

IBKRWEBINARS.COM



December 14, 2022

Nasdaq

U.S. Equity Markets: 2022 Wrapped

Kevin Davitt

Head of Index Options

Content

Nasdaq

Exchange and Industry Sponsored Webinars are presented by unaffiliated third parties. Interactive Brokers LLC is not responsible for the content of these presentations. You should review the contents of each presentation and make your own judgment as to whether the content is appropriate for you.

Interactive Brokers LLC does not provide recommendations or advice. This presentation is not an advertisement or solicitation for new customers. It is intended only as an educational presentation.



Disclosure:

Options involve risk and are not suitable for all investors. For information on the uses and risks of options, you can obtain a copy of the Options Clearing Corporation risk disclosure document titled [Characteristics and Risks of Standardized Options](#) by calling (312) 542-6901.

Any discussion or mention of an ETF is not to be construed as recommendation, promotion or solicitation. All investors should review and consider associated investment risks, charges and expenses of the investment company or fund prior to investing. Before acting on this material, you should consider whether it is suitable for your particular circumstances and as necessary, seek professional advice.

Futures are not suitable for all investors. The amount you may lose may be greater than your initial investment. Before trading futures, please read the [CFTC Risk Disclosure](#). For a copy visit [interactivebrokers.com](#).

There is a substantial risk of loss in foreign exchange trading. The settlement date of foreign exchange trades can vary due to time zone differences and bank holidays. When trading across foreign exchange markets, this may necessitate borrowing funds to settle foreign exchange trades. The interest rate on borrowed funds must be considered when computing the cost of trades across multiple markets.

The Order types available through Interactive Brokers LLC's Trader Workstation are designed to help you limit your loss and/or lock in a profit. Market conditions and other factors may affect execution. In general, orders guarantee a fill or guarantee a price, but not both. In extreme market conditions, an order may either be executed at a different price than anticipated or may not be filled in the marketplace.

There is a substantial risk of loss in trading futures and options. Past performance is not indicative of future results.

Any stock, options or futures symbols displayed are for illustrative purposes only and are not intended to portray recommendations.

- IRS Circular 230 Notice: These statements are provided for information purposes only, are not intended to constitute tax advice which may be relied upon to avoid penalties under any federal, state, local or other tax statutes or regulations, and do not resolve any tax issues in your favor.
- Interactive Brokers LLC is a member of [NYSE FINRA SIPC](#)



U.S. Equity Markets 2022 Wrapped

+ What Might Lay Ahead?

Interactive Brokers

December 14, 2022

Kevin Davitt

Head of Index Options Content

Nasdaq

DISCLAIMER

Index

Nasdaq® is a registered trademark of Nasdaq, Inc. The information contained above is provided for informational and educational purposes only, and nothing contained herein should be construed as investment advice, either on behalf of a particular security or an overall investment strategy. Neither Nasdaq, Inc. nor any of its affiliates makes any recommendation to buy or sell any security or any representation about the financial condition of any company. Statements regarding Nasdaq-listed companies or Nasdaq proprietary indexes are not guarantees of future performance. Actual results may differ materially from those expressed or implied. Past performance is not indicative of future results. Investors should undertake their own due diligence and carefully evaluate companies before investing. **ADVICE FROM A SECURITIES PROFESSIONAL IS STRONGLY ADVISED.**

Options

For the sake of simplicity, the examples included do not take into consideration commissions and other transaction fees, tax considerations, or margin requirements, which are factors that may significantly affect the economic consequences of a given strategy. An investor should review transaction costs, margin requirements and tax considerations with a broker and tax advisor before entering into any options strategy.

Options involve risk and are not suitable for everyone. Prior to buying or selling an option, a person must receive a copy of *Characteristics and Risks of Standardized Options*. Copies may be obtained from your broker, one of the exchanges or The Options Clearing Corporation, One North Wacker Drive, Suite 500, Chicago, IL 60606 or call 1-888-OPTIONS or visit www.888options.com.

Any strategies discussed, including examples using actual securities and price data, are strictly for illustrative and education purposes and are not to be construed as an endorsement, recommendation or solicitation to buy or sell securities.

Nasdaq-100® Volatility Index

The Nasdaq-100® Volatility Index (Ticker Symbol: VOLQ) is calculated and administered by The Nasdaq Stock Market LLC. The Nasdaq-100 Volatility Index is a financial benchmark designed to measure changes in 30-day implied volatility of the Nasdaq-100 Index as further described in the methodology, rules and other information. VOLQ options, which are traded on Nasdaq Phlx LLC, are complicated financial products only suitable for sophisticated market participants. Market participants should put at risk only funds that they can afford to lose without affecting their lifestyles. Transacting in VOLQ options involves the risk of loss, which can be substantial and can exceed the amount of money deposited for a Nasdaq-100 Volatility Index position (except when buying options on VOLQ, in which case the potential loss is limited to the purchase price of the options).

Before transacting in VOLQ options, market participants should fully inform themselves about the Nasdaq-100 Volatility Index and the characteristics and risks of VOLQ Options. Market participants also should make sure they understand the product specifications for VOLQ Options and the methodologies for calculating and settling the Nasdaq-100 Volatility Index.



U.S. Equity Markets Wrapped (2022)

Q1 Highlights

- Equity Market Performance:
 - NDX: -9.1%
 - SPX: -4.95%
 - RUT: -7.8%
- Macro:
 - Jan: Omnicron cases spike
 - Feb: U.S. CPI @ 7.5%
 - 2/24 Russian incursion begins
- Fed Funds
 - 3/17: +25 basis points (25-50 bpts)
 - Terminal Rates forecast: 2.8%
 - Yield curve begins to invert



Source: LiveVol LLC. & Nasdaq



U.S. Equity Markets Wrapped (2022)

Q2 Highlights

- Equity Market Performance:
 - NDX: - 22.5%
 - SPX: -16.4%
 - RUT: -17.5%
- Macro:
 - Energy & food prices increase quickly
- Fed Funds
 - 5/5: +50 basis points (75-100 bpts)
 - 6/16: +75 basis points (150-175 bpts)
 - Terminal Rates forecast: 3.5%
 - Yield curve continues inverting



