

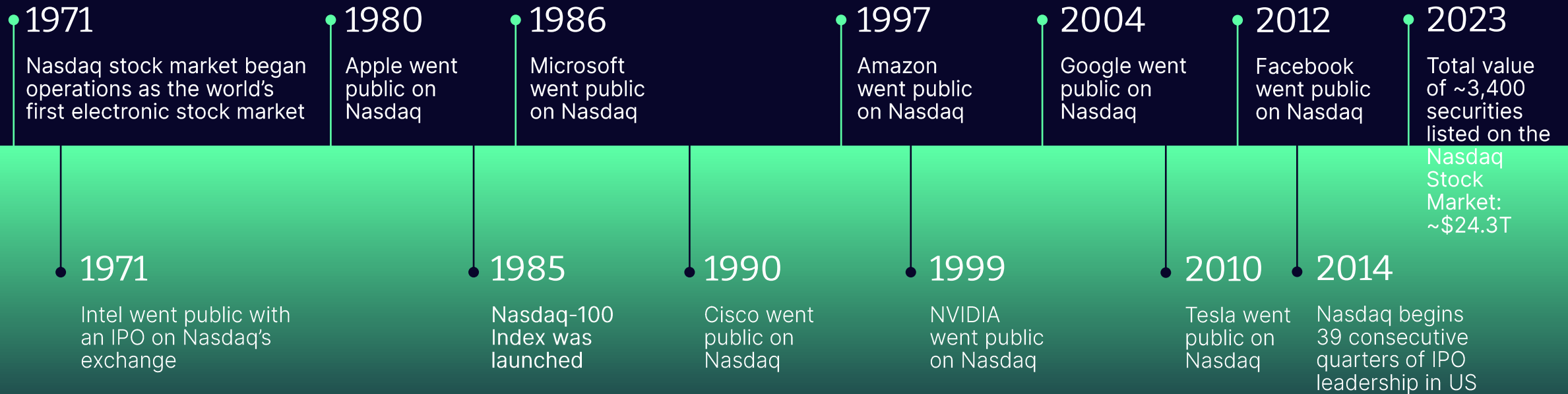


Nasdaq-100[®] Index:

The Benchmark of the 21st Century

January 2024

Nasdaq: A Leading US and Global Exchange Operator with World-Class Indexing Capabilities



What is the Nasdaq-100?

Nasdaq-Listed Only

100% weighting in Nasdaq-listed companies

86% weighting in companies that went public since 1980



Unique among US equity benchmarks, it is the only major exchange-driven index with substantial AUM in the US ETF industry (>\$250B)

Technology Exposure +

58% weighting in Technology (ICB Industry)

50% weighting in Information Technology (GICS Sector)



Not a “pure Tech” index, other major sector exposures (per ICB) include Consumer Discretionary (19%) and Healthcare (7%)

Growth Exposure +

70% overlap by index weight with Nasdaq US Large Cap Growth™ Index, spread across 59 constituents; 26% Value overlap / 32 constituents



Not a “pure Growth” index, although it is disproportionately exposed to highly innovative, fast-growing large cap companies

US Exposure +

“100 of the largest domestic and international non-financial companies listed on Nasdaq”



Includes 8 internationally-domiciled constituents with US listings, such as AstraZeneca, ASML, Lululemon, & Atlassian

