

ATTORNEY GENERAL OF THE STATE OF NEW YORK  
INVESTOR PROTECTION BUREAU

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In the Matter of  
DEUTSCHE BANK SECURITIES INC.

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**SETTLEMENT AGREEMENT**

The Office of the Attorney General of the State of New York, Eric T. Schneiderman (“NYAG”) commenced an investigation pursuant to Section 352 et seq. of the General Business Law (the “Martin Act”) and Executive Law § 63(12) into potentially illegal conduct by Deutsche Bank Securities Inc. (“Deutsche Bank”) regarding Deutsche Bank’s electronic order routing services. A parallel investigation was conducted by the United States Securities and Exchange Commission (“SEC”).

**I. OVERVIEW**

This Settlement Agreement (“Agreement”) resolves the NYAG’s investigation. Deutsche Bank admits the facts set forth in Section III, acknowledges the jurisdiction of the NYAG over the conduct set forth herein, and acknowledges that its conduct violated federal and New York State securities laws. This Agreement imposes on Deutsche Bank the obligation to refrain from engaging in future actions in violation of state laws, and imposes a total penalty of \$37,000,000, half of which will be paid to the State of New York and half to the SEC.<sup>1</sup>

**II. NYAG’s FINDINGS**

1. Broker-dealers like Deutsche Bank often tout their proprietary routing technology as a means to differentiate themselves from their competitors. However, when broker-dealers choose to tout the material operations and functionality of their order routing technology, they must do so accurately, without material misrepresentations or omissions.

2. This Settlement Agreement arises from Deutsche Bank’s material misstatements and omissions regarding certain aspects of its operation of SuperX+, a “smart order router” that primarily routes client equity orders to alternative trading systems (“ATS”) in the United States known as “dark pools.”

3. As set forth in greater detail in Section III, below, Deutsche Bank offers several related products and services, including electronic equities-trading algorithms, SuperX+, and a dark pool named “SuperX.”

4. Beginning in late 2010 and continuing through at least late 2014, Deutsche Bank marketed to clients and potential clients a service called the “Dark Pool Ranking Model” (“DPRM”). The DPRM was designed to assist in measuring the performance of venues to which Deutsche Bank might route orders via SuperX+, as a means of determining which dark pools would be eligible to receive

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<sup>1</sup> Deutsche Bank has consented to the entry by the SEC of an Order Instituting Administrative and Cease-and-Desist Proceeding in Administrative Proceeding File No. [\_\_\_\_\_] concerning matters substantially related to those set forth in this Agreement.

priority when Deutsche Bank routed orders. The DPRM was designed to be “updated” periodically in order to recalculate the perceived performance of the various pools it measured.

5. In various written materials disseminated throughout 2012, 2013, and early 2014, clients and potential clients were led to believe that the DPRM was in fact being updated with new, “objective” data in order to reflect the current state of trading in the pools to which Deutsche Bank routed orders. That was not the case, because from January 2012 through February 2014, the DPRM was not fully operating, and as a result, new Rankings and Fill Probabilities were calculated only once. Deutsche Bank used stale execution quality calculations to determine how to route orders, meaning that client orders were routed based on data that was, in some cases, over one year old.

6. Further, during this period of time, Deutsche Bank added new venues to the list of venues to which SuperX+ routed orders, but never objectively evaluated the execution quality of those venues for inclusion into the DPRM (as it was telling clients it was doing). Because Deutsche Bank lacked historic data with respect to these new venues, Deutsche Bank employees merely estimated what those venues’ rankings should be. In certain instances, though, those estimated rankings did not accurately predict the pool’s actual performance.

7. As a result of the facts set forth in Section III, the NYAG finds that Deutsche Bank violated the Martin Act and Executive Law § 63(12).

8. The NYAG further finds that Deutsche Bank cooperated with its investigation, and took adequate steps to remediate the internal processes and procedures that led to the violations discussed herein.