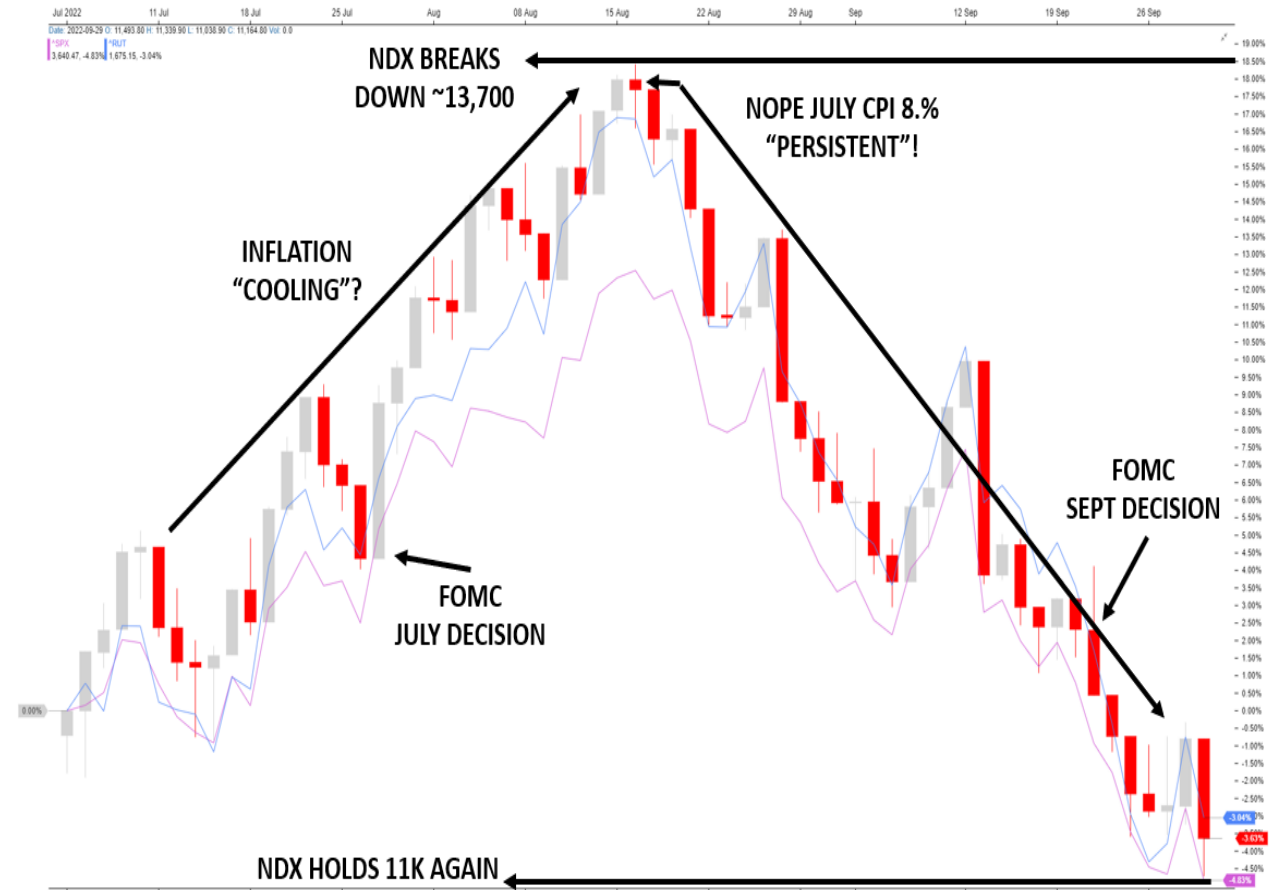
Source: LiveVol LLC. & Nasdaq



U.S. Equity Markets Wrapped (2022)

Q3 Highlights

- Equity Market Performance:
 - NDX: -4.63%
 - SPX: -5.27%
 - RUT: -2.32%
- Macro:
 - Early optimism on inflation (lower energy prices) gives way to services inflation pressure
- Fed Funds
 - 7/27: +75 basis points (225-250 bpts)
 - 9/21: +75 basis points (300-325 bpts)
 - Terminal Rates forecast 4.0%
 - Yield curve remains inverted



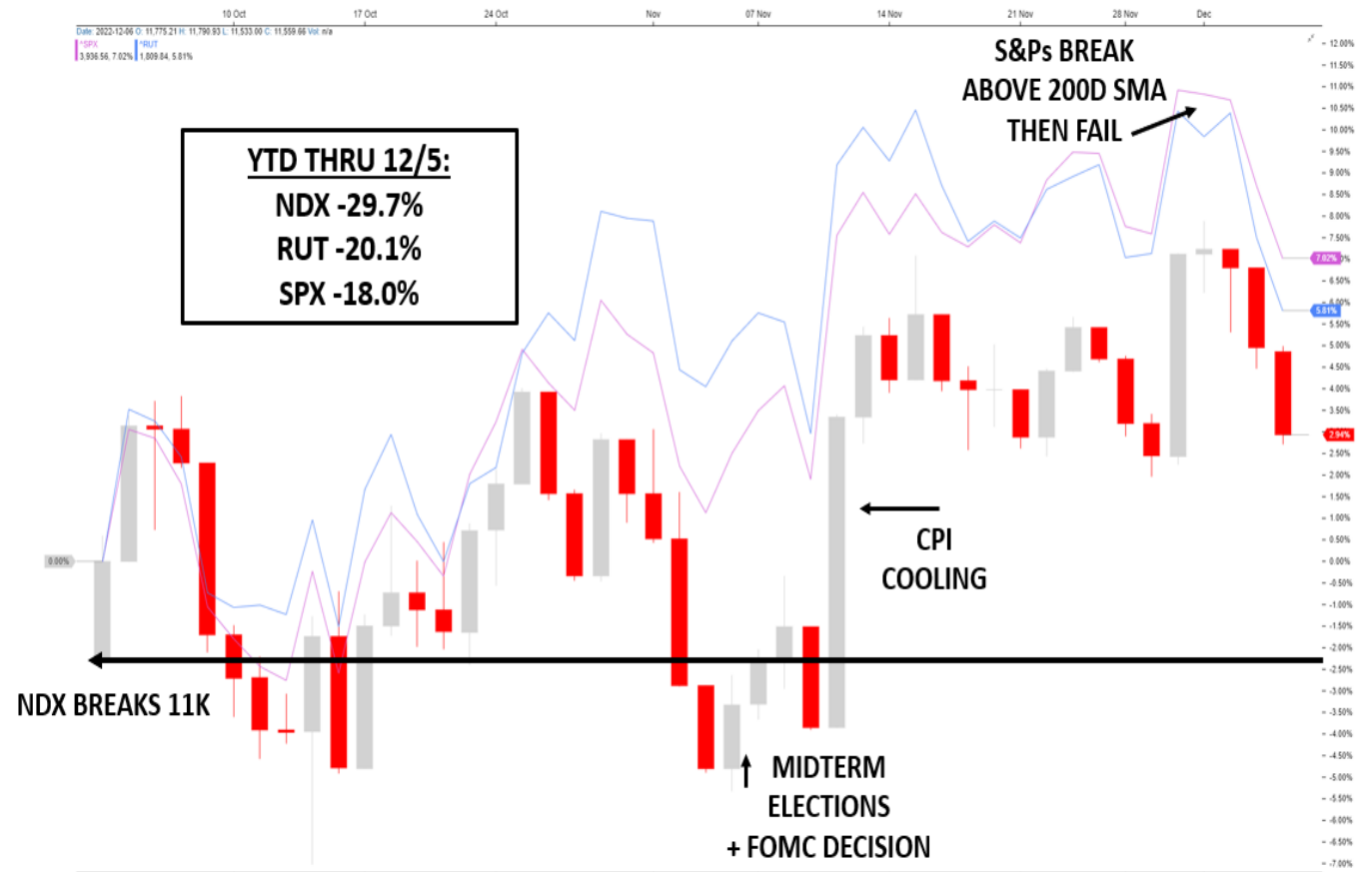
Source: LiveVol LLC. & Nasdaq



U.S. Equity Markets Wrapped (2022)

Q4 Highlights (Through Dec 5th)

- Equity Market Performance:
 - NDX: +2.50%
 - SPX: +6.70%
 - RUT: +5.50%
 - Overall, lower highs & lower lows
- Macro:
 - Midterm elections “resolved” = divided U.S. government. Inflation data improving with mixed economic data signals into year end
- Fed Funds
 - 11/2: +75 basis points (375-400 bpts)
 - 12/14: ?? (Market pricing +50 bpts)
 - Terminal Rates forecast ~5.0%
 - Yield curve remains inverted



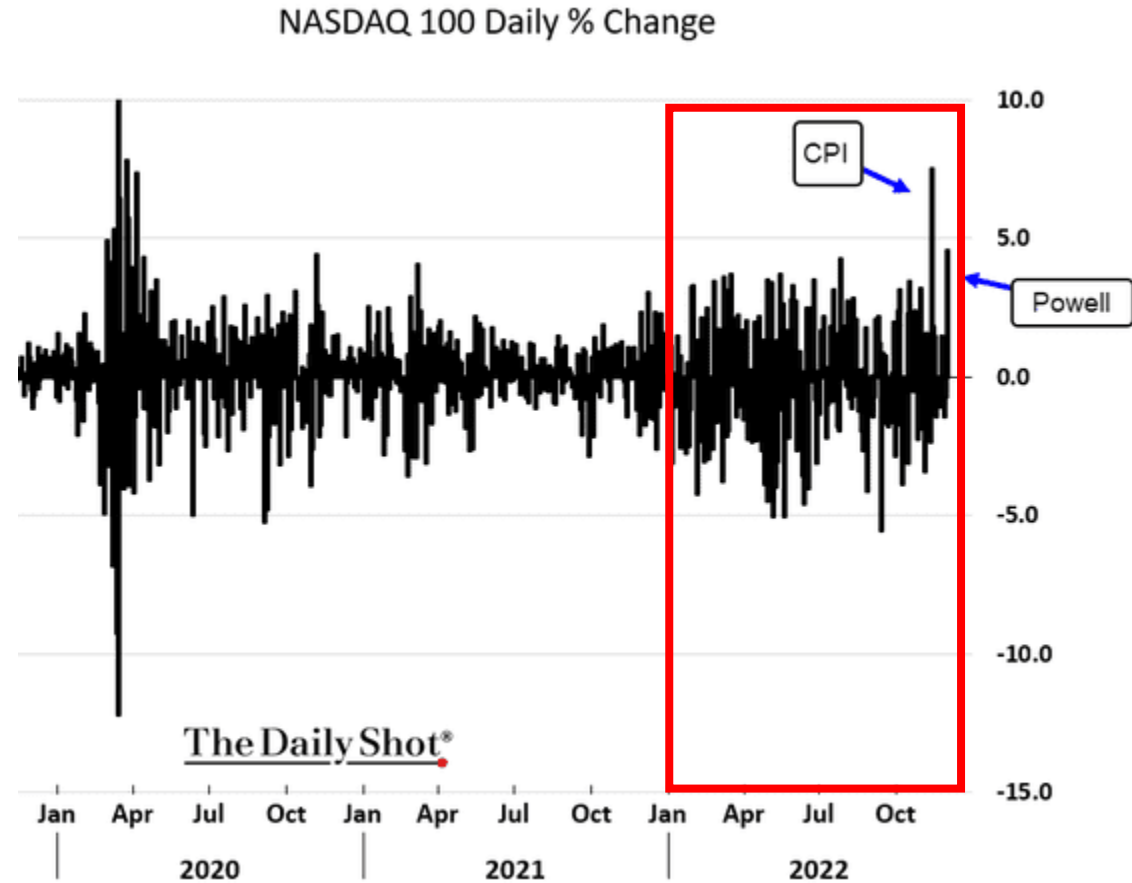
Source: LiveVol LLC. & Nasdaq



U.S. Equity Markets Wrapped (2022)

Volatility – It's Back!

