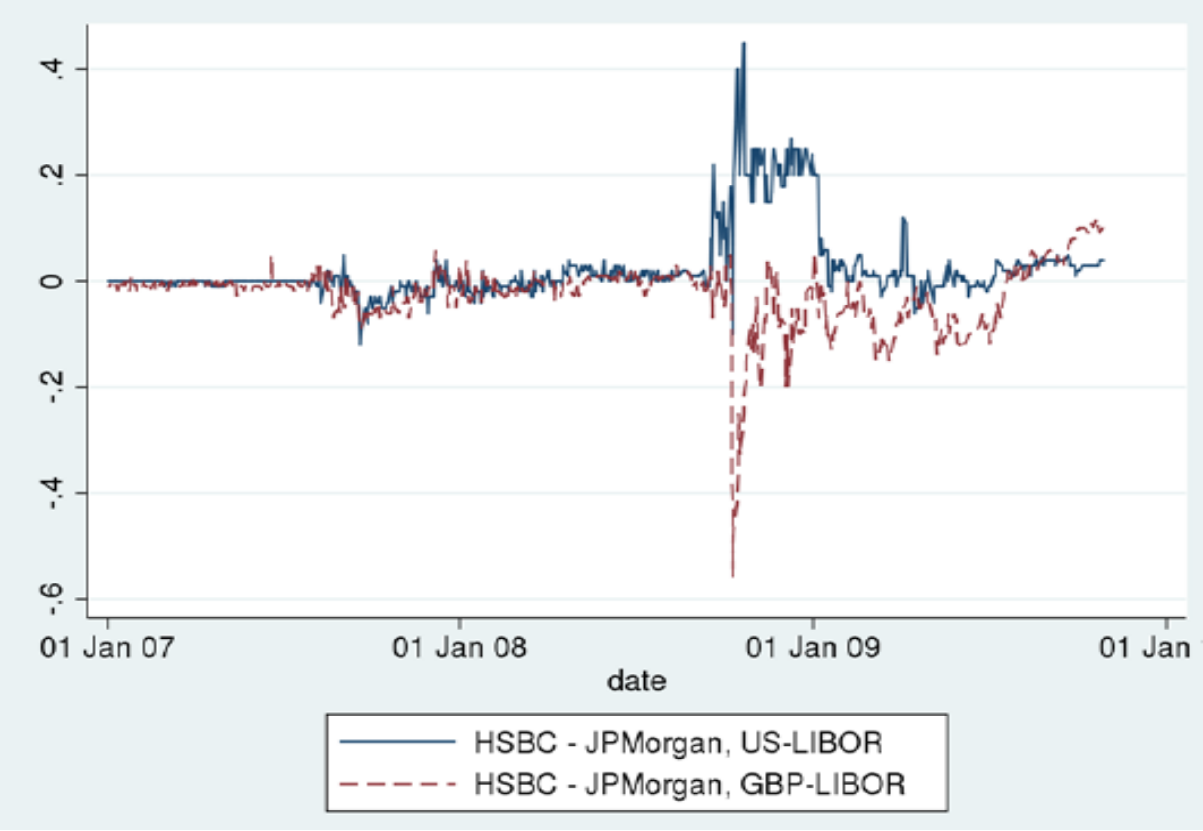
Citigroup - Credit Suisse, US-LIBOR
Citigroup - Credit Suisse, Swiss Franc-LIBOR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HSBC - JPMorgan, US-LIBOR
HSBC - JPMorgan, GBP-LIBOR

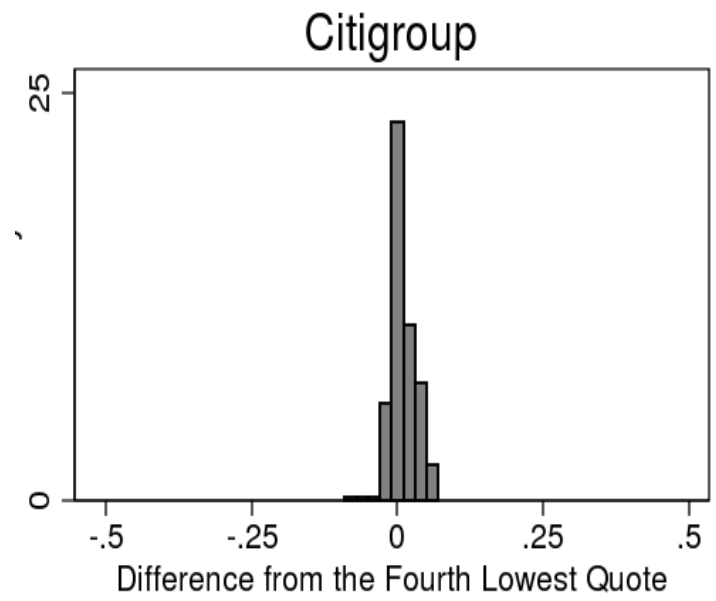
3. **The frequency with which at least certain Defendants' LIBOR quotes "bunched" around the fourth-lowest quote of the day suggests manipulation.**

105. During the Class Period, the rates reported by certain Defendants—in particular, Citibank, BAC, and JPMorgan Chase—also demonstrated suspicious "bunching" around the fourth lowest quote submitted by the 16 banks to the BBA. Indeed, Citibank's and BAC's quotes often tended to be identical to the fourth-lowest quote for the day. Because the LIBOR calculation involved excluding the lowest (and highest) four reported rates every day, bunching around the fourth-lowest rate suggests Defendants collectively depressed LIBOR by reporting the lowest possible rates that would not be excluded from the calculation of LIBOR on a given day.

106. Bunching among Defendants' respective LIBOR quotes indicates the banks intended to report the same or similar rates, notwithstanding the banks' differing financial conditions, which, as detailed above, reasonably should have resulted in differing LIBOR quotes. Those discrepancies suggest Defendants colluded to suppress LIBOR.

107. The following charts show the frequency with which the USD-LIBOR quotes submitted by Defendants Citigroup, BAC, and JPMorgan Chase fell within a given percentage rate from the fourth-lowest quote. A negative difference means the reporting bank was below the fourth-lowest quote, and therefore its rate was not included in the daily LIBOR calculation, while zero difference means that the bank reported the fourth-lowest quote on a given day (either by itself or tied with other reporting banks).[35]

[35] In the event of a tie between two or more banks, one of the banks' quotes, selected at random, was discarded.


Citigroup
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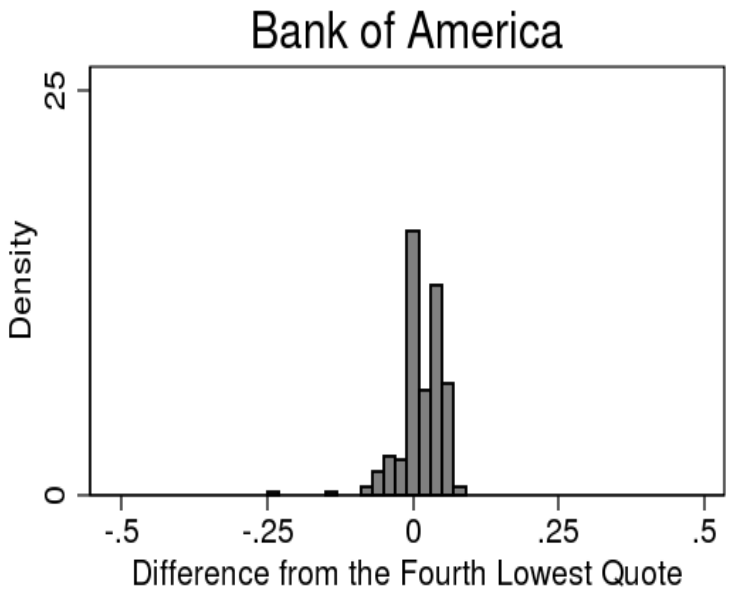
Difference from the Fourth Lowest Quote


Bank of America
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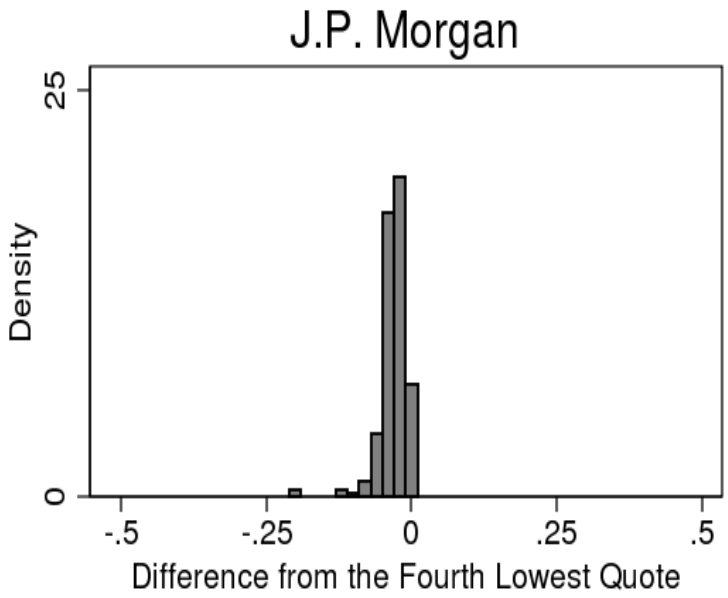
Difference from the Fourth Lowest Quote



108. According to Snider and Youle, the fact that observed bunching occurred around the pivotal fourth-lowest reported rate reflected the reporting banks' intention to ensure the lowest borrowing rates were included in the calculation of USD-LIBOR (which includes only the fifth-lowest through the twelfth-lowest quotes).

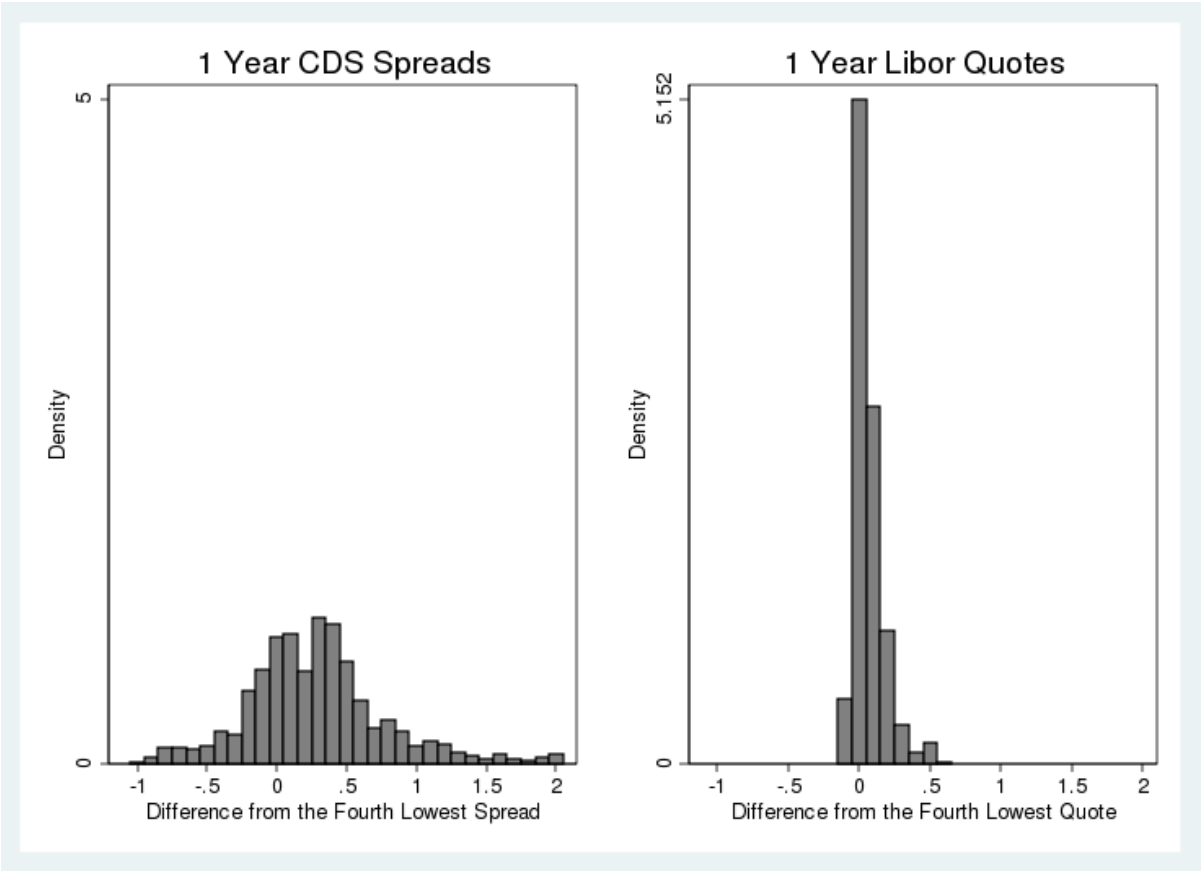
109. In other words, banks that bunched their quotes around the fourth-lowest submission helped ensure the maximum downward manipulation of the resulting rate. Furthermore, that a panel bank reported one of the four lowest quotes (*i.e.*, quotes excluded from the ultimate LIBOR calculation) does not mean the bank did not also participate in the collusion.

