

Nasdaq PHLX, LLC (“PHLX”) Nonstandard Expiration Pilot Program

NDXP

Annual Report

As part of the Pilot Program, the Exchange submits this Pilot Program report to the Commission (the "annual report"). The annual report contains an analysis of volume, open interest and trading patterns. In addition, for series that exceed certain minimum open interest parameters, the annual report will provide analysis of index price volatility and, if needed, share trading activity. The annual report is provided to the Commission on a confidential basis.

To date Nasdaq has not listed any end of month (EOM) nonstandard NDXP options. All NDXP data included in this report reflects only weekly expirations, except 3rd Friday. Data are consolidated across all exchanges that trade the products.

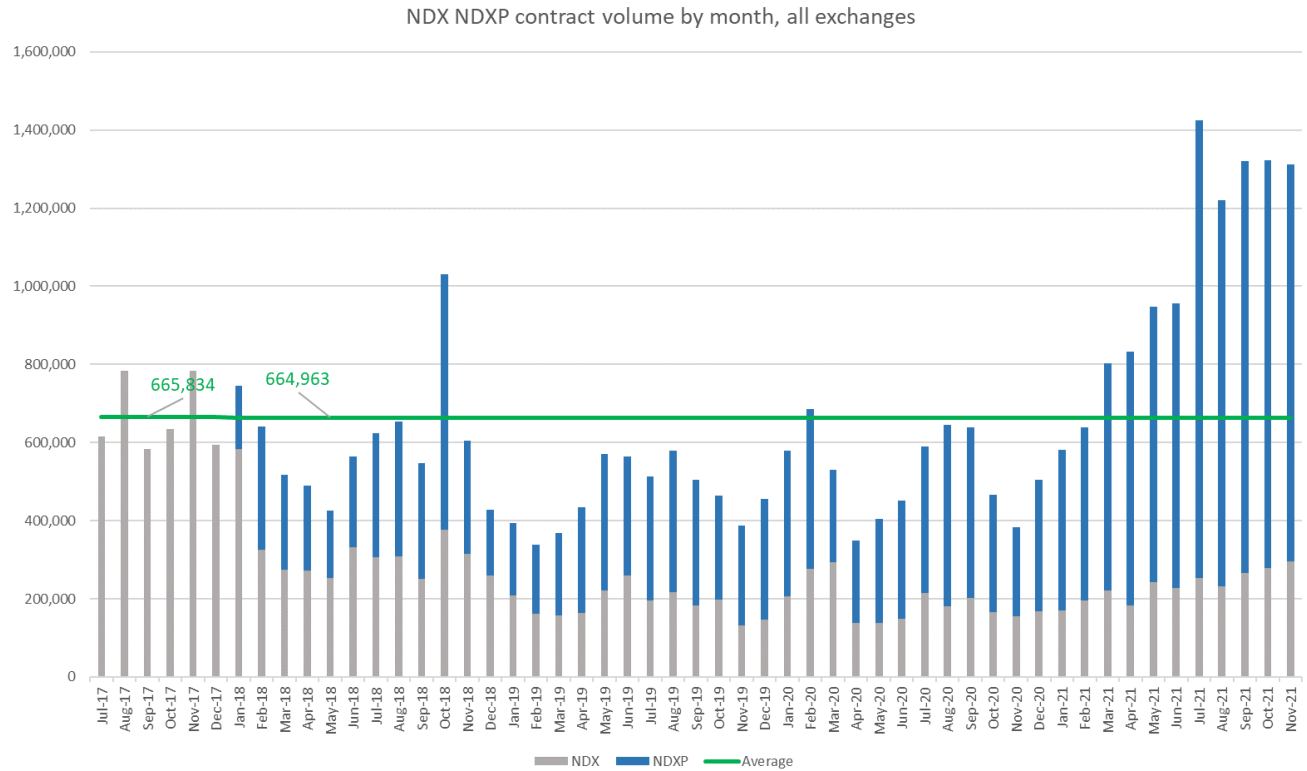
Analysis of Volume and Open Interest

For all weekly nonstandard expirations series (NDXP), this annual report provides volume and open interest data for each broad-based index overlying weekly expiration options.

In addition, the annual report contains the information noted for standard expiration Friday, a.m.-settled series (NDX), for the period covered in the annual report as well as for the six-month period prior to the initiation of the Pilot Program.

(1) Monthly volume aggregated for all Weekly Expiration series

After the introduction of NDXP (January 2018), monthly volume for the class (NDX and NDXP) initially fell and subsequently recovered to the pre-January 2018 level due to the increase in options trading interest in 2021.

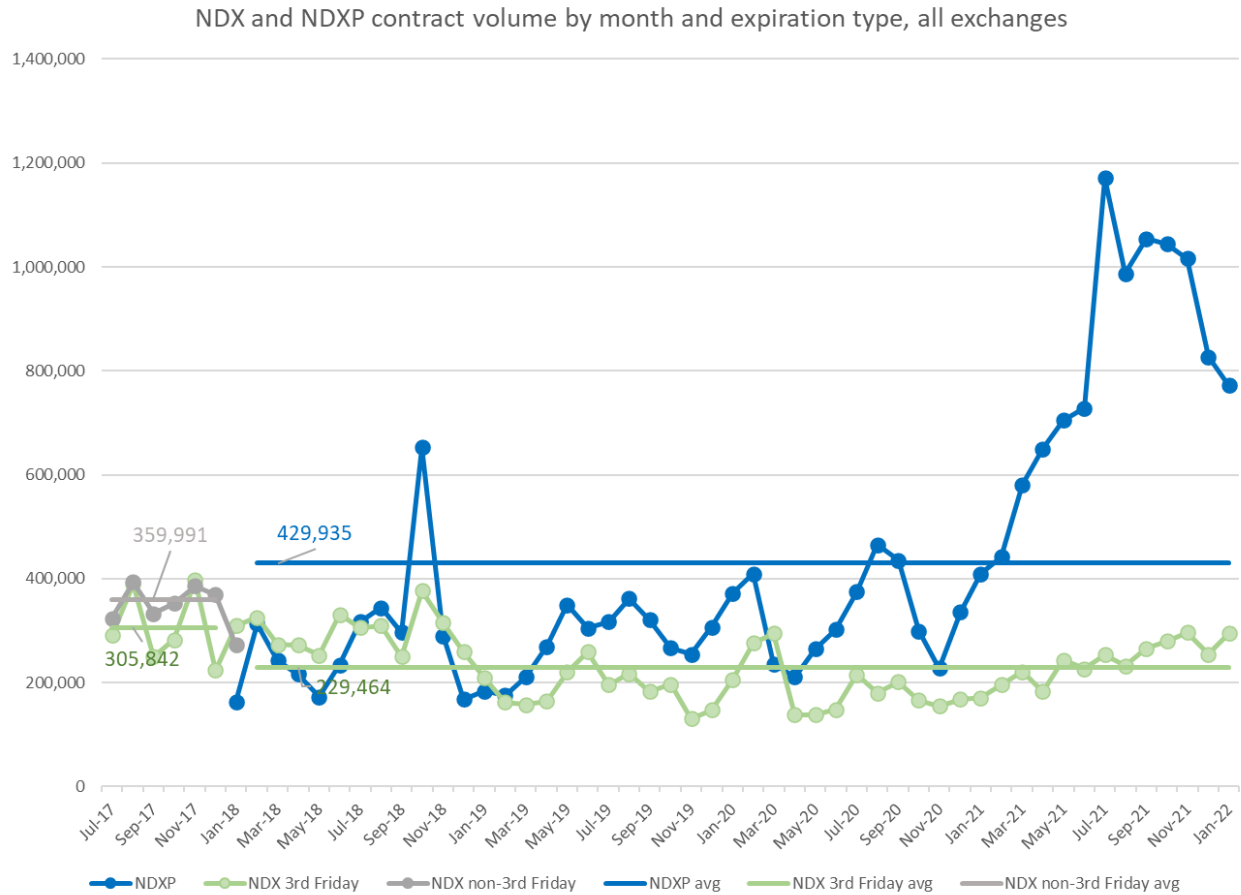


Contract volume by month, all exchanges

Month	NDX	NDXP	Total
Jul-17	614,878	0	614,878
Aug-17	783,976	0	783,976
Sep-17	583,680	0	583,680
Oct-17	635,576	0	635,576
Nov-17	783,388	0	783,388
Dec-17	593,504	0	593,504
Jan-18	582,456	163,990	746,446
Feb-18	325,908	314,060	639,968
Mar-18	273,912	243,016	516,928
Apr-18	272,914	216,280	489,194
May-18	252,708	173,304	426,012
Jun-18	331,264	234,098	565,362
Jul-18	306,550	317,458	624,008
Aug-18	309,646	344,652	654,298
Sep-18	250,670	296,606	547,276
Oct-18	377,344	652,938	1,030,282
Nov-18	315,196	290,364	605,560
Dec-18	259,708	168,512	428,220
Jan-19	208,812	184,052	392,864
Feb-19	162,460	176,038	338,498
Mar-19	158,070	210,788	368,858
Apr-19	164,796	269,488	434,284
May-19	220,350	350,224	570,574
Jun-19	259,164	305,398	564,562
Jul-19	196,620	317,554	514,174
Aug-19	217,902	362,052	579,954
Sep-19	183,102	320,734	503,836
Oct-19	197,444	266,838	464,282
Nov-19	131,262	255,228	386,490
Dec-19	147,826	306,980	454,806
Jan-20	206,170	372,142	578,312
Feb-20	275,882	409,386	685,268
Mar-20	294,722	235,910	530,632
Apr-20	138,660	210,684	349,344
May-20	138,688	265,288	403,976
Jun-20	148,454	302,872	451,326
Jul-20	215,568	375,342	590,910
Aug-20	180,366	465,456	645,822
Sep-20	202,024	435,882	637,906
Oct-20	166,778	299,546	466,324
Nov-20	155,076	228,046	383,122
Dec-20	168,610	336,350	504,960
Jan-21	171,276	409,370	580,646
Feb-21	195,796	442,508	638,304
Mar-21	221,224	581,216	802,440
Apr-21	182,964	650,002	832,966
May-21	243,676	705,124	948,800
Jun-21	227,202	728,224	955,426
Jul-21	253,624	1,171,326	1,424,950
Aug-21	232,300	987,776	1,220,076
Sep-21	265,646	1,054,470	1,320,116
Oct-21	279,594	1,043,832	1,323,426
Nov-21	296,504	1,016,460	1,312,964
Dec-21	254,696	826,676	1,081,372
Jan-22	294,806	772,266	1,067,072

Volume Jul 1, 2017 - Jan 31, 2022

Before the introduction of NDXP, NDX volume included regular Friday expirations as well as 3rd Friday expirations. Nasdaq discontinued regular Friday expirations of NDX after NDXP was introduced. Regular Friday expirations of NDX averaged 359,991 contracts per month in the 6 months before they were discontinued. Since introduction, NDXP has averaged 429,935 contracts per month, 19% above the level for NDX regular Friday expirations. NDX 3rd Friday expirations declined from 305,842 contracts per month to 229,464 contracts per month, a 25% decline.



NDX and NDXP volume by month, by expiration type, all exchanges

Month	NDXP	NDX 3rd Friday	NDX non-3rd Friday
Jul-17		290,888	323,990
Aug-17		389,880	394,096
Sep-17		250,674	333,006
Oct-17		282,576	353,000
Nov-17		397,218	386,170
Dec-17		223,818	369,686
Jan-18	163,990	309,790	272,666
Feb-18	314,060	325,908	
Mar-18	243,016	273,912	
Apr-18	216,280	272,914	
May-18	173,304	252,708	
Jun-18	234,098	331,264	
Jul-18	317,458	306,550	
Aug-18	344,652	309,646	
Sep-18	296,606	250,670	
Oct-18	652,938	377,344	
Nov-18	290,364	315,196	
Dec-18	168,512	259,708	
Jan-19	184,052	208,812	
Feb-19	176,038	162,460	
Mar-19	210,788	158,070	
Apr-19	269,488	164,796	
May-19	350,224	220,350	
Jun-19	305,398	259,164	
Jul-19	317,554	196,620	
Aug-19	362,052	217,902	
Sep-19	320,734	183,102	
Oct-19	266,838	197,444	
Nov-19	255,228	131,262	
Dec-19	306,980	147,826	
Jan-20	372,142	206,170	
Feb-20	409,386	275,882	
Mar-20	235,910	294,722	
Apr-20	210,684	138,660	
May-20	265,288	138,688	
Jun-20	302,872	148,454	
Jul-20	375,342	215,568	
Aug-20	465,456	180,366	
Sep-20	435,882	202,024	
Oct-20	299,546	166,778	
Nov-20	228,046	155,076	
Dec-20	336,350	168,610	
Jan-21	409,370	171,276	
Feb-21	442,508	195,796	
Mar-21	581,216	221,224	
Apr-21	650,002	182,964	
May-21	705,124	243,676	
Jun-21	728,224	227,202	
Jul-21	1,171,326	253,624	
Aug-21	987,776	232,300	
Sep-21	1,054,470	265,646	
Oct-21	1,043,832	279,594	
Nov-21	1,016,460	296,504	
Dec-21	826,676	254,696	
Jan-22	772,266	294,806	

Volume Jul 1, 2017 - Jan 31, 2022

(2) Volume in Weekly Expiration series aggregated by expiration date

NDXP contract volume by expiration date Expiration date between February 2018 and April 2019			NDXP contract volume by expiration date Expiration date between May 2019 and February 2020			NDXP contract volume by expiration date Expiration date between March 2020 and September 2020		
Expiration date	NDXP	Expiration day	Expiration date	NDXP	Expiration day	Expiration date	NDXP	Expiration day
2/2/2018	122,948	Friday	5/1/2019	31,272	Wednesday	3/2/2020	11,780	Monday
2/9/2018	163,880	Friday	5/3/2019	54,258	Friday	3/4/2020	27,574	Wednesday
2/23/2018	77,960	Friday	5/8/2019	50,286	Wednesday	3/6/2020	50,260	Friday
3/2/2018	90,830	Friday	5/10/2019	42,832	Friday	3/9/2020	8,152	Monday
3/9/2018	53,206	Friday	5/15/2019	32,942	Wednesday	3/11/2020	16,882	Wednesday
3/23/2018	94,770	Friday	5/22/2019	33,478	Wednesday	3/13/2020	29,214	Friday
3/29/2018	58,116	Thursday	5/24/2019	48,148	Friday	3/16/2020	4,598	Monday
4/6/2018	65,810	Friday	5/29/2019	32,202	Wednesday	3/18/2020	10,290	Wednesday
4/13/2018	78,978	Friday	5/31/2019	53,054	Friday	3/23/2020	5,284	Monday
4/27/2018	73,536	Friday	6/5/2019	35,776	Wednesday	3/25/2020	9,814	Wednesday
5/4/2018	49,740	Friday	6/7/2019	59,508	Friday	3/27/2020	48,406	Friday
5/11/2018	41,220	Friday	6/12/2019	27,196	Wednesday	3/30/2020	16,118	Monday
5/25/2018	46,416	Friday	6/14/2019	41,734	Friday	4/1/2020	10,868	Wednesday
6/1/2018	49,484	Friday	6/19/2019	28,212	Wednesday	4/3/2020	39,260	Friday
6/8/2018	54,170	Friday	6/26/2019	31,636	Wednesday	4/6/2020	7,766	Monday
6/22/2018	66,368	Friday	6/28/2019	97,092	Friday	4/8/2020	12,374	Wednesday
6/29/2018	90,040	Friday	7/3/2019	25,400	Wednesday	4/9/2020	35,070	Thursday
7/6/2018	69,942	Friday	7/5/2019	43,312	Friday	4/13/2020	11,238	Monday
7/13/2018	60,350	Friday	7/10/2019	28,290	Wednesday	4/15/2020	20,272	Wednesday
7/27/2018	110,478	Friday	7/12/2019	48,592	Friday	4/20/2020	14,790	Monday
8/3/2018	90,200	Friday	7/17/2019	30,338	Wednesday	4/22/2020	20,648	Wednesday
8/10/2018	88,032	Friday	7/24/2019	46,404	Wednesday	4/24/2020	30,954	Friday
8/24/2018	112,810	Friday	7/26/2019	52,288	Friday	4/27/2020	14,046	Monday
8/31/2018	108,782	Friday	7/31/2019	22,772	Wednesday	4/29/2020	16,306	Wednesday
9/7/2018	82,520	Friday	8/2/2019	63,374	Friday	5/1/2020	31,818	Friday
9/14/2018	58,738	Friday	8/7/2019	34,188	Wednesday	5/4/2020	10,336	Monday
9/26/2018	12,486	Wednesday	8/9/2019	38,096	Friday	5/6/2020	16,782	Wednesday
9/28/2018	167,618	Friday	8/14/2019	34,888	Wednesday	5/8/2020	38,544	Friday
10/3/2018	8,898	Wednesday	8/21/2019	33,774	Wednesday	5/11/2020	17,634	Monday
10/5/2018	82,856	Friday	8/23/2019	62,330	Friday	5/13/2020	25,294	Wednesday
10/10/2018	64,626	Wednesday	8/28/2019	29,822	Wednesday	5/18/2020	16,562	Monday
10/12/2018	104,182	Friday	8/30/2019	81,536	Friday	5/20/2020	22,026	Wednesday
10/17/2018	20,388	Wednesday	9/4/2019	36,826	Wednesday	5/22/2020	29,898	Friday
10/24/2018	44,278	Wednesday	9/6/2019	40,138	Friday	5/26/2020	16,348	Tuesday
10/26/2018	67,582	Friday	9/11/2019	30,056	Wednesday	5/27/2020	22,792	Wednesday
10/31/2018	44,538	Wednesday	9/13/2019	42,890	Friday	5/29/2020	31,980	Friday
11/2/2018	130,996	Friday	9/18/2019	34,386	Wednesday	6/1/2020	9,878	Monday
11/7/2018	28,038	Wednesday	9/25/2019	54,158	Wednesday	6/3/2020	17,338	Wednesday
11/9/2018	101,954	Friday	9/27/2019	63,222	Friday	6/5/2020	33,512	Friday
11/14/2018	29,308	Wednesday	10/2/2019	32,300	Wednesday	6/8/2020	19,016	Monday
11/21/2018	31,366	Wednesday	10/4/2019	37,342	Friday	6/10/2020	21,216	Wednesday
11/23/2018	63,614	Friday	10/9/2019	22,666	Wednesday	6/12/2020	45,370	Friday
11/28/2018	30,974	Wednesday	10/11/2019	50,868	Friday	6/15/2020	19,976	Monday
11/30/2018	82,364	Friday	10/16/2019	26,730	Wednesday	6/17/2020	23,382	Wednesday
12/5/2018	11,992	Wednesday	10/23/2019	33,426	Wednesday	6/22/2020	16,828	Monday
12/7/2018	52,206	Friday	10/25/2019	40,004	Friday	6/24/2020	24,022	Wednesday
12/12/2018	16,260	Wednesday	10/30/2019	26,598	Wednesday	6/26/2020	39,446	Friday
12/14/2018	34,800	Friday	11/1/2019	37,188	Friday	6/29/2020	14,178	Monday
12/19/2018	13,846	Wednesday	11/6/2019	23,540	Wednesday	7/1/2020	20,456	Wednesday
12/26/2018	14,688	Wednesday	11/8/2019	37,176	Friday	7/2/2020	32,960	Thursday
12/28/2018	36,080	Friday	11/13/2019	27,018	Wednesday	7/6/2020	19,170	Monday
1/2/2019	17,292	Wednesday	11/20/2019	32,418	Wednesday	7/8/2020	26,666	Wednesday
1/4/2019	33,702	Friday	11/22/2019	48,604	Friday	7/10/2020	63,080	Friday
1/9/2019	10,026	Wednesday	11/27/2019	28,716	Wednesday	7/13/2020	24,764	Monday
1/11/2019	18,614	Friday	11/29/2019	42,362	Friday	7/15/2020	21,124	Wednesday
1/16/2019	20,344	Wednesday	12/4/2019	28,862	Wednesday	7/20/2020	24,784	Monday
1/23/2019	14,118	Wednesday	12/6/2019	36,806	Friday	7/22/2020	16,428	Wednesday
1/25/2019	44,470	Friday	12/11/2019	28,028	Wednesday	7/24/2020	59,078	Friday
1/30/2019	24,178	Wednesday	12/13/2019	44,558	Friday	7/27/2020	14,744	Monday
2/1/2019	36,698	Friday	12/18/2019	33,326	Wednesday	7/29/2020	19,576	Wednesday
2/6/2019	18,558	Wednesday	12/24/2019	26,682	Tuesday	7/31/2020	43,582	Friday
2/8/2019	48,880	Friday	12/27/2019	49,110	Friday	8/3/2020	17,800	Monday
2/13/2019	15,386	Wednesday	12/31/2019	33,566	Tuesday	8/5/2020	21,600	Wednesday
2/20/2019	15,928	Wednesday	1/3/2020	40,200	Friday	8/7/2020	47,708	Friday
2/22/2019	28,444	Friday	1/8/2020	40,724	Wednesday	8/10/2020	30,542	Monday
2/27/2019	22,400	Wednesday	1/10/2020	57,584	Friday	8/12/2020	49,434	Wednesday
3/1/2019	31,212	Friday	1/15/2020	44,008	Wednesday	8/14/2020	45,854	Friday
3/6/2019	19,636	Wednesday	1/22/2020	33,838	Wednesday	8/17/2020	16,254	Monday
3/8/2019	31,434	Friday	1/24/2020	66,022	Friday	8/19/2020	28,630	Wednesday
3/13/2019	16,852	Wednesday	1/29/2020	39,926	Wednesday	8/24/2020	36,554	Monday
3/20/2019	18,286	Wednesday	1/31/2020	67,328	Friday	8/26/2020	49,052	Wednesday
3/22/2019	38,236	Friday	2/5/2020	47,982	Wednesday	8/28/2020	68,080	Friday
3/27/2019	21,390	Wednesday	2/7/2020	56,346	Friday	8/31/2020	32,010	Monday
3/29/2019	41,326	Friday	2/12/2020	44,642	Wednesday	9/2/2020	36,396	Wednesday
4/3/2019	16,076	Wednesday	2/14/2020	62,004	Friday	9/4/2020	102,746	Friday
4/5/2019	36,224	Friday	2/19/2020	36,148	Wednesday	9/8/2020	19,066	Tuesday
4/10/2019	25,344	Wednesday	2/26/2020	61,862	Wednesday	9/9/2020	16,960	Wednesday
4/12/2019	43,806	Friday	2/28/2020	79,944	Friday	9/11/2020	46,242	Friday
4/17/2019	25,594	Wednesday				9/14/2020	15,002	Monday
4/24/2019	31,540	Wednesday				9/16/2020	21,816	Wednesday
4/26/2019	49,912	Friday				9/21/2020	21,880	Monday
						9/23/2020	28,004	Wednesday
						9/25/2020	79,572	Friday
						9/28/2020	17,440	Monday
						9/30/2020	23,722	Wednesday