- Higher average daily NDX ranges
 - 2022 YTD – Avg. Daily H/L range largest since 2009
 - 2022 YTD Ranges – Essentially double the avg. range between 2013 – 2017
- Highest realized vol sessions
 - FOMC dates & CPI data releases (inflation narrative)
- Do you expect elevated vol levels to continue into/through 2023?
 - Do you expect Fed (other central banks) to continue tightening through 2023?
 - What impact would a technical recession have on future ranges?



Source: The Daily Shot



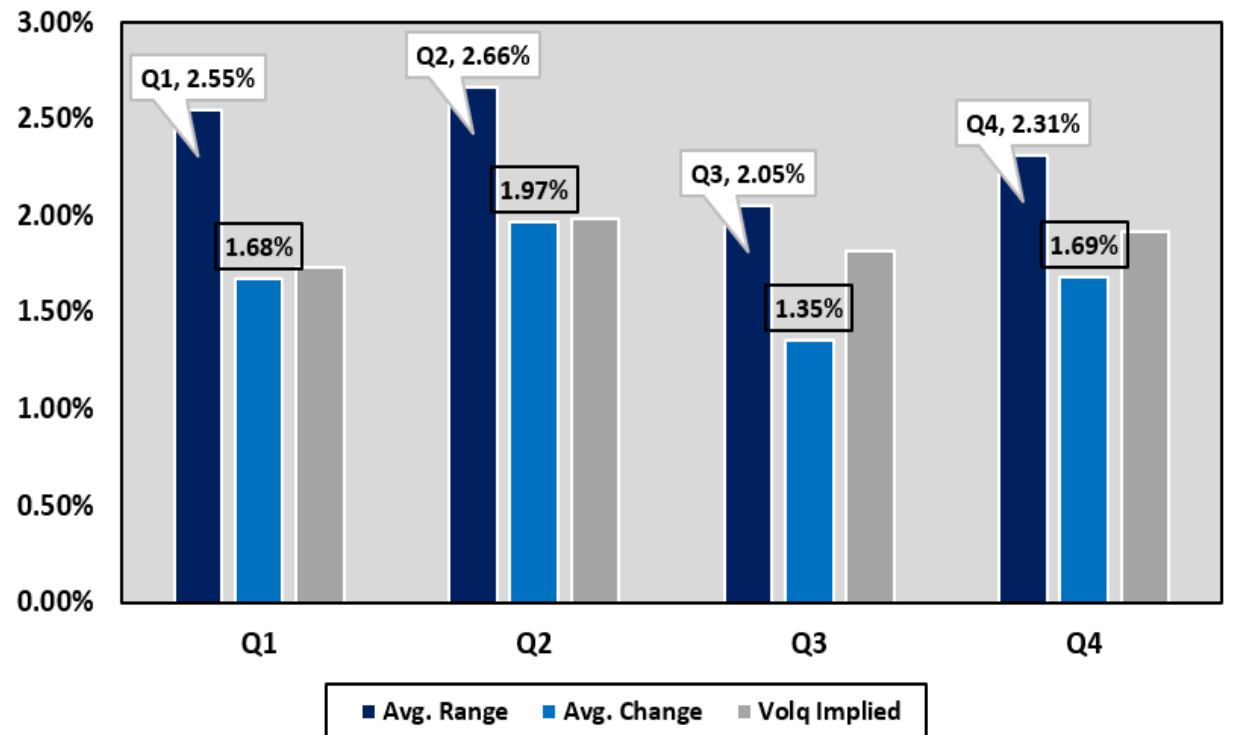
U.S. Equity Markets Wrapped (2022)

Volatility – It's Back!

- Average H/L Range by Quarter
 - Q1: 2.55%
 - Q2: 2.66%
 - Q3: 2.05%
 - Q4*: 2.31%
- Average Close/Close Move by Quarter
 - Q1: 1.68%
 - Q2: 1.97%
 - Q3: 1.35%
 - Q4*: 1.69%
- Average VOLQ Index Implied Range
 - Q1: 1.73% (No real IVRP)
 - Q2: 1.98% (No real IVRP)
 - Q3: 1.82% (Decent IVRP)
 - Q4*: 1.92% (Decent IVRP)

*= YTD (through November)

2022 NDX Avg. Daily Range/Change by Quarter

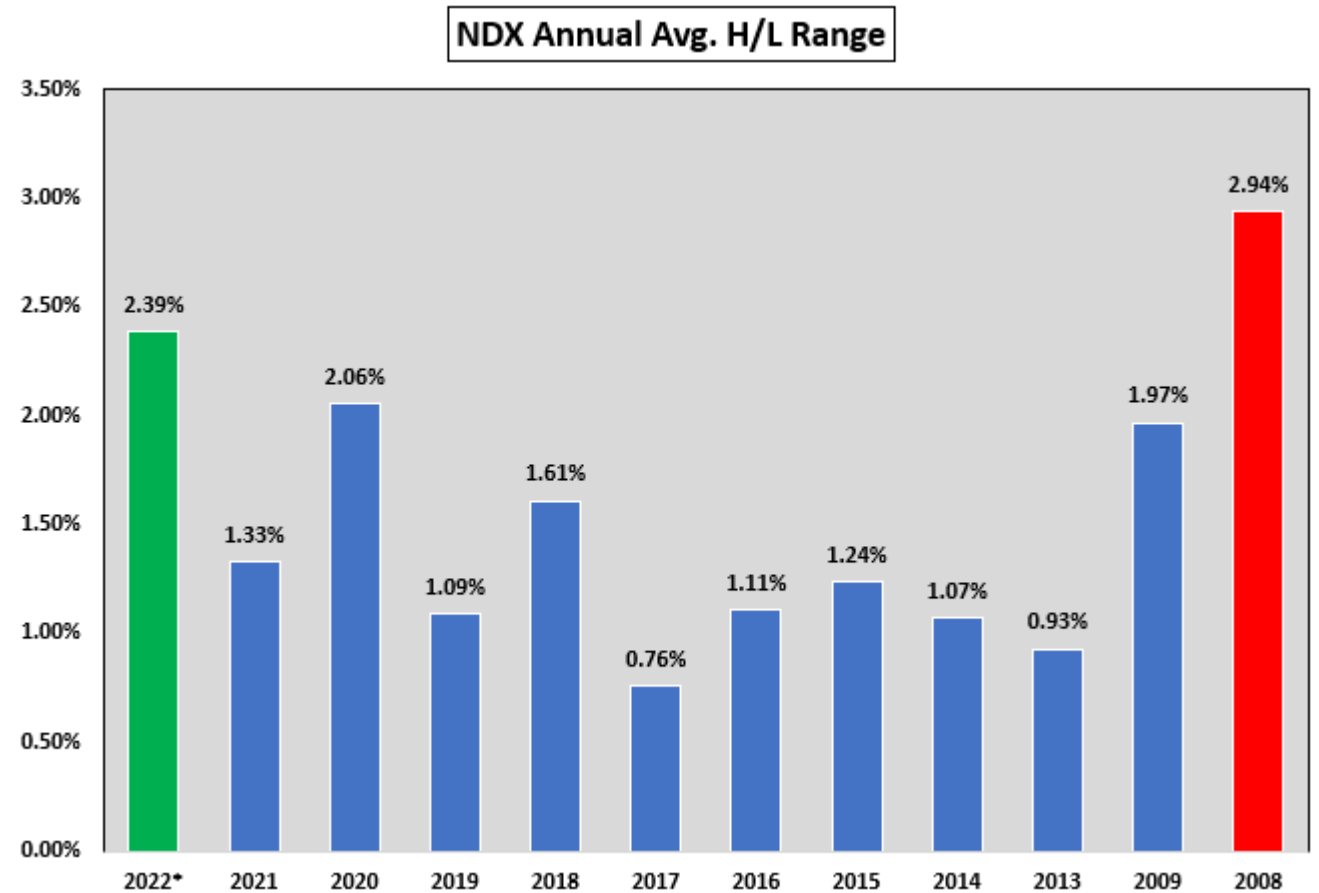


Source: Nasdaq



Volatility – It’s Back!