110. Further demonstrating the aberrant nature of the observed bunching around the fourth-lowest quote, Snider and Youle noted "the intraday distribution of *other* measures of bank borrowing costs do not exhibit this bunching pattern." (Emphasis added).

111. Additionally, Snider and Youle detailed a discrepancy between USD-LIBOR panel banks' LIBOR quotes and their CDS spreads. The authors found that "with the intra-day variation of both Libor quotes and CDS spreads increasing from their historical levels," the CDS

spreads' intra-day variation "grew considerably larger than that of Libor quotes."[36]

112. Snider and Youle further observed that—as the graphs below, embodying a composite of all the banks, illustrate—during the Class Period Defendants' quotes tended to "bunch" around the fourth-lowest quote much more commonly than those banks' CDS spreads "bunched" around the fourth-lowest spread. The authors concluded, "If banks were truthfully quoting their costs, . . . we would expect these distributions to be similar."



113. Given the method by which the BBA calculates LIBOR—discarding the highest and lowest reported rates and averaging the remainder—that strong concentration around the fourth-lowest rate is exactly what would occur if a number of banks sought in concert to depress LIBOR.

[36] Snider and Youle, "Does the LIBOR reflect banks' borrowing costs?"

4. **That LIBOR diverged from its historical relationship with the Federal Reserve auction rate indicates suppression occurred.**

114. A comparison between LIBOR and the Federal Reserve auction rate further suggests Defendants artificially suppressed LIBOR during the Class Period. An April 16, 2008 *Wall Street Journal* article, for example, noted the Federal Reserve had recently auctioned off $50 billion in one-month loans to banks for an average annualized interest rate of 2.82%—10 basis points higher than the comparable USD-LIBOR. That differential would make no economic sense if the reported LIBOR was accurate, the *Journal* observed: "Because banks put up securities as collateral for the Fed loans, they should get them for a lower rate than Libor, which is riskier because it involves no collateral."

115. A subsequent *Journal* article raised further concerns about LIBOR's accuracy based on the comparison of one-month LIBOR with the rate for the 28-day Federal Reserve auction.[37] According to the *Journal*, because the Federal Reserve requires collateral:

> [B]anks should be able to pay a lower interest rate [to the Fed] than they do when they borrow from each other [*e.g.*, as ostensibly measured by LIBOR] because those loans are unsecured. It is the same reason why rates for a mortgage, which is secured by a house, are lower than those for credit cards, where the borrower doesn't put up any collateral. In other words, the rate for the Fed auction should be lower than Libor.

To the contrary, though, two days before the *Journal* article (September 22, 2008), the rate for the 28-day Fed facility was 3.75%—much higher than one-month USD-LIBOR, which was 3.18% that day[38] and 3.21% the next day.

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[37] Carrick Mollenkamp, "Libor's Accuracy Becomes Issue Again," *The Wall Street Journal*, September 24, 2008.

[38] The *Journal* initially reported the one-month USD-LIBOR rate for that day as 3.19% but later noted the correct figure.

5. **LIBOR's divergence from its historical correlation to overnight index swaps also suggests it was artificially suppressed during the Class Period.**

116. Yet another measure of LIBOR's aberrant behavior with respect to other measures of banks' borrowing costs during the Class Period is its observed deviation from the overnight-index swap ("OIS") rate. In his academic article analyzing LIBOR data for the period of the second half of 2007 and 2008, Justin Wong observed that between 2001 and July 2007, when the global credit crisis began, the spread between LIBOR and the OIS rate "averaged eleven basis points."[39] By July 2008, on the other hand, that gap approached 100 basis points, a figure significantly higher than the spread from a year prior, and by October 2008, "it peaked at 366 basis points." While the spread "receded somewhat in November 2008 to 209 basis points," that was still "far above the pre-crisis level." Wong's analysis provides further support for Plaintiffs' allegations that Defendants suppressed LIBOR.

6. **Additional data suggest LIBOR may have been manipulated as early as August 2006.**

117. As the empirical evidence in support of LIBOR manipulation continues to develop, at least some of the data point to possible manipulation as early as August 2006. In a recent paper, Rosa Abrantes-Metz (of NYU Stern School of Business's Global Economics Group) and Albert Metz (of Moody's Investors Service) compared one-month LIBOR against the Fed Funds effective rate and the one-month Treasury Bill ("T-Bill") rate.[40] Studying the period of early August 2006 through early August 2007, the authors observed the level of one-month LIBOR was "virtually constant," while the Fed Funds effective rate and the one-month T-

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[39] Justin T. Wong, "LIBOR Left in Limbo; A Call for More Reform," *North Carolina Banking Institute*, Vol. 13 p. 365-84 (Feb. 22, 2009).

[40] Rosa M. Abrantes-Metz and Albert D. Metz, "How Far Can Screens Go in Distinguishing Explicit from Tacit Collusion? New Evidence from the Libor Setting."

Bill rate did "not present such striking stability." Spurred by that "highly anomalous" discrepancy, Abrantes-Metz and Metz examined the LIBOR panel members' individual quotes, which showed that during the studied period, the middle eight quotes used to set LIBOR each day were "essentially identical day in and day out"—another "highly anomalous" finding.

118. The authors concluded that "explicit collusion" presented "the most likely explanation" for this anomalous behavior. They explained that because LIBOR quotes are submitted sealed, "the likelihood of banks moving simultaneously to the same value from one day to the next without explicit coordination is extremely low, particularly given that their idiosyncrasies would not imply completely identical quotes under a non-cooperative outcome." They further opined "it is difficult to attribute it to tacit collusion or strategic learning, since the change is abrupt, the quotes are submitted sealed, and the quotes themselves sometimes change from one day to the next in an identical fashion."

119. Abrantes-Metz and Sofia B. Villas-Boas (of UC-Berkeley's Department of Agricultural & Resource Economics) used another methodology—Benford second-digit reference distribution—to track the daily, one-month LIBOR over the period 2005-2008.[41] Based on this analysis, the authors found that for sustained periods in 2006 and 2007, the empirical standard-deviation distribution differed significantly from the Benford reference distribution for nearly all banks submitting quotes. The authors also observed large deviations from Benford for a sustained period in 2008.

120. Those studies indicate at least a possibility that Defendants' suppression of LIBOR goes back even further than August 2007.

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[41] Rosa M. Abrantes-Metz and Sofia B. Villas-Boas, "Tracking the Libor Rate," July 2010.

7. **Expert Analysis Performed In Connection With These Proceedings Indicates LIBOR's Increase Following Expressions of Concern Over LIBOR's Viability Resulted from Defendants' Reaction to Events Unrelated to Market Factors.**

121. On April 17, 2008, the day after *The Wall Street Journal* initially reported on LIBOR's anomalous behavior and the BBA stated it would conduct an inquiry concerning LIBOR, there was a sudden jump in USD-LIBOR—the three-month borrowing rate hit 2.8175% that day, about eight basis points more than the previous day's rate of 2.735%.

122. Suspiciously, reported LIBOR for other currencies fell or remained relatively flat at the time USD-LIBOR rose, a sign that the latter was susceptible to manipulation.

123. A consulting expert engaged by the Plaintiffs in these coordinated proceedings conducted an analysis of the change in LIBOR on the single date of April 17, 2008. The analysis tested the hypothesis that if banks did not manipulate LIBOR, there would be no systematic changes in LIBOR expected on April 17, 2008 relative to typical changes on other days between January 5, 2000 to May 13, 2011, whereas if banks did manipulate LIBOR—and were responding to *The Wall Street Journal* article and BBA announcement—the reporting banks would be likely to reduce or abandon the manipulation immediately in response to these events. An immediate reduction in LIBOR manipulation would result in an increase in LIBOR quotes by the member banks on April 17, 2008.

124. To conduct the analysis, the consulting expert ran a regression using the daily changes in LIBOR. Table 1 below shows the studies' results. As discussed above, LIBOR increased on April 17, 2008 at a statistically significant level. Moreover, the increase in composite LIBOR as well as of 11 of the 16 bank quotes were statistically significant. These findings were consistent with the hypothesis that the banks manipulated and suppressed LIBOR.

Table 1				
Changes in LIBOR on April 17, 2008 in Percentage Points*				
	Dependent variable	**Average change during non-suppression days**	**Change in the dependent variable on April 17, 2008 relative to non-suppression days' average**	**Statistical Significance at the 1-5% level of the April 17, 2008 move**
1	BBA LIBOR	-0.000371	0.0909*	5%
2	HSBC LIBOR	0.000154	0.1273**	1%
3	JPMC LIBOR	-0.000333	0.0872*	5%
4	BARCLAYS LIBOR	-0.000333	0.1072*	5%
5	WEST LB LIBOR	-0.000314	0.0971*	5%
6	RBS LIBOR	-0.000352	0.0921*	5%
7	RABOBANK LIBOR	-0.000364	0.0872*	5%
8	CITI LIBOR	-0.000344	0.1022*	5%
9	RBC LIBOR	0.002067	0.1021*	5%
10	UBS LIBOR	-0.000777	0.1021*	5%
11	NORIN LIBOR	-0.00038	0.0971*	5%
12	HBOS LIBOR	0.002467	0.1111*	5%

Statistical significance is assessed using a AR(3) model for the residuals

* While not shown here, an additional dummy variable is used to control for changes during the Relevent Period of August 8, 2007 to May 17, 2010.