NDXP contract volume by expiration date

Expiration date between October 2020 and April 2021

Expiration date	NDXP	Expiration day
10/2/2020	51,464	Friday
10/5/2020	16,192	Monday
10/7/2020	19,312	Wednesday
10/9/2020	44,034	Friday
10/12/2020	17,566	Monday
10/14/2020	22,118	Wednesday
10/19/2020	17,680	Monday
10/21/2020	19,010	Wednesday
10/23/2020	31,290	Friday
10/26/2020	19,616	Monday
10/28/2020	20,306	Wednesday
10/30/2020	47,718	Friday
11/2/2020	14,830	Monday
11/4/2020	12,224	Wednesday
11/6/2020	28,392	Friday
11/9/2020	15,422	Monday
11/11/2020	15,568	Wednesday
11/13/2020	32,440	Friday
11/16/2020	13,218	Monday
11/18/2020	19,346	Wednesday
11/23/2020	20,394	Monday
11/25/2020	23,948	Wednesday
11/27/2020	23,024	Friday
11/30/2020	15,464	Monday
12/2/2020	14,790	Wednesday
12/4/2020	29,262	Friday
12/7/2020	18,124	Monday
12/9/2020	33,766	Wednesday
12/11/2020	35,374	Friday
12/14/2020	21,596	Monday
12/16/2020	20,842	Wednesday
12/21/2020	22,886	Monday
12/23/2020	22,526	Wednesday
12/24/2020	23,748	Thursday
12/28/2020	16,234	Monday
12/30/2020	23,328	Wednesday
12/31/2020	47,140	Thursday
1/4/2021	30,494	Monday
1/6/2021	30,032	Wednesday
1/8/2021	46,704	Friday
1/11/2021	21,876	Monday
1/13/2021	29,308	Wednesday
1/19/2021	35,956	Tuesday
1/20/2021	27,934	Wednesday
1/22/2021	42,618	Friday
1/25/2021	25,042	Monday
1/27/2021	40,006	Wednesday
1/29/2021	54,150	Friday
2/1/2021	24,482	Monday
2/3/2021	21,596	Wednesday
2/5/2021	48,934	Friday
2/8/2021	26,186	Monday
2/10/2021	27,496	Wednesday
2/12/2021	60,584	Friday
2/16/2021	26,806	Tuesday
2/17/2021	27,538	Wednesday
2/22/2021	32,024	Monday
2/24/2021	34,676	Wednesday
2/26/2021	70,928	Friday
3/1/2021	38,504	Monday
3/3/2021	30,032	Wednesday
3/5/2021	112,558	Friday
3/8/2021	26,218	Monday
3/10/2021	28,484	Wednesday
3/12/2021	61,756	Friday
3/15/2021	30,104	Monday
3/17/2021	31,394	Wednesday
3/22/2021	33,554	Monday
3/24/2021	48,820	Wednesday
3/26/2021	87,368	Friday
3/29/2021	31,714	Monday
3/31/2021	37,824	Wednesday
4/1/2021	45,202	Thursday
4/5/2021	37,172	Monday
4/7/2021	30,126	Wednesday
4/9/2021	63,508	Friday
4/12/2021	34,446	Monday
4/14/2021	49,846	Wednesday
4/19/2021	41,094	Monday
4/21/2021	70,592	Wednesday
4/23/2021	81,850	Friday
4/26/2021	35,682	Monday
4/28/2021	65,354	Wednesday
4/30/2021	102,316	Friday

Volume Jan 1, 2017 - Jan 31, 2022

NDXP contract volume by expiration date

Expiration date between May 2021 and November 2021

Expiration date	NDXP	Expiration day
5/3/2021	45,182	Monday
5/5/2021	72,658	Wednesday
5/7/2021	105,528	Friday
5/10/2021	69,436	Monday
5/12/2021	49,460	Wednesday
5/14/2021	80,882	Friday
5/17/2021	39,242	Monday
5/19/2021	39,996	Wednesday
5/24/2021	49,008	Monday
5/26/2021	33,750	Wednesday
5/28/2021	79,864	Friday
6/1/2021	29,392	Tuesday
6/2/2021	30,616	Wednesday
6/4/2021	103,874	Friday
6/7/2021	31,702	Monday
6/9/2021	39,036	Wednesday
6/11/2021	90,730	Friday
6/14/2021	46,602	Monday
6/16/2021	47,258	Wednesday
6/21/2021	42,018	Monday
6/23/2021	48,690	Wednesday
6/25/2021	104,738	Friday
6/28/2021	50,054	Monday
6/30/2021	85,412	Wednesday
7/2/2021	100,702	Friday
7/6/2021	57,346	Tuesday
7/7/2021	54,620	Wednesday
7/9/2021	100,798	Friday
7/12/2021	48,720	Monday
7/14/2021	89,618	Wednesday
7/19/2021	162,462	Monday
7/21/2021	112,468	Wednesday
7/23/2021	139,704	Friday
7/26/2021	65,360	Monday
7/28/2021	101,324	Wednesday
7/30/2021	139,536	Friday
8/2/2021	46,238	Monday
8/4/2021	72,936	Wednesday
8/6/2021	110,174	Friday
8/9/2021	45,604	Monday
8/11/2021	77,802	Wednesday
8/13/2021	97,560	Friday
8/16/2021	87,476	Monday
8/18/2021	88,812	Wednesday
8/23/2021	83,712	Monday
8/25/2021	58,922	Wednesday
8/27/2021	108,138	Friday
8/30/2021	65,428	Monday
9/1/2021	64,848	Wednesday
9/3/2021	103,574	Friday
9/7/2021	53,864	Tuesday
9/8/2021	62,998	Wednesday
9/10/2021	117,310	Friday
9/13/2021	50,852	Monday
9/15/2021	94,762	Wednesday
9/20/2021	90,404	Monday
9/22/2021	82,508	Wednesday
9/24/2021	111,516	Friday
9/27/2021	56,770	Monday
9/29/2021	96,222	Wednesday
10/1/2021	137,712	Friday
10/4/2021	61,104	Monday
10/6/2021	88,168	Wednesday
10/8/2021	154,550	Friday
10/11/2021	55,274	Monday
10/13/2021	63,796	Wednesday
10/18/2021	57,374	Monday
10/20/2021	68,678	Wednesday
10/22/2021	132,264	Friday
10/25/2021	75,336	Monday
10/27/2021	94,156	Wednesday
10/29/2021	126,024	Friday
11/1/2021	51,570	Monday
11/3/2021	64,842	Wednesday
11/5/2021	139,836	Friday
11/8/2021	44,744	Monday
11/10/2021	69,568	Wednesday
11/12/2021	118,962	Friday
11/15/2021	61,392	Monday
11/17/2021	67,998	Wednesday
11/22/2021	79,862	Monday
11/24/2021	76,382	Wednesday
11/26/2021	96,346	Friday
11/29/2021	50,226	Monday

Volume Jan 1, 2017 - Jan 31, 2022

NDXP contract volume by expiration date

Expiration date between December 2021 and June 2022

Expiration date	NDXP	Expiration day
12/1/2021	67,722	Wednesday
12/3/2021	178,460	Friday
12/6/2021	39,396	Monday
12/8/2021	67,400	Wednesday
12/10/2021	105,212	Friday
12/13/2021	52,058	Monday
12/15/2021	63,920	Wednesday
12/20/2021	48,358	Monday
12/22/2021	43,356	Wednesday
12/23/2021	94,268	Thursday
12/27/2021	36,482	Monday
12/29/2021	62,634	Wednesday
12/31/2021	119,348	Friday
1/3/2022	38,996	Monday
1/5/2022	57,782	Wednesday
1/7/2022	84,232	Friday
1/10/2022	44,728	Monday
1/12/2022	52,716	Wednesday
1/14/2022	92,220	Friday
1/18/2022	39,598	Tuesday
1/19/2022	41,542	Wednesday
1/24/2022	90,214	Monday
1/26/2022	60,710	Wednesday
1/28/2022	89,664	Friday
1/31/2022	37,974	Monday
2/2/2022	37,626	Wednesday
2/4/2022	107,584	Friday
2/7/2022	30,382	Monday
2/9/2022	35,258	Wednesday
2/11/2022	84,736	Friday
2/14/2022	36,912	Monday
2/16/2022	41,010	Wednesday
2/22/2022	40,334	Tuesday
2/23/2022	27,472	Wednesday
2/25/2022	67,870	Friday
2/28/2022	29,020	Monday
3/2/2022	31,614	Wednesday
3/4/2022	54,646	Friday
3/7/2022	24,680	Monday
3/9/2022	32,722	Wednesday
3/11/2022	64,270	Friday
3/14/2022	35,046	Monday
3/16/2022	54,306	Wednesday
3/21/2022	43,142	Monday
3/23/2022	48,796	Wednesday
3/25/2022	74,812	Friday
3/28/2022	32,988	Monday
3/30/2022	52,196	Wednesday
4/1/2022	71,266	Friday
4/4/2022	35,770	Monday
4/6/2022	50,720	Wednesday
4/8/2022	95,178	Friday
4/11/2022	37,706	Monday
4/13/2022	82,650	Wednesday
4/18/2022	59,532	Monday
4/20/2022	64,266	Wednesday
4/22/2022	131,792	Friday
4/25/2022	37,642	Monday
4/27/2022	115,500	Wednesday
4/29/2022	120,526	Friday
5/2/2022	39,556	Monday
5/4/2022	57,048	Wednesday
5/6/2022	180,124	Friday
5/9/2022	52,856	Monday
5/11/2022	84,660	Wednesday
5/13/2022	90,778	Friday
5/16/2022	43,450	Monday
5/18/2022	47,418	Wednesday
5/23/2022	45,276	Monday
5/25/2022	52,880	Wednesday
5/27/2022	126,362	Friday
5/31/2022	49,246	Tuesday
6/1/2022	43,306	Wednesday
6/3/2022	82,422	Friday
6/6/2022	28,936	Monday
6/8/2022	41,348	Wednesday
6/10/2022	79,410	Friday
6/13/2022	33,488	Monday
6/15/2022	32,358	Wednesday
6/21/2022	33,228	Tuesday
6/22/2022	41,830	Wednesday
6/24/2022	99,244	Friday
6/27/2022	38,340	Monday
6/29/2022	57,700	Wednesday

Volume Jan 1, 2017 - Jan 31, 2022

NDXP contract volume by expiration date
Expiration date between July 2022 and October 2022

Expiration date	NDXP	Expiration day
7/1/2022	77,006	Friday
7/5/2022	31,208	Tuesday
7/6/2022	20,844	Wednesday
7/8/2022	48,252	Friday
7/11/2022	25,872	Monday
7/13/2022	33,958	Wednesday
7/18/2022	43,274	Monday
7/20/2022	46,086	Wednesday
7/22/2022	75,696	Friday
7/25/2022	32,634	Monday
7/27/2022	42,096	Wednesday
7/29/2022	82,324	Friday
8/1/2022	28,406	Monday
8/3/2022	48,080	Wednesday
8/5/2022	53,216	Friday
8/8/2022	29,440	Monday
8/10/2022	35,200	Wednesday
8/12/2022	82,356	Friday
8/15/2022	29,518	Monday
8/16/2022	18,582	Tuesday
8/17/2022	31,624	Wednesday
8/18/2022	13,648	Thursday
8/22/2022	30,512	Monday
8/23/2022	20,098	Tuesday
8/24/2022	24,716	Wednesday
8/25/2022	23,082	Thursday
8/26/2022	74,116	Friday
8/29/2022	31,314	Monday
8/30/2022	24,134	Tuesday
8/31/2022	34,186	Wednesday
9/1/2022	35,848	Thursday
9/2/2022	91,314	Friday
9/6/2022	29,130	Tuesday
9/7/2022	22,968	Wednesday
9/8/2022	22,952	Thursday
9/9/2022	55,144	Friday
9/12/2022	31,288	Monday
9/13/2022	23,786	Tuesday
9/14/2022	32,934	Wednesday
9/15/2022	37,052	Thursday
9/19/2022	32,786	Monday
9/20/2022	24,768	Tuesday
9/21/2022	25,258	Wednesday
9/22/2022	21,466	Thursday
9/23/2022	49,500	Friday
9/26/2022	31,034	Monday
9/27/2022	28,220	Tuesday
9/28/2022	33,884	Wednesday
9/29/2022	29,100	Thursday
9/30/2022	92,796	Friday
10/3/2022	38,224	Monday
10/4/2022	31,728	Tuesday
10/5/2022	43,590	Wednesday
10/6/2022	26,412	Thursday
10/7/2022	74,420	Friday
10/10/2022	47,236	Monday
10/11/2022	37,672	Tuesday
10/12/2022	36,964	Wednesday
10/13/2022	41,402	Thursday
10/14/2022	78,298	Friday
10/17/2022	36,108	Monday
10/18/2022	33,828	Tuesday
10/19/2022	29,850	Wednesday
10/20/2022	43,614	Thursday
10/24/2022	48,544	Monday
10/25/2022	29,648	Tuesday
10/26/2022	41,014	Wednesday
10/27/2022	35,494	Thursday
10/28/2022	82,138	Friday
10/31/2022	53,592	Monday

Volume Jan 1, 2017 - Jan 31, 2022

NDXP contract volume by expiration date
Expiration date between November 2022 and Sep 2023

Expiration date	NDXP	Expiration day
11/1/2022	29,900	Tuesday
11/2/2022	25,742	Wednesday
11/3/2022	23,874	Thursday
11/4/2022	80,182	Friday
11/7/2022	35,252	Monday
11/8/2022	40,406	Tuesday
11/9/2022	30,246	Wednesday
11/10/2022	61,402	Thursday
11/11/2022	83,544	Friday
11/14/2022	37,772	Monday
11/15/2022	37,772	Tuesday
11/16/2022	29,732	Wednesday
11/17/2022	41,978	Thursday
11/21/2022	35,898	Monday
11/22/2022	28,318	Tuesday
11/23/2022	31,402	Wednesday
11/25/2022	46,056	Friday
11/28/2022	35,166	Monday
11/29/2022	30,960	Tuesday
11/30/2022	48,718	Wednesday
12/1/2022	28,768	Thursday
12/2/2022	62,122	Friday
12/5/2022	30,058	Monday
12/6/2022	31,462	Tuesday
12/7/2022	28,262	Wednesday
12/8/2022	28,334	Thursday
12/9/2022	54,034	Friday
12/12/2022	32,874	Monday
12/13/2022	41,082	Tuesday
12/14/2022	26,836	Wednesday
12/15/2022	34,818	Thursday
12/19/2022	31,572	Monday
12/20/2022	24,872	Tuesday
12/21/2022	29,870	Wednesday
12/22/2022	18,078	Thursday
12/23/2022	49,862	Friday
12/27/2022	19,162	Tuesday
12/28/2022	31,218	Wednesday
12/29/2022	26,210	Thursday
12/30/2022	77,520	Friday
1/3/2023	11,260	Tuesday
1/4/2023	2,968	Wednesday
1/5/2023	1,952	Thursday
1/6/2023	11,754	Friday
1/9/2023	2,274	Monday
1/10/2023	618	Tuesday
1/11/2023	1,024	Wednesday
1/12/2023	782	Thursday
1/13/2023	7,424	Friday
1/17/2023	548	Tuesday
1/18/2023	282	Wednesday
1/19/2023	272	Thursday
1/23/2023	882	Monday
1/24/2023	110	Tuesday
1/25/2023	220	Wednesday
1/26/2023	88	Thursday
1/27/2023	8,836	Friday
1/31/2023	446	Tuesday
2/2/2023	30	Thursday
2/3/2023	3,276	Friday
2/10/2023	1,130	Friday
2/24/2023	124	Friday
3/31/2023	16,590	Friday
6/30/2023	2,898	Friday
9/29/2023	4,728	Friday

Volume Jan 1, 2017 - Jan 31, 2022

NDXP contract volume by expiration date Expiration date between July 2022 and October 2022		
Expiration date	NDXP	Expiration day
7/1/2022	77,006	Friday
7/5/2022	31,208	Tuesday
7/6/2022	20,844	Wednesday
7/8/2022	48,252	Friday
7/11/2022	25,872	Monday
7/13/2022	33,958	Wednesday
7/18/2022	43,274	Monday
7/20/2022	46,086	Wednesday
7/22/2022	75,696	Friday
7/25/2022	32,634	Monday
7/27/2022	42,096	Wednesday
7/29/2022	82,324	Friday
8/1/2022	28,406	Monday
8/3/2022	48,080	Wednesday
8/5/2022	53,216	Friday
8/8/2022	29,440	Monday
8/10/2022	35,200	Wednesday
8/12/2022	82,356	Friday
8/15/2022	29,518	Monday
8/16/2022	18,582	Tuesday
8/17/2022	31,624	Wednesday
8/18/2022	13,648	Thursday
8/22/2022	30,512	Monday
8/23/2022	20,098	Tuesday
8/24/2022	24,716	Wednesday
8/25/2022	23,082	Thursday
8/26/2022	74,116	Friday
8/29/2022	31,314	Monday
8/30/2022	24,134	Tuesday
8/31/2022	34,186	Wednesday
9/1/2022	35,848	Thursday
9/2/2022	91,314	Friday
9/6/2022	29,130	Tuesday
9/7/2022	22,968	Wednesday
9/8/2022	22,952	Thursday
9/9/2022	55,144	Friday
9/12/2022	31,288	Monday
9/13/2022	23,786	Tuesday
9/14/2022	32,934	Wednesday
9/15/2022	37,052	Thursday
9/19/2022	32,786	Monday
9/20/2022	24,768	Tuesday
9/21/2022	25,258	Wednesday
9/22/2022	21,466	Thursday
9/23/2022	49,500	Friday
9/26/2022	31,034	Monday
9/27/2022	28,220	Tuesday
9/28/2022	33,884	Wednesday
9/29/2022	29,100	Thursday
9/30/2022	92,796	Friday
10/3/2022	38,224	Monday
10/4/2022	31,728	Tuesday
10/5/2022	43,590	Wednesday
10/6/2022	26,412	Thursday
10/7/2022	74,420	Friday
10/10/2022	47,236	Monday
10/11/2022	37,672	Tuesday
10/12/2022	36,964	Wednesday
10/13/2022	41,402	Thursday
10/14/2022	78,298	Friday
10/17/2022	36,108	Monday
10/18/2022	33,828	Tuesday
10/19/2022	29,850	Wednesday
10/20/2022	43,614	Thursday
10/24/2022	48,544	Monday
10/25/2022	29,648	Tuesday
10/26/2022	41,014	Wednesday
10/27/2022	35,494	Thursday
10/28/2022	82,138	Friday
10/31/2022	53,592	Monday