- “High” Forward Vol – Function of High Realized Vol
 - ~30 VOLQ – 30D options pricing daily moves of ~1.85%
 - Avg. Daily Range > 1.85% and Avg. Daily Change slightly below @ 1.66%
 - VOLQ Closing Averages by Year:
 - 2019*: 15.13
 - 2020: 29.54
 - 2021: 20.47
 - 2022*: 29.66
- *Not full year data



Source: Nasdaq

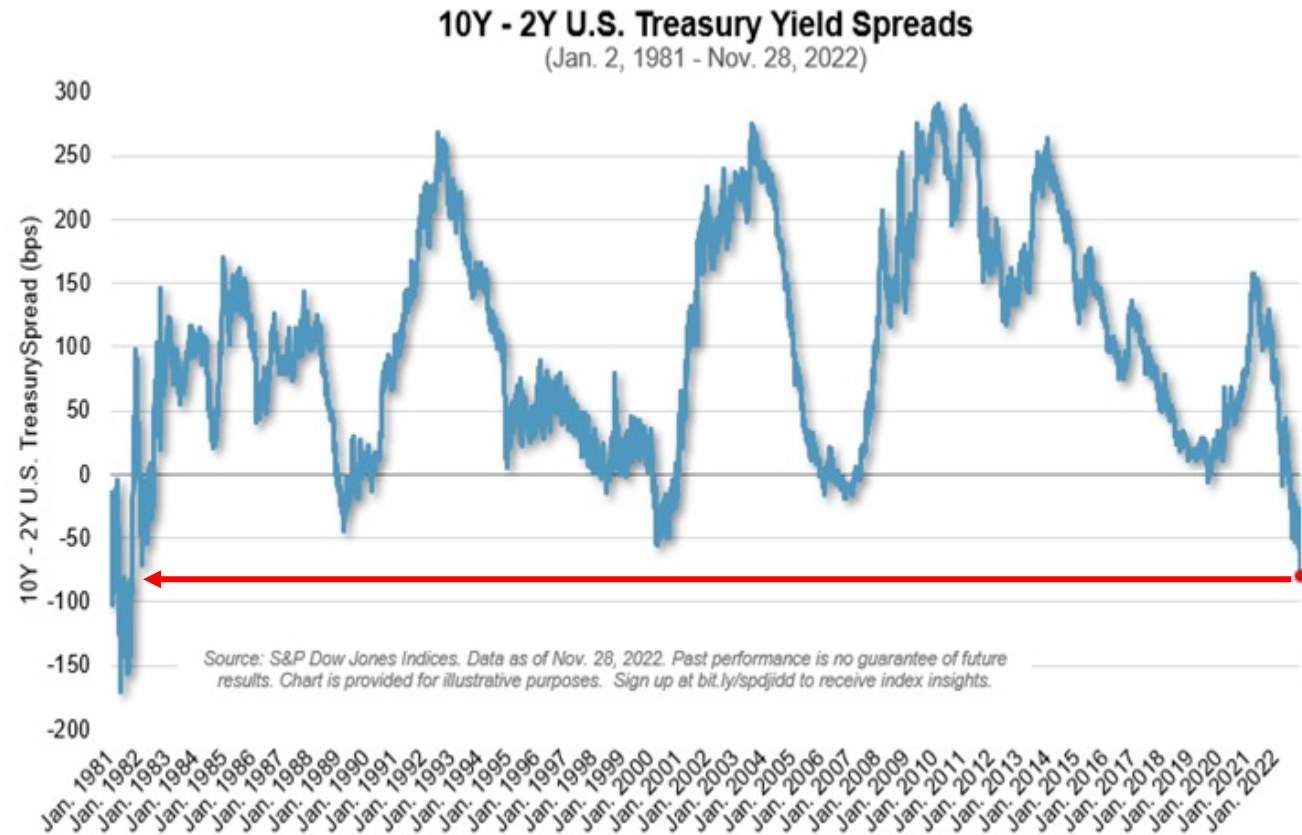


U.S. Equity Markets Wrapped (2022)

Yield Curve Significant Inversion (US 10Y – US2Y)

- UST 10Y – 2Y Shift:
 - Spread ended 2021 @ +80 basis points
 - Spread flattens throughout Q1/Q2 ends Q2 at +4 basis points
 - 10Y-2Y inverted since July and now at its most negative point (-80 bpts) since early 1980s.
- Translation:
 - 2Y yields have outpaced 10Y yields by 160 basis points YTD (from +80 to -80)
 - Historically inversions of this magnitude have accompanied (severe) recessions

Will it be different this time?

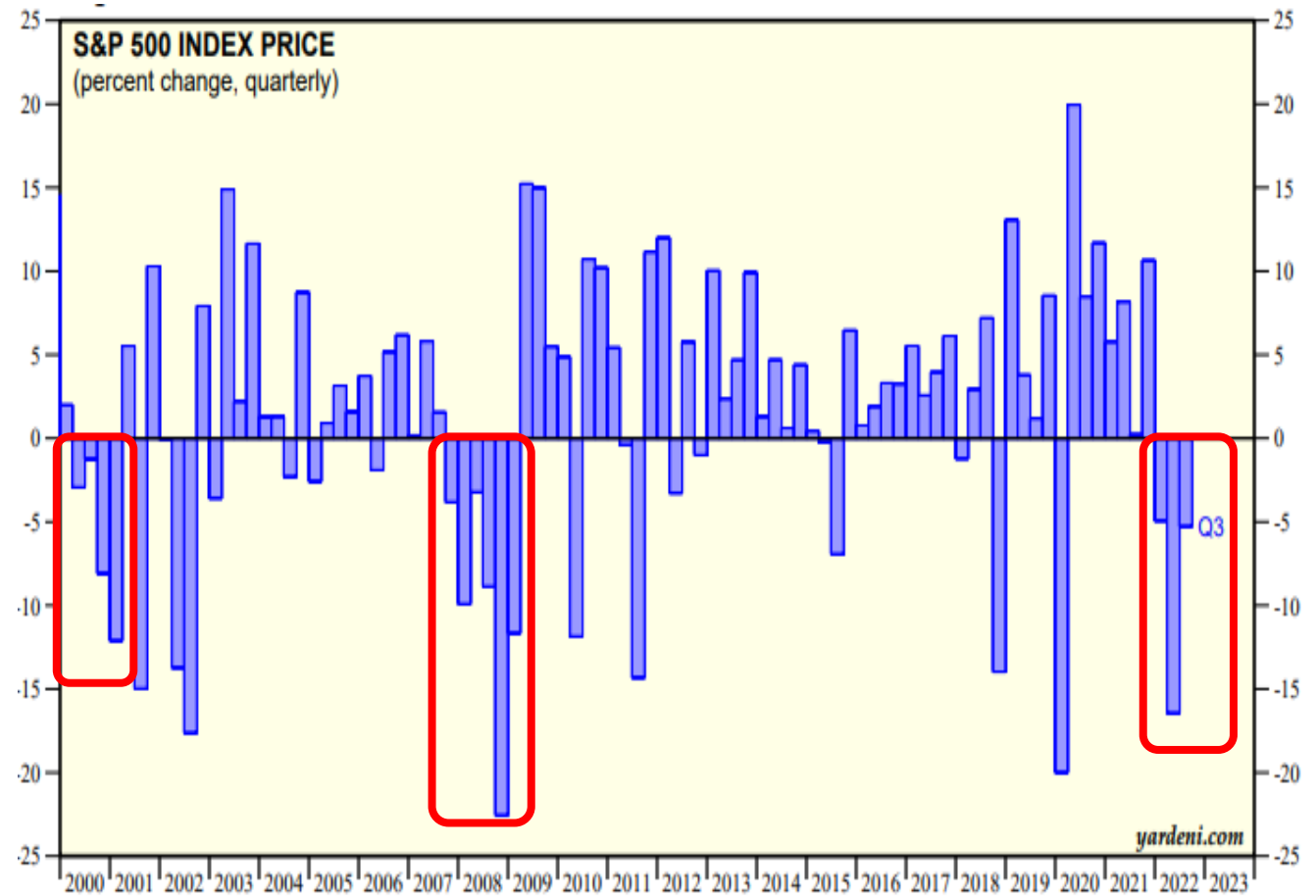


Source: Daily Shot



Three Straight Lower Quarters = Unusual

- Performance “typical” during crises/significant tops
 - Comparable periods during Dot com bust and Global Financial Crisis.
 - Following a period of seven straight positive quarterly returns.
 - S&Ps +11.3% through November Q4.
- Unusual Previous Decade
 - The 2010s were atypically sanguine with relatively few/short-lived drawdowns.
 - Low interest rates (arguably) helped fuel a decade of uneven recovery.