125. An alternative hypothesis is that, in addition to reacting to the *Journal*, other confounding effects that are related to the risk of the banking sector or overall Market Fundamentals could have emerged on April 16, 2008 and April 17, 2008. This alternative hypothesis also predicts an increase in LIBOR. To test this alternative hypothesis, instead of looking at daily changes in LIBOR quotes, it is possible to examine daily changes in the difference between banks' LIBOR quotes and the Federal Reserve Eurodollar Deposit Rate (the "Spread"). If risk-related factors or Market Fundamentals played a role, they would affect both the banks' LIBOR quotes as well as the Federal Reserve's Eurodollar Deposit Rate. Thus, if this hypothesis is correct, one should not see any changes to the Spread on April 17, 2008, since these two effects should cancel out. However, if there were no risk-related news and only a reaction to *The Wall Street Journal* article and the BBA announcement played a major role, then only LIBOR would be affected, leaving Federal Reserve's Eurodollar Deposit Rate mostly unaffected. In this case, the Spread would again be expected to increase.

126. The test of this alternative hypothesis showed that the Spreads of all 16 panel banks increased on April 17, 2008, and, as shown in Table 2 below, 11 of the 16 changes were statistically significant at levels ranging from 1% to 5%. Once again, these finding were consistent with the manipulation hypothesis and inconsistent with the hypothesis that other risk factors explained the April 17, 2008 shock to LIBOR.

Table 2
Changes in Spread (BBA LIBOR – Federal Reserve's Eurodollar Deposit Rate) on April 17, 2008 in Percentage Points*

	Dependent variable	Average change in Spread during non-suppression days	Change in the dependent variable on April 17, 2008 relative to non-suppression days' average	Statistical Significance at the 1-5% level of the April 17, 2008 move
1	BBA LIBOR Spread	-0.000078	0.0838	5%
2	HSBC LIBOR Spread	0.000508	0.1205	1%
3	JPMC LIBOR Spread	-0.000103	0.0803*	5%
4	BARCLAYS LIBOR Spread	-0.000067	0.1002**	1%
5	RBS LIBOR Spread	-0.0001	0.0851*	5%
6	TOKYO LIBOR Spread	-0.000092	0.0797*	5%
7	CITI LIBOR Spread	-0.00012	0.0953*	5%
8	CS LIBOR Spread	-0.000224	0.07*	5%
9	RBC LIBOR Spread	-0.000135	0.0951*	5%
10	UBS LIBOR Spread	-0.000172	0.095*	5%
11	NORIN LIBOR Spread	-0.000179	0.0903**	1%
12	HBOS LIBOR Spread	0	0.1007*	5%

Statistical significance is assessed using a AR(3) model for the residuals
* While not shown here, an additional dummy variable is used to control for changes during the Relevent Period of August 8, 2007 to May 17, 2010.

127. The conclusions of this study are consistent with the contemporaneous views

expressed by high-level employees of various Defendant panel banks recounted above.

E. That At Least Some Defendants Faced Dire Financial Circumstances During the Class Period Further Renders Their Unduly Low LIBOR Quotes Striking.

128. The independent economic analyses performed in connection with these proceedings, whose findings are corroborated by the publicly available scholarly work detailed above, strongly indicate Defendants' LIBOR quotes during the Class Period did not appropriately reflect those banks' actual borrowing costs at that time—and, indeed, that Defendants *collectively* suppressed LIBOR. Further illustrating the striking discrepancy between Defendants' submissions to the BBA and their actual borrowing costs, during 2008 and 2009 at least some of those banks' LIBOR quotes were too low in light of the dire financial circumstances the banks faced, as described in numerous news articles from the Class Period.

1. Citigroup

129. On November 21, 2008, *The Wall Street Journal* reported that Citigroup executives "began weighing the possibility of auctioning off pieces of the financial giant or even selling the company outright" after the company faced a plunging stock price. The article noted Citigroup executives and directors "rushing to bolster the confidence of investors, clients and employees" in response to uncertainty about Citigroup's exposure to risk concerning mortgage-related holdings.[42] Similarly, On November 24, 2008, *CNNMoney* observed:

> If you combine opaque structured-finance products with current fair-value accounting rules, almost none of the big banks are solvent because that system equates solvency with asset liquidity. So at this moment Citi isn't solvent. Some argue that liquidity, not solvency, is the problem. But in the end it doesn't matter. Fear will drive illiquidity to such a point that Citi could be rendered

[42] *See* http://online.wsj.com/article/SB122722907151946371.html?mod=testMod

insolvent under the current fair-value accounting system.[43]

130. On January 20, 2009, *Bloomberg* reported that Citigroup "posted an $8.29 billion fourth-quarter loss, completing its worst year, and plans to split in two under Chief Executive Officer Vikram Pandit's plan to rebuild a capital base eroded by the credit crisis. The article further stated, "***The problems of Citi, Bank of America and others suggest the system is bankrupt***." (Emphasis added).[44]

2. RBS, Lloyds, and HBOS

131. An April 23, 2008 analyst report from Société Générale concluded, with respect to RBS's financial condition in the midst of its attempt to raise capital:

> Given the magnitude and change in direction in a mere eight weeks, we believe that management credibility has been tarnished. We also remain unconvinced that the capital being raised is in support of growth rather than merely to rebase and recapitalise a bank that overstretched itself at the wrong point in the cycle in its pursuit of an overpriced asset.
>
> * * *
>
> [I]n our eyes, RBS has not presented a rock solid business case that warrants investor support and the bank has left itself almost no capital headroom to support further material deterioration in either its assets or its major operating environments. We believe £16bn (7% core tier I ratio) would have provided a solid capital buffer.

The analysts also opined, "[W]e are not of the belief that all of RBS' problems are convincingly behind it." They further explained, "When faced with the facts and the events leading up to yesterday's request for a £12bn capital injection, we believe shareholders are being asked to invest further in order to address an expensive mishap in H2 07 rather than capitalise on growth opportunities."

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[43] *See* http://money.cnn.com/2008/11/21/news/companies/benner_citi.fortune/

[44] *See* http://www.bloomberg.com/apps/news?pid=21070001&sid=aS0yBnMR3USk

132. On October 14, 2008, *The Herald Scotland* reported a £37 billion injection of state capital into three leading banks, including RBS and HBOS. The article observed, "Without such near-nationalisations, . . . Royal Bank of Scotland and HBOS, would almost certainly have suffered a run on their remaining reserves and been plunged into insolvency. Their share prices could scarcely have taken much more of their recent hammering."[45]

133. On December 12, 2008, *Bloomberg* reported that shareholders approved HBOS's takeover by Lloyds TSB Group plc following bad-loan charges in 2008 rising to £5 billion and an increase in corporate delinquencies. The article also quoted analysts characterizing HBOS's loan portfolio as "'generally of a lower quality than its peers.'" *Bloomberg* further observed that HBOS suffered substantial losses on its bond investments, which totaled £2.2 billion, and losses on investments increased from £100 million to £800 million for the year.[46]

134. A January 20, 2009, analyst report from Société Générale stated: "We would note that given the 67% drop in the share price following [RBS]'s announcements yesterday [relating to capital restructuring due to greater-than-expected credit-market related write downs and bad debt impairments in Q4], the loss of confidence in the bank's ability to continue to operate as a private sector player and concern over the potential ineffectiveness of the Asset Protection Scheme may prompt the U.K. government to fully nationalise the bank. In this instance, the shares could have very limited value, if at all."[47]

135. On March 7, 2009, *Bloomberg* reported that Lloyds "will cede control to [the

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[45] *See* http://www.heraldscotland.com/reckless-banks-brought-this-financial-firestorm-down-upon-their-own-heads-1.891981.

[46] *See* http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a4BTqdgwhPTc&refer=uk.

[47] *See* January 20, 2009 Société Générale analyst report on Royal Bank of Scotland titled "Little value left for shareholders."

British Government] in return for state guarantees covering 260 billion pounds ($367 billion) of risky assets." The article further observed that in September 2008, Lloyds agreed to buy HBOS for roughly £7.7 billion as the British Government sought to prevent HBOS from collapsing after credit markets froze. The HBOS loan book was described as "more toxic than anyone ever dreamed."[48]

136. On November 24, 2009, *Bloomberg* reported the Bank of England provided £62 billion ($102 billion) of "taxpayer-backed emergency financing" to RBS and HBOS at the height of the financial crisis in October 2008 and that "[t]he [financing] operations were kept secret until now to prevent unnerving markets." The Bank's Deputy Governor Paul Tucker was quoted as stating in evidence to the Treasury Committee in London that "'[h]ad we not done it, the cycle would have been a lot worse…[and that] [t]his was tough stuff, a classic lender of last resort operation.'"[49]

3. WestLB

137. A September 9, 2008 article in *Spiegel Online* reported WestLB was "heavily hit as a result of the US sub-prime crisis and the resulting credit crunch. Ill-advised speculation resulted in a 2007 loss of €1.6 billion -- leading the bank to the very brink of insolvency." The article reported that in early 2008, a special investment vehicle was set by WestLB's primary shareholders to "guarantee €5 billion worth of risky investments." The European Commissioner approved the public guarantee but demanded that the bank be "completely restructured to avoid falling afoul of competition regulations." The European Commissioner for Competition later warned that if WestLB did not significantly improve its restructuring package, Brussels would

[48] *See* http://www.businessday.com.au/business/lloyds-the-latest-uk-bank-to-be-rescued-20090308-8sfd.html.

[49] *See* http://www.bloomberg.com/apps/news?pid=21070001&sid=a9MjQj6MNTeA

not approve the public assistance that European Union had already provided to the bank. Further, if that occurred, WestLB would have to pay back €12 billion to the EU.[50]

138. On November 24, 2009, *Bloomberg* reported that BNP Paribas SA said "[i]nvestors should buy the euro [ ] on speculation that capital will need to be repatriated to support German bank WestLB AG." Furthermore, two German regional savings bank groups that hold a majority stake in WestLB were "prepared to let the Dusseldorf-based lender become insolvent" and that "the prospect of insolvency may force state-owned banks and savings banks outside North Rhine-Westphalia, WestLB's home state, to contribute to capital injections." Moreover, WestLB needed "as much as 5 billion euros ($7.5 billion) in capital and may be shut by Nov. 30 unless a solution for its capital needs can be found."[51]

F. Defendants' Improper Activities Have Incited Governmental Investigations Legal Proceedings and Disciplinary Action Worldwide.

139. As described in more detail below, investigations regarding LIBOR are ongoing in the United States, Switzerland, Japan, United Kingdom, Canada, the European Union, and Singapore by nine different governmental agencies, including the DOJ, the SEC, and the CFTC. Indeed, on February 27, 2012, the DOJ represented to the Court overseeing these multidistrict proceedings that the Justice Department "is conducting a criminal investigation into alleged manipulation of certain benchmark interest rates, including LIBORs of several currencies." The investigation represents an unprecedented joint investigation by both the criminal and antitrust divisions of the DOJ.

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[50] *See* Anne Seith, Germany's WestLB under Attack from Brussels, SPIEGEL ONLINE, Sept. 9, 2008, http://www.spiegel.de/international/business/0,1518,druck-577142,00.html.

[51] See Matthew Brown, BNP Says Buy Euro on Speculation WestLB to Be Rescued (Update 1), BLOOMBERG, Nov. 24, 2009, http://www.bloomberg.com/apps/news?pid=21070001&sid=aI9ZPZShrjWI.

140. Authorities are attempting to determine, among other things, "whether banks whose funding costs were rising as the financial crisis intensified tried to mask that trend by submitting artificially low readings of their daily borrowing costs."[52] Though the proceedings are ongoing, several Defendants have admitted that regulators—including the DOJ, SEC, and CFTC—have targeted them in seeking information about potential misconduct.

141. Moreover, documents submitted in connection with legal proceedings in Canada and Singapore reveal that at least certain Defendants misreported their borrowing costs to artificially suppress Yen-LIBOR.