### **III. ADMISSIONS OF FACT**

Deutsche Bank admits the following:

9. Deutsche Bank Securities Inc. (“Deutsche Bank”), an affiliate of Deutsche Bank AG, is a broker-dealer registered under the Securities Exchange Act of 1934 and an investment adviser registered under the Investment Advisers Act of 1940, with offices in the United States. Since 2010, Deutsche Bank has operated SuperX+, an order router that primarily routes to dark pools. Between January 1, 2012, and February 28, 2014, SuperX+ routed approximately 1.39 billion orders, representing approximately 1.78 trillion shares. Since 2009, Deutsche Bank also has operated SuperX, a dark pool that operates pursuant to Regulation ATS. As of July 2016, SuperX was the fourth-largest alternative trading system (“ATS”) in the United States, as measured by total trades and total shares traded in equities on a weekly basis.

#### **Deutsche Bank’s Dark Pool Ranking Model**

10. One of Deutsche Bank’s smart order routers is known as SuperX+. SuperX+ primarily routes to dark pools, and also routes some non-displayed orders to exchanges.

11. Beginning in April 2010 and continuing throughout the Relevant Period (January 2012 through February 2014), Deutsche Bank marketed to clients and potential clients a component of SuperX+ called the “Dark Pool Ranking Model” (“DPRM”).

12. The DPRM was designed to assist in measuring the performance of the venues to which Deutsche Bank might route orders via SuperX+, and in identifying venues eligible to receive those orders. Between April 2010 and February 5, 2014, the DPRM evaluated venues by measuring price movement

between the time an order routed by Deutsche Bank arrived at a venue and the time the order was executed.

13. The venues measured by the DPRM included Deutsche Bank's own dark pool, SuperX. SuperX+ relied on the DPRM—among other things, including client instructions—to help determine where to route certain orders.

14. The output of the DPRM was a tiered ranking of the venues to which SuperX+ routed orders ("DPRM Ranking"). Those tiers determined which venues were eligible to receive different categories of orders routed by SuperX+. In the absence of specific client instructions or a Deutsche Bank algorithm specifying that an order should be sent to a particular venue, SuperX+ generally applied the DPRM to all orders.

15. In general, depending on their trading strategies and preferences, clients would designate their orders as "aggressive," "neutral," or "passive." The DPRM worked as follows: For orders marked as "aggressive"—meaning that the client or Deutsche Bank algorithm placed priority on receiving an execution—100% of the venues to which SuperX+ routed were eligible to receive the order, regardless of their DPRM Ranking. For orders marked "neutral," only the top 80% of venues, as ranked by the DPRM, were eligible, with the lowest 20% of ranked venues ineligible. For orders marked "passive"—reflecting lower priority on receiving an execution and increased priority on price—only the top 60% of venues were eligible. In its marketing materials, on its website and in direct communications, Deutsche Bank informed its clients of these thresholds.

16. After using the DPRM Rankings to determine the venues eligible to receive an order, SuperX+ then determined how to route that order to one or more specific venues. Absent client instructions or other limiting factors (such as a venue's minimum order size requirements), SuperX+ made initial routing decisions based on its calculation of historical fill rates at different venues ("Fill Probability"). This calculation was designed to use historical data to measure the likelihood of an order getting executed at each venue. Deutsche Bank intended to perform the Fill Probability calculations at the same time and as part of the same process that generated the DPRM Rankings.

17. If a client order was sufficiently large to allow for allocation to all eligible venues, SuperX+ generally divided that order among all of those venues. For example, if SuperX+ received a passive order for 1,000 shares, and the DPRM Rankings identified ten venues eligible to receive passive orders (because they comprised the top 60% of venues in the DPRM rankings), SuperX+ may have sent 100 shares to each eligible venue.

18. SuperX+ did not make such an allocation with smaller orders. Small orders were divided among a limited subset of eligible venues based on Fill Probability. For example, if SuperX+ received a passive order for 500 shares and the DPRM Rankings identified ten eligible venues, SuperX+ may have initially routed 100 shares to each of the five venues with the highest Fill Probability scores.

19. After Deutsche Bank routed orders it would receive real time market feedback as to whether the order(s) were executed and SuperX+ would reallocate any unfilled portion of the orders. SuperX+ based its reallocation decisions on various factors, including, but not limited to, current market conditions (*i.e.*, venues demonstrating an ability to execute the order immediately received preference over those that did not) or a desire to rotate among additional eligible venues.