The Nasdaq-100® Ecosystem



150+

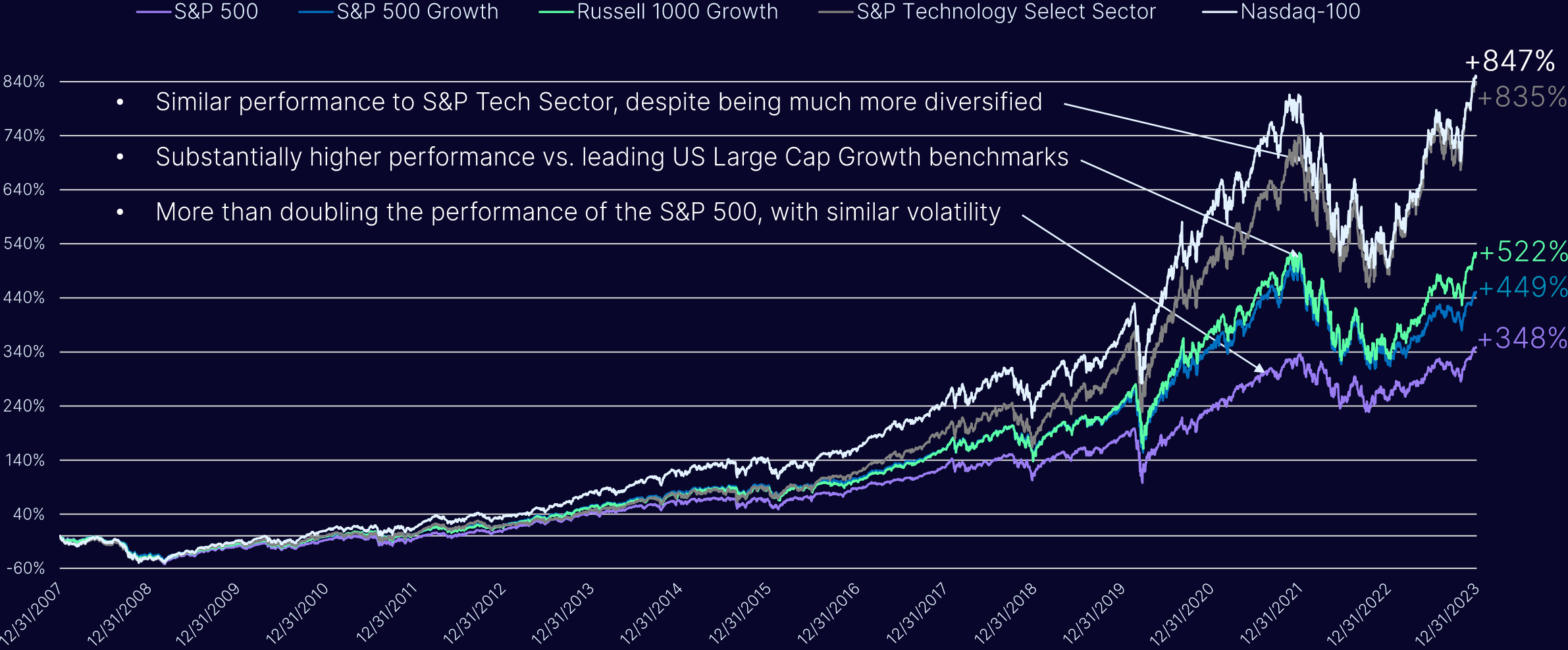
Linked Products Trading

18

Exchanges

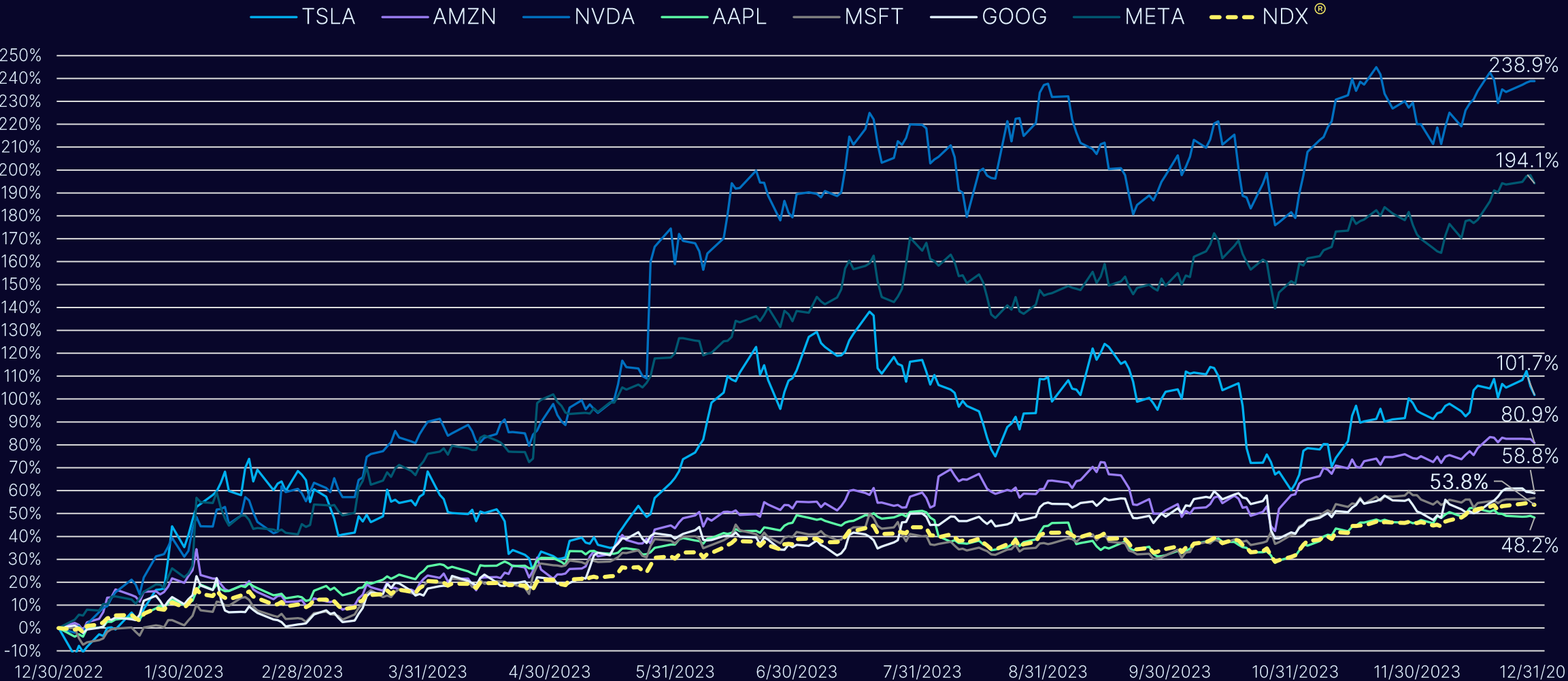
The Nasdaq-100 Index has sparked the development of more than 150 linked products trading on 18 exchanges as