

Form 1 Page 1 Execution Page	U.S. SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549	Date filed (MM/DD/YY) <b>02/04/20</b>	OFFICIAL USE ONLY
<b>APPLICATION FOR, AND AMENDMENTS TO APPLICATION FOR, REGISTRATION AS A NATIONAL SECURITIES EXCHANGE OR EXEMPTION FROM REGISTRATION PURSUANT TO SECTION 5 OF THE EXCHANGE ACT</b>			

WARNING: Failure to keep this form current and to file accurate supplementary information on a timely basis, or the failure to keep accurate books and records or otherwise to comply with the provisions of law applying to the conduct of the applicant would violate the federal securities laws and may result in disciplinary, administrative or criminal action.

INTENTIONAL MISSTATEMENTS OR OMISSIONS OF FACTS  
MAY CONSTITUTE CRIMINAL VIOLATIONS

APPLICATION  AMENDMENT

1. State the name of the applicant: Cboe Exchange, Inc.
2. Provide the applicant's primary street address (Do not use a P.O. Box):  
400 South LaSalle Street  
Chicago, Illinois 60605
3. Provide the applicant's mailing address (if different):  
\_\_\_\_\_
4. Provide the business telephone and facsimile number:  
(913) 815-7000 (913) 815-7119  
(Telephone) (Facsimile)
5. Provide the name, title and telephone number of a contact employee:  
Kyle Murray VP, Associate General Counsel, Cboe Exchange, Inc. (913) 815-7121  
(Name) (Title) (Telephone Number)
6. Provide the name and address of counsel for the applicant:  
Pat Sexton  
400 S. LaSalle Street  
Chicago, IL 60605
7. Provide the date that applicant's fiscal year ends: December 31
8. Indicate legal status of the applicant:  Corporation  Sole Partnership  Partnership  
 Limited Liability Company  Other (specify): \_\_\_\_\_

SEC Mail Processing  
FEB 05 2020  
Washington, DC



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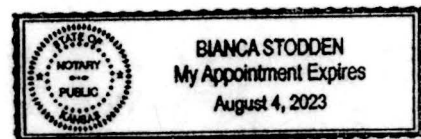
If other than a sole proprietor, indicate the date and place where applicant obtained its legal status (e.g. state where incorporated, place where partnership agreement was filed or where applicant entity was formed):  
(a) Date (MM/DD/YY): 11/01/07 (b) State/Country of formation: Delaware/United States of America  
(c) Statute under which applicant was organized: General Corporation Law of the State of Delaware

**EXECUTION:**

The applicant consents that service of any civil action brought by, or notice of any proceeding before, the Securities and Exchange Commission in connection with the applicant's activities may be given by registered or certified mail or confirmed telegram to the applicant's contact employee at the main address, or mailing address if different, given in Items 2 and 3. The undersigned, being first duly sworn, deposes and says that he/she has executed this form on behalf of, and with the authority of, said applicant. The undersigned and applicant represent that the information and statement contained herein, including exhibits, schedules, or other documents attached hereto, and other information filed herewith, all of which are made a part hereof, are current, true and complete.

Date: 02/04/20 Cboe Exchange, Inc.  
(MM/DD/YY) (Name of Applicant)  
By: [Signature] Kyle Murray, VP, Associate General Counsel  
(Signature) (Printed Name and Title)  
Subscribed and sworn before me this 4<sup>th</sup> day of Feb., 2020 by Ben AOO  
(Month) (Year) (Notary Public)  
My Commission expires 08/09/23 County of Johnson State of Kansas

This page must always be completed in full with original, manual signature and notarization.  
Affix notary stamp or seal where applicable.





February 4, 2020

**Via Federal Express**

Ms. Jeanette Marshall  
Securities and Exchange Commission  
100 F Street, N.E.  
Mail Stop 7010  
Washington, DC 20549-0001

SEC Mail Processing

FEB 05 2020

Washington, DC

Re: ***Cboe Exchange, Inc.  
Form 1 Amendment***

Dear Jeanette:

On behalf of Cboe Exchange, Inc. (the "Exchange"), and in connection with the Cboe Form 1 that is on file with the Securities and Exchange Commission ("Commission"), enclosed please find one original and two copies of the Execution Page to Form 1 as well as the following exhibit<sup>1</sup>:

- Exhibit M (updated to provide a list of firms currently approved as members or other users of the Exchange)

This amendment is filed in accordance with SEC Rule 6a-2 and is intended to replace Exhibit M currently on file with the Commission. Please do not hesitate to contact me if you have any questions or require anything further.

Sincerely,

Kyle Murray  
VP, Associate General Counsel  
913-815-7121

**Securities and Exchange Commission  
Trading and Markets**

FEB 05 2020

**RECEIVED**

Enclosures

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<sup>1</sup> See Attachment for a comprehensive list of updates to Exhibit M

**Attachment**

*Summary of changes made to Exhibit M:*

**Membership:**

- Virtu Financial BD LLC was terminated on Cboe Exchange, Inc.

**Exhibit M**

**Exhibit Request:**

Provide an alphabetical list of all members, participants, subscribers or other users, including the following information:

1. Name,
2. Date of election to membership or acceptance as a participant, subscriber or other user,
3. Principal business address and telephone number,
4. If member, participant, subscriber or other user is an individual, the name of the entity with which such individual is associated and the relationship of such individual to the entity (e.g., partner, officer, director, employee, etc.),
5. Describe the type of activities primarily engaged in by the member, participant, subscriber, or other user (e.g., floor broker, specialist, odd lot dealer, other market maker, proprietary trader, non-broker dealer, inactive or other functions). A person shall be “primarily engaged” in an activity or function for purposes of this item when that activity or function is the one in which that person is engaged for the majority of their time. When more than one type of person at an entity engages in any of the six types of activities or functions enumerated in this item, identify each type (e.g., proprietary trader, Registered Competitive Trader and Registered Competitive Market Maker) and state the number of members, participants, subscribers, or other users in each, and
6. The class of membership, participation or subscription or other access.

**Response:**

Attached please find a list of the current Members and Sponsored Participants accepted as Users of the Exchange.