20. In sum, the DPRM Rankings determined which venues were eligible to receive an order, whereas Fill Probability determined which of those venues actually received initial orders (or portions thereof).

### **Deutsche Bank's Initial Periodic Updates to Dark Pool Ranking Model**

21. Deutsche Bank designed the DPRM to periodically update its DPRM Rankings and Fill Probability scores. This was done in the following manner: a Deutsche Bank employee would execute a series of computer instructions that would analyze the relevant execution data over the period since the last rankings. That process generated a table containing the DPRM Rankings and Fill Probability scores. Other Deutsche Bank personnel would then download the table into a file for incorporation into SuperX+'s logic.

22. Following the DPRM's inception in April 2010, Deutsche Bank updated the DPRM Rankings (*i.e.*, analyzed the collected data and assigned venues to tiers using the aforementioned process) and Fill Probability scores for all venues to which SuperX+ routed on five occasions in 2010 and 2011, including four times in 2011, with the last update occurring on December 20, 2011.

23. Each time the calculations were updated in 2010 and 2011, the DPRM Rankings resulted in SuperX being ranked in the highest tier, thus ensuring its eligibility for orders of all categories (passive, neutral, or aggressive).

### **Deutsche Bank's Representations Regarding Dark Pool Ranking Model**

24. Deutsche Bank made a number of statements regarding the DPRM to clients and potential clients from 2010 through February 2014. Those statements included:

- “The quantitative core of the [SuperX+] dark pool allocation algorithm is the Dark Pool Ranking Model (DPRM), a model that determines certain advantages of placing orders in one dark venue over another.”
- “At the core of SuperX Plus is the Dark Pool Ranking Model.”
- “The core of [SuperX+] is a sophisticated dark pool ranking model that profiles dark pools based on transaction cost, statistically determined compatibility for each order, client order attributes, and real time market conditions. This allows users to interact only with dark pools selected by [SuperX+'s] dark pool ranking model.”
- “. . . the relative benefit of two dark pools is calculated from a statistical test . . . that measures the confidence with which realized execution costs are differentiated from pre-trade estimates using a bright-pool market impact model. Dark venues distinguished with greater confidence are ranked higher than those with less. Final rankings are constructed from averages taken over all such pair-wise comparisons.”
- “[SuperX+] utilises our sophisticated ranking model that enables you to achieve smarter executions by profiling each Dark Pool based on transaction cost, order attributes and real-time market conditions. Each order interacts only with Dark Pools that are compatible by our statistically determined ranking model, accessing a smarter source of liquidity unique to each order.”
- “[The DPRM] ranks liquidity on a real-time and historical basis to determine the optimal sources according to the order characteristics and urgency.”

- “Although the higher-ranked dark pool may be a preferred venue, we may still submit orders to the lower-ranked pool. This is determined by the client’s overall objective expressed via the urgency submitted with the order.”
- “Our statistical dark pool ranking model smartly routes and selects optimal pools of liquidity on an order by order basis . . .”
- “We study the performance of the various external dark pools we connect to broken into categories based on market cap and volatility of the names. We then periodically rank the pools based on their performance in each category. Performance is calculated by comparing the average price per venue versus the arrival price of the order aggregated within each category of stocks.”

### **Deutsche Bank Did Not Update the Dark Pool Ranking Model for 14 Months**

25. Between December 20, 2011 and February 19, 2013, Deutsche Bank did not update the DPRM Rankings and Fill Probability calculations.<sup>2</sup> Deutsche Bank was unable to do so due to an inadvertent coding error, discussed below.

26. Because Deutsche Bank did not update the DPRM, SuperX+ continued to route client orders based on the DPRM Rankings and Fill Probability scores from December 20, 2011. Between January 1, 2012, and February 28, 2013, SuperX+ routed more than 452 million orders, constituting more than 431 billion shares.