well as mutual funds, CITs, SMAs, Insurance products, Options, Futures, and more.

Nasdaq-100's Long-Run Performance is Unrivalled



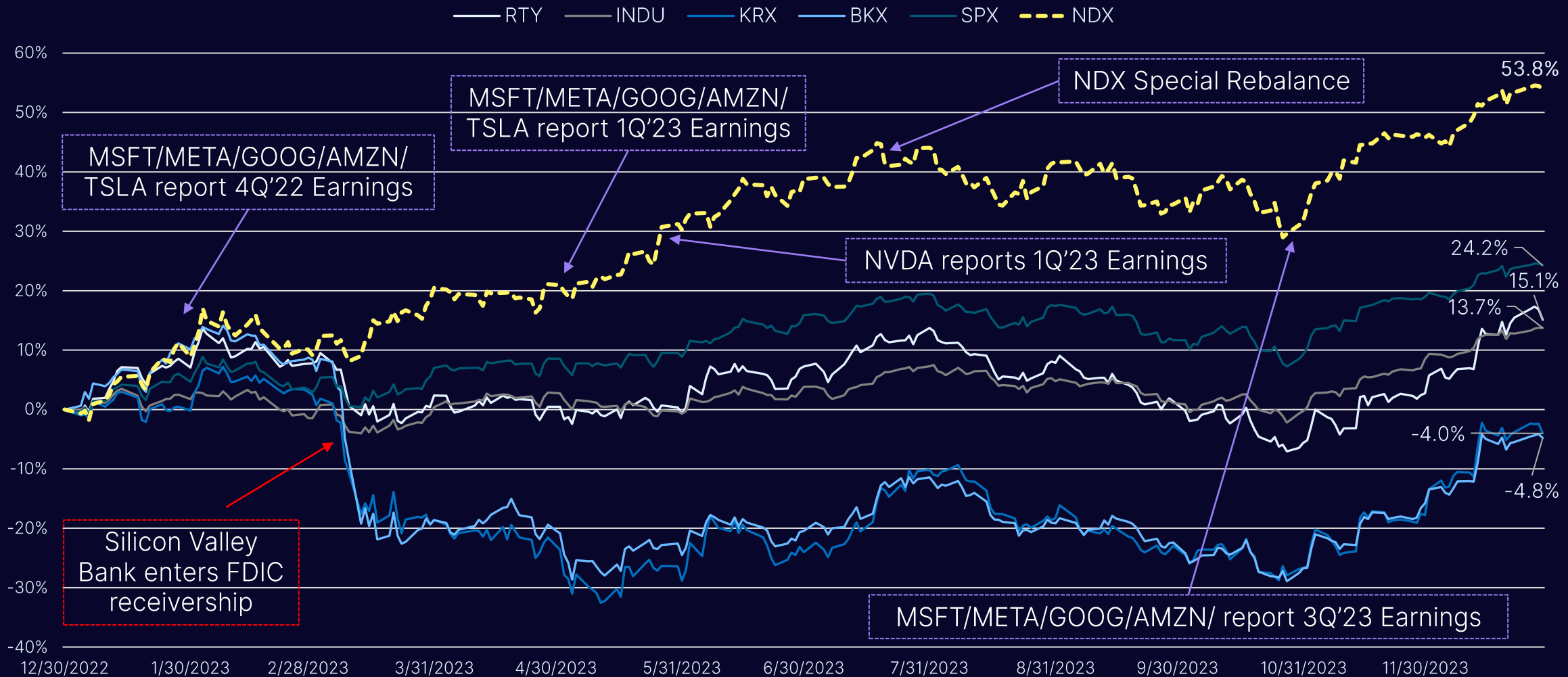
Source: Nasdaq, Bloomberg. Total return versions of each index shown. Data as of 12/31/2023.