Company Name	BZX Approval Date	BYX Approval Date	EDGA Approval Date	EDGX Approval Date	CBOT Effective Date	C2 Effective Date	Type of User	Address	Phone Number	Primary Activities
ABN AMRO Clearing Chicago LLC	10/15/2008	10/1/2010	5/25/2010	5/27/2010	5/13/1985	9/24/2010	Member TPH	175 W Jackson Boulevard Suite 400 Chicago, IL 60604	312-604-8000	Clearing, Transact Business with the Public, Brokerage
ACS Execution Services, LLC	1/15/2016	1/15/2016	1/15/2016	1/15/2016	NA	NA	Member TPH	12 Broad Street 2nd Floor Red Bank, NJ 07701	732-204-8669	Proprietary Trading
Agency Desk, LLC	7/1/2009	NA	NA	NA	NA	NA	Member TPH	560 Madison Avenue 21st Floor New York, NY 10022	212-695-9835	Market Maker
Alura Securities LLC	9/15/2015	NA	NA	8/14/2017	2/2/2012	2/12/2015	Member TPH	333 S Wabash Avenue Suite 2800 Chicago, IL 60604	312-994-4840	Market Maker, Proprietary Trading
All Rise Trading LLC	NA	NA	NA	NA	8/14/2018	NA	Member TPH	141 W. Jackson Blvd., Suite 300A, Chicago, IL 60604	312-483-2147	Floor Broker
Alpha Direct LLC	8/20/2015	8/20/2015	8/20/2015	8/20/2015	NA	NA	Sponsored Participant	533 2nd Street Encinitas, CA 92024	858-947-8650	Proprietary Trading
Alpha Trading, LP	10/24/2017	10/24/2017	10/24/2017	10/24/2017	NA	NA	Member TPH	840 W California Avenue Sunnyvale, CA 94088	408-990-1940	Market Maker, Proprietary Trading
Alpha Trading, LP	2/22/2019	2/22/2019	2/22/2019	2/22/2019	NA	NA	Member TPH	840 W California Avenue Sunnyvale, CA 94088	408-990-1940	Market Maker, Proprietary Trading
Alpine Securities Corporation	11/3/2008	11/15/2010	NA	NA	NA	NA	Member TPH	36 Exchange Place Salt Lake City, UT 84111	801-355-5588	Agency
AMS Derivatives B.V.	8/14/2019	9/10/2019	9/10/2019	8/14/2019	12/1/2017	6/5/2019	Member TPH	Strawinskylaan 3095 Amsterdam, 1077ZX Netherlands	31-020-708-7000	Proprietary Trading
Apex Clearing Corporation	8/5/2012	8/5/2012	8/5/2012	8/5/2012	8/8/2012	8/8/2012	Member TPH	One Dallas Center 350 N St. Paul, Suite 1300 Dallas, TX 75201	214-785-1055	Clearing, Transact Business with the Public
Archipelago Securities LLC	8/18/2008	9/1/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	263 N Clark Street Suite 3200 Chicago, IL 60654	312-538-6700	Limited Routing Facility of ICE affiliated Exchanges
Athene Capital Research, LLC	7/1/2009	10/20/2010	NA	NA	NA	NA	Sponsored Participant	440 9th Avenue 11th Floor New York, NY 10001	212-631-8066	Proprietary Trading
ATM Execution LLC dba Cowan Electronic	3/15/2012	3/15/2012	3/21/2012	3/21/2012	NA	NA	Member TPH	590 Lexington Avenue 21st Floor New York, NY 10022	848-562-1010	Public Customer Business
Aura Financial LLC	10/15/2008	NA	NA	NA	NA	NA	Member TPH	1200 Landmark Center 1280 Farnam Street Suite 800 Omaha, NE 68102	402-394-6100	Clearing Services
Barclays Capital Inc.	8/18/2008	10/1/2010	5/14/2010	5/14/2010	9/22/2008	10/8/2010	Member TPH	745 7th Avenue New York, NY 10019	212-526-7000	Clearing, Market Maker, Transact Business with the Public, Brokerage, Proprietary Trading
Bay Crest Partners, LLC	10/15/2008	NA	5/25/2010	5/27/2010	NA	NA	Member TPH	40 Wall Street 42nd Floor New York, NY 10005	212-480-1400	Agency
Belvedere Trading LLC	11/1/2011	3/1/2012	11/29/2011	10/18/2018	1/3/2006	4/4/2011	Member TPH	10 S Riverside Plaza Suite 2100 Chicago, IL 60606	312-893-3750	Market Maker, Proprietary Trading
BGC Financial, LP	8/17/2009	NA	NA	NA	NA	NA	Member TPH	One Seaport Plaza 18th Floor New York, NY 10038	848-348-7000	Agency
Bluefin Trading, LLC	8/3/2009	8/1/2015	9/27/2013	8/13/2013	4/27/2009	NA	Member TPH	3 Park Avenue 37th Floor New York, NY 10018	212-457-9150	Market Maker, Proprietary Trading
BMO Capital Markets Corp.	8/18/2008	11/15/2010	7/15/2014	7/15/2014	10/8/2013	11/15/2013	Member TPH	3 Times Square New York, NY 10036	212-865-4000	Clearing, Proprietary Trading, Transact Business with the Public, Brokerage
BNP Paribas Securities Corp.	8/18/2008	9/15/2010	5/25/2010	5/27/2010	1/5/2005	10/15/2010	Member TPH	787 7th Avenue New York, NY 10019	212-841-2000	Clearing, Order Flow Provider, Proprietary Trading, Transact Business with the Public
BNY Mellon Capital Markets, LLC	NA	NA	NA	1/17/2017	NA	NA	Member TPH	101 Barclay Street New York, NY 10286	212-815-4972	Market Maker
Boarboel Capital LLC	11/17/2017	8/27/2019	8/27/2019	8/27/2019	2/1/2017	NA	Member TPH	300 N LaSalle Street Suite 2080 Chicago, IL 60654	708-967-8843	Market Maker
Boarboel Capital LLC	1/30/2019	1/30/2019	1/30/2019	1/30/2019	NA	NA	Sponsored Participant	300 N LaSalle Street Suite 2080 Chicago, IL 60654	708-967-8843	Market Maker
Boarboel Trading LP	10/15/2018	10/15/2018	10/15/2018	10/15/2018	NA	NA	Sponsored Participant	Maples Corporate Services PO Box 306, Upland House Cayman Islands KY1-1104	#####	Proprietary Trading
BofA Securities, Inc.	9/19/2018	9/19/2018	9/19/2018	9/19/2018	5/13/2019	5/13/2019	Member TPH	One Bryant Park New York, NY 10036	201-671-5885	Clearing Services, Firm Proprietary Trading, Public Customer Business
BTIG, LLC	8/18/2008	11/15/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	600 Montgomery Street 6th Floor San Francisco, CA 94111	415-248-2200	Market Maker
C&C Trading LLC	8/18/2008	10/11/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	71 Arch Street 1st Floor Greenwich, CT 06830	212-708-1227	Proprietary Trading
Censcood Genuity LLC	10/1/2013	10/1/2013	8/10/2010	8/10/2010	NA	NA	Member TPH	535 Madison Avenue New York, NY 10022	212-360-8000	Market Maker
Canadian Imperial Holdings, Inc.	10/15/2008	11/15/2010	NA	NA	NA	NA	Sponsored Participant	300 Madison Avenue 5th Floor New York, NY 10017	212-856-3877	Proprietary Trading
Centor Fitzgerald & Co.	10/23/2008	2/13/2015	5/25/2010	5/27/2010	NA	NA	Member TPH	110 E 58th Street 4th Floor New York, NY 10022	212-938-5000	Agency, Institutional Trading
Capital Institutional Services, Inc.	8/18/2008	NA	5/25/2010	5/27/2010	NA	NA	Member TPH	1708 Pacific Avenue Suite 1100 Dallas, TX 75201	214-720-0055	Agency
Cardinal Capital Management, LLC	1/24/2019	NA	NA	NA	10/1/2007	NA	Member TPH	141 W Jackson Boulevard Suite 2200A Chicago, IL 60604	312-477-8400	Market Maker/Proprietary
Cboe Trading, Inc.	10/23/2008	9/1/2010	5/14/2010	5/14/2010	7/28/2019	4/18/2018	Member TPH	8050 Marshall Drive Suite 120 Lenexa, KS 66214	913-815-7000	Limited Routing Facility of Cboe affiliated Exchanges
CF Global Trading, LLC	10/23/2008	1/3/2011	NA	NA	NA	NA	Member TPH	60 E 42nd Street Suite 1455 New York, NY 10185	212-688-4711	Market Maker
Charles Schwab & Co., Inc.	NA	NA	NA	4/3/2017	NA	NA	Member TPH	211 Main Street San Francisco, CA 94105	415-636-7000	Clearing, Transact Business with the Public
Chimera Securities, LLC	11/17/2017	11/27/2017	11/27/2017	11/17/2017	NA	NA	Sponsored Participant	27 Union Square West 4th Floor New York, NY 10003	846-597-6146	Proprietary Trading
CIBC World Markets Corp.	8/18/2008	11/15/2010	NA	NA	2/14/1973	NA	Member TPH	425 Lexington Avenue New York, NY 10017	212-856-4000	Clearing, Transact Business with the Public
Citadel Securities LLC	10/23/2008	10/1/2010	5/14/2010	5/14/2010	4/17/2002	10/7/2010	Member TPH	131 S Dearborn Street 32nd Floor Chicago, IL 60603	312-366-2100	Market Maker, Order Flow Provider, Brokerage
Citigroup Derivatives Markets Inc.	2/15/2018	NA	NA	2/15/2018	12/3/2004	2/25/2011	Member TPH	130 Cheapeake Lane Suite 102 Minneapolis, MN 55305	212-723-2980	Market Maker