27. Deutsche Bank did not inform clients or potential clients that it was unable to update its DPRM between December 20, 2011, and February 19, 2013, and that it instead used Rankings and Fill Probability scores from December 20, 2011. Nevertheless, during this time period, Deutsche Bank continued to provide materials to clients and potential clients indicating that the DPRM was a tool that the firm relied on in routing orders, stating, among other things, that the DPRM “ranks liquidity,” is “[a]t the core of SuperX Plus,” is used “to determine the optimal sources” for routing the order, and Deutsche Bank “periodically rank[s] the pools based on their performance.” Deutsche Bank also did not correct prior similar statements it had made regarding the DPRM’s operations.

### **Deutsche Bank Added New Venues to the DPRM and Ranked Them Based on Subjective Assessment**

28. During this first time period when Deutsche Bank did not generate new Rankings or Fill Probability scores (January 2012 through February 2013), Deutsche Bank connected SuperX+ to seven venues to which it had not previously routed orders.

29. Because Deutsche Bank had not previously routed orders to those venues, it did not have historical execution data to use in calculating Rankings and Fill Probability scores for inclusion in the DPRM. Instead, Deutsche Bank personnel chose existing venues they believed to be similar to the new venues, copied those existing venues’ Rankings and Fill Probability scores, and assigned them to the new venues.

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<sup>2</sup> On March 26, 2012, Deutsche Bank attempted to update the DPRM using the process outlined above, but it was able to update the DPRM Rankings and Fill Probability scores for only one of the 27 venues subject to the DPRM at that time.

30. For certain new venues, Deutsche Bank used Fill Probabilities that, as it turned out, overstated or understated the newly-added venues' actual performance. For example, upon connecting to a new venue in May 2012, Deutsche Bank copied the high Fill Probabilities for a significantly larger dark pool and assigned those scores to the new venue. When Deutsche Bank next ran the DPRM in February 2013, the data demonstrated that the new venue did not mirror the dark pool Deutsche Bank had copied in May 2012, and, in fact, had much lower Fill Probability scores. However, because Deutsche Bank had applied the overstated scores for nine months, the new venue was one of the first pools selected by SuperX+ when initially routing smaller orders. This condition persisted until February 2013.

31. Deutsche Bank did not inform clients or potential clients that it added new venues to the DPRM based on subjective judgment rather than historical execution data, and then retained those Rankings and Fill Probabilities until February 19, 2013. Deutsche Bank also did not inform clients or potential clients that, as a result, SuperX+ made routing decisions for nine months or more based on numbers that diverged meaningfully from venues' actual performance.

32. Deutsche Bank did not correct prior representations to clients and potential clients, such as those stating that the DPRM was a "quantitative" model and that "each order interacts only with Dark Pools that are compatible by our statistically determined ranking model, accessing a smarter source of liquidity unique to each order."

### **Deutsche Bank Updated the Model, Overrode Its Own Ranking, and Failed to Update for Another Year**

33. On February 19, 2013, Deutsche Bank tried to update the DPRM. Deutsche Bank was able to update the DPRM only by deviating from its normal procedure and running the process in batches.

34. In this update, Deutsche Bank's own dark pool, SuperX, received a ranking in the lowest tier, meaning that it would be ineligible to receive orders marked as "neutral" or "passive."

35. At the time, Deutsche Bank personnel did not know what caused this drop in SuperX's DPRM Ranking, but they believed that it was an error of some sort. Deutsche Bank personnel manually overrode SuperX's DPRM Ranking, placing SuperX at the top of the Rankings.<sup>3</sup> Deutsche Bank did not disclose this override, which remained in place until July 2014. Deutsche Bank did not override the DPRM Rankings of any other venues. Deutsche Bank also did not attempt to determine the cause of its difficulties in updating the DPRM until July 2014.

36. As a result of Deutsche Bank's continued problems with the DPRM, at least two other dark pools received inflated rankings on February 19, 2013, which remained in place for the next twelve months. If Deutsche Bank had operated the DPRM as it had represented, those pools would have been ineligible (subject to client instructions) to receive certain categories of orders. Instead, the DPRM Rankings erroneously rendered one of the pools eligible to receive passive orders and the other eligible to receive neutral orders. As a result, these pools received millions of orders that should not have been sent to them had Deutsche Bank operated the DPRM as disclosed. Between February 19, 2013, and February 5, 2014, Deutsche Bank sent 1.7 million orders marked as passive, representing 197.9 million shares, to

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<sup>3</sup> A subsequent analysis commissioned by Deutsche Bank during the course of the investigation that gave rise to this order determined that the same coding error that had prevented Deutsche Bank from updating the DPRM had also caused the erroneous drop in Super X's ranking in February 2013. That analysis demonstrated that had Deutsche Bank updated the DPRM in February 2013 without the coding error, SuperX would have been ranked in the top tier and thus been eligible to receive all classes of client orders during the Relevant Period.

the first dark pool, and 1.9 million orders marked as neutral, representing 327 million shares, to the second dark pool.