Nasdaq-100: FY'23 Performance vs. "Mag 7"



Source: Nasdaq, Bloomberg. Data as of 12/31/2023. Performance data based on price returns.

Nasdaq-100: FY'23 Performance vs. Benchmarks



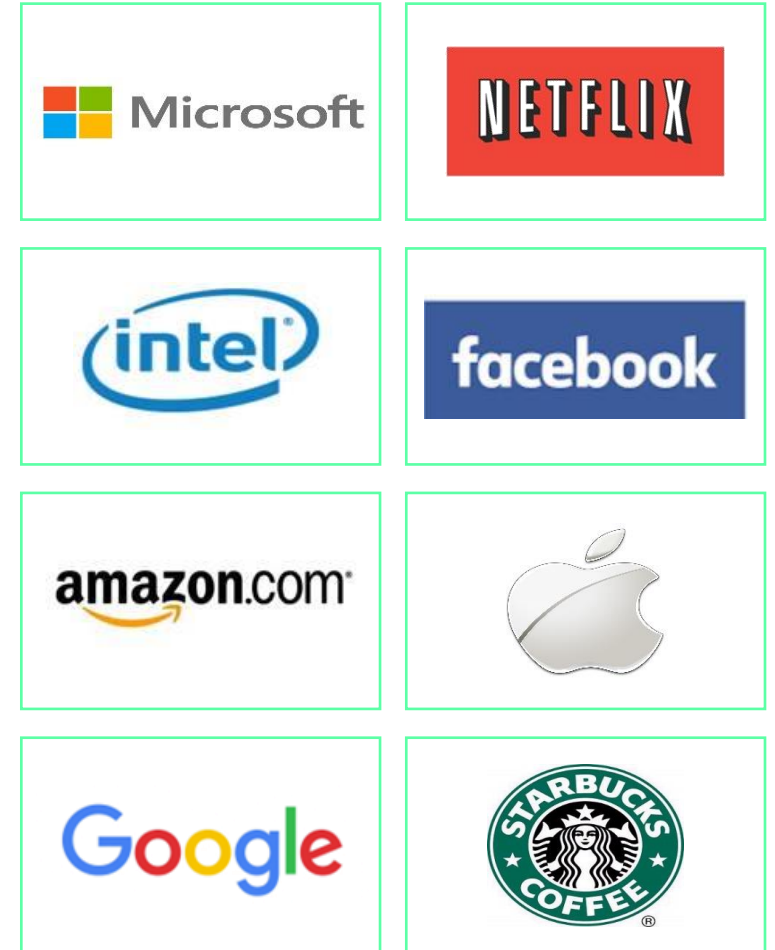
Source: Nasdaq, Bloomberg. Data as of 12/31/2023. Performance data based on price return versions of each index.