Company Name	BDX Approval Date	BYX Approval Date	EDGA Approval Date	EDGX Approval Date	CBCE Effective Date	C2 Effective Date	Type of User	Address	Phone Number	Primary Activities
Citigroup Global Markets Inc.	9/24/2008	12/15/2010	5/25/2010	5/27/2010	5/2/2011	6/3/2019	Member TPH	300-388 Greenwich Street New York, NY 10013	212-616-6000	Clearing, Proprietary Trading, Transact Business with the Public
Claremont Platu Securities, Inc.	NA	NA	1/15/2015	NA	NA	NA	Member TPH	280 Park Avenue 21st Floor New York, NY 10017	212-317-7080	Public Customer Business
Clear Street Markets, LLC	7/18/2012	7/18/2012	8/20/2012	8/20/2012	6/8/2012	3/22/2019	Member TPH	55 Broadway Suite 2102 New York, NY 10008	646-738-4086	Market Maker, Proprietary Trading
Clear Street, LLC	3/18/2019	8/14/2019	8/14/2019	8/14/2019	NA	NA	Member TPH	55 Broadway Suite 2102 New York, NY 10008	646-738-4086	Public Customer Business, Clearing, Proprietary Trading
Clearpool Execution Services, LLC	5/15/2014	5/15/2014	8/18/2014	8/18/2014	NA	NA	Member TPH	17 State Street 38th Floor New York, NY 10004	212-631-8500	Public Customer Business
CMT Fund XIV Limited	7/2/2012	7/2/2012	NA	NA	NA	NA	Sponsored Participant	500 W Monroe Street Suite 2630 Chicago, IL 60681	312-320-7867	Agency
CMT Trading LLC	3/17/2014	3/17/2014	3/5/2014	3/5/2014	NA	NA	Member TPH	500 W Monroe Street Suite 2630 Chicago, IL 60681	312-930-9050	Market Maker, Proprietary Trading
CODA Markets, Inc.	10/18/2008	10/4/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	2524 Patriot Boulevard Glenview, IL 60026	224-621-2700	ATS
Cognitive Capital, LLC	NA	NA	NA	NA	5/13/2004	NA	Member TPH	141 W Jackson Boulevard Suite 1620 Chicago, IL 60604	312-431-0400	Proprietary Trading
Comhar Capital Markets, LLC	2/27/2017	12/13/2019	12/13/2019	NA	NA	NA	Member TPH	311 S Wacker Drive Suite 2200A Chicago, IL 60608	872-205-0190	Proprietary Trading
Consolidated Trading, LLC	NA	NA	NA	NA	1/2/2002	NA	Member TPH	71 S Wacker Drive Suite 2200 Chicago, IL 60608	312-380-7300	Market Maker
Cowan and Company, LLC	8/18/2008	10/7/2010	5/14/2010	5/14/2010	NA	NA	Member TPH	589 Lexington Avenue 20th Floor New York, NY 10022	646-562-1010	Market Maker
Cowan Execution Services LLC	10/15/2008	9/1/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	1833 Broadway 48th Floor New York, NY 10019	800-367-8666	Full Service
Cowan Prime Services LLC	3/15/2011	3/15/2011	NA	NA	NA	NA	Member TPH	589 Lexington Avenue 21st Floor New York, NY 10022	646-562-1010	Public Customer Business, Proprietary Trading
Credit Suisse Securities (USA) LLC	9/3/2008	10/1/2010	5/25/2010	5/27/2010	8/14/1981	10/8/2010	Member TPH	11 Madison Avenue New York, NY 10010	212-325-2000	Clearing, Proprietary Trading, Transact Business with the Public, Brokerage
Critical Trading, LLC	7/1/2014	6/8/2018	NA	6/8/2018	NA	NA	Member TPH	120 W 45th Street 15th Floor New York, NY 10036	646-918-0529	Market Maker, Proprietary Trading
CSS, LLC	NA	NA	NA	NA	8/21/1998	NA	Member TPH	175 W Jackson Boulevard Suite 440 Chicago, IL 60604	312-542-8505	Proprietary Trading
CTC, LLC	3/15/2018	NA	NA	NA	3/25/1998	3/3/2011	Member TPH	440 S LaSalle Street 4th Floor Chicago, IL 60605	312-883-8000	Market Maker
Cutter Group, LP	4/1/2010	10/6/2010	NA	10/18/2015	4/5/1999	12/4/2019	Member TPH	101 Montgomery Street Suite 700 San Francisco, CA 94104	415-293-3656	Market Maker, Proprietary Trading
Dash Financial Technologies LLC	10/23/2008	7/2/2012	6/9/2010	6/9/2010	5/19/2000	9/30/2010	Member TPH	311 S Wacker Drive Suite 1000 Chicago, IL 60608	312-988-2008	Clearing, Floor Broker, Order Flow Provider, Transact Business with the Public, Brokerage
Deutsche Bank Securities Inc.	10/15/2008	10/11/2010	5/21/2010	5/21/2010	4/25/1996	8/15/2011	Member TPH	80 Wall Street New York, NY 10005	212-250-2500	Clearing, Proprietary Trading, Transact Business with the Public, Brokerage
DRW Execution Services, LLC	11/19/2019	11/19/2019	11/19/2019	11/19/2019	NA	NA	Member TPH	540 W Madison Street Suite 2500 Chicago, IL 60661	312-542-1090	Proprietary Trading
DRW Securities, LLC	9/1/2009	11/1/2010	5/25/2010	5/27/2010	11/23/1998	1/22/2016	Member TPH	540 W Madison Street Suite 2500 Chicago, IL 60661	312-542-1000	Market Maker, Proprietary Trading
DRW Singapore Ltd.	11/19/2018	NA	NA	11/19/2018	NA	NA	Sponsored Participant	8 Marina View Axe Square Tower 1   #32-05 Singapore 018980	312-542-1005	Proprietary Trading
Dynamic Technology Lab Pte. Ltd.	11/5/2018	11/5/2018	11/5/2018	11/5/2018	NA	NA	Sponsored Participant	07-00, 178 Clemenceau Avenue Singapore 239928	656-610-4693	Proprietary Trading
E D & F Men Capital Markets Inc.	NA	NA	NA	NA	3/1/2019	8/7/2019	Member TPH	140 E. 48th Street 10th Floor New York, NY 10017	212-618-2800	Clearing, Public Customer Business
E-TRADE Securities LLC	NA	NA	NA	8/10/2010	NA	NA	Member TPH	11 Times Square 32nd Floor New York, NY 10036	646-521-4300	Public Customer Business
Electronic Transaction Clearing, Inc.	10/23/2008	9/1/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	880 S Figueroa Street Los Angeles, CA 90017	949-533-1885	Market Maker
Evercore Group LLC	NA	NA	5/10/2017	NA	NA	NA	Member TPH	55 E 52nd Street New York, NY 10055	212-857-3100	Public Customer Business
FIS Brokerage & Securities Services LLC	8/18/2008	10/1/2010	5/6/2010	5/6/2010	NA	NA	Member TPH	2100 Enterprise Avenue Geneva, IL 60134	630-482-7100	Agency
Flow Traders U.S. Institutional Trading LLC	NA	NA	6/1/2018	NA	NA	NA	Member TPH	1114 Avenue of the Americas 4th Floor New York, NY 10038	917-210-5000	Riskless Principal
Flow Traders U.S. LLC	10/1/2009	8/1/2012	2/28/2014	2/28/2014	8/31/2010	NA	Member TPH	1114 Avenue of the Americas 4th Floor New York, NY 10038	917-210-5000	Proprietary Trading
G1 Execution Services, LLC	8/18/2008	12/1/2010	4/17/2010	4/17/2010	NA	NA	Member TPH	175 W Jackson Boulevard Suite 1700 Chicago, IL 60604	312-382-0404	Market Maker
Geir Loch Enterprises Ltd.	2/22/2019	2/22/2019	4/8/2019	4/8/2019	NA	NA	Member TPH	540 W. Madison Suite 2500 Chicago, IL 60661	312-542-1193	Proprietary Trading
Geir Loch Enterprises Ltd.	12/2/2019	12/2/2019	12/2/2019	12/2/2019	NA	NA	Member TPH	540 W. Madison Suite 2500 Chicago, IL 60661	312-542-1193	Proprietary Trading
Geneva Stock, LLC	NA	NA	NA	NA	4/8/2001	NA	Member TPH	440 S LaSalle Street Suite 1711 Chicago, IL 60605	312-382-4404	Market Maker
Global Execution Brokers, LP	2/1/2010	10/5/2010	12/1/2015	10/15/2015	12/23/2003	9/24/2010	Member TPH	401 City Avenue Bala Cynwyd, PA 19004	610-617-2600	Floor Broker, Transact Business with the Public, Brokerage
Goldman Sachs & Co. LLC	10/23/2008	10/12/2010	5/14/2010	5/14/2010	2/21/1973	10/8/2010	Member TPH	200 West Street New York, NY 10282	212-902-1000	Clearing, Market Maker, Proprietary Trading, Transact Business with the Public, Brokerage
Gordon, Haskell Capital Corporation	NA	NA	NA	5/2/2018	NA	NA	Member TPH	441 Lexington Avenue 10th Floor New York, NY 10017	212-863-0900	Agency, Institutional Trading
Group One Trading, LP	8/2/2015	NA	NA	9/29/2015	11/23/1994	NA	Member TPH	440 S LaSalle Street Suite 3232 Chicago, IL 60605	312-347-8884	Market Maker
GTS Securities LLC	12/17/2013	5/1/2012	8/2/2014	8/2/2014	11/29/2019	NA	Member TPH	545 Madison Avenue 15th Floor New York, NY 10022	212-715-2830	Market Maker, Proprietary Trading