1. News reports and Defendants' regulatory filings indicate U.S. government and foreign regulatory bodies are engaged in expansive investigations of possible LIBOR manipulation.

142. The first public revelation regarding government investigations into possible LIBOR manipulation occurred on March 15, 2011, when UBS disclosed in a Form 20-F (annual report) filed with the SEC that the bank had "received subpoenas" from the SEC, the CFTC, and the DOJ "in connection with investigations regarding submissions to the [BBA]." UBS stated it understood "that the investigations focus on whether there were improper attempts by UBS, either acting on its own or together with others, to manipulate LIBOR rates at certain times." The bank further disclosed that it had "received an order to provide information to the Japan Financial Supervisory Agency concerning similar matters." UBS stated it was "conducting an internal review" and was "cooperating with the investigations."

143. On March 16, 2011, the *Financial Times* reported that UBS, BAC, Citigroup, and Barclays received subpoenas from U.S. regulators "probing the setting of" USD-LIBOR "between 2006 and 2008." The *Times* further noted investigators had "demanded information

[52] David Enrich, Carrick Mollenkamp, & Jean Eaglesham, "U.S. Libor Probe Includes BofA, Citi, UBS." The Wall Street Journal, March 18, 2011

from" WestLB, and that the previous fall, "all 16 members of the committee that helped the [BBA] set the dollar Libor rate during 2006-08 received informal requests for information."[53]

144. The same day, *MarketWatch* similarly reported "[m]ultiple U.S. and European banks, which provide borrowing costs to calculate Libor every day, have been contacted by investigators," including the DOJ, the SEC, and the CFTC.[54]

145. The next day, *Bloomberg* reported that Barclays and Citigroup had received subpoenas from U.S. regulators and that Defendants WestLB, Lloyds, and BAC had been contacted by regulators. The article specified BAC had received subpoenas from the SEC and the DOJ.[55]

146. On March 23, 2011, *Bloomberg* revealed that Citigroup Inc., Deutsche Bank, BAC, and JPMorgan Chase were asked by U.S. regulators "to make employees available to testify as witnesses" in connection with the regulators' ongoing investigation.[56]

147. The next day, the *Financial Times* reported that Defendant Barclays was "emerging as a key focus of the US and U.K. regulatory probe into alleged rigging of [LIBOR]." According to the *Times*, investigators were "probing whether communications between the bank's traders and its treasury arm," which helps set LIBOR, "violated 'Chinese wall' rules that prevent information-sharing between different parts of the bank." The *Times* further stated

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[53] Brooke Masters, Patrick Jenkins & Justin Baer, "Banks served subpoenas in Libor case," FT.com, available at http://www.ft.com/cms/s/0/52958d66-501f-11e0-9ad1-00144feab49a.html#axzz1sJNEDIiI, last accessed on April 17, 2012.

[54] Carrick Mollenkamp and David Enrich, "Banks Probed in Libor Manipulation Case," *MarketWatch*, March 16, 2011.

[55] Gavin Finch and Jon Menon, "Barclays, Citigroup Said to Be Subpoenaed in Libor Probe," *Bloomberg*, March 17, 2011.

[56] Joshua Gallu and Donal Griffin, "Libor Probe Spurs Witness Call-up at Citigroup, Deutsche Bank," *Bloomberg*, March 23, 2011.

investigators were "said to be looking at whether there was any improper influence on Barclays' submissions" during 2006-2008 for the BBA's daily survey used to set LIBOR.[57]

148. Additional information regarding the regulatory probes emerged during the next few months, including revelations about other banks' possible—or actual—misconduct.

149. In an "Interim Management Statement" filed on April 27, 2011, for example, Barclays stated it was "cooperating with" the investigations by the U.K. Financial Services Authority, the CFTC, the SEC, and the DOJ "relating to certain past submissions made by Barclays to the [BBA], which sets LIBOR rates."

150. RBS similarly disclosed, in a Form 6-K filed with the SEC on May 6, 2011, the bank was "co-operating with" the investigations being conducted by the CFTC, the SEC, and the European Commission "into the submission of various LIBOR rates by relevant panel banks."

151. Soon after, on May 16, 2011, Lloyds disclosed that it too "had received requests for information as part of the Libor investigation and that it was co-operating with regulators, including the [CFTC] and the European Commission."[58] Britain's *Daily Telegraph* further reported that Defendant HBOS, which merged with Lloyds TSB in January 2009 to form Lloyds Banking Group, "was the main target given its near collapse in late 2008 as it lost access to wholesale funding markets."

152. On May 23, 2011, the *Telegraph* reported that the Federal Bureau of Investigation ("FBI") was working with regulators in connection with the LIBOR investigations, and the FBI's British counterpart, the Serious Fraud Office, "revealed it is also taking an active interest."

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[57] Brooke Masters and Megan Murphy, "Barclays at centre of Libor inquiry," FT.com, March 24, 2011, available at http://www.ft.com/intl/cms/s/0/1c3228f6-5646-11e0-82aa-00144feab49a.html#axzz1sJNEDIiI, last accessed on April 17, 2012.

[58] Harry Wilson, "Lloyds Banking Group in Libor investigation," *The Daily Telegraph*, May 17, 2011.

153. In a Form 6-K filed with the SEC on July 26, 2011, UBS disclosed that it had "been granted conditional leniency or conditional immunity from authorities in certain jurisdictions, including the Antitrust Division of the DOJ, in connection with potential antitrust or competition law violations related to submissions for Yen LIBOR and Euroyen TIBOR (Tokyo Interbank Offered Rate)." Accordingly, the company continued, it would "not be subject to prosecutions, fines or other sanctions for antitrust or competition law violations in connection with the matters [UBS] reported to those authorities, subject to [UBS's] continuing cooperation." The conditional leniency UBS received derives from the Antitrust Criminal Penalties Enhancement and Reform Act and the DOJ's Corporate Leniency Policy, under which the DOJ only grants leniency to corporations reporting *actual illegal activity*. UBS later disclosed (on February 7, 2012) that the Swiss Competition Commission had granted the bank conditional immunity regarding submissions for Yen LIBOR, TIBOR, and Swiss franc LIBOR.

154. Similar to the other Defendants discussed above, HSBC, in an interim report filed on August 1, 2011, disclosed that it and/or its subsidiaries had "received requests" from various regulators to provide information and were "cooperating with their enquiries."

155. On or about the same day, Barclays—which several months earlier had referenced its "cooperation" with governmental entities investigating potential misconduct relating to LIBOR—specified the investigations involved "submissions made by Barclays" and other LIBOR panel members. Barclays further stated it was engaged in discussions with those authorities about potential resolution of these matters before proceedings are brought against the bank.

156. On September 7, 2011, the *Financial Times* reported that as part of their LIBOR investigation, the DOJ and the CFTC—in assessing whether banks violated the Commodity

Exchange Act, which can result in criminal liability—were examining "whether traders placed bets on future yen and dollar rates and colluded with bank treasury departments, who help set the Libor index, to move the rates in their direction," as well as "whether some banks lowballed their Libor submissions to make themselves appear stronger."[59]

157. On October 19, 2011, *The Wall Street Journal* reported that the European Commission "seized documents from several major banks" the previous day, "marking the escalation of a worldwide law-enforcement probe" regarding the Euro Interbank Offered Rate, or Euribor—a benchmark, set by more than 40 banks, used to determine interest rates on trillions of euros' worth of euro-denominated loans and debt instruments. The Euribor inquiry, the *Journal* explained, constitutes "an offshoot" of the broader LIBOR investigation that had been ongoing for more than a year. According to the *Journal*, while the list of financial firms raided by the European Commission was not available, people familiar with the situation had counted "a large French bank and a large German bank" among the targets, and the coordinated raids "occurred in London and other European cities."

158. On October 31, 2011, the *Financial News* observed that "[a]n investigation into price fixing, first ordered by the [SEC] in 2008, focused on whether banks, including UBS, Citigroup, and Bank of America, had been quoting deliberately low rates."[60]

159. On December 9, 2011, *Law360* reported that the Japanese Securities and Exchange Surveillance Commission ("SESC") alleged that Citigroup Global Markets Japan Inc. and UBS Securities Japan Ltd. "employed staffers who attempted to influence" TIBOR "to gain

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[59] Brooke Masters and Kara Scannell, "Libor inquiry looks at criminal angle," FT.com, September 7, 2011, available at http://www.ft.com/cms/s/0/c8ed4248-d962-11e0-b52f-00144feabdc0.html#axzz1sRxAdyPS, last accessed on April 18, 2012.

[60] Tom Osborn, "Is Libor in its death throes?" *Financial News*, October 31, 2011.

advantage on derivative trades." The SESC recommended that the Japanese prime minister and the head of Japan's Financial Services Agency ("JFSA") take action against the companies. The Commission specified that Citigroup's head of G-10 rates and a Citigroup trader, as well as a UBS trader, were involved in the misconduct, further stating, "[t]he actions of Director A and Trader B are acknowledged to be seriously unjust and malicious, and could undermine the fairness of the markets." Moreover, the Commission added, "[i]n spite of recognizing these actions, the president and CEO . . . who was also responsible for the G-10 rates, overlooked these actions and the company did not take appropriate measures, therefore, the company's internal control system is acknowledged to have a serious problem."[61] *Law360* reported that the SESC released "a similar statement" about UBS's alleged conduct.

160. Citigroup and UBS did not deny the SESC's findings. A Citigroup spokesperson stated, "Citigroup Global Markets Japan takes the matter very seriously and sincerely apologizes to clients and all parties concerned for the issues that led to the recommendation. The company has started working diligently to address the issues raised." A UBS spokesperson similarly stated the bank was taking the findings "very seriously" and had been "working closely with" the SESC and the JFSA "to ensure all issues are fully addressed and resolved." She added, "We have taken appropriate personnel action against the employee involved in the conduct at issue."

161. Citigroup later disclosed that on December 16, 2011, the JFSA took administrative action against Citigroup Global Markets Japan, Inc. ("CGMJ") for, among other things, certain communications made by two CGMJ traders about the Euroyen Tokyo InterBank Offered Rate ("TIBOR"). The JFSA issued a business improvement order and suspended CGMJ's trading in derivatives related to Yen-LIBOR, as well as Euroyen and Yen-TIBOR from

[61] Juan Carlos Rodriguez, "Japan Accuses Citi, UBS Of Market Trickery," *Law360*, December 9, 2011.

January 10 to January 23, 2012. On the same day, the JFSA also took administrative action against Citibank Japan Ltd. for conduct arising out of Citibank Japan's retail business and also noted that the communications made by the CGMJ traders to employees of Citibank Japan about Euroyen TIBOR had not been properly reported to Citibank Japan's management team.

162. UBS likewise recently revealed further details regarding the Japanese regulators' findings and the resulting disciplinary action. Specifically, the bank announced that on December 16, 2011, the JFSA commenced an administrative action against UBS Securities Japan Ltd. ("UBS Securities Japan") based on findings by the SESC that:

> (i) a trader of UBS Securities Japan engaged in inappropriate conduct relating to Euroyen TIBOR and Yen LIBOR, including approaching UBS AG, Tokyo Branch, and other banks to ask them to submit TIBOR rates taking into account requests from the trader for the purpose of benefiting trading positions; and (ii) serious problems in the internal controls of UBS Securities Japan resulted in its failure to detect this conduct.