Nasdaq-100 Index: Overview

The disruptors; the game-changers; the forward-thinkers.

Companies that influence our lives daily, in multiple areas.

- The original Dow Industrials, including GE and American Sugar Company, were pivotal in transitioning the US economy from agricultural to industrial in the early 20th century.
- By mid-century, GE remained a top 10 company, alongside automakers and Big Oil firms. The late 20th century saw a shift from industrial to technological sectors, marked by the Internet/Tech Bubble.
- Currently, tech giants like Apple, Google, and Microsoft dominate, offering diverse products & services from software to e-commerce, computers, smartphones, gaming systems, and other IoT devices.
- Other companies like Intel and Netflix focus on specific tech niches, while the Nasdaq-100 features innovative firms across various sectors.



The Nasdaq-100: Index Methodology

Summary

- 100 of the largest non-financial companies listed on the Nasdaq Stock Exchange
- Global companies including ADRs; excludes Financials/REITS (per ICB Industry Classification)
- Modified market-cap weighting process with quarterly and annual weight adjustments
- Rebalanced quarterly (March, June, September, December)
- Reconstituted annually (December)

Quarterly Adjustments

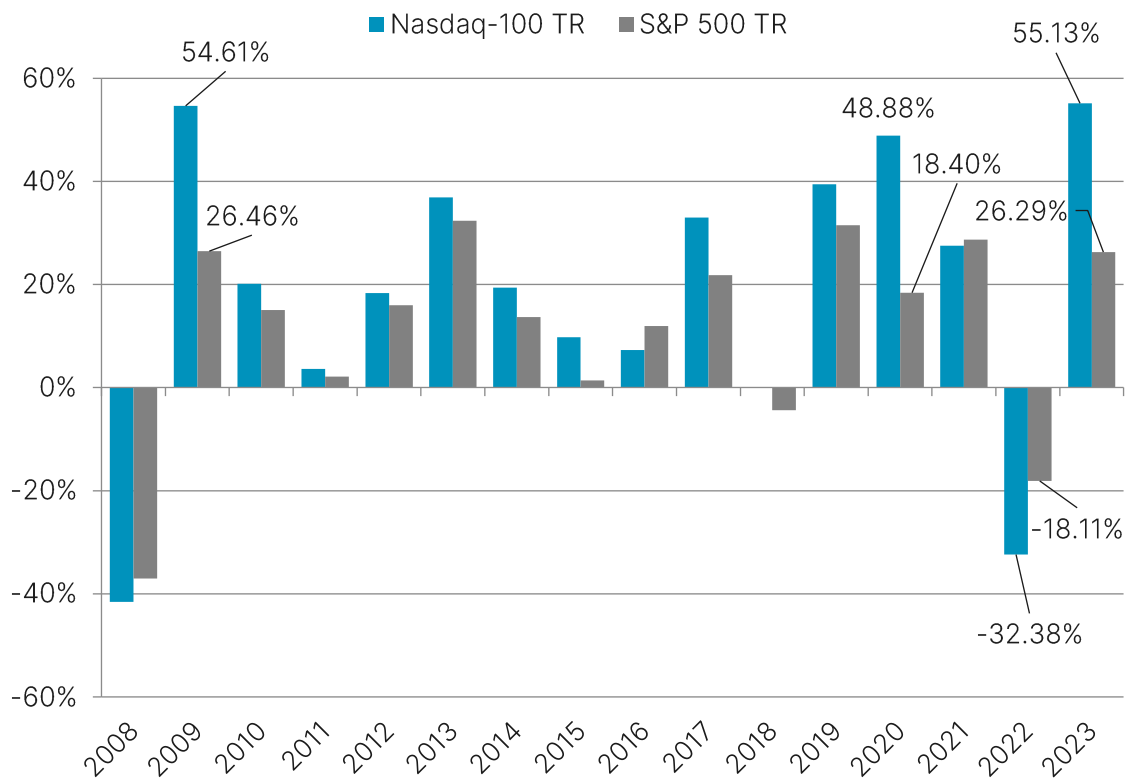
- If any issuer >24% of index weight, capped at 20%
- If aggregate weight of any individual issuer with >4.5% of index weight exceeds 48%, that group is capped at 40%