Company Name	EDX Approval Date	BYX Approval Date	EDGA Approval Date	EDGX Approval Date	CBOT Effective Date	C2 Effective Date	Type of User	Address	Phone Number	Primary Activities
Hainey Investments Limited	8/18/2014	NA	NA	NA	NA	NA	Sponsored Participant	Thamistold Deriv 41 #808-807 Nicosia, Cyprus	704-248-8221	Proprietary Trading
HAP Trading LLC	10/1/2009	11/15/2010	NA	8/2/2010	3/18/2001	NA	Member TPH	365 Hudson Street Suite 701 New York, NY 10014	212-380-5100	Market Maker, Proprietary Trading
HAP Trading LLC	1/8/2020	1/8/2020	1/8/2020	1/8/2020	NA	NA	Sponsored Participant	365 Hudson Street Suite 701 New York, NY 10014	212-380-5100	Proprietary Trading
Hardcastle Trading USA LLC	4/15/2009	NA	5/25/2010	5/27/2010	5/18/2005	NA	Member TPH	756 Secaucus Road Suite F-1110 Secaucus, NJ 07094	201-305-8888	Proprietary Trading
Headlands Technologies LLC	10/15/2018	10/15/2018	10/15/2018	10/15/2018	NA	NA	Sponsored Participant	155 N. Wacker Drive, Suite 1000 Chicago, IL 60606	312-801-8848	Proprietary Trading
Helmayer, LLC	10/3/2016	10/3/2016	10/3/2016	10/3/2016	NA	NA	Sponsored Participant	801 S LaSalle Street 2nd Floor Chicago, IL 60605	312-327-4112	Proprietary Trading
Henning-Carey Proprietary Trading, LLC	8/15/2012	NA	NA	NA	NA	NA	Sponsored Participant	141 W Jackson Boulevard Suite 1801 Chicago, IL 60604	312-789-8784	Proprietary Trading
Highbridge Capital Management, LLC	10/23/2008	NA	NA	NA	NA	NA	Sponsored Participant	9 West 57th Street 27th Floor New York, NY 10019	212-287-4600	Proprietary Trading
Hilltop Securities Inc.	10/23/2008	9/1/2010	NA	5/21/2013	10/1/2010	NA	Member TPH	1201 Elm Street Suite 3500 Dallas, TX 75270	214-859-1800	Clearing, Transact Business with the Public
HRT Financial LLC	2/1/2010	10/1/2010	5/18/2010	5/18/2010	1/24/2011	1/24/2011	Member TPH	4 World Trade Center 150 Greenwich Street, 57th Floor New York, NY 10007	212-293-1444	Proprietary Trading
HSBC Securities (USA) Inc.	4/3/2017	4/3/2017	4/3/2017	4/3/2017	11/21/2005	NA	Member TPH	462 Fifth Avenue New York, NY 10018	224-880-7116	Clearing, Transact Business with the Public
IEX Services LLC	10/1/2013	10/1/2013	9/24/2013	9/24/2013	NA	NA	Member TPH	4 World Trade Center 44th Floor New York, NY 10007	846-343-2000	Limited Routing Facility of IEX affiliated Exchanges
IMC-Chicago LLC dba IMC Financial Markets	8/18/2008	10/1/2010	5/25/2010	5/27/2010	7/5/2000	9/24/2010	Member TPH	233 S Wacker Drive Suite 4300 Chicago, IL 60606	312-244-3300	Market Maker, Proprietary Trading
IMC-Chicago LLC dba IMC Financial Markets	11/5/2018	11/5/2018	11/5/2018	11/5/2018	NA	NA	Sponsored Participant	233 S Wacker Drive Suite 4300 Chicago, IL 60606	312-244-3300	Market Maker, Proprietary Trading
Industrial and Commercial Bank of China Financial Services LLC	5/15/2014	5/15/2014	NA	NA	NA	NA	Member TPH	1833 Broadway 28th Floor New York, NY 10019	212-963-7300	Clearing Services
Instatat LLC	8/18/2008	9/1/2010	5/14/2010	5/14/2010	12/29/2009	10/6/2010	Member TPH	Worldwide Plaza 309 W 48th Street New York, NY 10019	212-310-9500	Clearing, Transact Business with the Public, Brokerage
Interactive Brokers Corp.	NA	NA	NA	NA	4/21/2009	10/6/2010	Member TPH	6 Greenwich Office Park Greenwich, CT 06831	203-618-5700	Floor Broker, Brokerage
Interactive Brokers LLC	8/18/2008	9/15/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	One Pickwick Plaza 2nd Floor Greenwich, CT 06830	203-618-5710	Full Service
J.P. Morgan Securities LLC	8/18/2008	9/15/2010	5/14/2010	5/14/2010	10/29/1985	11/18/2010	Member TPH	383 Madison Avenue New York, NY 10179	212-272-2000	Clearing, Transact Business with the Public