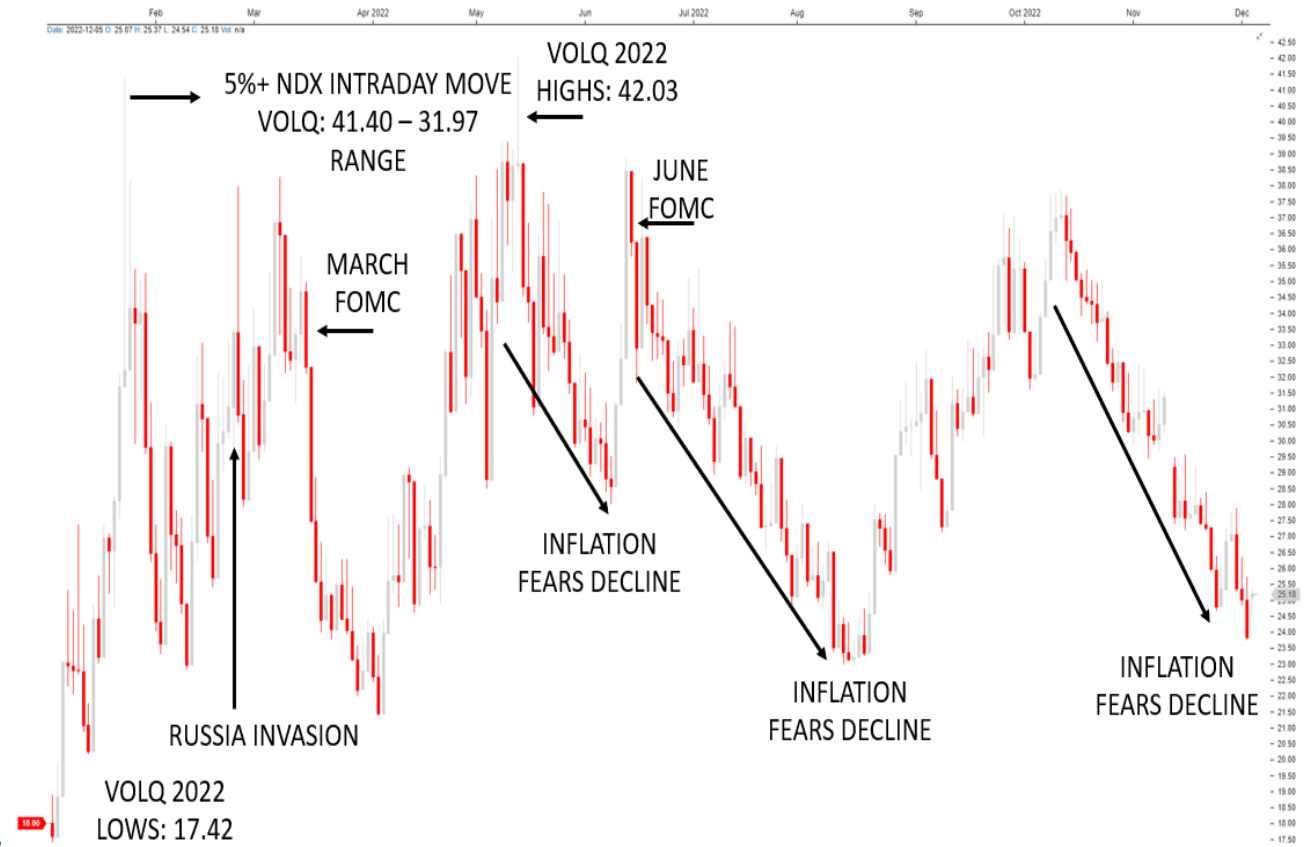
Source: Yardeni Research



U.S. Equity Markets Wrapped (2022)

VOLQ Index Review

- VOLQ Index Avg. (2022)* 29.68
 - *Through November 2022
- Peaks & Valleys
 - Intraday Highs (5/12): 42.03
 - High Close (5/9): 38.74
 - Intraday Lows (1/3): 17.42
 - Low Close (1/5): 17.57
- Rates Vol Leads – Equity Vol Lags
 - Forward equity vol levels remained rangebound throughout 2022
 - MOVE Index (UST vol) up to ~150 in mid-October (highest since 2009 crisis)



Source: LiveVol LLC.

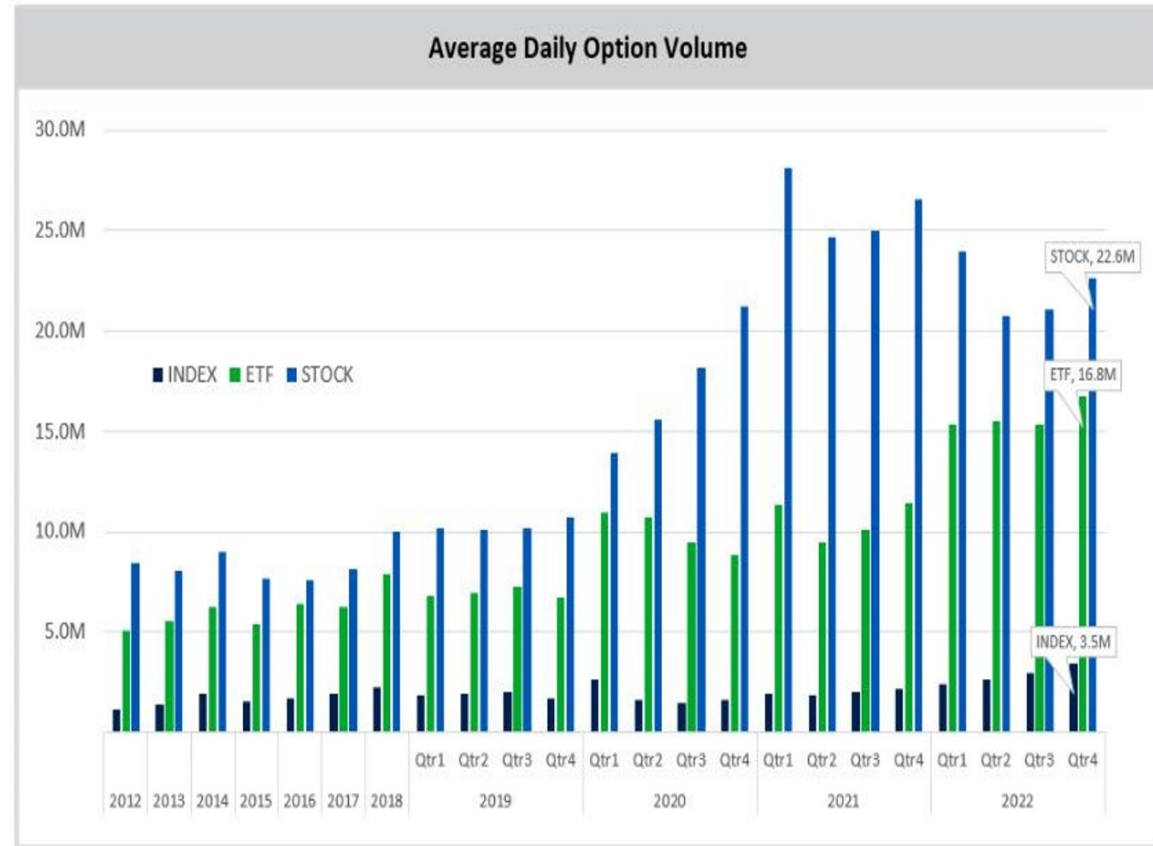


U.S. Equity Markets Wrapped (2022)

(INDEX & ETF) Option Volumes Growth

- Index Option Volume +40% Y/Y
 - Typical behavior when market risks shift “macro.”
 - Ability to efficiently hedge/gain exposure to broad market.
- Equity Option Volume -16% Y/Y
 - Compared to a record year for individual equity options in 2021.
 - Overall option volumes likely to establish new record w/ADV ~41M.