Volume Jan 1, 2017 - Jan 31, 2022

NDXP contract volume by expiration date Expiration date between November 2022 and Sep 2023		
Expiration date	NDXP	Expiration day
11/1/2022	29,900	Tuesday
11/2/2022	25,742	Wednesday
11/3/2022	23,874	Thursday
11/4/2022	80,182	Friday
11/7/2022	35,252	Monday
11/8/2022	40,406	Tuesday
11/9/2022	30,246	Wednesday
11/10/2022	61,402	Thursday
11/11/2022	83,544	Friday
11/14/2022	37,772	Monday
11/15/2022	37,772	Tuesday
11/16/2022	29,732	Wednesday
11/17/2022	41,978	Thursday
11/21/2022	35,898	Monday
11/22/2022	28,318	Tuesday
11/23/2022	31,402	Wednesday
11/25/2022	46,056	Friday
11/28/2022	35,166	Monday
11/29/2022	30,960	Tuesday
11/30/2022	48,718	Wednesday
12/1/2022	28,768	Thursday
12/2/2022	62,122	Friday
12/5/2022	30,058	Monday
12/6/2022	31,462	Tuesday
12/7/2022	28,262	Wednesday
12/8/2022	28,334	Thursday
12/9/2022	54,034	Friday
12/12/2022	32,874	Monday
12/13/2022	41,082	Tuesday
12/14/2022	26,836	Wednesday
12/15/2022	34,818	Thursday
12/19/2022	31,572	Monday
12/20/2022	24,872	Tuesday
12/21/2022	29,870	Wednesday
12/22/2022	18,078	Thursday
12/23/2022	49,862	Friday
12/27/2022	19,162	Tuesday
12/28/2022	31,218	Wednesday
12/29/2022	26,210	Thursday
12/30/2022	77,520	Friday
1/3/2023	11,260	Tuesday
1/4/2023	2,968	Wednesday
1/5/2023	1,952	Thursday
1/6/2023	11,754	Friday
1/9/2023	2,274	Monday
1/10/2023	618	Tuesday
1/11/2023	1,024	Wednesday
1/12/2023	782	Thursday
1/13/2023	7,424	Friday
1/17/2023	548	Tuesday
1/18/2023	282	Wednesday
1/19/2023	272	Thursday
1/23/2023	882	Monday
1/24/2023	110	Tuesday
1/25/2023	220	Wednesday
1/26/2023	88	Thursday
1/27/2023	8,836	Friday
1/31/2023	446	Tuesday
2/2/2023	30	Thursday
2/3/2023	3,276	Friday
2/10/2023	1,130	Friday
2/24/2023	124	Friday
3/31/2023	16,590	Friday
6/30/2023	2,898	Friday
9/29/2023	4,728	Friday

Volume Jan 1, 2017 - Jan 31, 2022

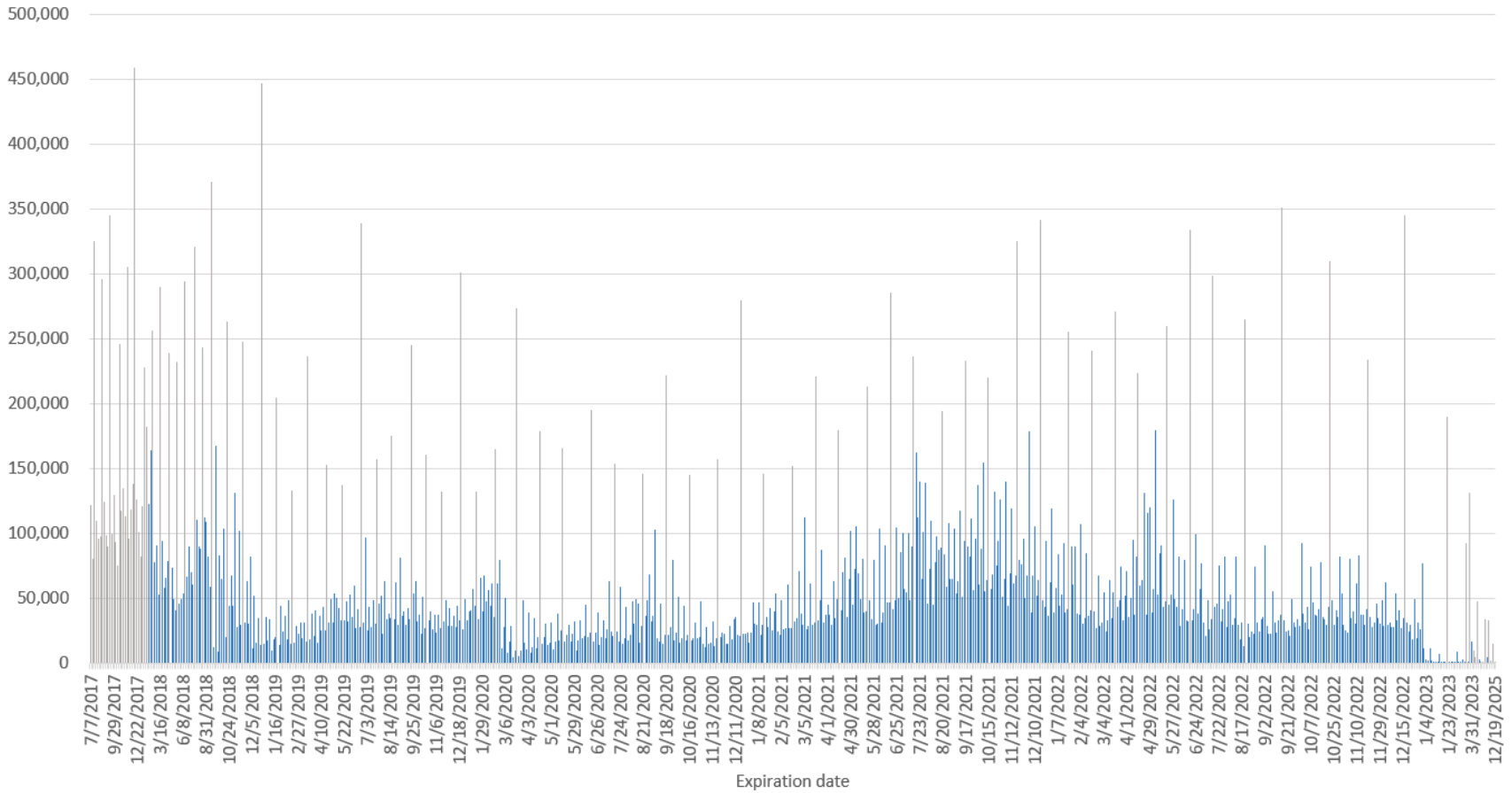
NDX 3rd Friday contract volume by expiration date

NDX non-3rd Friday contract volume by expiration date

Expiration date	NDX	Expiration day	Expiration date	NDX	Expiration day
7/21/2017	325,300	3rd Friday	7/7/2017	121,716	Friday
8/18/2017	296,352	3rd Friday	7/14/2017	80,228	Friday
9/15/2017	345,250	3rd Friday	7/28/2017	109,454	Friday
10/20/2017	246,100	3rd Friday	8/4/2017	95,942	Friday
11/17/2017	305,468	3rd Friday	8/11/2017	97,736	Friday
12/15/2017	459,208	3rd Friday	8/25/2017	124,484	Friday
1/19/2018	228,008	3rd Friday	9/1/2017	98,544	Friday
2/16/2018	256,190	3rd Friday	9/8/2017	90,122	Friday
3/16/2018	290,100	3rd Friday	9/22/2017	99,730	Friday
4/20/2018	238,940	3rd Friday	9/29/2017	129,980	Friday
5/18/2018	232,476	3rd Friday	10/6/2017	93,314	Friday
6/15/2018	294,288	3rd Friday	10/13/2017	75,248	Friday
7/20/2018	321,010	3rd Friday	10/27/2017	117,896	Friday
8/17/2018	243,408	3rd Friday	11/3/2017	135,036	Friday
9/21/2018	370,976	3rd Friday	11/10/2017	113,578	Friday
10/19/2018	263,136	3rd Friday	11/24/2017	95,948	Friday
11/16/2018	248,076	3rd Friday	12/1/2017	118,188	Friday
12/21/2018	446,776	3rd Friday	12/8/2017	138,314	Friday
1/18/2019	204,622	3rd Friday	12/22/2017	126,052	Friday
2/15/2019	132,860	3rd Friday	12/29/2017	100,978	Friday
3/15/2019	236,206	3rd Friday	1/5/2018	82,702	Friday
4/18/2019	153,024	3rd Thursday	1/12/2018	121,190	Friday
5/17/2019	137,190	3rd Friday	1/26/2018	182,438	Friday
6/21/2019	338,960	3rd Friday	Volume Jan 1, 2017 - Jan 31, 2020		
7/19/2019	157,694	3rd Friday			
8/16/2019	175,242	3rd Friday			
9/20/2019	245,016	3rd Friday			
10/18/2019	160,998	3rd Friday			
11/15/2019	132,710	3rd Friday			
12/20/2019	301,542	3rd Friday			
1/17/2020	131,964	3rd Friday			
2/21/2020	165,158	3rd Friday			
3/20/2020	273,516	3rd Friday			
4/17/2020	179,216	3rd Friday			
5/15/2020	166,258	3rd Friday			
6/19/2020	194,850	3rd Friday			
7/17/2020	154,074	3rd Friday			
8/21/2020	145,978	3rd Friday			
9/18/2020	222,346	3rd Friday			
10/16/2020	145,120	3rd Friday			
11/20/2020	157,282	3rd Friday			
12/18/2020	279,880	3rd Friday			
1/15/2021	146,234	3rd Friday			
2/19/2021	152,198	3rd Friday			
3/19/2021	220,908	3rd Friday			
4/16/2021	179,304	3rd Friday			
5/21/2021	213,538	3rd Friday			
6/18/2021	285,656	3rd Friday			
7/16/2021	237,020	3rd Friday			
8/20/2021	194,284	3rd Friday			
9/17/2021	233,572	3rd Friday			
10/15/2021	220,202	3rd Friday			
11/19/2021	325,392	3rd Friday			
12/17/2021	341,764	3rd Friday			
1/21/2022	255,474	3rd Friday			
2/18/2022	240,484	3rd Friday			
3/18/2022	271,184	3rd Friday			
4/14/2022	223,446	3rd Thursday			
5/20/2022	260,172	3rd Friday			
6/17/2022	333,942	3rd Friday			
7/15/2022	298,574	3rd Friday			
8/19/2022	265,122	3rd Friday			
9/16/2022	350,836	3rd Friday			
10/21/2022	309,796	3rd Friday			
11/18/2022	233,594	3rd Friday			
12/16/2022	344,798	3rd Friday			
1/20/2023	190,210	3rd Friday			
2/17/2023	92,566	3rd Friday			
3/17/2023	131,622	3rd Friday			
4/21/2023	9,942	3rd Friday			
5/19/2023	5,114	3rd Friday			
6/16/2023	47,720	3rd Friday			
7/21/2023	386	3rd Friday			
8/18/2023	170	3rd Friday			
9/15/2023	34,306	3rd Friday			
12/15/2023	32,910	3rd Friday			
6/21/2024	2,212	3rd Friday			
12/20/2024	14,856	3rd Friday			

Volume Jan 1, 2017 - Jan 31, 2022

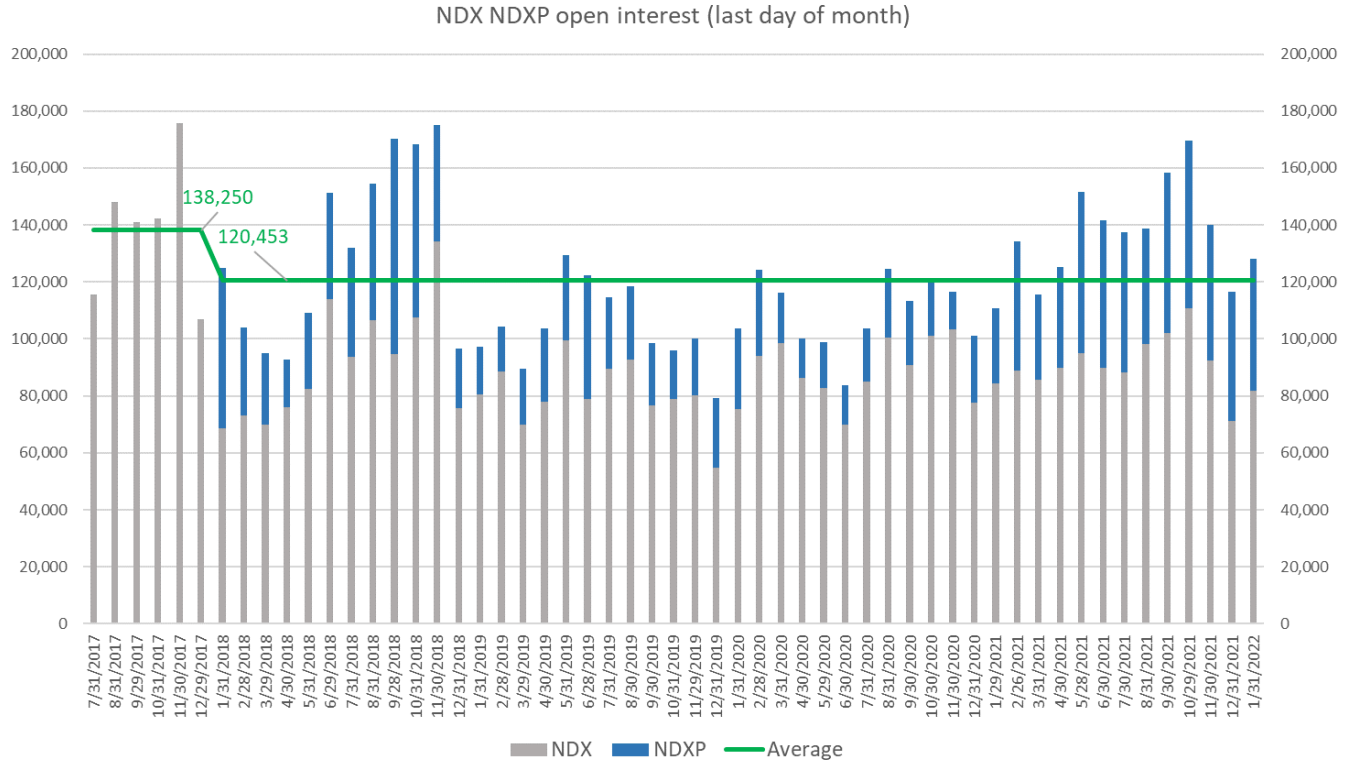
NDX and NDXP contract volume by expiration date



Volume Jan 1, 2017 - Jan 31, 2022

(3) Month-end open interest aggregated for all Weekly Expiration series

After the introduction of NDXP (January 2018), end of month open interest for the class (NDX and NDXP) fell from 138,250 contracts to 120,453 contracts, a 13% decline.



Open interest (last day of month)

Month	NDX	NDXP	Sum	Average
7/31/2017	115,491	0	115,491	138,250
8/31/2017	148,145	0	148,145	138,250
9/29/2017	140,978	0	140,978	138,250
10/31/2017	142,374	0	142,374	138,250
11/30/2017	175,566	0	175,566	138,250
12/29/2017	106,946	0	106,946	138,250
1/31/2018	68,543	56,330	124,873	120,453
2/28/2018	73,287	30,879	104,166	120,453
3/29/2018	69,796	25,276	95,072	120,453
4/30/2018	76,090	16,791	92,881	120,453
5/31/2018	82,429	26,626	109,055	120,453
6/29/2018	113,834	37,446	151,280	120,453
7/31/2018	93,721	38,338	132,059	120,453
8/31/2018	106,741	47,646	154,387	120,453
9/28/2018	94,781	75,324	170,105	120,453
10/31/2018	107,545	60,906	168,451	120,453
11/30/2018	134,295	40,710	175,005	120,453
12/31/2018	75,729	20,790	96,519	120,453
1/31/2019	80,582	16,667	97,249	120,453
2/28/2019	88,482	15,940	104,422	120,453
3/29/2019	69,836	19,716	89,552	120,453
4/30/2019	77,819	25,986	103,805	120,453
5/31/2019	99,495	29,858	129,353	120,453
6/28/2019	78,865	43,479	122,344	120,453
7/31/2019	89,541	25,004	114,545	120,453
8/30/2019	92,796	25,771	118,567	120,453
9/30/2019	76,662	21,932	98,594	120,453
10/31/2019	78,771	17,242	96,013	120,453
11/29/2019	80,124	20,123	100,247	120,453
12/31/2019	54,888	24,369	79,257	120,453
1/31/2020	75,328	28,274	103,602	120,453
2/28/2020	94,164	30,135	124,299	120,453
3/31/2020	98,445	17,634	116,079	120,453
4/30/2020	86,271	13,983	100,254	120,453
5/29/2020	82,769	15,955	98,724	120,453
6/30/2020	70,000	13,604	83,604	120,453
7/31/2020	84,980	18,693	103,673	120,453
8/31/2020	100,590	23,898	124,488	120,453
9/30/2020	90,712	22,595	113,307	120,453
10/30/2020	101,004	20,081	121,085	120,453
11/30/2020	103,254	13,413	116,667	120,453
12/31/2020	77,794	23,339	101,133	120,453
1/29/2021	84,364	26,313	110,677	120,453
2/26/2021	89,026	45,230	134,256	120,453
3/31/2021	85,563	29,889	115,452	120,453
4/30/2021	89,978	35,275	125,253	120,453
5/28/2021	94,873	56,650	151,523	120,453
6/30/2021	90,005	51,678	141,683	120,453
7/30/2021	88,100	49,243	137,343	120,453
8/31/2021	98,219	40,438	138,657	120,453
9/30/2021	102,014	56,259	158,273	120,453
10/29/2021	110,713	58,804	169,517	120,453
11/30/2021	92,350	47,573	139,923	120,453
12/31/2021	71,240	45,404	116,644	120,453
1/31/2022	81,851	46,405	128,256	120,453

(4) Month-end open interest for Weekly Expiration series aggregated by expiration date.