Jane Street Capital, LLC	5/1/2009	11/15/2010	5/14/2010	5/14/2010	9/4/2012	1/2/2019	Member TPH	250 Vesey Street 5th Floor New York, NY 10281	846-759-6000	Market Maker, Proprietary Trading
Jane Street Execution Services LLC	1/24/2019	1/24/2019	1/24/2019	1/24/2019	NA	NA	Member TPH	250 Vesey Street 6th Floor New York, NY 10281	846-759-6381	Proprietary Trading
Jane Street Options, LLC	4/15/2016	NA	NA	11/9/2018	5/2/2005	1/2/2019	Member TPH	250 Vesey Street 5th Floor New York, NY 10281	846-759-6000	Market Maker
Jefferies Investment Advisors	7/1/2011	7/15/2011	NA	NA	NA	NA	Sponsored Participant	520 Madison Avenue New York, NY 10022	212-323-3663	Full Service
Jefferies LLC	10/23/2008	10/19/2010	5/25/2010	5/27/2010	7/9/2012	7/18/2012	Member TPH	520 Madison Avenue New York, NY 10022	212-284-2300	Clearing, Proprietary Trading, Transact Business with the Public, Brokerage
JNK Securities Corp.	11/17/2008	11/15/2010	NA	NA	NA	NA	Member TPH	140 E 45th Street 27th Floor New York, NY 10017	212-885-6300	Agency
Juliet Group, LLC	3/1/2011	3/1/2011	NA	NA	NA	NA	Sponsored Participant	240 E 36th Street #3A New York, NY 10016	846-380-0565	Proprietary Trading
Juliet Labs, LLC	9/20/2017	9/20/2017	9/20/2017	9/20/2017	NA	NA	Sponsored Participant	1 Northside Plaza Suite 14H Brooklyn, NY 11249	846-380-0565	Proprietary Trading
Jump Trading, LLC	8/18/2008	10/1/2010	5/14/2010	5/14/2010	4/2/2012	8/8/2017	Member TPH	800 W Chicago Avenue Suite 825 Chicago, IL 60654	312-205-8800	Market Maker, Proprietary Trading
Kaële, Bruyette & Woods, Inc.	8/18/2008	12/1/2010	8/8/2010	8/8/2010	NA	NA	Member TPH	787 7th Avenue New York, NY 10019	212-867-7777	Agency
LakeShore Securities, LP	NA	NA	NA	NA	1/24/1983	NA	Member TPH	401 S LaSalle Street Suite 1000 Chicago, IL 60605	312-863-1307	Clearing, Floor Broker, Market Maker, Transact Business with the Public
Lamberson Capital LLC	NA	NA	NA	NA	3/23/2018	NA	Member TPH	71 S Wacker Drive Suite 2300 Chicago, IL 60606	312-380-7300	Market Maker
Lampert Capital Markets Inc.	NA	2/18/2014	2/28/2014	NA	NA	NA	Member TPH	444 Madison Avenue Suite 401 New York, NY 10022	846-833-4900	Introducing Broker
Latour Trading LLC	8/17/2009	10/1/2010	5/28/2010	5/27/2010	4/8/2011	NA	Member TPH	377 Broadway 10th Floor New York, NY 10013	917-388-8000	Proprietary Trading
LEK Securities Corporation	8/18/2008	10/1/2010	5/28/2010	5/27/2010	1/9/2001	9/24/2010	Member TPH	1 Liberty Plaza 185 Broadway, 52nd Floor New York, NY 10006	212-509-2300	Clearing, Transact Business with the Public
Lime Brokerage LLC	8/18/2008	10/1/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	11 E 44th Street Suite 705 New York, NY 10017	212-824-5000	Transact Business with the Public
Liquidnet, Inc.	9/1/2009	9/15/2010	NA	NA	NA	NA	Member TPH	488 7th Avenue 15th Floor New York, NY 10018	846-874-2000	Agency
Lupo Securities, LLC	NA	NA	NA	NA	8/1/1997	NA	Member TPH	141 W Jackson Boulevard Suite 2200A Chicago, IL 60604	312-477-8400	Market Maker, Proprietary Trading
Macquerie Capital (USA) Inc.	12/1/2009	NA	5/28/2010	5/27/2010	NA	NA	Member TPH	125 W 55th Street Level 22 New York, NY 10019	212-231-1000	Agency
Marathon Trading Group LLC	2/13/2015	NA	NA	NA	1/30/2013	NA	Member TPH	100 Metacorn Road Building 2, Suite 107 Wayne, PA 19087	810-254-8880	Market Maker, Proprietary Trading
Matrix Executions, LLC	8/18/2008	11/15/2010	NA	11/12/2015	2/1/2008	10/28/2010	Member TPH	801 S LaSalle Street Suite 300 Chicago, IL 60605	312-334-8000	Transact Business with the Public, Brokerage
Merrill Lynch Professional Clearing Corp.	8/18/2008	10/5/2010	5/14/2010	5/14/2010	4/8/1985	9/24/2010	Member TPH	One Bryant Park, 8th Floor NY-100-08-01 New York, NY 10036	846-743-1265	Clearing, Brokerage, Transact Business with the Public