The industry maintained growth past in “post-COVID” environment. Testament to broader understanding!



Source: @HenrySchwartz, OCC, LiveVol LLC

Annualized Growth	
Index	
1yr	40%
5yr	4%
10yr	9%
ETF	
1yr	48%
5yr	15%
10yr	12%
Stock	
1yr	-16%
5yr	17%
10yr	10%
Total	
1yr	33%
5yr	19%
10yr	8%



U.S. Equity Markets Wrapped (2022)

Nasdaq-100 Performance Breakdown

Nasdaq 100 YTD Returns

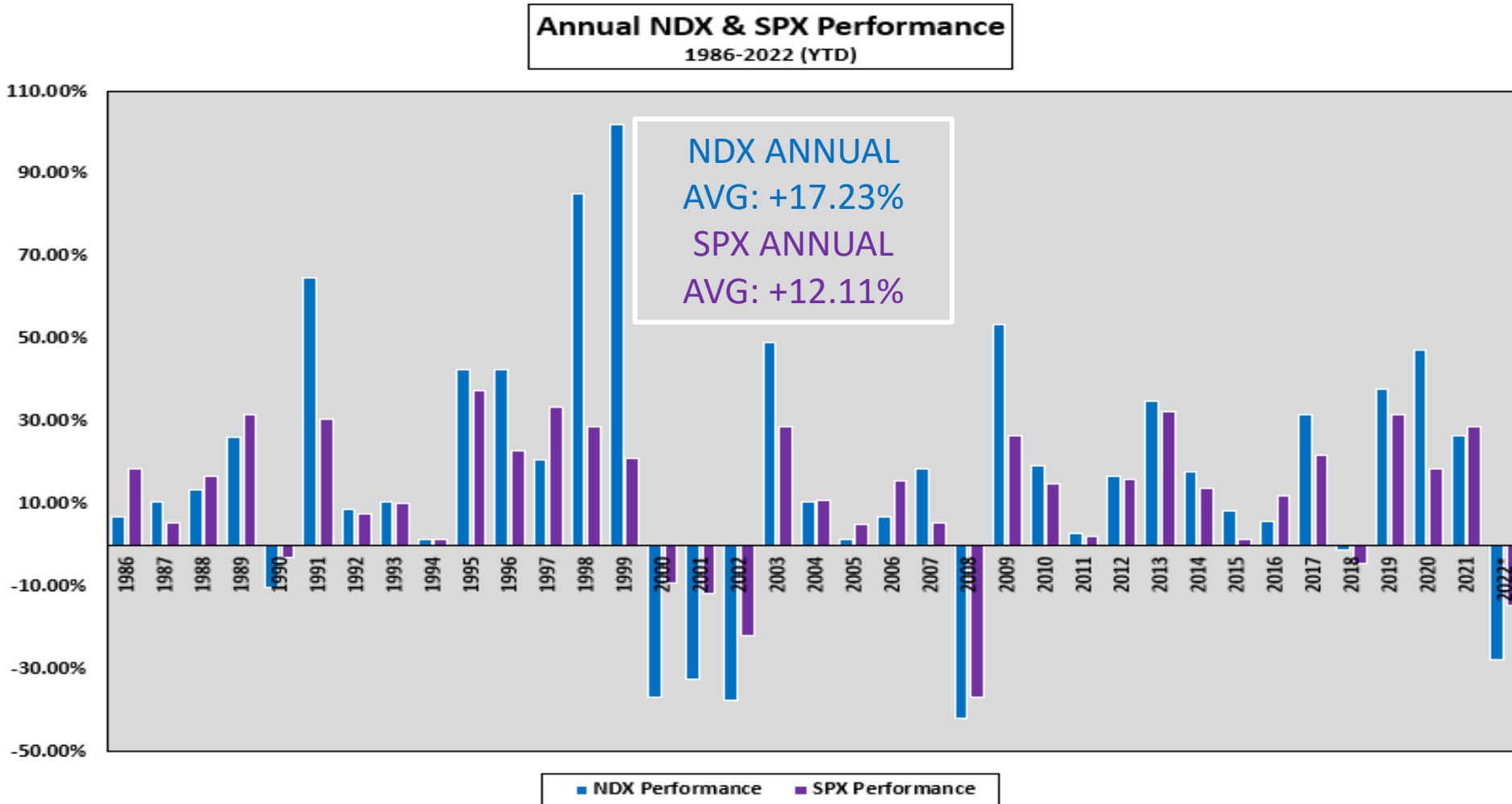
#	Company	Symbol	YTD Return
1	Constellation Energy Corp	CEG	▲ 141.90%
2	Enphase Energy Inc	ENPH	▲ 83.57%
3	Pinduoduo Inc ADR	PDD	▲ 50.60%
4	Vertex Pharmaceuticals Inc	VRTX	▲ 44.63%
5	T-Mobile US Inc	TMUS	▲ 29.87%
6	Amgen Inc	AMGN	▲ 26.64%
7	Biogen Inc	BIIB	▲ 22.02%
8	Gilead Sciences Inc	GILD	▲ 21.17%
9	Regeneron Pharmaceuticals Inc	REGN	▲ 19.62%
10	O'Reilly Automotive Inc	ORLY	▲ 19.38%
11	AstraZeneca PLC ADR	AZN	▲ 17.46%
12	PACCAR Inc	PCAR	▲ 17.11%
13	Activision Blizzard Inc	ATVI	▲ 14.73%
14	Kraft Heinz Co/The	KHC	▲ 10.36%
15	Automatic Data Processing Inc	ADP	▲ 7.22%
16	Monster Beverage Corp	MNST	▲ 6.38%
17	American Electric Power Co Inc	AEP	▲ 6.24%
18	PepsiCo Inc	PEP	▲ 5.42%
19	Dollar Tree Inc	DLTR	▲ 5.21%
20	Cintas Corp	CTAS	▲ 3.66%
21	Honeywell International Inc	HON	▲ 3.40%
22	Keurig Dr Pepper Inc	KDP	▲ 2.98%
23	Ross Stores Inc	ROST	▲ 2.70%
24	Mondelez International Inc	MDLZ	▲ 1.69%
25	Xcel Energy Inc	XEL	▲ 1.45%
26	Exelon Corp	EXC	▲ 1.34%
27	Electronic Arts Inc	EA	▼ -1.12%
28	Fiserv Inc	FISV	▼ -1.54%
29	Marriott International Inc/MD	MAR	▼ -1.94%
30	Lululemon Athletica Inc	LULU	▼ -2.64%
31	Sirius XM Holdings Inc	SIRI	▼ -2.68%
32	Analog Devices Inc	ADI	▼ -4.51%
33	Texas Instruments Inc	TXN	▼ -5.88%
34	Palo Alto Networks Inc	PANW	▼ -8.40%
35	KLA Corp	KLAC	▼ -9.66%
36	Paychex Inc	PAYX	▼ -9.75%
37	Synopsys Inc	SNPS	▼ -10.10%
38	Cadence Design Systems Inc	CDNS	▼ -10.67%
39	Starbucks Corp	SBUX	▼ -11.47%
40	Microchip Technology Inc	MCHP	▼ -12.04%
41	Dexcom Inc	DXCM	▼ -13.17%
42	Copart Inc	CPRT	▼ -13.34%
43	Costco Wholesale Corp	COST	▼ -13.92%
44	JD.com Inc ADR	JD	▼ -14.00%
45	Booking Holdings Inc	BKNG	▼ -14.28%
46	CSX Corp	CSX	▼ -16.62%
47	Apple Inc	AAPL	▼ -17.42%
48	Old Dominion Freight Line Inc	ODFL	▼ -19.15%
49	Verisk Analytics Inc	VRSK	▼ -19.93%
50	Broadcom Inc	AVGO	▼ -20.25%
51	Fastenal Co	FAST	▼ -20.56%
52	Walgreens Boots Alliance Inc	WBA	▼ -20.99%
53	Baidu Inc ADR	BIDU	▼ -21.42%
54	Baidu Inc ADR	BIDU	▼ -21.42%
54	Seagen Inc	SGEN	▼ -21.59%
55	Cisco Systems Inc	CSCO	▼ -22.16%
56	VeriSign Inc	VRSN	▼ -22.27%
57	ASML Holding NV	ASML	▼ -24.54%
58	Intuitive Surgical Inc	ISRG	▼ -24.93%
59	Microsoft Corp	MSFT	▼ -25.61%
60	NXP Semiconductors NV	NXPI	▼ -26.08%
61	Splunk Inc	SPLK	▼ -26.18%
62	Fortinet Inc	FTNT	▼ -28.12%
63	Autodesk Inc	ADSK	▼ -29.45%
64	Comcast Corp	CMCSA	▼ -30.16%
65	Moderna Inc	MRNA	▼ -30.73%
66	Alphabet Inc	GOOG	▼ -30.97%
67	Alphabet Inc	GOOGL	▼ -31.32%
68	Cognizant Technology Solutions Corp	CTSH	▼ -31.86%
69	NetEase Inc ADR	NTES	▼ -32.19%
70	Applied Materials Inc	AMAT	▼ -32.37%
71	QUALCOMM Inc	QCOM	▼ -32.58%
72	eBay Inc	EBAY	▼ -33.92%
73	MercadoLibre Inc	MELI	▼ -34.60%
74	IDEXX Laboratories Inc	IDXX	▼ -35.87%
75	Lam Research Corp	LRGX	▼ -37.06%
76	ANSYS Inc	ANSS	▼ -37.85%
77	Intuit Inc	INTU	▼ -38.57%
78	Skyworks Solutions Inc	SWKS	▼ -39.58%
79	Workday Inc	WDAY	▼ -39.74%
80	Charter Communications Inc	CHTR	▼ -40.52%
81	Airbnb Inc	ABNB	▼ -40.83%
82	Adobe Inc	ADBE	▼ -41.08%
83	Micron Technology Inc	MU	▼ -41.99%
84	CrowdStrike Holdings Inc	CRWD	▼ -42.21%
85	Intel Corp	INTC	▼ -43.36%
86	NVIDIA Corp	NVDA	▼ -43.52%
87	Illumina Inc	ILMN	▼ -43.79%
88	Amazon.com Inc	AMZN	▼ -45.41%
89	Netflix Inc	NFLX	▼ -48.11%
90	Tesla Inc	TSLA	▼ -48.21%
91	Advanced Micro Devices Inc	AMD	▼ -48.84%
92	Marvell Technology Inc	MRVL	▼ -50.89%
93	Zoom Video Communications Inc	ZM	▼ -60.36%
94	Datadog Inc	DDOG	▼ -60.55%
95	PayPal Holdings Inc	PYPL	▼ -60.96%
96	Zscaler Inc	ZS	▼ -62.41%
97	Meta Platforms Inc	META	▼ -63.60%
98	Atlassian Corp	TEAM	▼ -64.96%
99	Match Group Inc	MTCH	▼ -65.38%
100	Align Technology Inc	ALGN	▼ -71.41%
101	DocuSign Inc	DOCU	▼ -72.14%
102	Lucid Group Inc	LCID	▼ -75.22%