37. Deutsche Bank did not perform new calculations of the DPRM Rankings and Fill Probability scores between February 19, 2013, and February 5, 2014.<sup>4</sup> Deutsche Bank instead continued to use the February 19, 2013 DPRM Rankings and Fill Probability scores for all dark pools, with several exceptions.<sup>5</sup> During this time period, SuperX+ routed more than 816 million orders, comprising more than 1.16 trillion shares.

38. Between February 2013 and February 2014, Deutsche Bank continued to reference the DPRM in statements to clients and potential clients, stating, among other things, that it “ranks pools based on execution quality,” is “the core of SuperX+,” and “periodically rank[s] the pools based on their performance in each category.” Deutsche Bank did not inform clients or potential clients that it was unable to update the DPRM during this time period, that it manually ranked its own dark pool at the top of the DPRM Rankings, that at least two venues received orders that they should not have received had Deutsche Bank operated the DPRM as it had represented, or that Deutsche Bank continued to use the DPRM Rankings from December 2011 for three venues, and manually assigned scores from May 2012 for another venue. Deutsche Bank also did not correct prior statements, described above, regarding the DPRM’s operations.

#### **Deutsche Bank Determined That Stale Dark Pool Rankings Were Caused By Data Errors, and Revised Its Ranking Methodology**

39. In February 2014, after several years of development, Deutsche Bank implemented a new and different statistical methodology for calculating the DPRM Ranking. The new methodology ranked the pools based on a calculation of the amount of price “reversion” in venues to which SuperX+ routes. More specifically, the updated methodology measured the change in price of an order routed by Deutsche Bank between the time of order execution and 20 milliseconds after order execution, and used that metric to determine venue quality. The new methodology has operated continuously since February 2014 and remains in use to the present day.

40. In July 2014, Deutsche Bank discovered why it had had such difficulty updating the DPRM during the Relevant Period. Throughout that time period, a coding error in Deutsche Bank’s systems had corrupted the data input into the DPRM and had made it impossible for Deutsche Bank’s computers to process the proper execution quality data. Also in July 2014, Deutsche Bank management ordered the immediate removal of the manual override to SuperX’s ranking.

41. As initially designed, the first generation DPRM included in its calculations data from only “non-algorithmic” orders, which Deutsche Bank defined, for these purposes, to mean orders that a Deutsche Bank trader or client directed to SuperX+. Thus, prior to February 2014, Deutsche Bank

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<sup>4</sup> Deutsche Bank attempted to update the DPRM on June 7, 2013 and October 2, 2013, but could not make new calculations of venue performance on these dates.

<sup>5</sup> First, as discussed above, Deutsche Bank manually overrode the DPRM Ranking for SuperX and continued to rank SuperX first until July 2014. In addition, Deutsche Bank did not update the DPRM Rankings for four venues on February 19, 2013. For three of the venues, Deutsche Bank continued to use the December 20, 2011, DPRM Rankings until February 5, 2014. For the fourth, a newly-connected venue, Deutsche Bank used the DPRM Ranking it manually assigned to the venue on May 4, 2012.

intended to exclude, from the data input into the DPRM, orders that originated in a Deutsche Bank trading or execution algorithm.<sup>6</sup>

42. In 2011, Deutsche Bank began transitioning from one trading platform to another. By late 2011, a coding error that occurred in connection with that transition caused Deutsche Bank's systems to begin unintentionally including algorithmic orders in the data input into the DPRM. By early 2012, those orders appeared in the DPRM's input data set in such large quantities that Deutsche Bank's computer system was unable to process the quantity of data, and thus unable to update the Rankings and Fill Probability scores.<sup>7</sup> As discussed above, Deutsche Bank input algorithmic orders into the first generation DPRM for two years (until it changed the DPRM methodology) and did not realize it had done so until July 2014.