NDXP month end Open interest by expiration date, from Jan 2018 to Sep 2018				NDXP month end Open interest by expiration date, from Oct 2018 to Feb 2019			
Month	Expiration date	Open interest	Expiration day	Month	Expiration date	Open interest	Expiration day
1/31/2018	2/2/2018	30,512	Friday	10/31/2018	10/31/2018	6,472	Wednesday
1/31/2018	2/9/2018	20,151	Friday	10/31/2018	11/2/2018	17,431	Friday
1/31/2018	2/23/2018	2,791	Friday	10/31/2018	11/7/2018	4,653	Wednesday
1/31/2018	3/2/2018	2,681	Friday	10/31/2018	11/9/2018	12,801	Friday
1/31/2018	3/9/2018	195	Friday	10/31/2018	11/14/2018	5,037	Wednesday
2/28/2018	3/2/2018	17,327	Friday	10/31/2018	11/21/2018	680	Wednesday
2/28/2018	3/9/2018	5,364	Friday	10/31/2018	11/23/2018	7,598	Friday
2/28/2018	3/23/2018	6,007	Friday	10/31/2018	11/28/2018	1,357	Wednesday
2/28/2018	3/29/2018	2,019	Thursday	10/31/2018	11/30/2018	4,448	Friday
2/28/2018	4/6/2018	162	Friday	10/31/2018	12/7/2018	429	Friday
3/29/2018	3/29/2018	9,118	Thursday	11/30/2018	11/30/2018	18,641	Friday
3/29/2018	4/6/2018	8,202	Friday	11/30/2018	12/5/2018	2,416	Wednesday
3/29/2018	4/13/2018	4,826	Friday	11/30/2018	12/7/2018	10,533	Friday
3/29/2018	4/27/2018	2,694	Friday	11/30/2018	12/12/2018	1,232	Wednesday
3/29/2018	5/4/2018	428	Friday	11/30/2018	12/14/2018	2,974	Friday
3/29/2018	5/11/2018	8	Friday	11/30/2018	12/19/2018	422	Wednesday
4/30/2018	5/4/2018	10,118	Friday	11/30/2018	12/26/2018	324	Wednesday
4/30/2018	5/11/2018	4,153	Friday	11/30/2018	12/28/2018	1,480	Friday
4/30/2018	5/25/2018	1,529	Friday	11/30/2018	1/2/2019	1,177	Wednesday
4/30/2018	6/1/2018	871	Friday	11/30/2018	1/4/2019	1,486	Friday
4/30/2018	6/8/2018	120	Friday	11/30/2018	1/11/2019	25	Friday
5/31/2018	6/1/2018	11,836	Friday	12/31/2018	1/2/2019	5,765	Wednesday
5/31/2018	6/8/2018	8,494	Friday	12/31/2018	1/4/2019	6,778	Friday
5/31/2018	6/22/2018	2,732	Friday	12/31/2018	1/9/2019	740	Wednesday
5/31/2018	6/29/2018	3,183	Friday	12/31/2018	1/11/2019	1,814	Friday
5/31/2018	7/6/2018	369	Friday	12/31/2018	1/16/2019	1,479	Wednesday
5/31/2018	7/13/2018	12	Friday	12/31/2018	1/23/2019	273	Wednesday
6/29/2018	6/29/2018	15,734	Friday	12/31/2018	1/25/2019	3,233	Friday
6/29/2018	7/6/2018	10,748	Friday	12/31/2018	1/30/2019	18	Wednesday
6/29/2018	7/13/2018	5,325	Friday	12/31/2018	2/1/2019	635	Friday
6/29/2018	7/27/2018	4,297	Friday	12/31/2018	2/8/2019	55	Friday
6/29/2018	8/3/2018	1,307	Friday	1/31/2019	2/1/2019	6,273	Friday
6/29/2018	8/10/2018	35	Friday	1/31/2019	2/6/2019	1,283	Wednesday
7/31/2018	8/3/2018	18,696	Friday	1/31/2019	2/8/2019	3,356	Friday
7/31/2018	8/10/2018	8,841	Friday	1/31/2019	2/13/2019	572	Wednesday
7/31/2018	8/24/2018	3,975	Friday	1/31/2019	2/20/2019	414	Wednesday
7/31/2018	8/31/2018	6,013	Friday	1/31/2019	2/22/2019	2,598	Friday
7/31/2018	9/7/2018	813	Friday	1/31/2019	2/27/2019	351	Wednesday
8/31/2018	8/31/2018	18,397	Friday	1/31/2019	3/1/2019	1,040	Friday
8/31/2018	9/7/2018	13,794	Friday	1/31/2019	3/6/2019	14	Wednesday
8/31/2018	9/14/2018	5,625	Friday	1/31/2019	3/8/2019	734	Friday
8/31/2018	9/28/2018	8,908	Friday	1/31/2019	3/22/2019	32	Friday
8/31/2018	10/5/2018	861	Friday	2/28/2019	3/1/2019	6,207	Friday
8/31/2018	10/12/2018	61	Friday	2/28/2019	3/6/2019	2,605	Wednesday
9/28/2018	9/28/2018	56,006	Friday	2/28/2019	3/8/2019	3,625	Friday
9/28/2018	10/3/2018	821	Wednesday	2/28/2019	3/13/2019	472	Wednesday
9/28/2018	10/5/2018	7,473	Friday	2/28/2019	3/20/2019	304	Wednesday
9/28/2018	10/10/2018	1,327	Wednesday	2/28/2019	3/22/2019	1,125	Friday
9/28/2018	10/12/2018	5,086	Friday	2/28/2019	3/27/2019	189	Wednesday
9/28/2018	10/17/2018	83	Wednesday	2/28/2019	3/29/2019	1,213	Friday
9/28/2018	10/24/2018	357	Wednesday	2/28/2019	4/3/2019	4	Wednesday
9/28/2018	10/26/2018	2,948	Friday	2/28/2019	4/5/2019	186	Friday
9/28/2018	10/31/2018	645	Wednesday	2/28/2019	4/12/2019	10	Friday
9/28/2018	11/2/2018	532	Friday				
9/28/2018	11/9/2018	46	Friday				

NDXP month end Open interest by expiration date, from Mar 2019 to Jul 2019

Month	Expiration date	Open interest	Expiration day
3/29/2019	3/29/2019	6,540	Friday
3/29/2019	4/3/2019	1,637	Wednesday
3/29/2019	4/5/2019	5,322	Friday
3/29/2019	4/10/2019	614	Wednesday
3/29/2019	4/12/2019	2,132	Friday
3/29/2019	4/17/2019	468	Wednesday
3/29/2019	4/24/2019	500	Wednesday
3/29/2019	4/26/2019	1,361	Friday
3/29/2019	5/1/2019	25	Wednesday
3/29/2019	5/3/2019	1,107	Friday
3/29/2019	5/10/2019	10	Friday
4/30/2019	5/1/2019	8,523	Wednesday
4/30/2019	5/3/2019	6,756	Friday
4/30/2019	5/8/2019	2,358	Wednesday
4/30/2019	5/10/2019	2,596	Friday
4/30/2019	5/15/2019	1,025	Wednesday
4/30/2019	5/22/2019	783	Wednesday
4/30/2019	5/24/2019	2,200	Friday
4/30/2019	5/29/2019	587	Wednesday
4/30/2019	5/31/2019	1,023	Friday
4/30/2019	6/5/2019	2	Wednesday
4/30/2019	6/7/2019	133	Friday
5/31/2019	5/31/2019	10,479	Friday
5/31/2019	6/5/2019	2,389	Wednesday
5/31/2019	6/7/2019	3,716	Friday
5/31/2019	6/12/2019	607	Wednesday
5/31/2019	6/14/2019	2,508	Friday
5/31/2019	6/19/2019	535	Wednesday
5/31/2019	6/26/2019	299	Wednesday
5/31/2019	6/28/2019	9,018	Friday
5/31/2019	7/3/2019	52	Wednesday
5/31/2019	7/5/2019	193	Friday
5/31/2019	7/12/2019	62	Friday
6/28/2019	6/28/2019	29,928	Friday
6/28/2019	7/3/2019	3,088	Wednesday
6/28/2019	7/5/2019	3,694	Friday
6/28/2019	7/10/2019	1,405	Wednesday
6/28/2019	7/12/2019	2,656	Friday
6/28/2019	7/17/2019	526	Wednesday
6/28/2019	7/24/2019	664	Wednesday
6/28/2019	7/26/2019	990	Friday
6/28/2019	7/31/2019	11	Wednesday
6/28/2019	8/2/2019	507	Friday
6/28/2019	8/9/2019	10	Friday
7/31/2019	7/31/2019	4,400	Wednesday
7/31/2019	8/2/2019	12,106	Friday
7/31/2019	8/7/2019	2,860	Wednesday
7/31/2019	8/9/2019	2,480	Friday
7/31/2019	8/14/2019	947	Wednesday
7/31/2019	8/21/2019	668	Wednesday
7/31/2019	8/23/2019	581	Friday
7/31/2019	8/28/2019	193	Wednesday
7/31/2019	8/30/2019	519	Friday
7/31/2019	9/4/2019	8	Wednesday
7/31/2019	9/6/2019	242	Friday

NDXP month end Open interest by expiration date, from Aug 2019 to Jan 2020

Month	Expiration date	Open interest	Expiration day
8/30/2019	8/30/2019	11,142	Friday
8/30/2019	9/4/2019	6,059	Wednesday
8/30/2019	9/6/2019	3,529	Friday
8/30/2019	9/11/2019	809	Wednesday
8/30/2019	9/13/2019	1,786	Friday
8/30/2019	9/18/2019	988	Wednesday
8/30/2019	9/25/2019	316	Wednesday
8/30/2019	9/27/2019	738	Friday
8/30/2019	10/2/2019	98	Wednesday
8/30/2019	10/4/2019	305	Friday
8/30/2019	10/11/2019	1	Friday
9/30/2019	10/2/2019	3,908	Wednesday
9/30/2019	10/4/2019	4,676	Friday
9/30/2019	10/9/2019	1,552	Wednesday
9/30/2019	10/11/2019	8,328	Friday
9/30/2019	10/16/2019	845	Wednesday
9/30/2019	10/23/2019	478	Wednesday
9/30/2019	10/25/2019	1,296	Friday
9/30/2019	10/30/2019	171	Wednesday
9/30/2019	11/1/2019	504	Friday
9/30/2019	11/8/2019	174	Friday
10/31/2019	11/1/2019	7,618	Friday
10/31/2019	11/6/2019	2,029	Wednesday
10/31/2019	11/8/2019	3,260	Friday
10/31/2019	11/13/2019	772	Wednesday
10/31/2019	11/20/2019	509	Wednesday
10/31/2019	11/22/2019	1,138	Friday
10/31/2019	11/27/2019	189	Wednesday
10/31/2019	11/29/2019	1,387	Friday
10/31/2019	12/4/2019	8	Wednesday
10/31/2019	12/6/2019	316	Friday
10/31/2019	12/13/2019	16	Friday
11/29/2019	11/29/2019	6,622	Friday
11/29/2019	12/4/2019	2,748	Wednesday
11/29/2019	12/6/2019	3,689	Friday
11/29/2019	12/11/2019	1,372	Wednesday
11/29/2019	12/13/2019	1,613	Friday
11/29/2019	12/18/2019	762	Wednesday
11/29/2019	12/24/2019	1,111	Tuesday
11/29/2019	12/27/2019	1,806	Friday
11/29/2019	1/3/2020	344	Friday
11/29/2019	1/10/2020	56	Friday
12/31/2019	12/31/2019	5,828	Tuesday
12/31/2019	1/3/2020	5,828	Friday
12/31/2019	1/8/2020	2,119	Wednesday
12/31/2019	1/10/2020	2,476	Friday
12/31/2019	1/15/2020	2,200	Wednesday
12/31/2019	1/22/2020	366	Wednesday
12/31/2019	1/24/2020	2,202	Friday
12/31/2019	1/29/2020	130	Wednesday
12/31/2019	1/31/2020	3,048	Friday
12/31/2019	2/7/2020	172	Friday
1/31/2020	1/31/2020	13,355	Friday
1/31/2020	2/5/2020	4,963	Wednesday
1/31/2020	2/7/2020	3,902	Friday
1/31/2020	2/12/2020	1,027	Wednesday
1/31/2020	2/14/2020	2,142	Friday
1/31/2020	2/19/2020	838	Wednesday
1/31/2020	2/26/2020	299	Wednesday
1/31/2020	2/28/2020	1,370	Friday
1/31/2020	3/4/2020	24	Wednesday
1/31/2020	3/6/2020	303	Friday
1/31/2020	3/13/2020	51	Friday

NDXP month end Open interest by expiration date, from
Feb 2020 to May 2020

Month	Expiration	Open interest	Expiration day
2/28/2020	2/28/2020	11,347	Friday
2/28/2020	3/2/2020	2,202	Monday
2/28/2020	3/4/2020	3,090	Wednesday
2/28/2020	3/6/2020	4,583	Friday
2/28/2020	3/9/2020	404	Monday
2/28/2020	3/11/2020	1,346	Wednesday
2/28/2020	3/13/2020	2,807	Friday
2/28/2020	3/16/2020	111	Monday
2/28/2020	3/18/2020	736	Wednesday
2/28/2020	3/23/2020	122	Monday
2/28/2020	3/25/2020	332	Wednesday
2/28/2020	3/27/2020	1,792	Friday
2/28/2020	3/30/2020	88	Monday
2/28/2020	4/1/2020	480	Wednesday
2/28/2020	4/3/2020	668	Friday
2/28/2020	4/9/2020	27	Thursday
3/31/2020	4/1/2020	2,424	Wednesday
3/31/2020	4/3/2020	5,861	Friday
3/31/2020	4/6/2020	741	Monday
3/31/2020	4/8/2020	413	Wednesday
3/31/2020	4/9/2020	6,031	Thursday
3/31/2020	4/13/2020	478	Monday
3/31/2020	4/15/2020	248	Wednesday
3/31/2020	4/20/2020	141	Monday
3/31/2020	4/22/2020	212	Wednesday
3/31/2020	4/24/2020	661	Friday
3/31/2020	4/27/2020	78	Monday
3/31/2020	4/29/2020	82	Wednesday
3/31/2020	5/1/2020	223	Friday
3/31/2020	5/8/2020	41	Friday
4/30/2020	5/1/2020	5,760	Friday
4/30/2020	5/4/2020	739	Monday
4/30/2020	5/6/2020	656	Wednesday
4/30/2020	5/8/2020	4,448	Friday
4/30/2020	5/11/2020	278	Monday
4/30/2020	5/13/2020	420	Wednesday
4/30/2020	5/18/2020	214	Monday
4/30/2020	5/20/2020	214	Wednesday
4/30/2020	5/22/2020	542	Friday
4/30/2020	5/26/2020	122	Tuesday
4/30/2020	5/27/2020	82	Wednesday
4/30/2020	5/29/2020	310	Friday
4/30/2020	6/1/2020	2	Monday
4/30/2020	6/3/2020	4	Wednesday
4/30/2020	6/5/2020	192	Friday
5/29/2020	5/29/2020	6,015	Friday
5/29/2020	6/1/2020	1,448	Monday
5/29/2020	6/3/2020	1,170	Wednesday
5/29/2020	6/5/2020	2,519	Friday
5/29/2020	6/8/2020	749	Monday
5/29/2020	6/10/2020	404	Wednesday
5/29/2020	6/12/2020	1,370	Friday
5/29/2020	6/15/2020	391	Monday
5/29/2020	6/17/2020	260	Wednesday
5/29/2020	6/22/2020	225	Monday
5/29/2020	6/24/2020	134	Wednesday
5/29/2020	6/26/2020	1,095	Friday
5/29/2020	6/29/2020	49	Monday
5/29/2020	7/1/2020	4	Wednesday
5/29/2020	7/2/2020	95	Thursday
5/29/2020	7/6/2020	2	Monday
5/29/2020	7/10/2020	25	Friday

NDXP month end Open interest by expiration date, from
Jun 2020 to Sep 2020

Month	Expiration	Open interest	Expiration day
6/30/2020	7/1/2020	3,072	Wednesday
6/30/2020	7/2/2020	3,579	Thursday
6/30/2020	7/6/2020	821	Monday
6/30/2020	7/8/2020	538	Wednesday
6/30/2020	7/10/2020	2,020	Friday
6/30/2020	7/13/2020	501	Monday
6/30/2020	7/15/2020	575	Wednesday
6/30/2020	7/20/2020	224	Monday
6/30/2020	7/22/2020	194	Wednesday
6/30/2020	7/24/2020	855	Friday
6/30/2020	7/27/2020	161	Monday
6/30/2020	7/31/2020	756	Friday
6/30/2020	8/3/2020	28	Monday
6/30/2020	8/7/2020	280	Friday
7/31/2020	7/31/2020	7,235	Friday
7/31/2020	8/3/2020	2,627	Monday
7/31/2020	8/5/2020	1,063	Wednesday
7/31/2020	8/7/2020	3,033	Friday
7/31/2020	8/10/2020	603	Monday
7/31/2020	8/12/2020	379	Wednesday
7/31/2020	8/14/2020	1,730	Friday
7/31/2020	8/17/2020	290	Monday
7/31/2020	8/19/2020	272	Wednesday
7/31/2020	8/24/2020	125	Monday
7/31/2020	8/26/2020	146	Wednesday
7/31/2020	8/28/2020	816	Friday
7/31/2020	8/31/2020	104	Monday
7/31/2020	9/2/2020	4	Wednesday
7/31/2020	9/4/2020	165	Friday
7/31/2020	9/8/2020	26	Tuesday
7/31/2020	9/11/2020	75	Friday
8/31/2020	8/31/2020	7,066	Monday
8/31/2020	9/2/2020	4,097	Wednesday
8/31/2020	9/4/2020	6,004	Friday
8/31/2020	9/8/2020	1,386	Tuesday
8/31/2020	9/9/2020	596	Wednesday
8/31/2020	9/11/2020	1,760	Friday
8/31/2020	9/14/2020	354	Monday
8/31/2020	9/16/2020	370	Wednesday
8/31/2020	9/21/2020	261	Monday
8/31/2020	9/23/2020	88	Wednesday
8/31/2020	9/25/2020	1,286	Friday
8/31/2020	9/28/2020	139	Monday
8/31/2020	10/2/2020	410	Friday
8/31/2020	10/5/2020	47	Monday
8/31/2020	10/9/2020	34	Friday
9/30/2020	9/30/2020	3,848	Wednesday
9/30/2020	10/2/2020	8,696	Friday
9/30/2020	10/5/2020	1,108	Monday
9/30/2020	10/7/2020	628	Wednesday
9/30/2020	10/9/2020	2,827	Friday
9/30/2020	10/12/2020	338	Monday
9/30/2020	10/14/2020	401	Wednesday
9/30/2020	10/19/2020	260	Monday
9/30/2020	10/21/2020	212	Wednesday
9/30/2020	10/23/2020	784	Friday
9/30/2020	10/26/2020	175	Monday
9/30/2020	10/28/2020	82	Wednesday
9/30/2020	10/30/2020	3,084	Friday
9/30/2020	11/2/2020	39	Monday
9/30/2020	11/4/2020	2	Wednesday
9/30/2020	11/6/2020	111	Friday

NDXP month end Open interest by expiration date, from Oct 2020 to Dec 2020

Month	Expiration date	Open interest	Expiration day
10/30/2020	10/30/2020	8,152	Friday
10/30/2020	11/2/2020	2,212	Monday
10/30/2020	11/4/2020	1,060	Wednesday
10/30/2020	11/6/2020	2,956	Friday
10/30/2020	11/9/2020	641	Monday
10/30/2020	11/11/2020	584	Wednesday
10/30/2020	11/13/2020	1,672	Friday
10/30/2020	11/16/2020	573	Monday
10/30/2020	11/18/2020	257	Wednesday
10/30/2020	11/23/2020	307	Monday
10/30/2020	11/25/2020	207	Wednesday
10/30/2020	11/27/2020	872	Friday
10/30/2020	11/30/2020	249	Monday
10/30/2020	12/2/2020	6	Wednesday
10/30/2020	12/4/2020	265	Friday
10/30/2020	12/11/2020	64	Friday
10/30/2020	12/24/2020	4	Thursday
11/30/2020	11/30/2020	2,465	Monday
11/30/2020	12/2/2020	1,648	Wednesday
11/30/2020	12/4/2020	2,807	Friday
11/30/2020	12/7/2020	567	Monday
11/30/2020	12/9/2020	336	Wednesday
11/30/2020	12/11/2020	1,672	Friday
11/30/2020	12/14/2020	490	Monday
11/30/2020	12/16/2020	476	Wednesday
11/30/2020	12/21/2020	206	Monday
11/30/2020	12/23/2020	278	Wednesday
11/30/2020	12/24/2020	1,159	Thursday
11/30/2020	12/28/2020	83	Monday
11/30/2020	12/30/2020	8	Wednesday
11/30/2020	12/31/2020	834	Thursday
11/30/2020	1/4/2021	59	Monday
11/30/2020	1/8/2021	279	Friday
11/30/2020	1/22/2021	46	Friday
12/31/2020	12/31/2020	9,752	Thursday
12/31/2020	1/4/2021	2,987	Monday
12/31/2020	1/6/2021	1,741	Wednesday
12/31/2020	1/8/2021	2,803	Friday
12/31/2020	1/11/2021	773	Monday
12/31/2020	1/13/2021	556	Wednesday
12/31/2020	1/19/2021	835	Tuesday
12/31/2020	1/20/2021	322	Wednesday
12/31/2020	1/22/2021	1,546	Friday
12/31/2020	1/25/2021	321	Monday
12/31/2020	1/27/2021	90	Wednesday
12/31/2020	1/29/2021	863	Friday
12/31/2020	2/1/2021	123	Monday
12/31/2020	2/3/2021	48	Wednesday
12/31/2020	2/5/2021	490	Friday
12/31/2020	2/12/2021	89	Friday