Company Name	SDI Approval Date	BYX Approval Date	EDGA Approval Date	EDGX Approval Date	CBOE Effective Date	C2 Effective Date	Type of User	Address	Phone Number	Primary Activities
Merrill Lynch, Pierce, Fenner & Smith Incorporated	8/18/2008	10/4/2010	5/14/2010	5/14/2010	4/25/1973	NA	Member TPH	One Bryant Park New York, NY 10036	800-637-7455	Clearing, Transact Business with the Public, Brokerage, Market Maker, Proprietary Trading
Mint Global Markets, Inc.	NA	NA	5/28/2010	5/27/2010	NA	NA	Member TPH	1717 Route 8 Suite 102 Carmel, NY 10512	800-874-3030	Agency
Mizuho Securities USA, LLC	6/1/2010	1/3/2011	NA	NA	NA	NA	Member TPH	320 Park Avenue 12th Floor New York, NY 10022	212-209-6300	Agency
MKM Partners LLC	8/3/2009	NA	5/14/2010	5/14/2010	NA	NA	Member TPH	300 First Stamford Place 4th Floor East Wing Stamford, CT 06902	203-861-9080	Agency
Monednock Capital Management, LP	NA	NA	NA	NA	12/1/2014	NA	Member TPH	1845 Walnut Street Suite 940 Philadelphia, PA 19103	267-238-0387	Market Maker
Morgan Stanley & Co. International plc	NA	NA	NA	NA	4/12/2017	NA	Sponsored Participant	20 Bank Street Canary Wharf London, UK E14 4A	#####	
Morgan Stanley & Co. LLC	10/23/2008	9/1/2010	5/14/2010	5/14/2010	8/20/1980	9/24/2010	Member TPH	1585 Broadway New York, NY 10036	212-781-4000	Clearing, Market Maker, Proprietary Trading, Transact Business with the Public, Brokerage
Nasdaq Execution Services, LLC	8/19/2008	9/1/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	One Liberty Plaza 185 Broadway New York, NY 10006	212-231-5100	Limited Routing Facility of Nasdaq affiliated Exchanges
National Financial Services LLC	10/23/2008	10/4/2010	5/28/2010	5/27/2010	10/8/1987	4/18/2012	Member TPH	200 Seaport Boulevard Boston, MA 02210	617-583-7000	Clearing, Floor Broker, Transact Business with the Public
National Securities Corporation	7/1/2009	NA	NA	NA	NA	NA	Member TPH	One Union Square 600 University Street, Suite 2000 Seattle, WA 98101	206-622-7200	Agency
Needham & Company, LLC	10/23/2008	10/1/2010	NA	NA	NA	NA	Member TPH	445 Park Avenue New York, NY 10022	212-371-6300	Market Maker
Nomura Securities International, Inc.	10/23/2008	10/1/2010	5/28/2010	5/27/2010	9/1/2009	11/16/2010	Member TPH	Worldwide Plaza 309 W 49th Street New York, NY 10019	212-667-9000	Clearing, Transact Business with the Public, Proprietary Trading
Northern Trust Securities, Inc.	8/18/2008	10/6/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	50 S LaSalle Street Chicago, IL 60603	312-567-2000	Market Maker
Old Mission Capital, LLC	4/18/2012	4/18/2012	4/25/2012	4/25/2012	9/27/2017	NA	Member TPH	314 W Superior Suite 200 Chicago, IL 60654	312-260-3031	Market Maker
Old Mission Markets LLC	NA	NA	12/13/2019	NA	NA	NA	Member TPH	314 W Superior Suite 200 Chicago, IL 60654	312-260-3044	Public Customer Business
Olivetree Financial, LLC	NA	NA	9/1/2016	NA	NA	NA	Member TPH	420 Lexington Avenue Suite 800 New York, NY 10170	646-630-8800	Agency
Oppenheimer & Co. Inc.	NA	NA	NA	NA	5/17/1973	NA	Member TPH	85 Broad Street 22nd, 24th Floors New York, NY 10004	212-688-8000	Clearing, Transact Business with the Public
Optiver US, LLC	6/16/2009	NA	NA	5/30/2018	8/1/2006	9/24/2010	Member TPH	130 E Randolph Street 14th Floor Chicago, IL 60601	312-821-9500	Market Maker
Oscar Gruss & Son Incorporated	8/7/2017	NA	NA	NA	NA	NA	Member TPH	430 Park Avenue 8th Floor New York, NY 10022	212-419-4000	Agency
PEAKS Capital Management LLC	8/1/2014	NA	NA	2/1/2016	12/2/1987	NA	Member TPH	141 W Jackson Boulevard Suite 500 Chicago, IL 60604	312-444-8000	Proprietary Trading
Parshing LLC	8/18/2008	9/15/2010	5/28/2010	5/27/2010	2/21/1973	9/28/2010	Member TPH	One Parshing Plaza Jersey City, NJ 07306	201-413-2000	Clearing, Transact Business with the Public
Phillip Capital Inc.	NA	NA	NA	11/27/2017	NA	NA	Member TPH	141 W Jackson Boulevard Suite 3050 Chicago, IL 60604	312-358-9001	Clearing Services
Pictet Overseas Inc.	6/1/2015	8/1/2015	5/28/2010	5/27/2010	NA	NA	Member TPH	1000 de la Gauchetiere West Suite 3100 Montreal, Quebec H3B 4W5	514-288-6161	Agency
Piper Sandler & Co.	10/15/2008	11/15/2012	5/14/2010	5/14/2010	NA	NA	Member TPH	800 Nicollet Mall Minneapolis, MN 55402	612-303-6000	Market Maker
Potomac Trading, LLC	4/15/2013	4/15/2013	4/11/2013	4/11/2013	NA	NA	Member TPH	2 Seaport Lane 8th Floor Boston, MA 02210	617-855-8722	Market Maker, Proprietary Trading
Princeton Alpha Management, LP	12/1/2015	12/1/2015	12/1/2015	12/1/2015	NA	NA	Sponsored Participant	61 Princeton Hightstown Road West Windsor, NJ 08550	800-288-9212	Agency
Puma Capital, LLC	NA	NA	8/15/2016	8/15/2016	NA	NA	Member TPH	287 Bowman Avenue 3rd Floor Purchase, NY 10577	212-269-4100	Market Maker, Proprietary Trading
Pundion LLC	2/27/2017	2/27/2017	2/27/2017	2/27/2017	NA	NA	Member TPH	230 Park Avenue 10th Floor New York, NY 10169	718-618-4829	Proprietary Trading
Pundion LLC	10/15/2018	10/15/2018	10/15/2018	10/15/2018	NA	NA	Sponsored Participant	230 Park Avenue 10th Floor New York, NY 10169	718-618-4829	Proprietary Trading
Quantbot Technologies LP	3/27/2018	3/27/2018	3/27/2018	3/27/2018	NA	NA	Sponsored Participant	389 Lexington Avenue New York, NY 10017	212-622-6510	Proprietary Trading
Quantix Clearing, LLC	10/3/2011	12/27/2011	5/17/2011	5/17/2011	NA	NA	Member TPH	70 Hudson Street Hoboken, NJ 07030	201-708-7157	Clearing Services
Quantlab Brokerage, LLC	12/9/2019	12/9/2019	12/9/2019	12/9/2019	NA	NA	Member TPH	3 Greerway Plaza Suite 200 Houston, TX 77048	713-333-3704	Public Customer Business
Quantlab Securities LP	8/18/2008	11/1/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	3 Greerway Plaza Suite 200 Houston, TX 77048	713-333-3700	Transact Business with the Public, Brokerage
Quiet Light Securities, LLC	NA	NA	NA	NA	5/1/2001	NA	Member TPH	141 W Jackson Boulevard Suite 2020A Chicago, IL 60604	312-431-0573	Market Maker, Proprietary Trading
R.W. Preesprich & Co.	2/17/2009	11/15/2010	6/2/2010	6/2/2010	NA	NA	Member TPH	452 5th Avenue New York, NY 10018	212-632-6200	Agency
Rackson Asset Management, LLC	10/1/2009	NA	NA	NA	NA	NA	Sponsored Participant	2000 Broadway Suite 22C New York, NY 10023	212-724-2567	Proprietary Trading
Radix Trading LLC	11/5/2018	11/5/2018	11/5/2018	11/5/2018	NA	NA	Sponsored Participant	363 N Clark Street Suite 3200 Chicago, IL 60654	773-377-8080	Research Firm
Rainier Investment Management, Inc.	1/4/2010	NA	NA	NA	NA	NA	Sponsored Participant	601 Union Street Suite 2801 Seattle, WA 98101	206-518-8658	Hedge Fund
RBC Capital Markets, LLC	9/18/2008	10/14/2010	5/14/2010	5/14/2010	11/24/1983	10/19/2010	Member TPH	3 World Financial Center 200 Vesey Street New York, NY 10281	212-858-7000	Clearing, Proprietary Trading, Transact Business with the Public
Robert W. Baird & Co. Incorporated	10/23/2008	1/3/2011	NA	NA	NA	NA	Member TPH	777 E Wisconsin Avenue Milwaukee, WI 53202	414-785-3500	Market Maker
Ronin Capital, LLC	NA	NA	NA	NA	12/17/2001	NA	Member TPH	350 N Orleans Street Suite 2N Chicago, IL 60654	312-244-5000	Market Maker