#### **Deutsche Bank Failed to Amend Its Form ATS**

43. Between August 2009 (when Deutsche Bank filed its Form ATS initial operation report) and May 2015 (when prompted by SEC staff), Deutsche Bank did not attach to its Form ATS a copy of SuperX's subscriber manual and other materials provided to subscribers. Moreover, Deutsche Bank did not amend its Form ATS to correct certain information about the operations of the ATS, including changes to its hours of operations and use of benchmark orders.

#### **IV. ACKNOWLEDGMENT OF JURISDICTION**

Deutsche Bank acknowledges that the NYAG has jurisdiction over the matters set forth herein pursuant to the Martin Act and Executive Law § 63(12).

#### **V. ADMISSION OF VIOLATION OF LAW**

Deutsche Bank admits as a result of the conduct set forth in Section III, above, Deutsche Bank violated federal and New York State securities laws.

#### **VI. AGREEMENT**

WHEREAS, Deutsche Bank admits that as a result of the conduct set forth in Section III, above, Deutsche Bank violated federal and New York State securities laws;

WHEREAS, Deutsche Bank acknowledges that the NYAG has jurisdiction over the matters set forth herein pursuant to the Martin Act and Executive Law § 63(12).

WHEREAS, Deutsche Bank and its subsidiaries, representatives, employees, agents, assigns, and successors-in-interest will comply with, and cease and desist from engaging in any actions in further violation of federal and New York State securities laws;

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<sup>6</sup> Deutsche Bank intended to, and did, incorporate algorithmic orders into the input of the new methodology implemented in February 2014.

<sup>7</sup> As discussed above, Deutsche Bank was able to update the DPRM on February 19, 2013, only by running the DPRM in batches. Due to the coding error, the February 2013 DPRM Rankings for two pools were inflated, with these venues receiving millions of orders contrary to the DPRM methodology Deutsche Bank claimed it was using. Also due to the same coding error, SuperX erroneously received a low ranking, which Deutsche Bank manually overrode.



WHEREAS, the NYAG is willing to accept the terms of this Agreement pursuant to Executive Law § 63(15) and to discontinue its current investigation of Deutsche Bank;

WHEREAS, Deutsche Bank has agreed to pay a penalty as set forth below; and

WHEREAS, the parties each believe that the obligations imposed by this Agreement are prudent and appropriate;

IT IS HEREBY UNDERSTOOD AND AGREED by and between the parties that:

### **Penalty and Censure**

44. In consideration of this Agreement, and within ten business days thereafter, Deutsche Bank will pay by wire transfer, certified check, or bank check payable to the State of New York a monetary penalty in the amount of \$18,500,000.

45. Deutsche Bank agrees that it will not claim, assert, or apply for a tax deduction or tax credit with regard to any federal, state, or local tax, directly or indirectly, for any portion of the payment that it shall make pursuant to this Agreement.

46. The foregoing payment and all correspondence related to this Agreement must reference Agreement # 16-143

47. The NYAG censures Deutsche Bank for the conduct set out in Section III.

### **General Provisions**

48. NYAG has agreed to the terms of this Agreement based on, among other things, the representations made to NYAG by Deutsche Bank and its counsel. To the extent that any material representations made by Deutsche Bank or its counsel to NYAG are later found to be inaccurate or misleading, this Agreement is voidable by NYAG in its sole discretion.

49. If the Agreement is voided or breached, Deutsche Bank agrees that any statute of limitations or other time-related defenses applicable to the subject of the Agreement and any claims arising from or relating thereto are tolled from and after the date of this Agreement. In the event the Agreement is voided or breached, Deutsche Bank expressly agrees and acknowledges that this Agreement shall in no way bar or otherwise preclude NYAG from commencing, conducting, or prosecuting any investigation, action, or proceeding, however denominated, related to the Agreement, against Deutsche Bank, or from using in any way any statements, documents, or other materials produced or provided by Deutsche Bank prior to or after the date of this Agreement.