NDXP month end Open interest by expiration date, from Jan 2021 to Mar 2021

Month	Expiration date	Open interest	Expiration day
1/29/2021	1/29/2021	6,724	Friday
1/29/2021	2/1/2021	2,613	Monday
1/29/2021	2/3/2021	1,610	Wednesday
1/29/2021	2/5/2021	5,375	Friday
1/29/2021	2/8/2021	958	Monday
1/29/2021	2/10/2021	865	Wednesday
1/29/2021	2/12/2021	2,910	Friday
1/29/2021	2/16/2021	697	Tuesday
1/29/2021	2/17/2021	563	Wednesday
1/29/2021	2/22/2021	362	Monday
1/29/2021	2/24/2021	169	Wednesday
1/29/2021	2/26/2021	2,026	Friday
1/29/2021	3/1/2021	244	Monday
1/29/2021	3/3/2021	29	Wednesday
1/29/2021	3/5/2021	852	Friday
1/29/2021	3/8/2021	61	Monday
1/29/2021	3/12/2021	208	Friday
1/29/2021	3/26/2021	47	Friday
2/26/2021	2/26/2021	10,991	Friday
2/26/2021	3/1/2021	6,039	Monday
2/26/2021	3/3/2021	1,589	Wednesday
2/26/2021	3/5/2021	14,932	Friday
2/26/2021	3/8/2021	1,479	Monday
2/26/2021	3/10/2021	835	Wednesday
2/26/2021	3/12/2021	3,647	Friday
2/26/2021	3/15/2021	1,285	Monday
2/26/2021	3/17/2021	577	Wednesday
2/26/2021	3/22/2021	386	Monday
2/26/2021	3/24/2021	130	Wednesday
2/26/2021	3/26/2021	1,772	Friday
2/26/2021	3/29/2021	566	Monday
2/26/2021	3/31/2021	183	Wednesday
2/26/2021	4/1/2021	383	Thursday
2/26/2021	4/5/2021	12	Monday
2/26/2021	4/9/2021	381	Friday
2/26/2021	4/23/2021	43	Friday
3/31/2021	3/31/2021	6,670	Wednesday
3/31/2021	4/1/2021	6,511	Thursday
3/31/2021	4/5/2021	2,110	Monday
3/31/2021	4/7/2021	1,616	Wednesday
3/31/2021	4/9/2021	4,825	Friday
3/31/2021	4/12/2021	813	Monday
3/31/2021	4/14/2021	1,223	Wednesday
3/31/2021	4/19/2021	717	Monday
3/31/2021	4/21/2021	591	Wednesday
3/31/2021	4/23/2021	1,730	Friday
3/31/2021	4/26/2021	389	Monday
3/31/2021	4/28/2021	260	Wednesday
3/31/2021	4/30/2021	1,688	Friday
3/31/2021	5/3/2021	141	Monday
3/31/2021	5/5/2021	1	Wednesday
3/31/2021	5/7/2021	469	Friday
3/31/2021	5/14/2021	135	Friday

NDXP month end Open interest by expiration date, from Apr
2021 to Jun 2021

Month	Expiration date	Open interest	Expiration day
4/30/2021	4/30/2021	13,236	Friday
4/30/2021	5/3/2021	4,677	Monday
4/30/2021	5/5/2021	2,812	Wednesday
4/30/2021	5/7/2021	5,950	Friday
4/30/2021	5/10/2021	940	Monday
4/30/2021	5/12/2021	606	Wednesday
4/30/2021	5/14/2021	2,432	Friday
4/30/2021	5/17/2021	493	Monday
4/30/2021	5/19/2021	373	Wednesday
4/30/2021	5/24/2021	240	Monday
4/30/2021	5/26/2021	275	Wednesday
4/30/2021	5/28/2021	1,686	Friday
4/30/2021	6/1/2021	212	Tuesday
4/30/2021	6/2/2021	67	Wednesday
4/30/2021	6/4/2021	919	Friday
4/30/2021	6/7/2021	92	Monday
4/30/2021	6/11/2021	253	Friday
4/30/2021	6/25/2021	12	Friday
5/28/2021	5/28/2021	13,163	Friday
5/28/2021	6/1/2021	3,245	Tuesday
5/28/2021	6/2/2021	2,290	Wednesday
5/28/2021	6/4/2021	22,615	Friday
5/28/2021	6/7/2021	1,288	Monday
5/28/2021	6/9/2021	941	Wednesday
5/28/2021	6/11/2021	6,965	Friday
5/28/2021	6/14/2021	1,116	Monday
5/28/2021	6/16/2021	347	Wednesday
5/28/2021	6/21/2021	231	Monday
5/28/2021	6/23/2021	80	Wednesday
5/28/2021	6/25/2021	2,042	Friday
5/28/2021	6/28/2021	168	Monday
5/28/2021	6/30/2021	34	Wednesday
5/28/2021	7/2/2021	1,642	Friday
5/28/2021	7/6/2021	25	Tuesday
5/28/2021	7/9/2021	444	Friday
5/28/2021	7/23/2021	14	Friday
6/30/2021	6/30/2021	20,976	Wednesday
6/30/2021	7/2/2021	10,237	Friday
6/30/2021	7/6/2021	2,182	Tuesday
6/30/2021	7/7/2021	1,498	Wednesday
6/30/2021	7/9/2021	3,624	Friday
6/30/2021	7/12/2021	873	Monday
6/30/2021	7/14/2021	600	Wednesday
6/30/2021	7/19/2021	6,321	Monday
6/30/2021	7/21/2021	347	Wednesday
6/30/2021	7/23/2021	2,009	Friday
6/30/2021	7/26/2021	415	Monday
6/30/2021	7/28/2021	128	Wednesday
6/30/2021	7/30/2021	1,534	Friday
6/30/2021	8/2/2021	74	Monday
6/30/2021	8/4/2021	23	Wednesday
6/30/2021	8/6/2021	766	Friday
6/30/2021	8/13/2021	71	Friday

NDXP month end Open interest by expiration date, from Jul
2021 to Sep 2021

Month	Expiration date	Open interest	Expiration day
7/30/2021	7/30/2021	21,317	Friday
7/30/2021	8/2/2021	5,037	Monday
7/30/2021	8/4/2021	3,101	Wednesday
7/30/2021	8/6/2021	8,981	Friday
7/30/2021	8/9/2021	1,152	Monday
7/30/2021	8/11/2021	771	Wednesday
7/30/2021	8/13/2021	3,338	Friday
7/30/2021	8/16/2021	567	Monday
7/30/2021	8/18/2021	458	Wednesday
7/30/2021	8/23/2021	458	Monday
7/30/2021	8/25/2021	189	Wednesday
7/30/2021	8/27/2021	2,470	Friday
7/30/2021	8/30/2021	174	Monday
7/30/2021	9/1/2021	5	Wednesday
7/30/2021	9/3/2021	958	Friday
7/30/2021	9/10/2021	263	Friday
7/30/2021	9/24/2021	4	Friday
8/31/2021	9/1/2021	9,669	Wednesday
8/31/2021	9/3/2021	10,408	Friday
8/31/2021	9/7/2021	2,814	Tuesday
8/31/2021	9/8/2021	1,758	Wednesday
8/31/2021	9/10/2021	7,617	Friday
8/31/2021	9/13/2021	770	Monday
8/31/2021	9/15/2021	952	Wednesday
8/31/2021	9/20/2021	456	Monday
8/31/2021	9/22/2021	211	Wednesday
8/31/2021	9/24/2021	2,806	Friday
8/31/2021	9/27/2021	482	Monday
8/31/2021	9/29/2021	100	Wednesday
8/31/2021	10/1/2021	1,570	Friday
8/31/2021	10/4/2021	32	Monday
8/31/2021	10/8/2021	686	Friday
8/31/2021	10/22/2021	107	Friday
9/30/2021	10/1/2021	23,604	Friday
9/30/2021	10/4/2021	3,376	Monday
9/30/2021	10/6/2021	5,409	Wednesday
9/30/2021	10/8/2021	9,689	Friday
9/30/2021	10/11/2021	847	Monday
9/30/2021	10/13/2021	1,012	Wednesday
9/30/2021	10/18/2021	813	Monday
9/30/2021	10/20/2021	449	Wednesday
9/30/2021	10/22/2021	3,334	Friday
9/30/2021	10/25/2021	256	Monday
9/30/2021	10/27/2021	386	Wednesday
9/30/2021	10/29/2021	4,202	Friday
9/30/2021	11/1/2021	53	Monday
9/30/2021	11/3/2021	9	Wednesday
9/30/2021	11/5/2021	2,122	Friday
9/30/2021	11/12/2021	694	Friday
9/30/2021	11/26/2021	4	Friday

NDXP month end Open interest by expiration date, from Oct 2021 to Dec 2021

Month	Expiration date	Open interest	Expiration day
10/29/2021	10/29/2021	19,085	Friday
10/29/2021	11/1/2021	8,037	Monday
10/29/2021	11/3/2021	5,586	Wednesday
10/29/2021	11/5/2021	12,863	Friday
10/29/2021	11/8/2021	1,698	Monday
10/29/2021	11/10/2021	1,041	Wednesday
10/29/2021	11/12/2021	4,984	Friday
10/29/2021	11/15/2021	332	Monday
10/29/2021	11/17/2021	392	Wednesday
10/29/2021	11/22/2021	460	Monday
10/29/2021	11/24/2021	311	Wednesday
10/29/2021	11/26/2021	1,753	Friday
10/29/2021	11/29/2021	83	Monday
10/29/2021	12/1/2021	33	Wednesday
10/29/2021	12/3/2021	1,564	Friday
10/29/2021	12/10/2021	546	Friday
10/29/2021	12/23/2021	36	Thursday
11/30/2021	12/1/2021	10,242	Wednesday
11/30/2021	12/3/2021	13,067	Friday
11/30/2021	12/6/2021	2,336	Monday
11/30/2021	12/8/2021	1,207	Wednesday
11/30/2021	12/10/2021	6,202	Friday
11/30/2021	12/13/2021	484	Monday
11/30/2021	12/15/2021	446	Wednesday
11/30/2021	12/20/2021	240	Monday
11/30/2021	12/22/2021	105	Wednesday
11/30/2021	12/23/2021	6,536	Thursday
11/30/2021	12/27/2021	145	Monday
11/30/2021	12/29/2021	624	Wednesday
11/30/2021	12/31/2021	4,401	Friday
11/30/2021	1/3/2022	28	Monday
11/30/2021	1/5/2022	2	Wednesday
11/30/2021	1/7/2022	1,257	Friday
11/30/2021	1/14/2022	251	Friday
12/31/2021	12/31/2021	20,123	Friday
12/31/2021	1/3/2022	5,076	Monday
12/31/2021	1/5/2022	3,202	Wednesday
12/31/2021	1/7/2022	5,857	Friday
12/31/2021	1/10/2022	1,645	Monday
12/31/2021	1/12/2022	1,052	Wednesday
12/31/2021	1/14/2022	2,898	Friday
12/31/2021	1/18/2022	684	Tuesday
12/31/2021	1/19/2022	612	Wednesday
12/31/2021	1/24/2022	181	Monday
12/31/2021	1/26/2022	160	Wednesday
12/31/2021	1/28/2022	2,467	Friday
12/31/2021	1/31/2022	26	Monday
12/31/2021	2/2/2022	9	Wednesday
12/31/2021	2/4/2022	1,201	Friday
12/31/2021	2/11/2022	197	Friday
12/31/2021	2/25/2022	14	Friday

NDXP month end Open interest by expiration date, for Jan 2022

Month	Expiration date	Open interest	Expiration day
1/31/2022	1/31/2022	5,523	Monday
1/31/2022	2/2/2022	3,999	Wednesday
1/31/2022	2/4/2022	21,993	Friday
1/31/2022	2/7/2022	1,687	Monday
1/31/2022	2/9/2022	801	Wednesday
1/31/2022	2/11/2022	5,335	Friday
1/31/2022	2/14/2022	860	Monday
1/31/2022	2/16/2022	479	Wednesday
1/31/2022	2/22/2022	261	Tuesday
1/31/2022	2/23/2022	215	Wednesday
1/31/2022	2/25/2022	2,360	Friday
1/31/2022	2/28/2022	235	Monday
1/31/2022	3/2/2022	114	Wednesday
1/31/2022	3/4/2022	1,053	Friday
1/31/2022	3/7/2022	3	Monday
1/31/2022	3/11/2022	1,462	Friday
1/31/2022	3/25/2022	25	Friday

NDX month end Open interest by expiration date (3rd Friday), from Jul 2017 to Nov 2017

Month	Expiration date	Open interest	Expiration day
7/31/2017	8/18/2017	24,113	3rd Friday
7/31/2017	9/15/2017	27,981	3rd Friday
7/31/2017	10/20/2017	2,492	3rd Friday
7/31/2017	11/17/2017	456	3rd Friday
7/31/2017	12/15/2017	15,111	3rd Friday
7/31/2017	3/16/2018	1,442	3rd Friday
7/31/2017	6/15/2018	4,039	3rd Friday
7/31/2017	12/21/2018	2,300	3rd Friday
7/31/2017	12/20/2019	550	3rd Friday
8/31/2017	9/15/2017	50,869	3rd Friday
8/31/2017	10/20/2017	13,347	3rd Friday
8/31/2017	11/17/2017	4,977	3rd Friday
8/31/2017	12/15/2017	17,262	3rd Friday
8/31/2017	1/19/2018	27	3rd Friday
8/31/2017	3/16/2018	2,010	3rd Friday
8/31/2017	6/15/2018	4,338	3rd Friday
8/31/2017	12/21/2018	2,370	3rd Friday
8/31/2017	12/20/2019	689	3rd Friday
9/29/2017	10/20/2017	26,116	3rd Friday
9/29/2017	11/17/2017	14,929	3rd Friday
9/29/2017	12/15/2017	21,838	3rd Friday
9/29/2017	1/19/2018	733	3rd Friday
9/29/2017	2/16/2018	203	3rd Friday
9/29/2017	3/16/2018	2,439	3rd Friday
9/29/2017	6/15/2018	4,441	3rd Friday
9/29/2017	12/21/2018	2,698	3rd Friday
9/29/2017	12/20/2019	753	3rd Friday
10/31/2017	11/17/2017	34,944	3rd Friday
10/31/2017	12/15/2017	38,954	3rd Friday
10/31/2017	1/19/2018	1,640	3rd Friday
10/31/2017	2/16/2018	572	3rd Friday
10/31/2017	3/16/2018	2,885	3rd Friday
10/31/2017	4/20/2018	88	3rd Friday
10/31/2017	5/18/2018	24	3rd Friday
10/31/2017	6/15/2018	4,523	3rd Friday
10/31/2017	7/20/2018	34	3rd Friday
10/31/2017	9/21/2018	5	3rd Friday
10/31/2017	12/21/2018	3,189	3rd Friday
10/31/2017	1/18/2019	153	3rd Friday
10/31/2017	12/20/2019	804	3rd Friday
11/30/2017	12/15/2017	99,788	3rd Friday
11/30/2017	1/19/2018	7,223	3rd Friday
11/30/2017	2/16/2018	2,958	3rd Friday
11/30/2017	3/16/2018	3,739	3rd Friday
11/30/2017	4/20/2018	152	3rd Friday
11/30/2017	5/18/2018	84	3rd Friday
11/30/2017	6/15/2018	4,648	3rd Friday
11/30/2017	7/20/2018	172	3rd Friday
11/30/2017	8/17/2018	38	3rd Friday
11/30/2017	9/21/2018	72	3rd Friday
11/30/2017	12/21/2018	3,441	3rd Friday
11/30/2017	1/18/2019	203	3rd Friday
11/30/2017	12/20/2019	829	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Dec 2017 to Mar 2018

Month	Expiration date	Open interest	Expiration day
12/29/2017	1/19/2018	22,687	3rd Friday
12/29/2017	2/16/2018	5,938	3rd Friday
12/29/2017	3/16/2018	8,704	3rd Friday
12/29/2017	4/20/2018	452	3rd Friday
12/29/2017	5/18/2018	143	3rd Friday
12/29/2017	6/15/2018	4,832	3rd Friday
12/29/2017	7/20/2018	195	3rd Friday
12/29/2017	8/17/2018	67	3rd Friday
12/29/2017	9/21/2018	139	3rd Friday
12/29/2017	10/19/2018	6	3rd Friday
12/29/2017	12/21/2018	3,700	3rd Friday
12/29/2017	1/18/2019	275	3rd Friday
12/29/2017	12/20/2019	1,127	3rd Friday
1/31/2018	2/16/2018	27,891	3rd Friday
1/31/2018	3/16/2018	22,669	3rd Friday
1/31/2018	4/20/2018	3,853	3rd Friday
1/31/2018	5/18/2018	719	3rd Friday
1/31/2018	6/15/2018	5,859	3rd Friday
1/31/2018	7/20/2018	282	3rd Friday
1/31/2018	8/17/2018	130	3rd Friday
1/31/2018	9/21/2018	324	3rd Friday
1/31/2018	10/19/2018	129	3rd Friday
1/31/2018	11/16/2018	38	3rd Friday
1/31/2018	12/21/2018	4,800	3rd Friday
1/31/2018	1/18/2019	503	3rd Friday
1/31/2018	12/20/2019	1,346	3rd Friday
2/28/2018	3/16/2018	40,931	3rd Friday
2/28/2018	4/20/2018	9,311	3rd Friday
2/28/2018	5/18/2018	4,561	3rd Friday
2/28/2018	6/15/2018	8,878	3rd Friday
2/28/2018	7/20/2018	550	3rd Friday
2/28/2018	8/17/2018	247	3rd Friday
2/28/2018	9/21/2018	721	3rd Friday
2/28/2018	10/19/2018	223	3rd Friday
2/28/2018	11/16/2018	70	3rd Friday
2/28/2018	12/21/2018	4,992	3rd Friday
2/28/2018	1/18/2019	1,185	3rd Friday
2/28/2018	12/20/2019	1,618	3rd Friday
3/29/2018	4/20/2018	26,545	3rd Friday
3/29/2018	5/18/2018	12,053	3rd Friday
3/29/2018	6/15/2018	16,271	3rd Friday
3/29/2018	7/20/2018	2,087	3rd Friday
3/29/2018	8/17/2018	1,196	3rd Friday
3/29/2018	9/21/2018	2,357	3rd Friday
3/29/2018	10/19/2018	369	3rd Friday
3/29/2018	11/16/2018	73	3rd Friday
3/29/2018	12/21/2018	5,305	3rd Friday
3/29/2018	1/18/2019	1,590	3rd Friday
3/29/2018	3/15/2019	82	3rd Friday
3/29/2018	6/21/2019	46	3rd Friday
3/29/2018	12/20/2019	1,822	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from
Apr 2018 to Jul 2018