Based on those findings, the JFSA "issued a Business Suspension Order requiring UBS Securities Japan to suspend trading in derivatives transactions related to Yen LIBOR and Euroyen TIBOR" from January 10 to January 16, 2012 (excluding transactions required to perform existing contracts). The JFSA also issued a "Business Improvement Order" requiring UBS Securities Japan to enhance "compliance with its legal and regulatory obligations" and to establish a "control framework" designed to prevent similar improper conduct.

163. *The Wall Street Journal* has since cited people familiar with the UBS matter as identifying the trader as Thomas Hayes, who joined UBS Securities Japan in 2006 "and traded products linked to the pricing of short-term yen-denominated borrowings"; he worked at UBS for about three years.[62]

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[62] Jean Eaglesham, Atsuko Fukase, & Sam Holmes, "Rate Probe Keys On Traders: Investigators

Footnote continued on next page

164. In the same article, the *Journal* more broadly reported that investigators in the U.S. and foreign LIBOR probes "are focusing on a small number of traders suspected of trying to influence other bank employees to manipulate the rates."

165. Other news accounts in recent months have confirmed—based at least in part on information from people familiar with the ongoing investigations—that investigators are examining potential improper collusion by traders and bankers to manipulate LIBOR or other rates. On February 3, 2012, for instance, Credit Suisse disclosed that the Swiss Competition Commission commenced an investigation involving twelve banks and certain other financial intermediaries, including Credit Suisse, concerning alleged collusive behavior among traders to affect the bid ask spread for derivatives tied to the LIBOR and TIBOR reference rates fixed with respect to certain currencies, and collusive agreements to influence these rates.

166. Additionally, on February 14, 2012, *Bloomberg* reported that two people with knowledge of the ongoing LIBOR probe said global regulators "have exposed flaws in banks' internal controls that may have allowed traders to manipulate interest rates around the world." The same people, who were not identified by name (as they were not authorized to speak publicly about those matters), stated investigators also had "received e-mail evidence of potential collusion" between firms setting LIBOR. Those sources further noted Britain's Financial Services Authority was "probing whether banks' proprietary-trading desks exploited information they had about the direction of Libor to trade interest-rate derivatives, potentially defrauding their firms' counterparties."[63]

Footnote continued from previous page
Suspect Employees at Some Banks Tried to Manipulate Rates," *The Wall Street Journal*, February 7, 2012.

[63] Lindsay Fortado and Joshua Gallu, "Libor Probe Said to Expose Collusion, Lack of Internal Controls," *Bloomberg*, February 14, 2012.

167. *Bloomberg* further reported that RBS had "dismissed at least four employees in connection with the probes," and Citigroup and Deutsche Bank "also have dismissed, put on leave or suspended traders as part of the investigations."

168. *Bloomberg* also reported that European Union antitrust regulators are also investigating whether banks effectively formed a global cartel and coordinated how to report borrowing costs between 2006 and 2008.

169. In March 2012, the Monetary Authority of Singapore disclosed that it has been approached by regulators in other countries to help in investigations over the possible manipulation of interbank interest rates.[64]

170. *Bloomberg* interviewed money-market traders in March 2012, who said that staff responsible for panel banks' LIBOR submissions "regularly discussed where to set the measure with traders sitting near them, interdealer brokers, and counterparts at rival banks."[65] "The talks became common practice after money markets froze in 2007. . . . Traders interviewed said there were no rules stopping talks between employees, or guidelines on how the rate should be set." The "BBA says only a bank's Treasurer or other nominated individual can make a submission, but a trader at one firm [told Bloomberg] that a large number of employees had access to the software used to make the bank's submissions and could overwrite other's figures." *The Telegraph* reported that "senior bankers privately admit it is easy for banks to fix Libor at rates that are favorable to their own interests, as the task of setting the rate is often undertaken by relatively junior employees."[66]

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[64] *Business Times*, March 9, 2012.

[65] Liam Vaughan, Gavin Finch and Jesse Westbrook, "Life as Libor Traders Knew It Seen as Abusive," *Bloomberg*, March 2, 2012.

[66] Jamie Dunkley and Harry Wilson, "UBS accused of manipulating Libor," *The Telegraph*, March 15, 2011.

171. According to the *Daily Mail*, investigations by the SEC, Britain's Financial Services Authority, the Swiss Competition Commission, and regulators in Japan focus on three concerns: First, whether banks artificially suppressed LIBOR during the financial crisis, making banks appear more secure than they actually were; second, whether bankers setting LIBOR leaked their data to traders before officially submitting the banks' LIBOR quotes to the BBA; third, whether traders at the banks, and at other organizations (such as hedge funds), may have tried to influence LIBOR by making suggestions or demands on the bankers providing LIBOR quotes.

2. Evidence disclosed to date in the Canadian and Singapore proceedings confirms that certain Defendants conspired to manipulate Yen-LIBOR as part of the global conspiracy.

Canadian Action

172. In the Canadian action, Brian Elliott, a Competition Law Officer in the Criminal Matters Branch of the Competition Bureau, submitted an affidavit in May 2011 (the "May 2011 Elliott Affidavit") in support of "an Ex Parte Application for Orders to Produce Records Pursuant to Section 11 of the Competition Act and for Sealing Orders" in the Court of Ontario, Superior Court of Justice, East Region. Specifically, the May 2011 Elliott Affidavit sought orders requiring HSBC Bank Canada, Royal Bank of Scotland N.V., Canada Branch, Deutsche Bank, J.P. Morgan Bank Canada, and Citibank Canada (referenced collectively in the Affidavit as the "Participant Banks") to produce documents in connection with an inquiry concerning whether those banks conspired to "enhance unreasonably the price of interest rate derivatives from 2007 to March 11, 2010; to prevent or lessen, unduly, competition in the purchase, sale or supply of interest derivatives from 2007 to March 11, 2010; to restrain or injure competition unduly from 2007 to March 11, 2010; and to fix, maintain, increase or control the price for the

supply of interest rate derivatives from March 12, 2010 to June 25, 2010."

173. The May 2011 Elliott Affidavit further states the Competition Bureau "became aware of this matter" after one of the banks (referenced in the affidavit as the "Cooperating Party") "approached the Bureau pursuant to the Immunity Program" and, in connection with that bank's application for immunity, its counsel "orally proffered information on the Alleged Offences" to officers of the Competition Bureau on numerous occasions in April and May 2011. Furthermore, according to the Affidavit, counsel for the Cooperating Party "stated that they have conducted an internal investigation of the Cooperating Party that included interviews of employees of the Cooperating Party who had knowledge of or participated in the conduct in question, as well as a review of relevant internal documents." The Affidavit also notes that on May 17, 2011, counsel for the Cooperating Party provided the Competition Bureau with "electronic records," which Elliot "believe[s] to be records of some of the communications involving the Cooperating Party that were read out as part of the orally proffered information by counsel for the Cooperating Party." The press has reported that UBS was the "Cooperating Party" referred to in the Elliott Affidavits.

174. The Affidavit recounted that, the Cooperating Party's counsel, during the Class Period the Participant Banks—at times "facilitated" by "Cash Brokers"—"entered into agreements to submit artificially high or artificially low London Inter-Bank Offered Rate ('LIBOR') submissions in order to impact the Yen LIBOR interest rates published by the [BBA]." Those entities engaged in that misconduct to "adjust[] the prices of financial instruments that use Yen LIBOR rates as a basis." The Affidavit further states the Cooperating Party's counsel "indicated the Participant Banks submitted rates consistent with the agreements and were able to move Yen LIBOR rates to the overall net benefit of the Participants."

175. More specifically, counsel proffered that, during the Class Period, the Participant Banks "communicated with each other and through the Cash Brokers to form agreements to fix the setting of Yen LIBOR," which "was done for the purpose of benefiting trading positions, held by the Participant Banks, on IRDs [interest rate derivatives]." By manipulating Yen LIBOR, the Affidavit continues, "the Participant Banks affected all IRDs that use Yen LIBOR as a basis for their price." The misconduct was carried out "through e-mails and Bloomberg instant messages between IRD traders at the Participant Banks and employees of Cash Brokers (who had influence in the setting of Yen LIBOR rates)." The Affidavit details:

> IRD traders at the Participant Banks communicated with each other their desire to see a higher or lower Yen LIBOR to aid their trading position(s). These requests for changes in Yen LIBOR were often initiated by one trader and subsequently acknowledged by the trader to whom the communication was sent. The information provided by counsel for the Cooperating Party showed that the traders at Participant Banks would indicate their intention to, or that they had already done so, communicate internally to their colleagues who were involved in submitting rates for Yen LIBOR. The traders would then communicate to each other confirming that the agreed up rates were submitted. However, not all attempts to affect LIBOR submissions were successful.
>
> The Cash Brokers were asked by IRD traders at the Participant Banks to use their influence with Yen LIBOR submitters to affect what rates were submitted by other Yen LIBOR panel banks, including the Participant Banks.

176. The Affidavit indicates the Cooperating Party's counsel further proffered that at least one of the Cooperating Party's IRD traders ("Trader A" or "Trader B") communicated with an IRD trader at HSBC, Deutsche Bank, RBS, JPMorgan (two traders), and Citibank. In that regard, the Affidavit specifies:

> Trader A communicated his trading positions, his desire for a certain movement in Yen LIBOR and instructions for the HSBC trader to get HSBC to make Yen LIBOR submissions consistent with his wishes. Attempts through the HSBC trader to influence Yen LIBOR were not always successful. Trader A also

communicated his desire for a certain movement in the Yen LIBOR rate with the Cash Brokers. He instructed them to influence the Yen LIBOR submitters of HSBC. The Cash Brokers acknowledged making these attempts.

Trader A communicated his trading positions, his desire for certain movement in Yen LIBOR and asked for the Deutsche IRD trader's assistance to get Deutsche to make Yen LIBOR submissions consistent with his wishes. The Deutsche IRD trader also shared his trading positions with Trader A. The Deutsche IRD trader acknowledged these requests. Trader A also aligned his trading positions with the Deutsche IRD trader to align their interests in respect of Yen LIBOR. The Deutsche IRD trader communicated with Trader A considerably during the period of time, mentioned previously, when Trader A told a Cash Broker of a plan involving the Cooperating Party, HSBC and Deutsche to change Yen LIBOR in a staggered and coordinated fashion by the Cooperating Party, HSBC and Deutsche. Not all attempts to change the LIBOR rate were successful.

Trader A explained to RBS IRD trader who his collusive contacts were and how he had and was going to manipulate Yen LIBOR. Trader A also communicated his trading positions, his desire for certain movement in Yen LIBOR and gave instructions for the RBS IRD trader to get RBS to make Yen LIBOR submissions consistent with Trader A's wishes. The RBS IRD trader acknowledged these communications and confirmed that he would follow through. Trader A and the RBS IRD trader also entered into transactions that aligned their trading interest in regards to Yen LIBOR. Trader A also communicated to another RBS IRD trader his trading positions, his desire for a certain movement in Yen LIBOR and instructions to get RBS to make Yen LIBOR submissions consistent with his wishes. The second RBS IRD trader agreed to do this.

Trader A communicated his trading positions, his desire for a certain movement in Yen LIBOR and gave instructions for them [two JPM IRD traders] to get JPMorgan to make Yen LIBOR submissions consistent with his wishes. Trader A also asked if the IRD traders at JPMorgan required certain Yen LIBOR submissions to aid their trading positions. The JPMorgan IRD traders acknowledged these requests and said that they would act on them. On another occasion, one of the JPMorgan IRD traders asked Trader A for a certain Yen LIBOR submission, which Trader A agreed to help with. Trader A admitted to an IRD trader at RBS that he colluded with IRD traders at JPMorgan.