Company Name	SDZ Approval Date	BYX Approval Date	EDGA Approval Date	EDGX Approval Date	CBOT Effective Date	C2 Effective Date	Type of User	Address	Phone Number	Primary Activities
Ronin Professional, LLC	8/18/2008	10/1/2010	5/25/2010	5/27/2010	1/2/2008	10/20/2010	Member TPH	350 N Orleans Street Suite 2N Chicago, IL 60654	312-244-5400	Order Flow Provider, Transact Business with the Public, Brokerage
Rosenblatt Securities Inc.	8/18/2008	10/9/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	40 Wall Street 50th Floor New York, NY 10005	212-607-3100	Agency
Roth Capital Partners, LLC	8/18/2008	NA	NA	NA	NA	NA	Member TPH	888 San Clemente Suite 400 Newport Beach, CA 92660	949-720-5700	Market Maker
SAC Capital Advisors, LP	10/23/2008	NA	NA	NA	NA	NA	Sponsored Participant	72 Cummings Point Road Stamford, CT 06902	203-860-2275	Hedge Fund
Safra Securities LLC	NA	NA	5/28/2010	5/27/2010	NA	NA	Member TPH	548 6th Avenue New York, NY 10036	212-704-5500	Market Maker
SageTrader, LLC	3/1/2016	6/5/2017	6/5/2017	6/1/2016	NA	NA	Member TPH	340 Pine Street Suite 501 San Francisco, CA 94104	415-283-3804	Public Customer Business
SAL Equity Trading, GP	9/3/2008	10/5/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	401 City Avenue Suite 220 Bala Cynwyd, PA 19004	610-617-3000	Agency, Institutional Trading
Sanford C. Bernstein & Co. LLC	9/10/2008	10/21/2010	5/28/2010	5/27/2010	9/13/2013	NA	Member TPH	1345 Avenue of the Americas New York, NY 10105	212-888-1000	Clearing, Proprietary Trading, Transact Business with the Public
Seafarer Investment Securities Inc.	4/15/2009	1/3/2011	NA	NA	NA	NA	Member TPH	45 E 53rd Street New York, NY 10022	212-350-3500	Institutional Trading
Scotie Capital (USA) Inc.	3/2/2009	9/15/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	250 Vesey Street New York, NY 10281	212-225-8500	Institutional Trading
Sea Otter Securities Group LLC	10/9/2018	10/9/2018	NA	10/9/2018	NA	NA	Sponsored Participant	107 Grand Street 7th Floor New York, NY 10013	646-782-0972	Proprietary Trading
SG Americas Securities, LLC	9/17/2008	11/15/2011	5/14/2010	5/14/2010	4/23/2004	1/2/2015	Member TPH	245 Park Avenue New York, NY 10167	212-278-8000	Clearing, Proprietary Trading, Transact Business with the Public, Brokerage
Simplex Trading, LLC	3/18/2015	NA	NA	4/13/2017	8/12/2010	3/1/2017	Member TPH	230 S LaSalle Street Suite 4-100 Chicago, IL 60604	312-380-2440	Market Maker, Proprietary Trading
SMBC Nikko Securities America, Inc.	8/7/2017	8/7/2017	8/7/2017	8/7/2017	NA	NA	Member TPH	277 Park Avenue 5th Floor New York, NY 10172	212-224-5038	Institutional Trading
SogoTrade, Inc.	NA	NA	NA	6/19/2017	NA	NA	Member TPH	11 Broadway Suite 514 New York, NY 10004	646-865-6486	Public Customer Business
SRT Securities LLC	NA	NA	NA	NA	10/27/1995	9/24/2010	Member TPH	688 5th Avenue 14th Floor New York, NY 10103	212-841-4567	Floor Broker, Transact Business with the Public, Brokerage
Stifel, Nicolaus & Company, Incorporated	8/18/2008	NA	6/2/2010	6/2/2010	NA	NA	Member TPH	501 N Broadway St. Louis, MO 63102	314-342-2000	Agency
Sumo Capital, LLC	7/15/2013	NA	NA	10/15/2015	3/3/2008	NA	Member TPH	440 S LaSalle Street Suite 2101 Chicago, IL 60605	312-324-0326	Market Maker, Proprietary Trading
SumRidge Partners, LLC	NA	NA	NA	12/27/2017	NA	NA	Member TPH	111 Town Square Place Suite 320 Jersey City, NJ 07310	201-888-2520	Proprietary Trading
Susquhanna Financial Group, LLLP	9/3/2008	10/5/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	401 City Avenue Suite 220 Bala Cynwyd, PA 19004	800-825-9550	Agency, Institutional Trading
Susquhanna Investment Group	NA	NA	NA	NA	5/1/1987	NA	Member TPH	401 City Avenue Suite 220 Bala Cynwyd, PA 19004	610-617-2000	Market Maker
Susquhanna Securities, LLC	10/15/2014	10/15/2014	10/15/2014	10/15/2014	4/4/1994	9/24/2010	Member TPH	401 City Avenue Suite 220 Bala Cynwyd, PA 19004	610-617-2000	Market Maker, Proprietary Trading
SVB Leerink LLC	8/18/2008	10/5/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	1 Federal Street 37th Floor Boston, MA 02110	617-918-4900	Agency
Synergy Capital Management, LLC	8/1/2016	NA	NA	NA	6/5/2007	NA	Member TPH	141 W Jackson Boulevard Suite 1530 Chicago, IL 60604	312-988-8889	Proprietary Trading
TD Ameritrade Clearing, Inc.	5/3/2011	5/3/2011	NA	5/27/2010	NA	NA	Member TPH	200 S 108th Avenue Omaha, NE 68154	800-889-3600	Public Customer Business, Clearing Services
Telsey Advisory Group, LLC	1/24/2011	8/15/2014	NA	NA	NA	NA	Member TPH	555 8th Avenue 7th Floor New York, NY 10017	212-973-9700	Public Customer Business
Tewtabury Investment Fund, Ltd.	7/1/2011	7/1/2011	1/6/2015	1/6/2015	NA	NA	Sponsored Participant	Washington Mall I 20th Church Street, 4th Floor Hamilton, HM 11 Bermuda	810-971-5000	Proprietary Trading
Tewtabury Investment Fund, Ltd.	10/23/2008	11/15/2010	NA	NA	NA	NA	Sponsored Participant	Washington Mall I 20th Church Street, 4th Floor Hamilton, HM 11 Bermuda	212-310-7078	Proprietary Trading
Theris Trading LLC	8/18/2008	10/1/2010	NA	NA	NA	NA	Member TPH	10 Town Square Suite 100 Chatham, NJ 07928	973-865-9800	Agency
ThinkTrade, LLC	2/1/2010	10/20/2010	1/9/2015	1/9/2015	NA	NA	Sponsored Participant	2210 Encinitas Boulevard Suite 1 Encinitas, CA 92024	760-452-2451	Proprietary Trading
Timber Hill LLC	NA	NA	NA	NA	12/27/1998	12/15/2010	Member TPH	One Pickwick Plaza Suite 200 Greenwich, CT 06830	203-618-5800	Clearing, Market Maker
TJM Investments, LLC	NA	NA	NA	NA	3/11/2013	NA	Member TPH	318 W Adams Street 9th Floor Chicago, IL 60606	312-432-5100	Floor Broker, Transact Business with the Public
Tradebot Systems, Inc.	8/18/2008	9/1/2010	5/28/2010	5/27/2010	NA	NA	Member TPH	1251 NW Briarcliff Parkway Suite 700 Kansas City, MO 64116	816-285-6400	Proprietary Trading
TradeStation Securities, Inc.	8/18/2008	9/1/2010	5/25/2010	5/25/2010	NA	NA	Member TPH	8050 SW 10th Street Suite 2000 Plantation, FL 33324	954-852-7900	Market Maker
TRC Hellepolis, Ltd.	12/11/2009	NA	NA	NA	NA	NA	Sponsored Participant	377 Broadway 11th Floor New York, NY 10013	846-472-1782	Proprietary Trading
TRC Markets LLC	4/13/2017	4/13/2017	4/13/2017	4/13/2017	NA	NA	Member TPH	710 Johnnie Dodds Boulevard Suite 300 Mt. Pleasant, SC 29464	917-388-8844	Agency
Trinity Executions, LLC	NA	NA	NA	NA	11/1/2011	NA	Member TPH	141 W Jackson Boulevard Suite 3000 Chicago, IL 60604	312-878-4704	Floor Broker, Transact Business with the Public
Tudor, Pickering, Holt & Co. Securities, Inc.	8/18/2008	10/17/2011	NA	NA	NA	NA	Member TPH	1111 Bagby Suite 4800 Houston, TX 77002	713-333-7100	Agency
Two Sigma Investments, LLC	9/1/2009	NA	NA	NA	NA	NA	Sponsored Participant	100 Avenue of the Americas 4th Floor New York, NY 10013	212-775-8878	Proprietary Trading
Two Sigma Partners Master Fund, Ltd.	3/2/2009	NA	NA	NA	NA	NA	Sponsored Participant	100 Avenue of the Americas 4th Floor New York, NY 10013	212-775-8878	Proprietary Trading
Two Sigma Securities, LLC	7/1/2009	NA	NA	NA	NA	NA	Sponsored Participant	100 Avenue of the Americas 4th Floor New York, NY 10013	846-292-8843	Proprietary Trading