Month	Expiration date	Open interest	Expiration day
4/30/2018	5/18/2018	29,138	3rd Friday
4/30/2018	6/15/2018	24,790	3rd Friday
4/30/2018	7/20/2018	5,662	3rd Friday
4/30/2018	8/17/2018	2,113	3rd Friday
4/30/2018	9/21/2018	3,612	3rd Friday
4/30/2018	10/19/2018	520	3rd Friday
4/30/2018	11/16/2018	134	3rd Friday
4/30/2018	12/21/2018	5,684	3rd Friday
4/30/2018	1/18/2019	2,060	3rd Friday
4/30/2018	3/15/2019	323	3rd Friday
4/30/2018	6/21/2019	209	3rd Friday
4/30/2018	12/20/2019	1,727	3rd Friday
4/30/2018	12/18/2020	118	3rd Friday
5/31/2018	6/15/2018	43,176	3rd Friday
5/31/2018	7/20/2018	14,161	3rd Friday
5/31/2018	8/17/2018	4,483	3rd Friday
5/31/2018	9/21/2018	7,608	3rd Friday
5/31/2018	10/19/2018	625	3rd Friday
5/31/2018	11/16/2018	165	3rd Friday
5/31/2018	12/21/2018	6,881	3rd Friday
5/31/2018	1/18/2019	2,642	3rd Friday
5/31/2018	2/15/2019	42	3rd Friday
5/31/2018	3/15/2019	441	3rd Friday
5/31/2018	4/18/2019	1	3rd Friday
5/31/2018	6/21/2019	239	3rd Friday
5/31/2018	12/20/2019	1,802	3rd Friday
5/31/2018	12/18/2020	163	3rd Friday
6/29/2018	7/20/2018	64,387	3rd Friday
6/29/2018	8/17/2018	13,800	3rd Friday
6/29/2018	9/21/2018	18,862	3rd Friday
6/29/2018	10/19/2018	1,244	3rd Friday
6/29/2018	11/16/2018	539	3rd Friday
6/29/2018	12/21/2018	7,465	3rd Friday
6/29/2018	1/18/2019	3,364	3rd Friday
6/29/2018	2/15/2019	115	3rd Friday
6/29/2018	3/15/2019	814	3rd Friday
6/29/2018	4/18/2019	130	3rd Friday
6/29/2018	5/17/2019	22	3rd Friday
6/29/2018	6/21/2019	597	3rd Friday
6/29/2018	12/20/2019	2,187	3rd Friday
6/29/2018	12/18/2020	308	3rd Friday
7/31/2018	8/17/2018	33,476	3rd Friday
7/31/2018	9/21/2018	33,985	3rd Friday
7/31/2018	10/19/2018	5,665	3rd Friday
7/31/2018	11/16/2018	2,055	3rd Friday
7/31/2018	12/21/2018	8,674	3rd Friday
7/31/2018	1/18/2019	3,597	3rd Friday
7/31/2018	2/15/2019	230	3rd Friday
7/31/2018	3/15/2019	1,059	3rd Friday
7/31/2018	4/18/2019	160	3rd Friday
7/31/2018	5/17/2019	31	3rd Friday
7/31/2018	6/21/2019	1,223	3rd Friday
7/31/2018	12/20/2019	3,111	3rd Friday
7/31/2018	12/18/2020	455	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from
Aug 2018 to Nov 2018

Month	Expiration date	Open interest	Expiration day
8/31/2018	9/21/2018	48,820	3rd Friday
8/31/2018	10/19/2018	17,184	3rd Friday
8/31/2018	11/16/2018	10,662	3rd Friday
8/31/2018	12/21/2018	14,992	3rd Friday
8/31/2018	1/18/2019	4,054	3rd Friday
8/31/2018	2/15/2019	358	3rd Friday
8/31/2018	3/15/2019	4,125	3rd Friday
8/31/2018	4/18/2019	290	3rd Friday
8/31/2018	5/17/2019	126	3rd Friday
8/31/2018	6/21/2019	2,211	3rd Friday
8/31/2018	10/18/2019	8	3rd Friday
8/31/2018	12/20/2019	3,292	3rd Friday
8/31/2018	12/18/2020	619	3rd Friday
9/28/2018	10/19/2018	34,310	3rd Friday
9/28/2018	11/16/2018	15,768	3rd Friday
9/28/2018	12/21/2018	22,638	3rd Friday
9/28/2018	1/18/2019	5,051	3rd Friday
9/28/2018	2/15/2019	548	3rd Friday
9/28/2018	3/15/2019	4,765	3rd Friday
9/28/2018	4/18/2019	375	3rd Friday
9/28/2018	5/17/2019	182	3rd Friday
9/28/2018	6/21/2019	5,897	3rd Friday
9/28/2018	9/20/2019	68	3rd Friday
9/28/2018	10/18/2019	72	3rd Friday
9/28/2018	12/20/2019	4,444	3rd Friday
9/28/2018	12/18/2020	663	3rd Friday
10/31/2018	11/16/2018	31,732	3rd Friday
10/31/2018	12/21/2018	44,442	3rd Friday
10/31/2018	1/18/2019	8,458	3rd Friday
10/31/2018	2/15/2019	1,255	3rd Friday
10/31/2018	3/15/2019	6,408	3rd Friday
10/31/2018	4/18/2019	1,081	3rd Friday
10/31/2018	5/17/2019	453	3rd Friday
10/31/2018	6/21/2019	7,004	3rd Friday
10/31/2018	7/19/2019	67	3rd Friday
10/31/2018	8/16/2019	27	3rd Friday
10/31/2018	9/20/2019	514	3rd Friday
10/31/2018	10/18/2019	195	3rd Friday
10/31/2018	12/20/2019	5,249	3rd Friday
10/31/2018	12/18/2020	660	3rd Friday
11/30/2018	12/21/2018	86,373	3rd Friday
11/30/2018	1/18/2019	16,798	3rd Friday
11/30/2018	2/15/2019	3,729	3rd Friday
11/30/2018	3/15/2019	8,222	3rd Friday
11/30/2018	4/18/2019	1,344	3rd Friday
11/30/2018	5/17/2019	522	3rd Friday
11/30/2018	6/21/2019	6,562	3rd Friday
11/30/2018	7/19/2019	175	3rd Friday
11/30/2018	8/16/2019	125	3rd Friday
11/30/2018	9/20/2019	714	3rd Friday
11/30/2018	10/18/2019	393	3rd Friday
11/30/2018	12/20/2019	8,634	3rd Friday
11/30/2018	12/18/2020	704	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Dec 2018 to Mar 2019

Month	Expiration date	Open interest	Expiration day
12/31/2018	1/18/2019	29,716	3rd Friday
12/31/2018	2/15/2019	7,142	3rd Friday
12/31/2018	3/15/2019	15,034	3rd Friday
12/31/2018	4/18/2019	1,929	3rd Friday
12/31/2018	5/17/2019	791	3rd Friday
12/31/2018	6/21/2019	7,739	3rd Friday
12/31/2018	7/19/2019	287	3rd Friday
12/31/2018	8/16/2019	277	3rd Friday
12/31/2018	9/20/2019	1,681	3rd Friday
12/31/2018	10/18/2019	476	3rd Friday
12/31/2018	12/20/2019	9,943	3rd Friday
12/31/2018	12/18/2020	714	3rd Friday
1/31/2019	2/15/2019	20,449	3rd Friday
1/31/2019	3/15/2019	27,668	3rd Friday
1/31/2019	4/18/2019	4,883	3rd Friday
1/31/2019	5/17/2019	1,206	3rd Friday
1/31/2019	6/21/2019	10,472	3rd Friday
1/31/2019	7/19/2019	498	3rd Friday
1/31/2019	8/16/2019	499	3rd Friday
1/31/2019	9/20/2019	2,143	3rd Friday
1/31/2019	10/18/2019	546	3rd Friday
1/31/2019	12/20/2019	10,758	3rd Friday
1/31/2019	1/17/2020	11	3rd Friday
1/31/2019	6/19/2020	215	3rd Friday
1/31/2019	12/18/2020	982	3rd Friday
1/31/2019	12/17/2021	252	3rd Friday
2/28/2019	3/15/2019	41,134	3rd Friday
2/28/2019	4/18/2019	10,796	3rd Friday
2/28/2019	5/17/2019	3,684	3rd Friday
2/28/2019	6/21/2019	13,194	3rd Friday
2/28/2019	7/19/2019	722	3rd Friday
2/28/2019	8/16/2019	575	3rd Friday
2/28/2019	9/20/2019	2,641	3rd Friday
2/28/2019	10/18/2019	696	3rd Friday
2/28/2019	12/20/2019	10,984	3rd Friday
2/28/2019	1/17/2020	150	3rd Friday
2/28/2019	3/20/2020	3	3rd Friday
2/28/2019	6/19/2020	263	3rd Friday
2/28/2019	12/18/2020	3,315	3rd Friday
2/28/2019	12/17/2021	325	3rd Friday
3/29/2019	4/18/2019	21,134	3rd Friday
3/29/2019	5/17/2019	8,578	3rd Friday
3/29/2019	6/21/2019	17,941	3rd Friday
3/29/2019	7/19/2019	1,117	3rd Friday
3/29/2019	8/16/2019	698	3rd Friday
3/29/2019	9/20/2019	3,089	3rd Friday
3/29/2019	10/18/2019	837	3rd Friday
3/29/2019	12/20/2019	10,580	3rd Friday
3/29/2019	1/17/2020	335	3rd Friday
3/29/2019	3/20/2020	258	3rd Friday
3/29/2019	6/19/2020	624	3rd Friday
3/29/2019	12/18/2020	4,142	3rd Friday
3/29/2019	12/17/2021	503	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Apr 2019 to Jul 2019

Month	Expiration date	Open interest	Expiration day
4/30/2019	5/17/2019	15,811	3rd Friday
4/30/2019	6/21/2019	26,648	3rd Friday
4/30/2019	7/19/2019	5,629	3rd Friday
4/30/2019	8/16/2019	2,215	3rd Friday
4/30/2019	9/20/2019	4,205	3rd Friday
4/30/2019	10/18/2019	1,100	3rd Friday
4/30/2019	11/15/2019	65	3rd Friday
4/30/2019	12/20/2019	14,323	3rd Friday
4/30/2019	1/17/2020	804	3rd Friday
4/30/2019	3/20/2020	421	3rd Friday
4/30/2019	6/19/2020	749	3rd Friday
4/30/2019	12/18/2020	4,216	3rd Friday
4/30/2019	12/17/2021	1,633	3rd Friday
5/31/2019	6/21/2019	44,810	3rd Friday
5/31/2019	7/19/2019	10,554	3rd Friday
5/31/2019	8/16/2019	9,111	3rd Friday
5/31/2019	9/20/2019	6,771	3rd Friday
5/31/2019	10/18/2019	2,431	3rd Friday
5/31/2019	11/15/2019	217	3rd Friday
5/31/2019	12/20/2019	16,693	3rd Friday
5/31/2019	1/17/2020	1,120	3rd Friday
5/31/2019	2/21/2020	13	3rd Friday
5/31/2019	3/20/2020	482	3rd Friday
5/31/2019	6/19/2020	1,272	3rd Friday
5/31/2019	12/18/2020	4,329	3rd Friday
5/31/2019	12/17/2021	1,692	3rd Friday
6/28/2019	7/19/2019	20,808	3rd Friday
6/28/2019	8/16/2019	13,230	3rd Friday
6/28/2019	9/20/2019	13,537	3rd Friday
6/28/2019	10/18/2019	3,954	3rd Friday
6/28/2019	11/15/2019	477	3rd Friday
6/28/2019	12/20/2019	17,039	3rd Friday
6/28/2019	1/17/2020	1,310	3rd Friday
6/28/2019	2/21/2020	16	3rd Friday
6/28/2019	3/20/2020	535	3rd Friday
6/28/2019	6/19/2020	1,838	3rd Friday
6/28/2019	12/18/2020	4,367	3rd Friday
6/28/2019	12/17/2021	1,754	3rd Friday
7/31/2019	8/16/2019	23,811	3rd Friday
7/31/2019	9/20/2019	29,303	3rd Friday
7/31/2019	10/18/2019	6,083	3rd Friday
7/31/2019	11/15/2019	914	3rd Friday
7/31/2019	12/20/2019	19,229	3rd Friday
7/31/2019	1/17/2020	1,691	3rd Friday
7/31/2019	2/21/2020	32	3rd Friday
7/31/2019	3/20/2020	606	3rd Friday
7/31/2019	6/19/2020	2,237	3rd Friday
7/31/2019	12/18/2020	3,706	3rd Friday
7/31/2019	12/17/2021	1,929	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Aug 2019 to Dec 2019

Month	Expiration date	Open interest	Expiration day
8/30/2019	9/20/2019	39,902	3rd Friday
8/30/2019	10/18/2019	12,769	3rd Friday
8/30/2019	11/15/2019	4,118	3rd Friday
8/30/2019	12/20/2019	22,663	3rd Friday
8/30/2019	1/17/2020	2,681	3rd Friday
8/30/2019	2/21/2020	201	3rd Friday
8/30/2019	3/20/2020	1,172	3rd Friday
8/30/2019	6/19/2020	2,258	3rd Friday
8/30/2019	12/18/2020	4,463	3rd Friday
8/30/2019	12/17/2021	2,569	3rd Friday
9/30/2019	10/18/2019	20,642	3rd Friday
9/30/2019	11/15/2019	7,762	3rd Friday
9/30/2019	12/20/2019	30,481	3rd Friday
9/30/2019	1/17/2020	3,008	3rd Friday
9/30/2019	2/21/2020	453	3rd Friday
9/30/2019	3/20/2020	3,403	3rd Friday
9/30/2019	6/19/2020	3,068	3rd Friday
9/30/2019	9/18/2020	261	3rd Friday
9/30/2019	12/18/2020	4,940	3rd Friday
9/30/2019	12/17/2021	2,644	3rd Friday
10/31/2019	11/15/2019	16,589	3rd Friday
10/31/2019	12/20/2019	39,563	3rd Friday
10/31/2019	1/17/2020	3,922	3rd Friday
10/31/2019	2/21/2020	1,075	3rd Friday
10/31/2019	3/20/2020	5,712	3rd Friday
10/31/2019	4/17/2020	43	3rd Friday
10/31/2019	5/15/2020	42	3rd Friday
10/31/2019	6/19/2020	3,163	3rd Friday
10/31/2019	9/18/2020	484	3rd Friday
10/31/2019	12/18/2020	5,311	3rd Friday
10/31/2019	12/17/2021	2,867	3rd Friday
11/29/2019	12/20/2019	49,241	3rd Friday
11/29/2019	1/17/2020	8,838	3rd Friday
11/29/2019	2/21/2020	2,754	3rd Friday
11/29/2019	3/20/2020	6,636	3rd Friday
11/29/2019	4/17/2020	150	3rd Friday
11/29/2019	5/15/2020	120	3rd Friday
11/29/2019	6/19/2020	3,303	3rd Friday
11/29/2019	9/18/2020	541	3rd Friday
11/29/2019	12/18/2020	5,525	3rd Friday
11/29/2019	12/17/2021	3,016	3rd Friday
12/31/2019	1/17/2020	19,599	3rd Friday
12/31/2019	2/21/2020	7,366	3rd Friday
12/31/2019	3/20/2020	13,669	3rd Friday
12/31/2019	4/17/2020	387	3rd Friday
12/31/2019	5/15/2020	161	3rd Friday
12/31/2019	6/19/2020	3,736	3rd Friday
12/31/2019	9/18/2020	770	3rd Friday
12/31/2019	10/16/2020	47	3rd Friday
12/31/2019	11/20/2020	24	3rd Friday
12/31/2019	12/18/2020	5,902	3rd Friday
12/31/2019	12/17/2021	3,197	3rd Friday
12/31/2019	12/16/2022	30	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Jan 2020 to Apr 2020

Month	Expiration date	Open interest	Expiration day
1/31/2020	2/21/2020	20,454	3rd Friday
1/31/2020	3/20/2020	29,048	3rd Friday
1/31/2020	4/17/2020	2,878	3rd Friday
1/31/2020	5/15/2020	3,612	3rd Friday
1/31/2020	6/19/2020	6,326	3rd Friday
1/31/2020	9/18/2020	1,518	3rd Friday
1/31/2020	10/16/2020	153	3rd Friday
1/31/2020	11/20/2020	451	3rd Friday
1/31/2020	12/18/2020	7,424	3rd Friday
1/31/2020	3/19/2021	1	3rd Friday
1/31/2020	6/18/2021	20	3rd Friday
1/31/2020	12/17/2021	3,339	3rd Friday
1/31/2020	12/16/2022	104	3rd Friday
2/28/2020	3/20/2020	44,622	3rd Friday
2/28/2020	4/17/2020	9,855	3rd Friday
2/28/2020	5/15/2020	8,008	3rd Friday
2/28/2020	6/19/2020	9,117	3rd Friday
2/28/2020	7/17/2020	54	3rd Friday
2/28/2020	8/21/2020	410	3rd Friday
2/28/2020	9/18/2020	2,773	3rd Friday
2/28/2020	10/16/2020	538	3rd Friday
2/28/2020	11/20/2020	1,588	3rd Friday
2/28/2020	12/18/2020	12,578	3rd Friday
2/28/2020	3/19/2021	334	3rd Friday
2/28/2020	6/18/2021	172	3rd Friday
2/28/2020	12/17/2021	3,800	3rd Friday
2/28/2020	12/16/2022	315	3rd Friday
3/31/2020	4/17/2020	30,701	3rd Friday
3/31/2020	5/15/2020	16,267	3rd Friday
3/31/2020	6/19/2020	22,678	3rd Friday
3/31/2020	7/17/2020	2,761	3rd Friday
3/31/2020	8/21/2020	863	3rd Friday
3/31/2020	9/18/2020	4,929	3rd Friday
3/31/2020	10/16/2020	871	3rd Friday
3/31/2020	11/20/2020	1,966	3rd Friday
3/31/2020	12/18/2020	11,877	3rd Friday
3/31/2020	3/19/2021	647	3rd Friday
3/31/2020	6/18/2021	571	3rd Friday
3/31/2020	12/17/2021	3,897	3rd Friday
3/31/2020	12/16/2022	417	3rd Friday
4/30/2020	5/15/2020	22,808	3rd Friday
4/30/2020	6/19/2020	27,899	3rd Friday
4/30/2020	7/17/2020	4,962	3rd Friday
4/30/2020	8/21/2020	1,480	3rd Friday
4/30/2020	9/18/2020	6,031	3rd Friday
4/30/2020	10/16/2020	999	3rd Friday
4/30/2020	11/20/2020	2,146	3rd Friday
4/30/2020	12/18/2020	12,798	3rd Friday
4/30/2020	1/15/2021	23	3rd Friday
4/30/2020	3/19/2021	723	3rd Friday
4/30/2020	6/18/2021	1,876	3rd Friday
4/30/2020	12/17/2021	3,901	3rd Friday
4/30/2020	12/16/2022	625	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from May 2020 to Aug 2020

Month	Expiration date	Open interest	Expiration day
5/29/2020	6/19/2020	37,140	3rd Friday
5/29/2020	7/17/2020	8,515	3rd Friday
5/29/2020	8/21/2020	2,792	3rd Friday
5/29/2020	9/18/2020	9,300	3rd Friday
5/29/2020	10/16/2020	1,320	3rd Friday
5/29/2020	11/20/2020	2,226	3rd Friday
5/29/2020	12/18/2020	12,772	3rd Friday
5/29/2020	1/15/2021	684	3rd Friday
5/29/2020	3/19/2021	844	3rd Friday
5/29/2020	6/18/2021	2,547	3rd Friday
5/29/2020	12/17/2021	4,002	3rd Friday
5/29/2020	12/16/2022	627	3rd Friday
6/30/2020	7/17/2020	17,151	3rd Friday
6/30/2020	8/21/2020	7,082	3rd Friday
6/30/2020	9/18/2020	15,915	3rd Friday
6/30/2020	10/16/2020	2,570	3rd Friday
6/30/2020	11/20/2020	2,592	3rd Friday
6/30/2020	12/18/2020	13,862	3rd Friday
6/30/2020	1/15/2021	1,094	3rd Friday
6/30/2020	2/19/2021	2	3rd Friday
6/30/2020	3/19/2021	1,408	3rd Friday
6/30/2020	6/18/2021	3,387	3rd Friday
6/30/2020	12/17/2021	4,338	3rd Friday
6/30/2020	12/16/2022	599	3rd Friday
7/31/2020	8/21/2020	19,473	3rd Friday
7/31/2020	9/18/2020	25,651	3rd Friday
7/31/2020	10/16/2020	6,153	3rd Friday
7/31/2020	11/20/2020	3,562	3rd Friday
7/31/2020	12/18/2020	16,310	3rd Friday
7/31/2020	1/15/2021	1,910	3rd Friday
7/31/2020	2/19/2021	54	3rd Friday
7/31/2020	3/19/2021	1,468	3rd Friday
7/31/2020	4/16/2021	17	3rd Friday
7/31/2020	6/18/2021	4,709	3rd Friday
7/31/2020	12/17/2021	4,968	3rd Friday
7/31/2020	12/16/2022	705	3rd Friday
8/31/2020	9/18/2020	45,328	3rd Friday
8/31/2020	10/16/2020	10,660	3rd Friday
8/31/2020	11/20/2020	8,047	3rd Friday
8/31/2020	12/18/2020	18,369	3rd Friday
8/31/2020	1/15/2021	3,033	3rd Friday
8/31/2020	2/19/2021	179	3rd Friday
8/31/2020	3/19/2021	2,800	3rd Friday
8/31/2020	4/16/2021	56	3rd Friday
8/31/2020	6/18/2021	5,529	3rd Friday
8/31/2020	9/17/2021	0	3rd Friday
8/31/2020	12/17/2021	5,791	3rd Friday
8/31/2020	12/16/2022	798	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Sep 2020 to Dec 2020