> Trader B of the Cooperating Party communicated with an IRD trader at Citi. They discussed their trading positions, advanced knowledge of Yen LIBOR submissions by their banks and others, and aligned their trading positions. They also acknowledged efforts to get their banks to submit the rates they wanted.

177. On May 18, 2011, the Ontario Superior Court signed the orders directing the production of the records sought by the May 2011 Elliott Affidavit. But, to the Baltimore Plaintiffs' knowledge, the Affidavit was not publicly available until February 2012.

178. Elliott submitted another affidavit in June 2011 (the "June 2011 Elliott Affidavit"), which sought an order requiring ICAP Capital Markets (Canada) Inc., believed to be one of the "Cash Brokers" referenced in the May 2011 Elliott Affidavit, to "produce records in the possession of its affiliates, ICAP PLC and ICAP New Zealand Ltd." The June 2011 Elliott Affidavit primarily detailed communications between "Trader A" (an IRD trader) of the previously-referenced "Cooperating Party" and an ICAP broker (referenced in the June 2011 Elliott Affidavit as "Broker X") during the Class Period.

179. The Affidavit specifies that Trader A "discussed his current trading positions with Broker X and where he would like to see various maturities of Yen LIBOR move." Trader A "asked Broker X for Yen LIBOR submissions that were advantageous to Trader A's trading positions," and Broker X, in turn, "acknowledged these requests and advised Trader A about his efforts to make them happen." The Affidavit further states:

> Counsel for the Cooperating Party has proffered that the expectation was for Broker X, directly or through other brokers at ICAP, to influence the Yen LIBOR submissions of Panel Banks. Broker X communicated to Trader A his efforts to get brokers at ICAP in London to influence Yen LIBOR Panel Banks in line with Trader A's requests. The efforts of Broker X included contacting a broker at ICAP in London who issued daily LIBOR expectations to the market. Trader A also communicated to Broker X his dealings with traders at other Participant Banks and a broker at another Cash Broker. Not all efforts to influence Yen LIBOR panel banks were successful. Broker X had additional discussions around the

setting of Yen LIBOR with another trader of the Cooperating Party ("Trader B").

180. On June 14, 2011, the Ontario Superior Court issued an order allowing the document requests concerning ICAP.

Singapore Proceedings

181. More information about the collusive behavior of Yen LIBOR panel banks was revealed in a Singapore wrongful termination lawsuit. In a pending legal action in Singapore's High Court, Tan Chi Min, former head of delta trading for RBS's global banking and markets division in Singapore (who worked for RBS from August 12, 2006 to November 9, 2011), alleges in his Writ of Summons and Statement of Claim that the bank condoned collusion between its traders and LIBOR rate-setters to set LIBOR at levels to maximize profits. In the same filing, Tan stated RBS commenced an internal probe following inquiries by European and U.S. authorities about potential LIBOR manipulation.

182. Tan—whom RBS terminated, asserting he engaged in "gross misconduct"—alleges that RBS's internal investigations "were intended to create the impression that such conduct was the conduct not of the defendant itself but the conduct of specific employees who the defendant has sought to make scapegoats through summary dismissals." Tan asserted RBS's rate setters took "into account the views of various employees before submitting a rate to the appropriate rate setting body." Tan further alleges that it was "part of his responsibilities to provide input and submit requests to the rate setter and there is no regulation, policy, guideline or law that he has infringed in doing this," and that "it was common practice among [RBS]'s senior employees to make requests to [RBS]'s rate setters as to the appropriate LIBOR rate." Those requests, Tan specified, "were made by, among others, Neil Danziger, Jezri Mohideen (a senior manager), Robert Brennan (a senior manager), Kevin Liddy (a senior manager) and Jeremy

Martin," and the practice "was known to other members of [RBS]'s senior management including Scott Nygaard, Todd Morakis and Lee Knight." Tan added that RBS employees "also took requests from clients (such as Brevan Howard) in relation to the fixing of LIBOR."

183. In his complaint, however, Tan alleged that he could not have influenced the rate on his own. He also stated it was "common practice" among RBS's senior employees to make requests as to the appropriate LIBOR quote.

184. Indeed, in responding to Tan's allegations, RBS admitted he had tried to improperly influence RBS rate-setters from 2007 to 2011 to submit LIBOR quotes at levels that would benefit him.

185. In subsequent filings with the Singapore High Court, Tan claims that RBS "interest-rate traders were seated with one of the main rate setters in its London office to share information, and discussed rates on conference calls," according to *Businessweek.*[67] Tan also claims that RBS's head of compliance sent an email to Tan's manager indicating that it was acceptable for a trader to request specific swap-offer rates from rate setters. According to *Businessweek*, Tan also asserts in his filing that he was told by his manager that "the practice of requesting to change the rate Libor is common in every rate setting environment in the banking industry."

3. Numerous employees from various financial institutions, including employees of Defendants and their affiliates, have been accused of improper conduct related to LIBOR.

186. Other individuals employed by the Defendants and their affiliates who have engaged in the illegal communications and conduct among Defendants to report artificially low LIBOR quotes include, but are not limited to, the following. These individuals were not

[67] Andrea Tan, "RBS rate Traders Sat With Libor Setter, Fired Banker Says," *Businessweek*, March 27, 2012.

randomly selected from Defendants but are people who have been identified by the press or government agencies as the targets of the world-wide government investigations.

(a) Yvan Ducrot was the Co-head of UBS's rates business. According to an article in *Citywire*, he was suspended by UBS in connection with international probes.[68]

(b) Holger Seger was the global head of short-term interest rates trading at UBS. According to an article in *Citywire*, Mr. Seger was suspended by UBS in connection with international probes and left his position at UBS in April 2012.[69]

(c) Paul White was the principal rate-setter for Yen-LIBOR for RBS. According to an article in *Businessweek*, Mr. White was fired by UBS in November 2011 in connection with the circumstances brought to light by the Singapore lawsuit.[70]

(d) Tan Chi Min was the head of short-term interest rate trading for Yen and the head of Delta One trading at RBS. In his Singapore lawsuit, Mr. Tan alleges that RBS fired him " because he tried to improperly influence the bank's rate setters from 2007 to 2011 to persuade them to offer Libor submissions that would benefit his trading positions."[71]

(e) Sim Suh Ting was the executive director and head of regulatory risk & compliance for South East Asia. According to the Singapore lawsuit, Mr. Ting "[S]ent an internal e-mail to Robert Brennan and Todd Morakis 'to the effect that it was acceptable for a trader to request the SOR rate setters that the SOR be set at a specific level.'"[72]

(f) Todd Morakis was the managing director at RBS. According to the

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[68] http://citywire.co.uk/new-model-adviser/ubs-suspends-traders-amid-libor-probe/a567164
[69] *Id*.
[70] http://www.businessweek.com/news/2012-03-27/rbs-rate-traders-sat-with-libor-setter-fired-employee-tan-says.
[71] *Id*.
[72] *Id*.

Singapore lawsuit, Mr. Morakis "orally confirmed to [Tan] round October [2011] that 'the practice of requesting to change the rate Libor is common in every rate setting environment in the banking industry.'" [73]

(g) Thomas Hayes was a derivatives trader for Citibank. According to an article in the *Financial Times*, Mr. Hayes "attempted to pressure colleagues and employees at other banks involved in the rate-setting process for the Tokyo Interbank Offered Rate, or Tibor."'[74]

(h) Christopher Cecere was the head of G10 trading and sales for Asia at Citibank. The Japanese FSA found that Mr. Cecere "and another Citigroup trader engaged in 'seriously unjust and malicious' conduct by asking bankers to alter data they submitted while setting a benchmark Japanese lending rate."[75]

(i) Brent Davies was a sterling trader at RBS in London. According to an article in *Businessweek*, Mr. Davies was named in Canadian Competition Law Officer Brian Elliott's May 18, 2011 affidavit as one of the traders believed to be involved in the manipulation of Yen LIBOR. According to the affidavit, Trader A explained to Mr. Davies who his collusive contacts were and how he had and was going to manipulate Yen LIBOR. Trader A also communicated his trading positions, his desire for certain movement in Yen LIBOR and gave instructions for Mr. Davies trader to get RBS to make Yen LIBOR submissions consistent with Trader A's wishes. Mr. Davies trader acknowledged these communications and confirmed that he would follow through. Trader A and Mr. Davies also entered into transactions that aligned

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[73] *Id*.

[74] http://www.ft.com/intl/cms/s/0/7089ffda-534a-11e1-aafd-00144feabdc0.html#axzz1qWqNwPlz

[75] http://www.businessweek.com/news/2012-02-16/ex-citigroup-trader-denies-wrongdoing-in-tibor-probe.html

their trading interest in regards to Yen LIBOR.[76]

(j) Will Hall was a derivatives trader at RBS in London. He was named in Canadian Competition Law Officer Brian Elliott's May 18, 2011 affidavit as one of the traders believed to be involved in the manipulation of Yen LIBOR. According to the affidavit, Trader A communicated to Mr. Hall his trading positions, his desire for a certain movement in Yen LIBOR and instructions to get RBS to make Yen LIBOR submissions consistent with his wishes, and Mr. Hall agreed to do this.[77]

(k) Paul Glands was a derivatives trader with JP Morgan. He was named in Canadian Competition Law Officer Brian Elliott's May 18, 2011 affidavit as one of the traders believed to be involved in the manipulation of Yen LIBOR. According to the affidavit, Trader A communicated to Mr. Glands his trading positions, his desire for a certain movement in Yen LIBOR and instructions to get JP Morgan to make Yen LIBOR submissions consistent with his wishes, and Mr. Glands agreed to do so.[78]

(l) Stewart Wiley was a derivatives trader with JP Morgan. He was named in Canadian Competition Law Officer Brian Elliott's May 18, 2011 affidavit as one of the traders believed to be involved in the manipulation of Yen LIBOR. According to the affidavit, Trader A communicated to Mr. Wiley his trading positions, his desire for a certain movement in Yen LIBOR and instructions to get JP Morgan to make Yen LIBOR submissions consistent with his wishes, and Mr. Wiley agreed to do so.[79]

(m) Guillaume Adolph was a derivatives trader at Deutsche Bank. He was

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[76] Brian Elliott's May 18, 2011 Affidavit, Ontario Superior Court.
[77] *Id.*
[78] *Id.*
[79] *Id.*

named in Canadian Competition Law Officer Brian Elliott's May 18, 2011 affidavit as one of the traders believed to be involved in the manipulation of Yen LIBOR. According to the affidavit, Trader A communicated to Mr. Adolph his trading positions, his desire for a certain movement in Yen LIBOR and instructions to get JP Morgan to make Yen LIBOR submissions consistent with his wishes, and Mr. Adolph agreed to do so.[80]

(n) Peter O'Leary was a derivatives trader at HSBC. He was named in Canadian Competition Law Officer Brian Elliott's May 18, 2011 affidavit as one of the traders believed to be involved in the manipulation of Yen LIBOR. According to the affidavit, Mr. O'Leary was instructed by Trader A at UBS "to get HSBC to make Yen LIBOR submissions consistent with his wishes." [81]

(o) Andrew Hamilton is a former investment advisor at RBS in London. According to an article in *Bloomberg*, Mr. Hamilton was dismissed by RBS on October 21, 2011 and now is listed as inactive on the U.K. Financial Services Authority's register of people approved to work in the industry. [82]

(p) Neil Danzinger is a former trader at RBS in London. According to an article in *Bloomberg*, Mr. Danzinger was dismissed by RBS on October 21, 2011 and now is listed as inactive on the U.K. Financial Services Authority's register of people approved to work in the industry. [83]

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[80] *Id.*
[81] *Id.*
[82] http://www.bloomberg.com/news/2012-02-09/rbs-said-to-dismiss-4-bankers-as-libor-probe-widens-to-brokers.html
[83] *Id.*

(q) Brian McAppin was Citigroup's brokerage head in Japan. According to an article in the *Wall Street Journal*, the Japanese investigation found that he "overlooked" alleged attempts by the two traders to influence interest rates despite "recognizing these actions."[84]

THE DISCOVERY RULE, FRAUDULENT CONCEALMENT, AND TOLLING OF THE STATUTE OF LIMITATIONS.