50. No representation, inducement, promise, understanding, condition, or warranty not set forth in this Agreement has been made to or relied upon by Deutsche Bank in agreeing to this Agreement.

51. Deutsche Bank represents and warrants, through the signatures below, that the terms and conditions of this Agreement are duly approved, and execution of this Agreement is duly authorized. Deutsche Bank shall not take any action or make any statement denying, directly or indirectly, the propriety of this Agreement or expressing the view that this Agreement is without factual basis. Nothing in this paragraph affects Deutsche Bank's (i) testimonial obligations or (ii) right to take legal or factual positions in defense of litigation or other legal proceedings to which the NYAG is not a party. This Agreement is not intended for use by any third party in any other proceeding. This Agreement is not a

final order of any court or governmental authority, which in no way impairs the binding nature of this Agreement.

52. This Agreement may not be amended except by an instrument in writing signed on behalf of all the parties to this Agreement.

53. This Agreement shall be binding on and inure to the benefit of the parties to this Agreement and their respective successors and assigns, provided that no party, other than the NYAG, may assign, delegate, or otherwise transfer any of its rights or obligations under this Agreement without the prior written consent of the NYAG.

54. In the event that any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal, or unenforceable in any respect, in the sole discretion of the NYAG such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement.

55. To the extent not already provided under this Agreement, Deutsche Bank shall, upon request by the NYAG, provide all documentation and information necessary for the NYAG to verify compliance with this Agreement.

56. All notices, reports, requests, and other communications to any party pursuant to this Agreement shall be in writing and shall be directed as follows:

If to the NYAG to:

John D. Castiglione  
Assistant Attorney General  
Investor Protection Bureau  
Office of the New York State Attorney General  
120 Broadway, 23<sup>rd</sup> Floor  
New York, NY 10271

If to Deutsche Bank, to:

David M. Levine  
Managing Director and Associate General Counsel  
Deutsche Bank AG  
60 Wall Street  
Mail Stop. 3601  
New York, NY 10005

57. Acceptance of this Agreement by the NYAG shall not be deemed approval by the NYAG of any of the practices or procedures referenced herein, and Deutsche Bank shall make no representation to the contrary.

58. Pursuant to Executive Law § 63(15), evidence of a violation of this Agreement shall constitute *prima facie* proof of violation of the Martin Act and Executive Law § 63(12) in any action or proceeding thereafter commenced by NYAG.

59. If a court of competent jurisdiction determines that Deutsche Bank has breached this Agreement, Deutsche Bank shall pay to the NYAG the cost, if any, of such determination and of enforcing this Agreement, including without limitation legal fees, expenses, and court costs.

60. The NYAG finds the relief and agreements contained in this Agreement appropriate and in the public interest. The NYAG is willing to accept this Agreement pursuant to Executive Law § 63(15) in lieu of commencing a statutory proceeding with respect to Deutsche Bank's electronic order routing business. This Agreement shall be governed by the laws of the State of New York without regard to any conflict of laws principles.

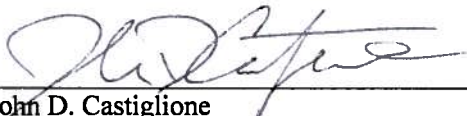
61. Nothing contained herein shall be construed as to deprive any person of any private right under the law, nor to deprive Deutsche Bank of any defense, claim or counterclaim in any action involving the assertion of any private right by any person, where NYAG is not a party to such action.

62. This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute one and the same agreement.

ERIC T. SCHNEIDERMAN


Dated: December 15, 2016  
New York, New York

Attorney General of the State of New York  
120 Broadway  
New York, NY 10271

By:   
John D. Castiglione  
Assistant Attorney General  
Investor Protection Bureau

Deutsche Bank Securities, Inc.

Dated: 9-16-16 2016  
New York, New York

By:   
David M. Levine  
Managing Director &  
Associate General Counsel

This Agreement has been reviewed by counsel, who also certifies that the Deutsche Bank signatory above, *David M. Levine*, is duly authorized by Deutsche Bank to execute the same, and that the signature above is true and authentic:



Dated: 9/16/2016

Charles A. Gilman  
Cahill Gordon & Reindel LLP