Month	Expiration date	Open interest	Expiration day
9/30/2020	10/16/2020	19,883	3rd Friday
9/30/2020	11/20/2020	10,620	3rd Friday
9/30/2020	12/18/2020	34,651	3rd Friday
9/30/2020	1/15/2021	4,459	3rd Friday
9/30/2020	2/19/2021	821	3rd Friday
9/30/2020	3/19/2021	3,227	3rd Friday
9/30/2020	4/16/2021	104	3rd Friday
9/30/2020	6/18/2021	9,008	3rd Friday
9/30/2020	9/17/2021	458	3rd Friday
9/30/2020	12/17/2021	6,452	3rd Friday
9/30/2020	12/16/2022	1,029	3rd Friday
10/30/2020	11/20/2020	19,820	3rd Friday
10/30/2020	12/18/2020	46,511	3rd Friday
10/30/2020	1/15/2021	9,157	3rd Friday
10/30/2020	2/19/2021	1,342	3rd Friday
10/30/2020	3/19/2021	4,597	3rd Friday
10/30/2020	4/16/2021	391	3rd Friday
10/30/2020	6/18/2021	10,278	3rd Friday
10/30/2020	9/17/2021	682	3rd Friday
10/30/2020	12/17/2021	6,901	3rd Friday
10/30/2020	12/16/2022	1,325	3rd Friday
11/30/2020	12/18/2020	59,793	3rd Friday
11/30/2020	1/15/2021	12,002	3rd Friday
11/30/2020	2/19/2021	3,486	3rd Friday
11/30/2020	3/19/2021	5,930	3rd Friday
11/30/2020	4/16/2021	1,211	3rd Friday
11/30/2020	5/21/2021	1	3rd Friday
11/30/2020	6/18/2021	10,683	3rd Friday
11/30/2020	9/17/2021	1,342	3rd Friday
11/30/2020	12/17/2021	7,182	3rd Friday
11/30/2020	12/16/2022	1,624	3rd Friday
12/31/2020	1/15/2021	23,450	3rd Friday
12/31/2020	2/19/2021	8,943	3rd Friday
12/31/2020	3/19/2021	19,742	3rd Friday
12/31/2020	4/16/2021	4,135	3rd Friday
12/31/2020	5/21/2021	104	3rd Friday
12/31/2020	6/18/2021	9,463	3rd Friday
12/31/2020	7/16/2021	28	3rd Friday
12/31/2020	9/17/2021	1,806	3rd Friday
12/31/2020	12/17/2021	8,257	3rd Friday
12/31/2020	3/18/2022	37	3rd Friday
12/31/2020	12/16/2022	1,820	3rd Friday
12/31/2020	12/15/2023	9	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Jan 2021 to Apr 2021

nth	Expiration date	Open interest	Expiration day
1/29/2021	2/19/2021	21,526	3rd Friday
1/29/2021	3/19/2021	26,888	3rd Friday
1/29/2021	4/16/2021	8,151	3rd Friday
1/29/2021	5/21/2021	2,151	3rd Friday
1/29/2021	6/18/2021	10,941	3rd Friday
1/29/2021	7/16/2021	322	3rd Friday
1/29/2021	9/17/2021	1,927	3rd Friday
1/29/2021	12/17/2021	9,999	3rd Friday
1/29/2021	3/18/2022	252	3rd Friday
1/29/2021	6/17/2022	54	3rd Friday
1/29/2021	12/16/2022	2,048	3rd Friday
1/29/2021	12/15/2023	105	3rd Friday
2/26/2021	3/19/2021	37,883	3rd Friday
2/26/2021	4/16/2021	12,655	3rd Friday
2/26/2021	5/21/2021	4,911	3rd Friday
2/26/2021	6/18/2021	14,638	3rd Friday
2/26/2021	7/16/2021	1,049	3rd Friday
2/26/2021	8/20/2021	473	3rd Friday
2/26/2021	9/17/2021	2,483	3rd Friday
2/26/2021	12/17/2021	11,704	3rd Friday
2/26/2021	3/18/2022	509	3rd Friday
2/26/2021	6/17/2022	290	3rd Friday
2/26/2021	12/16/2022	2,232	3rd Friday
2/26/2021	12/15/2023	199	3rd Friday
3/31/2021	4/16/2021	25,434	3rd Friday
3/31/2021	5/21/2021	11,287	3rd Friday
3/31/2021	6/18/2021	25,462	3rd Friday
3/31/2021	7/16/2021	927	3rd Friday
3/31/2021	8/20/2021	481	3rd Friday
3/31/2021	9/17/2021	3,851	3rd Friday
3/31/2021	10/15/2021	28	3rd Friday
3/31/2021	11/19/2021	4	3rd Friday
3/31/2021	12/17/2021	13,577	3rd Friday
3/31/2021	3/18/2022	871	3rd Friday
3/31/2021	6/17/2022	1,036	3rd Friday
3/31/2021	12/16/2022	2,270	3rd Friday
3/31/2021	12/15/2023	335	3rd Friday
4/30/2021	5/21/2021	21,803	3rd Friday
4/30/2021	6/18/2021	35,274	3rd Friday
4/30/2021	7/16/2021	3,681	3rd Friday
4/30/2021	8/20/2021	2,103	3rd Friday
4/30/2021	9/17/2021	5,073	3rd Friday
4/30/2021	10/15/2021	310	3rd Friday
4/30/2021	11/19/2021	427	3rd Friday
4/30/2021	12/17/2021	15,420	3rd Friday
4/30/2021	3/18/2022	1,372	3rd Friday
4/30/2021	6/17/2022	1,495	3rd Friday
4/30/2021	12/16/2022	2,494	3rd Friday
4/30/2021	12/15/2023	526	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from May 2021 to Aug 2021

Month	Expiration date	Open interest	Expiration day
5/28/2021	6/18/2021	51,620	3rd Friday
5/28/2021	7/16/2021	7,112	3rd Friday
5/28/2021	8/20/2021	3,394	3rd Friday
5/28/2021	9/17/2021	7,020	3rd Friday
5/28/2021	10/15/2021	616	3rd Friday
5/28/2021	11/19/2021	800	3rd Friday
5/28/2021	12/17/2021	16,928	3rd Friday
5/28/2021	1/21/2022	99	3rd Friday
5/28/2021	2/18/2022	8	3rd Friday
5/28/2021	3/18/2022	1,572	3rd Friday
5/28/2021	6/17/2022	1,921	3rd Friday
5/28/2021	9/16/2022	7	3rd Friday
5/28/2021	12/16/2022	3,075	3rd Friday
5/28/2021	12/15/2023	701	3rd Friday
6/30/2021	7/16/2021	30,468	3rd Friday
6/30/2021	8/20/2021	8,155	3rd Friday
6/30/2021	9/17/2021	19,037	3rd Friday
6/30/2021	10/15/2021	1,525	3rd Friday
6/30/2021	11/19/2021	975	3rd Friday
6/30/2021	12/17/2021	18,340	3rd Friday
6/30/2021	1/21/2022	1,012	3rd Friday
6/30/2021	2/18/2022	460	3rd Friday
6/30/2021	3/18/2022	2,552	3rd Friday
6/30/2021	6/17/2022	2,887	3rd Friday
6/30/2021	9/16/2022	297	3rd Friday
6/30/2021	12/16/2022	3,441	3rd Friday
6/30/2021	12/15/2023	856	3rd Friday
7/30/2021	8/20/2021	20,410	3rd Friday
7/30/2021	9/17/2021	26,611	3rd Friday
7/30/2021	10/15/2021	3,710	3rd Friday
7/30/2021	11/19/2021	2,967	3rd Friday
7/30/2021	12/17/2021	19,389	3rd Friday
7/30/2021	1/21/2022	2,103	3rd Friday
7/30/2021	2/18/2022	739	3rd Friday
7/30/2021	3/18/2022	2,903	3rd Friday
7/30/2021	4/14/2022	17	3rd Thursday
7/30/2021	5/20/2022	5	3rd Friday
7/30/2021	6/17/2022	4,054	3rd Friday
7/30/2021	9/16/2022	614	3rd Friday
7/30/2021	12/16/2022	3,590	3rd Friday
7/30/2021	12/15/2023	988	3rd Friday
8/31/2021	9/17/2021	41,197	3rd Friday
8/31/2021	10/15/2021	11,230	3rd Friday
8/31/2021	11/19/2021	5,843	3rd Friday
8/31/2021	12/17/2021	20,409	3rd Friday
8/31/2021	1/21/2022	2,920	3rd Friday
8/31/2021	2/18/2022	994	3rd Friday
8/31/2021	3/18/2022	3,863	3rd Friday
8/31/2021	4/14/2022	25	3rd Thursday
8/31/2021	5/20/2022	212	3rd Friday
8/31/2021	6/17/2022	4,549	3rd Friday
8/31/2021	9/16/2022	1,733	3rd Friday
8/31/2021	12/16/2022	4,121	3rd Friday
8/31/2021	12/15/2023	1,123	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), from Sep 2021 to Dec 2021

onth	Expiration date	Open interest	Expiration day
9/30/2021	10/15/2021	27,280	3rd Friday
9/30/2021	11/19/2021	15,489	3rd Friday
9/30/2021	12/17/2021	33,421	3rd Friday
9/30/2021	1/21/2022	5,406	3rd Friday
9/30/2021	2/18/2022	1,300	3rd Friday
9/30/2021	3/18/2022	5,076	3rd Friday
9/30/2021	4/14/2022	62	3rd Thursday
9/30/2021	5/20/2022	550	3rd Friday
9/30/2021	6/17/2022	4,871	3rd Friday
9/30/2021	9/16/2022	2,371	3rd Friday
9/30/2021	12/16/2022	4,684	3rd Friday
9/30/2021	1/20/2023	137	3rd Friday
9/30/2021	6/16/2023	5	3rd Friday
9/30/2021	12/15/2023	1,362	3rd Friday
10/29/2021	11/19/2021	37,442	3rd Friday
10/29/2021	12/17/2021	40,262	3rd Friday
10/29/2021	1/21/2022	8,156	3rd Friday
10/29/2021	2/18/2022	2,880	3rd Friday
10/29/2021	3/18/2022	5,681	3rd Friday
10/29/2021	4/14/2022	469	3rd Thursday
10/29/2021	5/20/2022	693	3rd Friday
10/29/2021	6/17/2022	5,659	3rd Friday
10/29/2021	7/15/2022	48	3rd Friday
10/29/2021	8/19/2022	7	3rd Friday
10/29/2021	9/16/2022	2,825	3rd Friday
10/29/2021	12/16/2022	4,852	3rd Friday
10/29/2021	1/20/2023	169	3rd Friday
10/29/2021	6/16/2023	16	3rd Friday
10/29/2021	12/15/2023	1,554	3rd Friday
11/30/2021	12/17/2021	45,951	3rd Friday
11/30/2021	1/21/2022	15,199	3rd Friday
11/30/2021	2/18/2022	5,352	3rd Friday
11/30/2021	3/18/2022	7,182	3rd Friday
11/30/2021	4/14/2022	891	3rd Thursday
11/30/2021	5/20/2022	750	3rd Friday
11/30/2021	6/17/2022	6,306	3rd Friday
11/30/2021	7/15/2022	170	3rd Friday
11/30/2021	8/19/2022	23	3rd Friday
11/30/2021	9/16/2022	3,358	3rd Friday
11/30/2021	12/16/2022	5,270	3rd Friday
11/30/2021	1/20/2023	276	3rd Friday
11/30/2021	6/16/2023	20	3rd Friday
11/30/2021	12/15/2023	1,600	3rd Friday
11/30/2021	6/21/2024	2	3rd Friday
12/31/2021	1/21/2022	27,786	3rd Friday
12/31/2021	2/18/2022	9,606	3rd Friday
12/31/2021	3/18/2022	12,287	3rd Friday
12/31/2021	4/14/2022	1,344	3rd Thursday
12/31/2021	5/20/2022	816	3rd Friday
12/31/2021	6/17/2022	7,422	3rd Friday
12/31/2021	7/15/2022	185	3rd Friday
12/31/2021	8/19/2022	44	3rd Friday
12/31/2021	9/16/2022	3,308	3rd Friday
12/31/2021	12/16/2022	5,732	3rd Friday
12/31/2021	1/20/2023	512	3rd Friday
12/31/2021	6/16/2023	576	3rd Friday
12/31/2021	12/15/2023	1,620	3rd Friday
12/31/2021	6/21/2024	2	3rd Friday

NDX month end Open interest by expiration date (3rd Friday), for Jan 2022

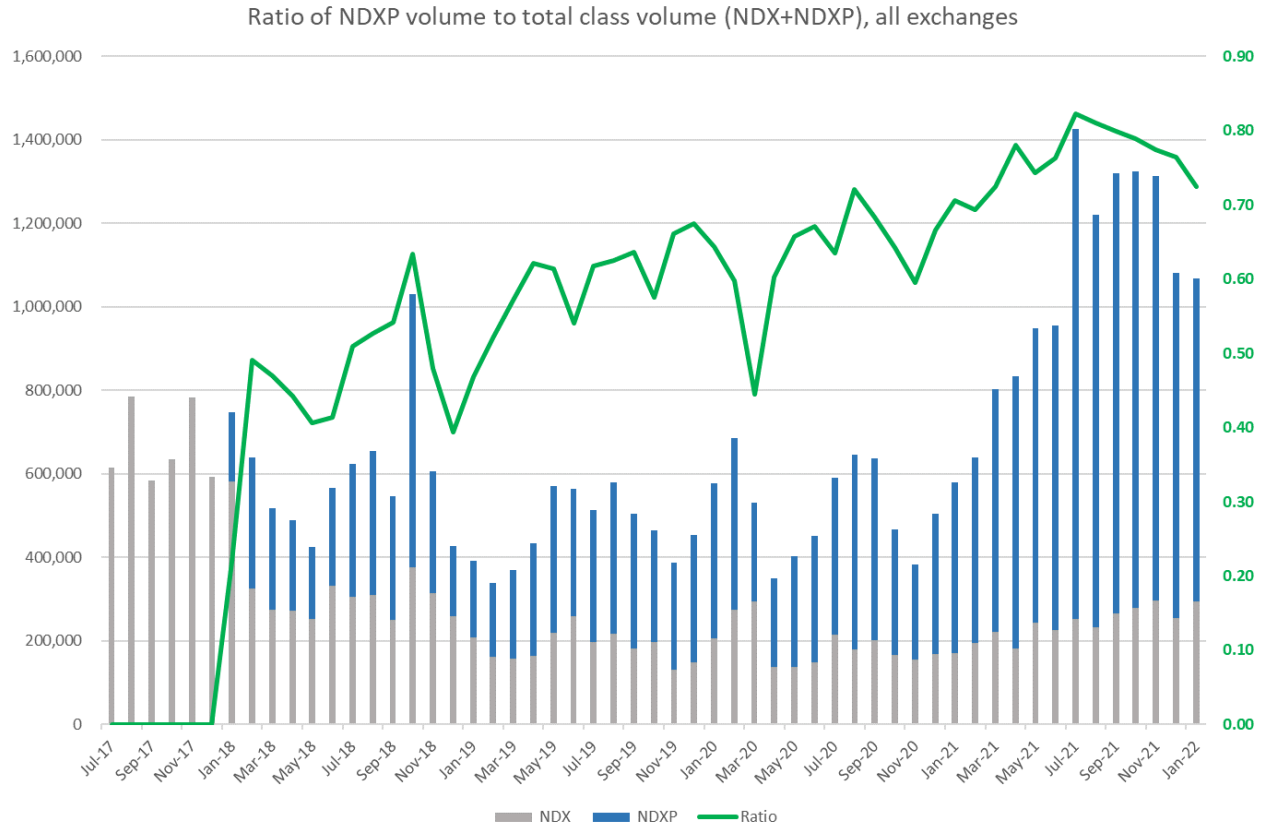
Month	Expiration date	Open interest	Expiration day
1/31/2022	2/18/2022	28,739	3rd Friday
1/31/2022	3/18/2022	21,273	3rd Friday
1/31/2022	4/14/2022	5,495	3rd Thursday
1/31/2022	5/20/2022	1,899	3rd Friday
1/31/2022	6/17/2022	9,257	3rd Friday
1/31/2022	7/15/2022	377	3rd Friday
1/31/2022	8/19/2022	160	3rd Friday
1/31/2022	9/16/2022	4,348	3rd Friday
1/31/2022	10/21/2022	56	3rd Friday
1/31/2022	11/18/2022	243	3rd Friday
1/31/2022	12/16/2022	6,295	3rd Friday
1/31/2022	1/20/2023	723	3rd Friday
1/31/2022	3/17/2023	36	3rd Friday
1/31/2022	6/16/2023	668	3rd Friday
1/31/2022	12/15/2023	2,149	3rd Friday
1/31/2022	6/21/2024	2	3rd Friday
1/31/2022	12/20/2024	131	3rd Friday

NDX month end Open interest by expiration date (non-3rd Friday)

Month	Expiration date	Open interest	Expiration day
7/31/2017	8/4/2017	22,646	Friday
7/31/2017	8/11/2017	6,450	Friday
7/31/2017	8/25/2017	4,257	Friday
7/31/2017	9/1/2017	3,485	Friday
7/31/2017	9/8/2017	169	Friday
8/31/2017	9/1/2017	18,582	Friday
8/31/2017	9/8/2017	18,472	Friday
8/31/2017	9/22/2017	5,896	Friday
8/31/2017	9/29/2017	5,307	Friday
8/31/2017	10/6/2017	3,063	Friday
8/31/2017	10/13/2017	936	Friday
9/29/2017	9/29/2017	27,913	Friday
9/29/2017	10/6/2017	21,190	Friday
9/29/2017	10/13/2017	9,234	Friday
9/29/2017	10/27/2017	3,955	Friday
9/29/2017	11/3/2017	3,888	Friday
9/29/2017	11/10/2017	648	Friday
10/31/2017	11/3/2017	31,436	Friday
10/31/2017	11/10/2017	16,405	Friday
10/31/2017	11/24/2017	2,454	Friday
10/31/2017	12/1/2017	3,856	Friday
10/31/2017	12/8/2017	408	Friday
11/30/2017	12/1/2017	21,388	Friday
11/30/2017	12/8/2017	19,469	Friday
11/30/2017	12/22/2017	6,250	Friday
11/30/2017	12/29/2017	4,416	Friday
11/30/2017	1/5/2018	618	Friday
11/30/2017	1/12/2018	78	Friday
12/29/2017	12/29/2017	17,780	Friday
12/29/2017	1/5/2018	17,445	Friday
12/29/2017	1/12/2018	20,212	Friday
12/29/2017	1/26/2018	3,244	Friday

(5) Ratio of monthly aggregate volume in Weekly Expiration series to total monthly class volume.

Ratio of NDXP volume to total class volume (NDX+NDXP) has been steadily increasing over time and has peaked at 82% in July 2021.