Source: Slick Charts

*DENOTES TOP 10 NDX HOLDING



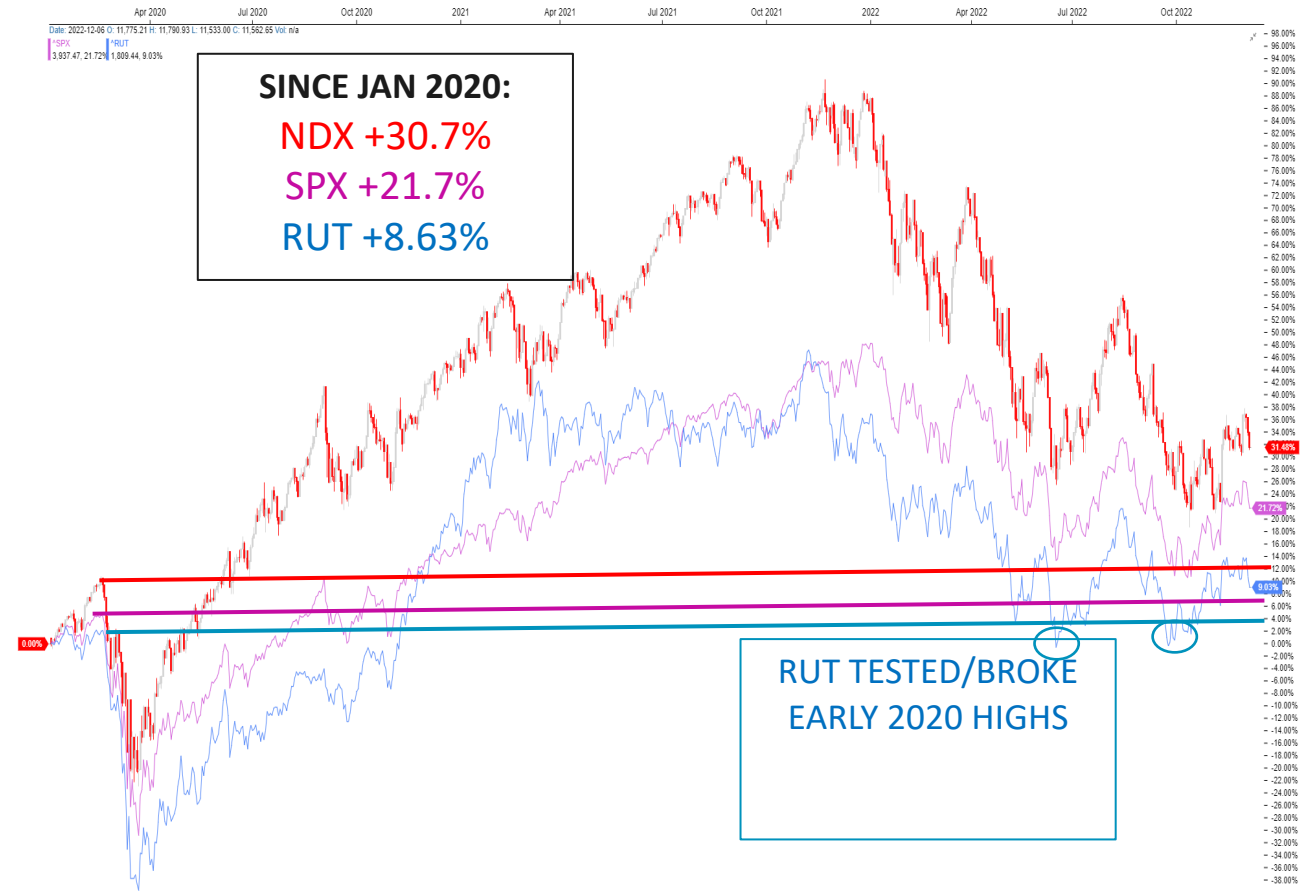
Will History Rhyme (with Dot Com Bust Era)?



U.S. Equity Markets Wrapped (2022)