187. The Baltimore Plaintiffs did not discover and could not have discovered through the exercise of reasonable diligence that they were injured by any LIBOR manipulation, much less who caused that injury until, at the very earliest, March 15, 2011, when the government investigations into the Defendants were revealed to the public for the first time.

188. Before the government investigations into the Defendants' alleged misconduct was revealed for the first time on May 15, 2011, Baltimore Plaintiffs could not have stated facts plausibly suggesting a concerted and conspiratorial effort to under-report LIBOR.

A. The Unlawful Activity Was Inherently Self-Concealing.

189. The Defendants conspired to share their interest rate information and falsely report interest rate information to the BBA and Reuters. Their purpose was to depress USD-LIBOR to artificially low levels and thereby manipulate the price for Eurodollar futures and other exchange-based contracts.

190. By its very nature, the Defendants' alleged misconduct was self-concealing. First, the Defendants' actual or realistic interest rates were not public information, making any comparison to the rates they published to the BBA, and in turn Reuters, and any discernment of discrepancies an impossibility. Second, the Defendants' internal communications and communications among each other were not public information, rendering impossible any

[84] http://online.wsj.com/article/SB10001424052970203315804577207212704268678.html.

ascertainment of the specific misconduct of individual Defendants' or the conspiracy. Third, the Defendants' trades on the exchanges or in the markets for LIBOR products were not public information, making it impossible to discern that they were using their false LIBOR reports to cause artificial prices and engage in manipulative trading.

191. As a result of the self-concealing nature of the Defendants' collusive scheme, no person of ordinary intelligence would previously have discovered their conspiracy to manipulate LIBOR or the manipulative trades to the detriment of Baltimore Plaintiffs and the Class.

B. In Addition To Engaging In Inherently Self-Concealing Misconduct, The Defendants Engaged In A Concerted Media Strategy Of Affirmatively Providing Plausible (But False) Alternative Explanations For The (In Actuality) Manipulated LIBOR.

192. In late Spring 2008, the media began to engage in *speculation* that the LIBOR banks were under-reporting their LIBOR quotes.

193. In any event, the Defendants engaged in a media strategy that had the effect of diffusing speculation and further concealing their conduct. In particular, the Defendants provided affirmative, public assurances that there were innocent, plausible explanations for the divergence in LIBOR quotes that were the subject of media speculation. Because of Defendants' affirmative statements plaintiff's continuing ignorance as to their claims was not a result of a lack of due diligence.

194. On April 21, 2008, Dominic Konstam of Credit Suisse affirmatively stated that the low LIBOR quotes were attributable to the fact that U.S. banks, such as Citibank and JP Morgan, had access to large customer deposits and borrowing from the Federal Reserve and did not need more expensive loans from other banks. "Banks are hoarding cash because funding from the asset-backed commercial paper market has fallen sharply while money market funds are

lending on a short term basis and are restricting their supply."[85] This alternative explanation had the effect of diffusing any speculation that the Defendants were engaged in a manipulation of LIBOR.

195. On April 21, 2008, Jeffrey Rosenberg, head of credit strategy at Bank of America Securities, echoed Mr. Konstam's misrepresentation. Mr. Rosenberg affirmatively misrepresented that LIBOR's divergence was the result of systemic conditions rather than active manipulation, explaining that the BBA approach "works when both overall bank risk is low and the dispersion of risks across banks is small … [however, that] is clearly not the case currently."[86]

196. In an April 28, 2008 interview with *The Financial Times* Credit Suisse's Dominic Konstam continued to reinforce LIBOR's reliability. "Libor has been a barometer of the need for banks to raise capital. The main problem with LIBOR is the capital strains facing banks … Initially there was some confusion that LIBOR itself was the problem, with talk of the rate being manipulated and not representative of the true cost of borrowing."[87]

197. On May 16, 2008, in response to a media inquiry, JP Morgan affirmatively misrepresented that "[t]he Libor interbank rate-setting process is not broken, and recent rate volatility can be blamed largely on reluctance among banks to lend to each other amid the current credit crunch."[88] "Everyone is funding at a similar level," said Terry Belton of JP

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[85] Gillian Tett & Michael Mackenzie, "Doubts Over Libor Widen," FT.com, available at http://www.ft.com/cms/s/0/d1d9a792-0fbd-11dd-8871-0000779fd2ac.html#axzz1szdS58jE, last accessed on April 24, 2012.

[86] *Id*.

[87] Michael Mackenzie, "Talk of quick fix recedes as Libor gap fails to close," FT.com, available at http://www.ft.com/intl/cms/s/0/3da27a46-5d05-11dd-8d38-000077b07658.html#axzz1szdS58jE, last accessed on April 24, 2012.

[88] Kirsten Donovan, Jamie McGeever, Jennifer Ablan, Richard Leong & John Parry, "European, U.S.

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Morgan, "but when credit conditions worsen and we have periods like this of unprecedented turmoil, the reality is there is not a single borrowing rate." This alternative explanation had the effect of diffusing any speculation that the Defendants were engaged in a manipulation of LIBOR.

198. That very same day, Colin Withers of Citigroup assured the public that LIBOR remained reliable. "We need to let the dust settle, markets stabilize and then have a review. But the measures we are using are historic -- up to 30 to 40 years old."[89]

199. In May 2008, *The Wall Street Journal* asked various Defendants to comment on the media speculation concerning divergence in LIBOR quotes. Rather than declining or refusing to comment, the Defendants made affirmative representations designed to further conceal their wrongdoing. On May 29, 2008, Citibank affirmatively claimed innocence and stated that it continued to "submit [its] Libor rates at levels that accurately reflect our perception of the market." HBOS similarly denied the *Journal's* allegations, asserting that its rate quotes were a "genuine and realistic" indication of its borrowing costs.[90]

C. The BBA's Public Statements Also Had The Effect Of Concealing The Defendants' Misconduct.

200. In addition, throughout 2008, the BBA engaged in affirmative acts that deffused any speculation that LIBOR had been or was being manipulated. Although the BBA announced on April 17, 2008 that it would push forward its annual review of the LIBOR rate-setting

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bankers work on Libor problems," reuters.com, available at http://in.reuters.com/article/2008/05/16/markets-rates-bba-idINL162110020080516, last accessed on April 24, 2012.

[89] *Id.*

[90] Carrick Mollencamp & Mark Whitehouse, "Study Casts Doubt on Key Rate," *The Wall Street Journal*, May 29, 2008.

process, seemingly in response to media speculation concerning rate manipulation, a BBA spokesman affirmatively stated that the review was a "relatively simple auditing process to check that the figures are consistent."[91] Indeed, the same BBA spokesman assured the public that the BBA did not believe "the data we collect is anything other than accurate."[92]

201. LIBOR increased exponentially in the days following the BBA's announcement. The BBA admitted that banks "were likely to have reconsidered the information they supplied for use in setting Libor." However, on April 18, 2008, the BBA continued to affirmatively assert that rate quotes submitted prior to the BBA's announcement were more the result of "concerns about difficult market place conditions than questions about credibility."[93]

202. Much like the Defendants, the BBA also made affirmative, public assurances that there were innocent, plausible explanations for the divergence in LIBOR quotes that were the subject of media speculation. By way of example:

(a) On May 13, 2008, Angela Knight, CEO of the BBA, explained to bloomberg.com that the BBA audit was needed to determine if the divergence was the result of "difficult markets" or was "giving the right answer, just one that people don't want to hear." Ms. Knight stressed that rate swings were "hardly surprising" given credit markets.[94]

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[91] Allistair Barr, "BBA to start Libor review earlier as rate spikes," MarketWatch.com, available at http://articles.marketwatch.com/2008-04-17/news/30791717_1_lending-rates-interest-rates-libor, last accessed on April 25, 2012.

[92] Jessica Mortimer, "U.K.'s BBA confirms bringing forward Libor review but denies issues of credibility," lse.co.uk, available at http://www.lse.co.uk/FinanceNews.asp?ArticleCode=0ojr2utyp0yw3y2&ArticleHeadline=U.K.s_BBA_confirms_bringing_forward_Libor_review_but_denies_issues_of_credibility, last accessed on April 25, 2012.

[93] Peter Taylor, "Dollar Libor soars as banks rethink their borrowing rates," *The Daily Telegraph*, April 18, 2008.

[94] Ben Livesey & Gavin Finch, "Libor Set for Overhaul as Credibility Is Doubted (Update1)," bloomberg.com, available at http://www.bloomberg.com/apps/news?pid=newsarchive&sid=az3eSerjPuDA&refer=home, last accessed

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(b) On September 16, 2008, the BBA explained that the "Libor overnight rate recognizes that, in the current uncertain market, banks are looking to their own liquidity as the priority … This is particularly reflected in the US Dollar because of the well-known world wide shortage of this currency."[95]

203. The BBA also attempted to defuse speculation premised on LIBOR's divergence from the default insurance market. The BBA stated that LIBOR was reliable, and that the financial crisis had caused many indicators to act in unusual ways. On May 29, 2008, a spokesman for the BBA stated that there was "no indication" that the default insurance market provided a picture of banks' borrowing costs more accurate than that provided by LIBOR.[96]

204. In sum, the BBA's alternative explanations, in conjunction with the Defendants' affirmative representations and the inherently self-concealing nature of the conduct at issue, made it impossible for Baltimore Plaintiffs to state facts setting forth a plausible manipulation claim before the public announcement of government investigations.

E. The Truth Was Not Revealed For The First Time Until March 15, 2011

205. The truth was not revealed until March 15, 2011, when UBS released its annual report 20-F stating that it had received subpoenas from the Department of Justice, the SEC, the

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on April 25, 2012.

[95]Michael Mackenzie & David Oakley, "Banks make their own liquidity a priority," FT.com, available at http://www.ft.com/cms/s/0/20d62052-8424-11dd-bf00-000077b07658.html#axzz1t4N9ezuQ, last accessed on April 25, 2012.

[96]Michael Mackenzie, "Talk of quick fix recedes as Libor gap fails to close," FT.com, available at http://www.ft.com/intl/cms/s/0/3da27a46-5d05-11dd-8d38-000077b07658.html#axzz1szdS58jE, last accessed on April 24, 2012.

CFTC, as well as an information request from the Japanese Financial Supervisory Agency, all relating to its interest rate submissions to the BBA. UBS described the focus of the investigation as "whether there were improper attempts by UBS, either acting on its own or together with others, to manipulate LIBOR at certain times."