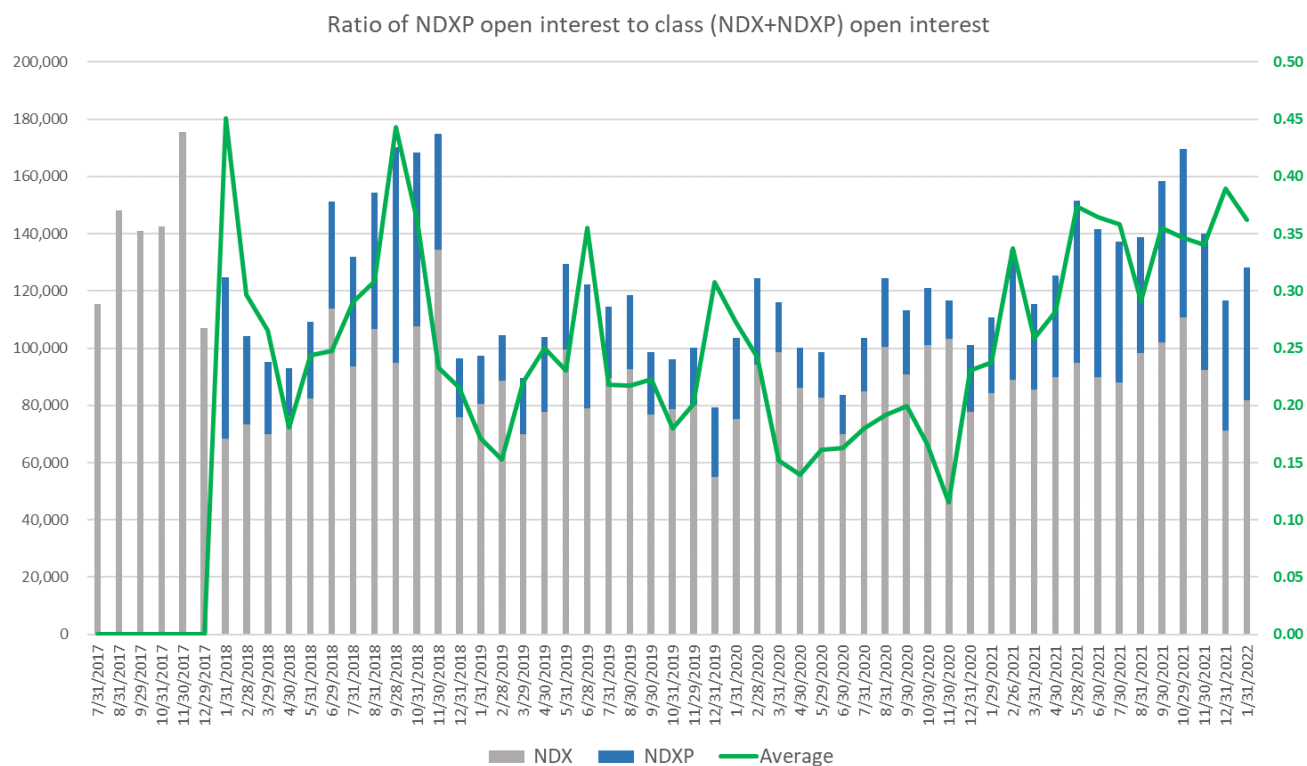


Ratio of NDXP contract volume to class volume				
Month	NDX	NDXP	Sum	Ratio
Jul-17	614,878	0	614,878	0.00
Aug-17	783,976	0	783,976	0.00
Sep-17	583,680	0	583,680	0.00
Oct-17	635,576	0	635,576	0.00
Nov-17	783,388	0	783,388	0.00
Dec-17	593,504	0	593,504	0.00
Jan-18	582,456	163,990	746,446	0.22
Feb-18	325,908	314,060	639,968	0.49
Mar-18	273,912	243,016	516,928	0.47
Apr-18	272,914	216,280	489,194	0.44
May-18	252,708	173,304	426,012	0.41
Jun-18	331,264	234,098	565,362	0.41
Jul-18	306,550	317,458	624,008	0.51
Aug-18	309,646	344,652	654,298	0.53
Sep-18	250,670	296,606	547,276	0.54
Oct-18	377,344	652,938	1,030,282	0.63
Nov-18	315,196	290,364	605,560	0.48
Dec-18	259,708	168,512	428,220	0.39
Jan-19	208,812	184,052	392,864	0.47
Feb-19	162,460	176,038	338,498	0.52
Mar-19	158,070	210,788	368,858	0.57
Apr-19	164,796	269,488	434,284	0.62
May-19	220,350	350,224	570,574	0.61
Jun-19	259,164	305,398	564,562	0.54
Jul-19	196,620	317,554	514,174	0.62
Aug-19	217,902	362,052	579,954	0.62
Sep-19	183,102	320,734	503,836	0.64
Oct-19	197,444	266,838	464,282	0.57
Nov-19	131,262	255,228	386,490	0.66
Dec-19	147,826	306,980	454,806	0.67
Jan-20	206,170	372,142	578,312	0.64
Feb-20	275,882	409,386	685,268	0.60
Mar-20	294,722	235,910	530,632	0.44
Apr-20	138,660	210,684	349,344	0.60
May-20	138,688	265,288	403,976	0.66
Jun-20	148,454	302,872	451,326	0.67
Jul-20	215,568	375,342	590,910	0.64
Aug-20	180,366	465,456	645,822	0.72
Sep-20	202,024	435,882	637,906	0.68
Oct-20	166,778	299,546	466,324	0.64
Nov-20	155,076	228,046	383,122	0.60
Dec-20	168,610	336,350	504,960	0.67
Jan-21	171,276	409,370	580,646	0.71
Feb-21	195,796	442,508	638,304	0.69
Mar-21	221,224	581,216	802,440	0.72
Apr-21	182,964	650,002	832,966	0.78
May-21	243,676	705,124	948,800	0.74
Jun-21	227,202	728,224	955,426	0.76
Jul-21	253,624	1,171,326	1,424,950	0.82
Aug-21	232,300	987,776	1,220,076	0.81
Sep-21	265,646	1,054,470	1,320,116	0.80
Oct-21	279,594	1,043,832	1,323,426	0.79
Nov-21	296,504	1,016,460	1,312,964	0.77
Dec-21	254,696	826,676	1,081,372	0.76
Jan-22	294,806	772,266	1,067,072	0.72

Volume Jul 1, 2017 - Jan 31, 2022

(6) Ratio of month-end open interest in each Weekly Expiration series to total class open interest.

Ratio of NDXP open interest to total class open interest (NDX+NDXP) has fluctuated widely, peaking at 44% in September 2018.



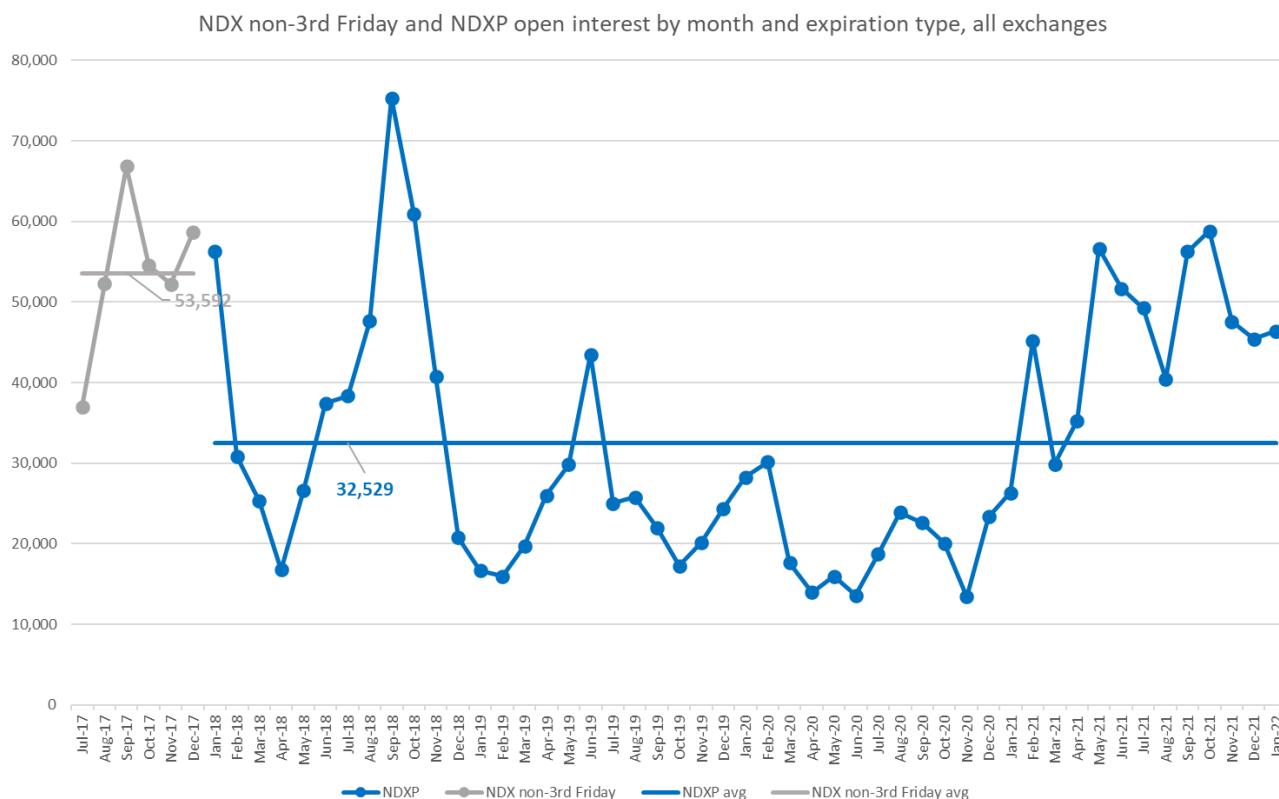
Ratio of NDXP open interest to class open interest				
Month	NDX	NDXP	Sum	Ratio
7/31/2017	115,491	0	115,491	0.00
8/31/2017	148,145	0	148,145	0.00
9/29/2017	140,978	0	140,978	0.00
10/31/2017	142,374	0	142,374	0.00
11/30/2017	175,566	0	175,566	0.00
12/29/2017	106,946	0	106,946	0.00
1/31/2018	68,543	56,330	124,873	0.45
2/28/2018	73,287	30,879	104,166	0.30
3/29/2018	69,796	25,276	95,072	0.27
4/30/2018	76,090	16,791	92,881	0.18
5/31/2018	82,429	26,626	109,055	0.24
6/29/2018	113,834	37,446	151,280	0.25
7/31/2018	93,721	38,338	132,059	0.29
8/31/2018	106,741	47,646	154,387	0.31
9/28/2018	94,781	75,324	170,105	0.44
10/31/2018	107,545	60,906	168,451	0.36
11/30/2018	134,295	40,710	175,005	0.23
12/31/2018	75,729	20,790	96,519	0.22
1/31/2019	80,582	16,667	97,249	0.17
2/28/2019	88,482	15,940	104,422	0.15
3/29/2019	69,836	19,716	89,552	0.22
4/30/2019	77,819	25,986	103,805	0.25
5/31/2019	99,495	29,858	129,353	0.23
6/28/2019	78,865	43,479	122,344	0.36
7/31/2019	89,541	25,004	114,545	0.22
8/30/2019	92,796	25,771	118,567	0.22
9/30/2019	76,662	21,932	98,594	0.22
10/31/2019	78,771	17,242	96,013	0.18
11/29/2019	80,124	20,123	100,247	0.20
12/31/2019	54,888	24,369	79,257	0.31
1/31/2020	75,328	28,274	103,602	0.27
2/28/2020	94,164	30,135	124,299	0.24
3/31/2020	98,445	17,634	116,079	0.15
4/30/2020	86,271	13,983	100,254	0.14
5/29/2020	82,769	15,955	98,724	0.16
6/30/2020	70,000	13,604	83,604	0.16
7/31/2020	84,980	18,693	103,673	0.18
8/31/2020	100,590	23,898	124,488	0.19
9/30/2020	90,712	22,595	113,307	0.20
10/30/2020	101,004	20,081	121,085	0.17
11/30/2020	103,254	13,413	116,667	0.11
12/31/2020	77,794	23,339	101,133	0.23
1/29/2021	84,364	26,313	110,677	0.24
2/26/2021	89,026	45,230	134,256	0.34
3/31/2021	85,563	29,889	115,452	0.26
4/30/2021	89,978	35,275	125,253	0.28
5/28/2021	94,873	56,650	151,523	0.37
6/30/2021	90,005	51,678	141,683	0.36
7/30/2021	88,100	49,243	137,343	0.36
8/31/2021	98,219	40,438	138,657	0.29
9/30/2021	102,014	56,259	158,273	0.36
10/29/2021	110,713	58,804	169,517	0.35
11/30/2021	92,350	47,573	139,923	0.34
12/31/2021	71,240	45,404	116,644	0.39
1/31/2022	81,851	46,405	128,256	0.36

Monthly Analysis of Weekly Expiration and EOM Trading Patterns

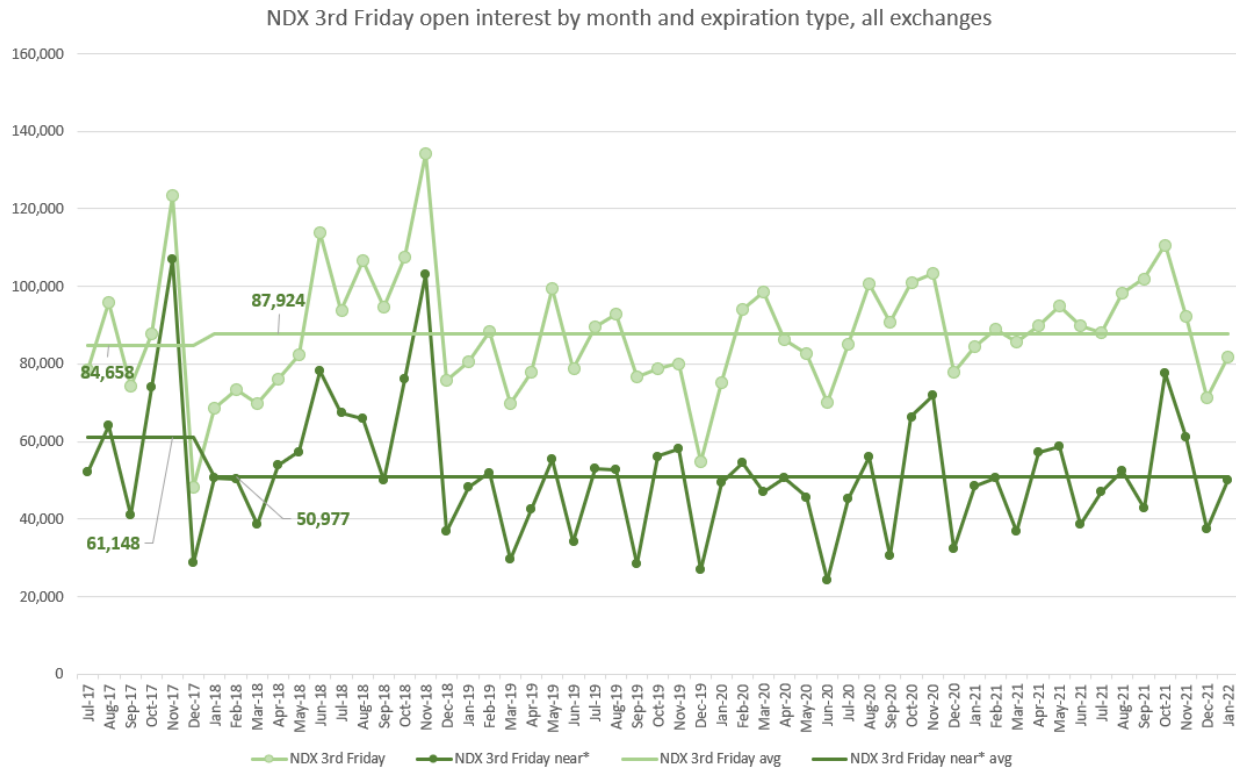
In this annual report, the Exchange analyzed open interest in Weekly Expiration series aggregated by expiration date compared to open interest in near-term standard Expiration Friday a.m.-settled series to determine whether users are shifting positions from standard series to Weekly Expiration series. PHLX has no data on other weekly p.m. settled products from other exchanges to compare open interest with these options to determine whether users are shifting positions from other weekly or monthly p.m.-settled products to the Weekly Expiration series. Declining open interest in standard series or the weekly p.m.-settled products of other exchanges accompanied by rising open interest in Weekly Expiration series would suggest that users are shifting positions.

Open interest trends:

After the introduction of NDXP and discontinuation of non-3rd Friday NDX contracts, open interest shifted from NDX regular Friday expirations to NDXP. Average month-end open interest fell from 53,592 contracts in NDX during Jul-Dec 2017 to 32,529 contracts in NDXP during Jan 2018-Jan 2022. NDXP end of month average open interest has widely fluctuated between 13,413 and 75,324 contracts.



Open interest in the full range of 3rd Friday NDX contracts has not significantly changed since the introduction of NDXP. Average open interest before the introduction was 84,658 contracts. Open interest after the introduction has been 87,924. Open interest in near-term 3rd Friday NDX contracts (expiring within 7 weeks) fell slightly after the introduction of NDXP. Month-end open interest in 3rd Friday NDX fell from 61,148 to 50,977 contracts, a 17% decline.



*NDX contracts with expirations within 7 weeks

Clearly users shifted positions from discontinued NDX non-3rd Friday expiration contracts to NDXP. Any shift from 3rd Friday NDX contracts to NDXP is limited at most. First, NDXP does not compete directly with 3rd Friday expirations. Second, NDX 3rd Friday open interest has changed very little since the introduction of NDXP. Third, NDXP average open interest has so far been below the average open interest in NDX non-3rd Friday expiration contracts.

NDX and NDXP open interest at end of month, by expiration type, all exchanges

Month	NDXP	NDX 3rd Friday	NDX 3rd Friday near*	NDX non-3rd Friday	NDX Total
7/31/2017		78,484	52,094	37,007	115,491
8/31/2017		95,889	64,216	52,256	148,145
9/29/2017		74,150	41,045	66,828	140,978
10/31/2017		87,815	73,898	54,559	142,374
11/30/2017		123,347	107,011	52,219	175,566
12/29/2017		48,265	28,625	58,681	106,946
1/31/2018	56,330	68,543	50,560		68,543
2/28/2018	30,879	73,287	50,242		73,287
3/29/2018	25,276	69,796	38,598		69,796
4/30/2018	16,791	76,090	53,928		76,090
5/31/2018	26,626	82,429	57,337		82,429
6/29/2018	37,446	113,834	78,187		113,834
7/31/2018	38,338	93,721	67,461		93,721
8/31/2018	47,646	106,741	66,004		106,741
9/28/2018	75,324	94,781	50,078		94,781
10/31/2018	60,906	107,545	76,174		107,545
11/30/2018	40,710	134,295	103,171		134,295
12/31/2018	20,790	75,729	36,858		75,729
1/31/2019	16,667	80,582	48,117		80,582
2/28/2019	15,940	88,482	51,930		88,482
3/29/2019	19,716	69,836	29,712		69,836
4/30/2019	25,986	77,819	42,459		77,819
5/31/2019	29,858	99,495	55,364		99,495
6/28/2019	43,479	78,865	34,038		78,865
7/31/2019	25,004	89,541	53,114		89,541
8/30/2019	25,771	92,796	52,671		92,796
9/30/2019	21,932	76,662	28,404		76,662
10/31/2019	17,242	78,771	56,152		78,771
11/29/2019	20,123	80,124	58,079		80,124
12/31/2019	24,369	54,888	26,965		54,888
1/31/2020	28,274	75,328	49,502		75,328
2/28/2020	30,135	94,164	54,477		94,164
3/31/2020	17,634	98,445	46,968		98,445
4/30/2020	13,983	86,271	50,707		86,271
5/29/2020	15,955	82,769	45,655		82,769
6/30/2020	13,604	70,000	24,233		70,000
7/31/2020	18,693	84,980	45,124		84,980
8/31/2020	23,898	100,590	55,988		100,590
9/30/2020	22,595	90,712	30,503		90,712
10/30/2020	20,081	101,004	66,331		101,004
11/30/2020	13,413	103,254	71,795		103,254
12/31/2020	23,339	77,794	32,393		77,794
1/29/2021	26,313	84,364	48,414		84,364
2/26/2021	45,230	89,026	50,538		89,026
3/31/2021	29,889	85,563	36,721		85,563
4/30/2021	35,275	89,978	57,077		89,978
5/28/2021	56,650	94,873	58,732		94,873
6/30/2021	51,678	90,005	38,623		90,005
7/30/2021	49,243	88,100	47,021		88,100
8/31/2021	40,438	98,219	52,427		98,219
9/30/2021	56,259	102,014	42,769		102,014
10/29/2021	58,804	110,713	77,704		110,713
11/30/2021	47,573	92,350	61,150		92,350
12/31/2021	45,404	71,240	37,392		71,240
1/31/2022	46,405	81,851	50,012		81,851

*NDX contracts with expirations within 7 weeks

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