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Two Sigma Securities, LLC	10/1/2009	10/5/2010	5/27/2010	5/27/2010	9/15/2017	7/18/2018	Member TPH	100 Avenue of the Americas 18th Floor New York, NY 10013	212-625-6700	Market Maker, Broker
U.S. Securities, Int'l Corp.	NA	NA	NA	NA	7/3/1973	NA	Member TPH	120 Broadway Suite 1017 New York, NY 10271	212-227-0800	Transact Business with the Public
UBS Financial Services Inc.	NA	NA	NA	NA	12/11/1972	NA	Member TPH	1200 Harbor Boulevard Weehawken, NJ 07088	201-352-3000	Clearing, Transact Business with the Public
UBS Securities LLC	10/15/2008	10/1/2010	4/12/2010	4/12/2010	10/1/1998	10/8/2010	Member TPH	1285 Avenue of the Americas New York, NY 10019	203-719-3000	Clearing, Proprietary Trading, Transact Business with the Public
Ultraviolet Securities LLC	8/17/2019	8/17/2019	8/17/2019	8/17/2019	NA	NA	Sponsored Participant	151 Bodman Place Suite 301 Red Bank, NJ 07701	732-450-7482	Proprietary Trading
Ultraviolet Securities LLC	10/24/2019	10/24/2019	10/24/2019	10/24/2019	NA	NA	Sponsored Participant	151 Bodman Place Suite 301 Red Bank, NJ 07701	732-450-7482	Proprietary Trading
Ustocktrade Securities, Inc.	4/17/2015	NA	NA	NA	NA	NA	Member TPH	275 Grove Street Suite 2-400 Newton, MA 02468	817-340-3041	Public Customer Business, Proprietary Trading
Valor Clearing LLC	9/5/2019	9/5/2019	9/5/2019	9/5/2019	NA	NA	Member TPH	2400 E. Katella Ave Suite 725 Anaheim, CA 92806	949-352-6894	Clearing Services
Vention Fund Management LLC	10/21/2019	10/21/2019	10/21/2019	10/21/2019	NA	NA	Sponsored Participant	1 American Lane Greenwich, CT 06831	203-742-7711	Proprietary Trading
ViewTrade Securities, Inc.	8/18/2008	11/15/2010	8/10/2010	8/10/2010	NA	NA	Member TPH	7280 W Palmetto Park Road Suite 310 Boca Raton, FL 33433	561-620-0308	Agency
Virtu Americas LLC	9/15/2009	10/14/2010	1/3/2011	1/3/2011	9/18/2009	3/17/2011	Member TPH	300 Vesey Street New York, NY 10282	848-682-8000	Clearing, Proprietary Trading, Transact Business with the Public, Brokerage
Virtu Financial BD LLC	11/17/2008	10/7/2010	5/27/2010	5/27/2010	NA	NA	Member TPH	307 Camp Craft Road Austin, TX 78743	800-544-7508	Proprietary Trading
Virtu Financial Capital Markets LLC	8/18/2008	9/1/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	300 Vesey Street New York, NY 10282	212-418-0100	Proprietary Trading
Virtu ITG LLC	8/18/2008	10/1/2010	5/25/2010	5/27/2010	NA	NA	Member TPH	One Liberty Plaza 185 Broadway, 4th Floor New York, NY 10006	212-588-4000	Agency
Vision Financial Markets LLC	4/1/2009	11/15/2010	7/13/2012	7/13/2012	12/11/2008	NA	Member TPH	120 Long Ridge Road 3 North Stamford, CT 06902	203-388-2700	Clearing, Transact Business with the Public
Volent Execution, LLC	8/15/2011	NA	NA	10/1/2015	4/12/2005	9/24/2010	Member TPH	111 W Jackson Boulevard 20th Floor Chicago, IL 60604	312-892-5000	Clearing, Brokerage
Volent Liquidity, LLC	4/15/2011	NA	5/27/2010	5/27/2010	2/1/2010	3/23/2011	Member TPH	250 Vesey Street Suite 2801 New York, NY 10281	848-804-7900	Market Maker, Order Flow Provider, Brokerage
Wall Street Access	11/3/2008	10/17/2011	5/27/2010	5/27/2010	NA	NA	Member TPH	17 Battery Place 11th Floor New York, NY 10004	212-709-9400	Agency
Walleye Trading LLC	12/1/2008	11/12/2010	NA	4/17/2018	8/1/2008	NA	Member TPH	2800 Niagara Lane North Plymouth, MN 55447	952-345-8811	Market Maker
Wedbush Securities Inc.	8/18/2008	9/1/2010	5/27/2010	5/27/2010	2/23/2012	3/9/2012	Member TPH	1000 Wilshire Boulevard Suite 800 Los Angeles, CA 90017	213-688-8090	Clearing
Wells Fargo Clearing Services, LLC	7/1/2018	NA	NA	NA	11/14/2018	NA	Member TPH	One N Jefferson Avenue Mail Code: H0004-050 St. Louis, MO 63103	314-875-3000	Clearing, Transact Business with the Public
Wells Fargo Securities, LLC	8/18/2008	10/11/2010	8/9/2010	8/9/2010	4/1/2014	4/1/2014	Member TPH	550 S Tryon Street, 8th Floor D1088-080 Charlotte, NC 28202	704-410-1913	Clearing, Proprietary Trading
Wolverine Execution Services, LLC	8/18/2008	10/19/2010	5/14/2010	5/14/2010	3/1/2008	9/24/2010	Member TPH	175 W Jackson Boulevard Suite 200 Chicago, IL 60604	312-884-4000	Clearing, Floor Broker, Transact Business with the Public, Brokerage
Wolverine Securities, LLC	NA	NA	NA	5/31/2017	NA	NA	Member TPH	175 W Jackson Boulevard Suite 200 Chicago, IL 60604	312-884-4000	Market Maker
Wolverine Trading, LLC	10/3/2011	NA	NA	10/1/2015	7/12/1994	9/24/2010	Member TPH	175 W Jackson Boulevard Suite 200 Chicago, IL 60604	312-884-4000	Market Maker, Proprietary Trading
X-Change Financial Access, LLC	NA	NA	NA	NA	5/1/2003	NA	Member TPH	440 S LaSalle Street Suite 2900 Chicago, IL 60605	312-235-0320	Clearing, Floor Broker, Transact Business with the Public
XR Securities LLC	1/15/2009	11/15/2010	5/10/2012	5/10/2012	11/30/2007	NA	Member TPH	550 W Jackson Boulevard Suite 1000 Chicago, IL 60661	312-244-4712	Market Maker, Proprietary Trading