206. In addition, on March 16, 2011, the *Financial Times* reported that "[a]ll the panel members are believed to have received at least an informal request for information—an earlier stage in an investigation process before a subpoena."[97]

207. In the weeks and months that followed, the extent of the Defendants' collusive scheme to manipulate the value of USD-LIBOR was publicly revealed for the first time. A steady stream of media reports revealed that a number of domestic and foreign regulatory and enforcement agencies had begun to investigate the Defendants, finally indicating to the public that the Defendants had indeed conspired to manipulate USD-LIBOR. By way of example:

(a) On March 23, 2011, *Bloomberg* revealed that Citigroup Inc., Deutsche Bank, BAC, and JPMorgan Chase were asked by U.S. regulators "to make employees available to testify as witnesses" in connection with the regulators' ongoing investigation.[98]

(b) The next day, the *Financial Times* reported that Defendant Barclays was "emerging as a key focus of the US and U.K. regulatory probe into alleged rigging of [LIBOR]." According to the Times, investigators were "probing whether communications between the bank's traders and its treasury arm," which helps set LIBOR, "violated 'Chinese wall' rules that prevent information-sharing between different parts of the bank." The *Times*

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[97] Brooke Masters, Patrick Jenkins & Justin Baer, "Big banks investigated over Libor," FT.com, available at http://www.ft.com/intl/cms/s/0/ab563882-4f08-11e0-9c25-00144feab49a.html#axzz1szdS58jE, last accessed on April 24, 2012.

[98] Joshua Gallu and Donal Griffin, "Libor Probe Spurs Witness Call-up at Citigroup, Deutsche Bank," *Bloomberg*, March 23, 2011.

further stated investigators were "said to be looking at whether there was any improper influence on Barclays' submissions" during 2006-2008 for the BBA's daily survey used to set LIBOR.[99]

(c) On May 23, 2011, the *Telegraph* reported that the Federal Bureau of Investigation ("FBI") was working with regulators in connection with the LIBOR investigations, and the FBI's British counterpart, the Serious Fraud Office, "revealed it is also taking an active interest."

(d) On October 19, 2011, *The Wall Street Journal* reported that the European Commission "seized documents from several major banks" the previous day, "marking the escalation of a worldwide law-enforcement probe" regarding the Euro Interbank Offered Rate, or Euribor—a benchmark, set by more than 40 banks, used to determine interest rates on trillions of euros' worth of euro-denominated loans and debt instruments. The Euribor inquiry, *The Wall Street Journal* explained, constitutes "an offshoot" of the broader LIBOR investigation that had been ongoing for more than a year.

208. Moreover, while the governments' investigations became public information in March 2011, the facts necessary to plausibly state claims for conspiracy and manipulation have become available as the Defendants' improper motive finally became apparent. For example, as discussed above, affidavits filed in a Canadian regulatory proceeding investigating Yen-LIBOR revealed that traders with the Canadian subsidiaries and/or affiliates of Defendants routinely discussed trading strategies, expected LIBOR quotes, and other confidential business information in an attempt to manipulate the value of Yen-LIBOR and commodities whose value is based directly on that measure.

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[99] Brooke Masters and Megan Murphy, "Barclays at centre of Libor inquiry," FT.com, March 24, 2011, available at http://www.ft.com/intl/cms/s/0/1c3228f6-5646-11e0-82aa-00144feab49a.html#axzz1sJNEDIiI, last accessed on April 17, 2012.

209. It is noteworthy that, in stark contrast to their earlier media campaign of offering innocent (but false) explanations for their LIBOR quotes, the Defendants began simply declining to comment to the media. For example, after March 15, 2011, representatives of Deutsche Bank, Bank of America, Citigroup, Credit Suisse, JP Morgan, Barclays and Lloyds have specifically declined to comment in response to inquiries concerning whether the Defendants colluded to artificially reduce LIBOR.

210. Likewise, in stark contrast to its 2008 conclusions that LIBOR was reliable, in February 2011 the BBA expanded the Panel of banks that contribute to U.S. dollar LIBOR from sixteen to twenty members.

211. The Baltimore Plaintiffs and members of the Class had no knowledge of the unlawful conduct alleged in this Complaint, or of any facts that could or would have led to the discovery thereof, until the government investigations became public on March 15, 2011.

212. Because the Defendants employed acts and techniques that were calculated to wrongfully conceal the existence of such illegal conduct, the Baltimore Plaintiffs and the Class could not have discovered the existence of this unlawful conduct any earlier than its public disclosure on March 15, 2011.

213. Because of the Defendants' fraudulent concealment, any applicable statute of limitations affecting or limiting the rights of action by the Baltimore Plaintiffs or members of the Class has been tolled during the period of such fraudulent concealment.

E. <u>Other Tolling Principles.</u>

214. In addition, any applicable statute of limitations affecting or limiting the rights of action by the Baltimore Plaintiffs or members of the Class has been tolled by the filing of other class actions against the Defendants, commencing in April 2011.

215. The Defendants are equitably estopped to assert that any otherwise applicable period of limitations has run.

216. The Defendants' conduct as alleged herein constitutes a continuing violation of law. The Baltimore Plaintiffs and members of the Class bring this action within two years of the end of such continuing violation.

DEFENDANTS' ANTITRUST VIOLATIONS

217. During the Class Period, as explained above, Defendants and their co-conspirators engaged in a continuing agreement, understanding, or conspiracy in restraint of trade to artificially fix, maintain, suppress and stabilize LIBOR and thus the prices and rates of return on LIBOR-Based Derivatives sold by them.

218. In formulating and effectuating the contract, combination, or conspiracy, Defendants and their co-conspirators engaged in anticompetitive activities, the purpose and effect of which were to fix, maintain, suppress and otherwise make artificial the price of LIBOR-Based Derivatives. These activities included the following:

(a) Defendants participated in meetings and/or conversations to unlawfully discuss their reporting of their borrowing rates to Thomson Reuters for calculation of the daily LIBOR;

(b) Defendants agreed during those meetings and conversations to unlawfully report their borrowing rates to Reuters for calculation of LIBOR in order to drive down LIBOR and otherwise to depress or make artificial LIBOR;

(c) Defendants signaled to one another their intention to depress or otherwise make artificial LIBOR and colluded with one another in achieving this unlawful and anticompetitive purpose; and

(d) Pursuant to such an unlawful conspiracy in restraint of trade, Defendants knowingly and collusively traded in order to depress or otherwise make artificial the price of LIBOR-Based Instruments.

ALLEGATIONS OF ANTITRUST INJURY TO THE BALTIMORE PLAINTIFFS AND THE CLASS

219. Defendants' anticompetitive conduct had severe adverse consequences on competition in that The Baltimore Plaintiffs and other members of the Class who traded in LIBOR-Based Derivatives during the Class Period were trading at artificially determined prices that were made artificial as a result of Defendants' unlawful conduct. As a consequence thereof, The Baltimore Plaintiffs and the Class suffered financial losses and were, therefore, injured in their business or property.

FIRST CLAIM FOR RELIEF
VIOLATION OF SECTION 1 OF THE SHERMAN ACT

220. The Baltimore Plaintiffs incorporate by reference the preceding allegations.

221. Defendants and their unnamed co-conspirators entered into and engaged in a conspiracy in unreasonable restraint of trade in violation of Section 1 of the Sherman Act and Section 4 of the Clayton Act.

222. During the Class Period, Defendants controlled what LIBOR quote would be reported and therefore controlled the rates of return on LIBOR-Based Derivatives sold by them.

223. The conspiracy consisted of a continuing agreement, understanding or concerted action between and among Defendants and their co-conspirators in furtherance of which Defendants fixed, maintained, suppressed and stabilized LIBOR and thus the prices and rates of return on LIBOR-Based Derivatives sold by them. Defendants' conspiracy is a per se violation of the federal antitrust laws and is, in any event, an unreasonable and unlawful restraint of trade

and commerce.

224. Defendants' conspiracy, and resulting impact on the market for LIBOR-Based Derivatives, occurred in or affected interstate and foreign commerce.

225. As a proximate result of Defendants' unlawful conduct, the Baltimore Plaintiffs and members of the Class have suffered injury to their business or property.

226. The Baltimore Plaintiffs and members of the Class are each entitled to treble damages for the violations of the Sherman Act alleged herein.

SECOND CLAIM FOR RELIEF
UNJUST ENRICHMENT AND RESTITUTION

227. The Baltimore Plaintiffs incorporate by reference the preceding allegations.

228. It would be inequitable for Defendants to be permitted to retain the benefit which Defendants obtained from their manipulative acts and at the expense of the Baltimore Plaintiffs and members of the Class.

229. The Baltimore Plaintiffs and members of the Class are entitled to the establishment of a constructive trust impressed on the benefits to Defendants from their unjust enrichment and inequitable conduct.

230. Alternatively or additionally each Defendant should pay restitution or its own unjust enrichment to the Baltimore Plaintiffs and members of the Class.

RELIEF SOUGHT

Accordingly, the Baltimore Plaintiffs demands relief as follows:

A. That the Court determine that this action may be maintained as a class action under Rule 23(b)(3) of the Federal Rules of Civil Procedure, that the Baltimore Plaintiffs be

appointed as class representative, and that the Baltimore Plaintiffs' counsel be appointed as counsel for the Class;

B. That the unlawful conduct alleged herein be adjudged and decreed to be an unlawful restraint of trade in violation of Section 1 of the Sherman Act and Section 4 of the Clayton Act;

C. That Defendants, their subsidiaries, affiliates, successors, transferees, assignees and the respective officers, directors, partners, agents, and employees and all other persons acting or claiming to act on their behalf, be permanently enjoined and restrained from continuing and maintaining the conspiracy alleged in the Complaint;

D. That the Baltimore Plaintiffs and the Class recover damages, as provided under federal antitrust laws, and that a joint and several judgment in favor of the Baltimore Plaintiffs and the Class be entered against Defendants in an amount to be trebled in accordance with such laws;

E. That the Baltimore Plaintiffs and the Class recover their costs of the suit, including attorneys' fees, as provided by law; and

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

DEMAND FOR JURY TRIAL

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

Dated: April 30, 2012

Respectfully submitted,

/s/ Arun Subramanian

Arun Subramanian
William Christopher Carmody
Suyash Agrawal
SUSMAN GODFREY L.L.P.
560 Lexington Avenue, 15th Floor
New York, New York 10022
Telephone: (212) 336-8330
Facsimile: (212) 336-8340
Email: asubramanian@SusmanGodfrey.com
Email: sagrawal@SusmanGodfrey.com

Marc M. Seltzer
SUSMAN GODFREY L.L.P.
1901 Avenue of the Stars, Suite 950
Los Angeles, CA 90067
Telephone: (310) 789-3100
Facsimile: (310) 789-3150
Email: MSeltzer@SusmanGodfrey.com

Michael D. Hausfeld
William P. Butterfield
Hilary K. Scherrer
Nathaniel C. Giddings
HAUSFELD LLP
1700 K St. NW, Suite 650
Washington, D.C. 20006
Telephone: (202) 540-7200
Facsimile: (202) 540-7201
Email: mhausfeld@hausfeldllp.com
Email: wbutterfield@hausfeldllp.com
Email: hscherrer@hausfeldllp.com
Email: ngiddings@hausfeldllp.com

Interim Lead Counsel for the Baltimore Plaintiffs and the Proposed Class

Max R. Schwartz (MS2517)
Donald A. Broggi
SCOTT+SCOTT LLP
500 Fifth Avenue, 40th Floor
New York, NY 10110
Telephone: (212) 223-6444

Facsimile: (212) 223-6334
Email: mschwartz@scott-scott.com
Email: dbroggi@scott-scott.com

Christopher M. Burke
SCOTT+SCOTT LLP
707 Broadway, Suite 1000
San Diego, CA 92101
Telephone: (619) 233-4565
Facsimile: (619) 233-0508
Email: cburke@scott-scott.com

Additional Counsel for Plaintiffs