Perspective After a Difficult Year

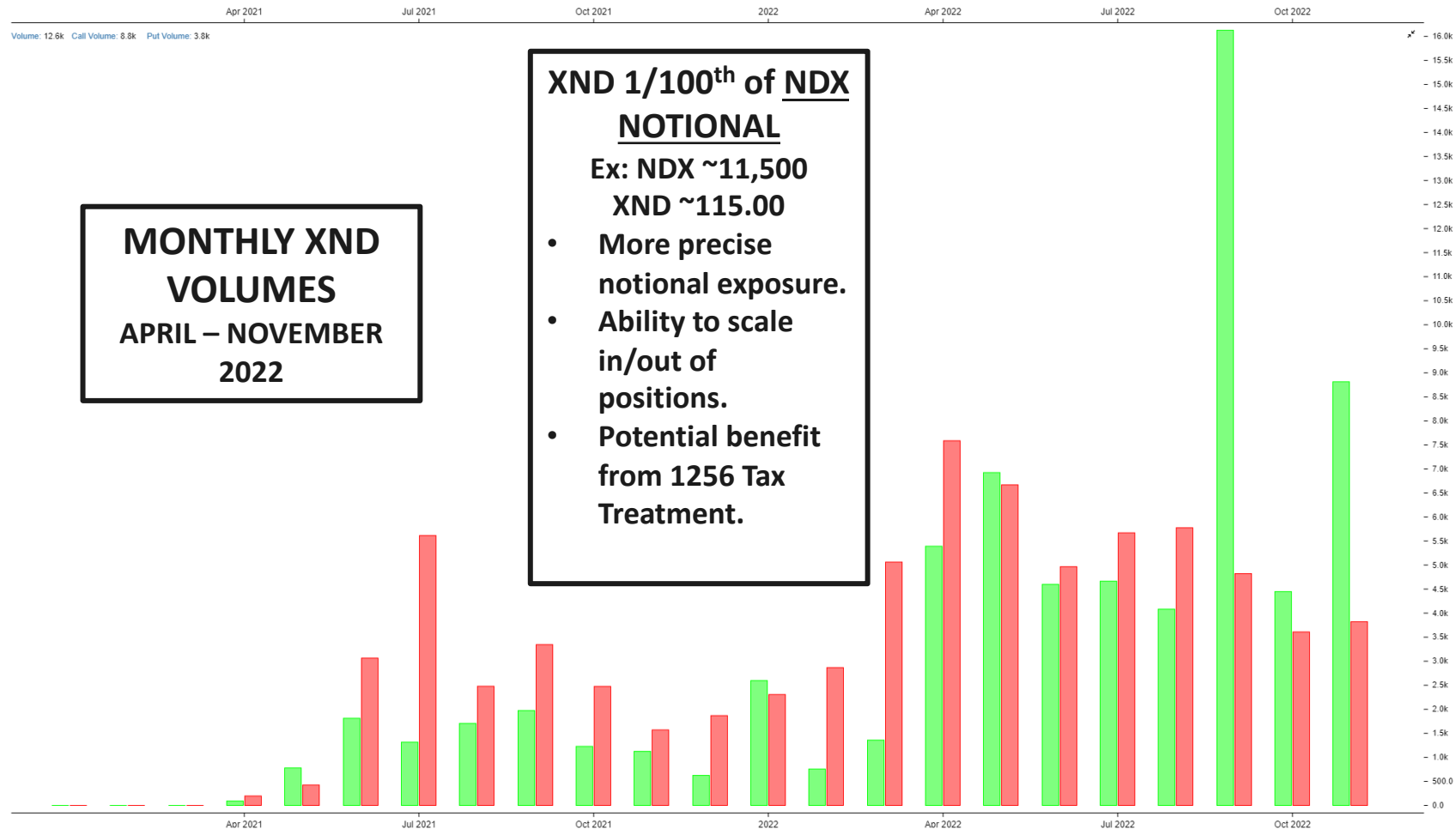
- Maintaining Perspective in Down Years
 - Hindsight: Year end (2021) option hedges would likely have provided meaningful cushion – but you can't “should have”
 - All major U.S. equity indexes remain above pre-pandemic highs
- Do you believe equities test old highs?
- Do you believe equities test March 2020 lows?
 - Will you be proactive about portfolio protection going into 2023?
 - Structured strategies?



Source: Live Vol LLC



The Growth of Micro Index Options (XND)

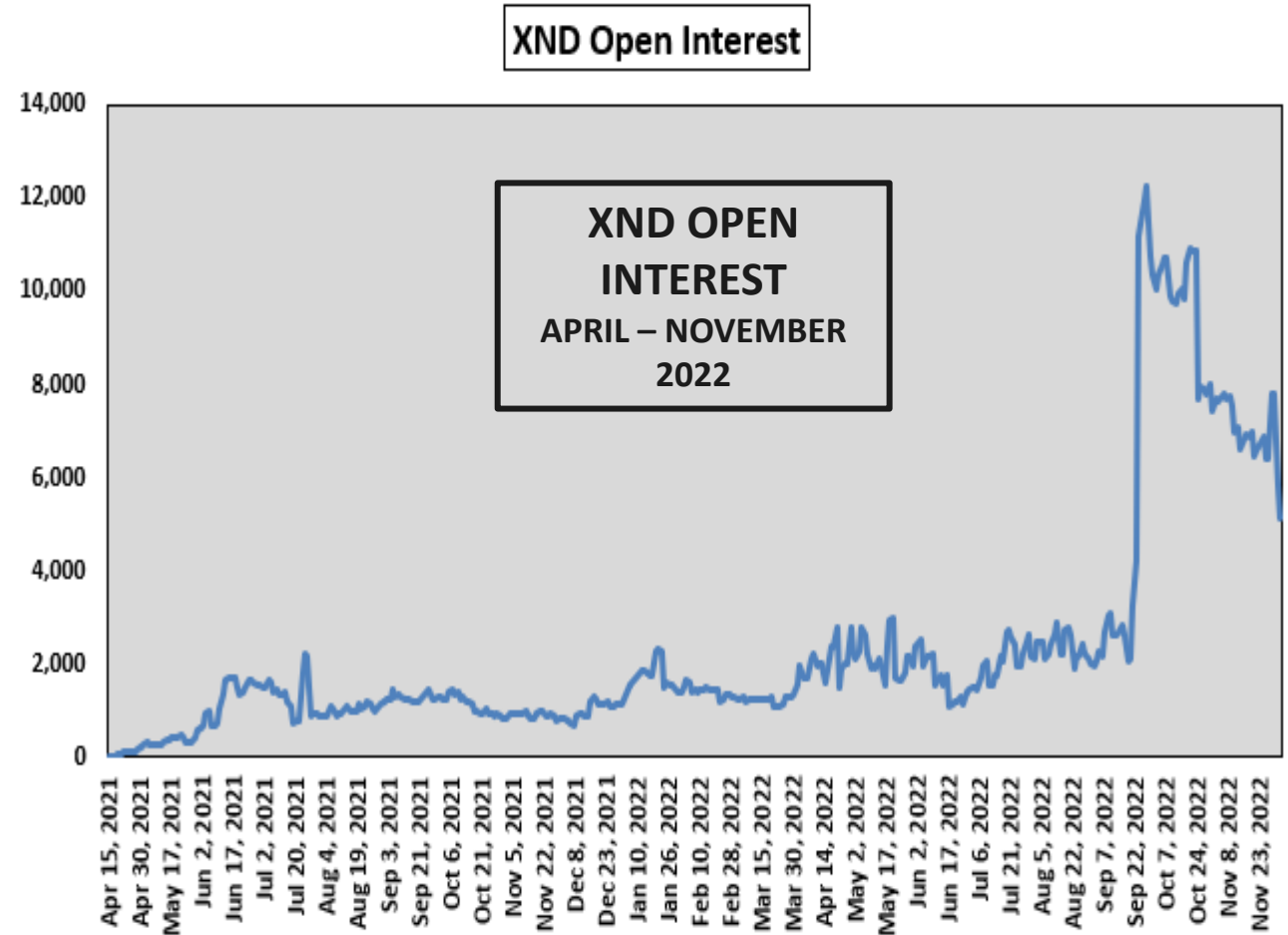


Source: Live Vol LLC.



The Growth of Micro Index Options (XND)

- Growth in Open Interest Fuels New Product Growth
 - Open interest is indicative of market participants establishing/holding XND index positions
 - Tremendous OI growth in September – likely Institutional overlay (Jan 2023 options)
- As options expire, OI declines
- Addition of daily expiries in late 2022 should help OI continue to grow in 2023.
 - Ability to customize short & long-term exposures



Source: Nasdaq



Recap

- The shift in the cost of capital (rates) pressured global equities throughout 2022.
- Option volumes remained incredibly strong which speaks to greater understanding.
 - Volume shift toward Index options and away from single name equities.
- Q2 incredibly difficult as food & energy prices ripped higher.
 - Will inflation remain sticky? Could determine path forward.
- VOLQ (& VIX) remained rangebound despite huge jump in MOVE Index.
 - Is rates vol bound to bleed over?

Mark Your Calendar!

FOMC DECISIONS	CPI DATA RELEASE
2/1/2023	1/12/2023
3/22/2023*	2/14/2023
5/3/2023	3/14/2023
4/14/2023*	4/12/2023

* Denotes Fed Economic Projections Updated

Source: FOMC & BLS

- Three straight down quarters – associated with crises.
 - Different this time?
- Growth of mini/micro index products broadens access to macro products.
 - Euro style, cash-settled, tax benefits, more granular expiries.



Questions?

Contact Us:

indexoptions@nasdaq.com

Nasdaq-100[®] Ecosystem:

<https://www.nasdaq.com/nasdaq-100-options-xnd-nqx-ndx-volq/>

Foreign Currency Options:

<https://www.nasdaq.com/solutions/foreign-currency-options>