Annual Adjustments

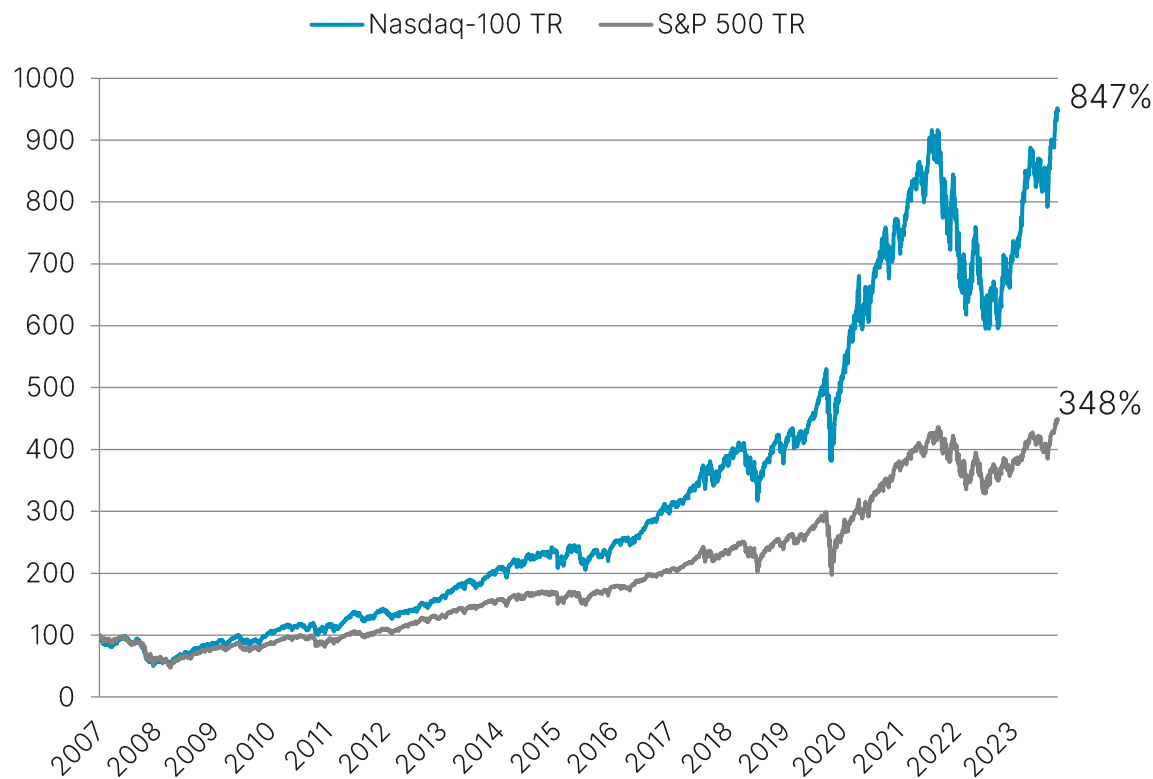
- If any security >15% of index weight, capped at 14%
- If aggregate weight of Top 5 securities exceeds 40%, that group is capped at 38.5%
- All other securities capped at 4.4% or, if #5 security is <4.4%, that becomes the effective cap for all others outside Top 5

Nasdaq-100 Index: Performance vs. S&P 500

INDEX ANNUAL TOTAL RETURNS



INDEX PERFORMANCE SINCE DECEMBER 31, 2007



- NDX® has outperformed SPX in 12 of the past 16 calendar years, including by nearly 30% each in 2023 / 2020 / 2009. 2023 was the index's best year overall since 1999, more than offsetting a disappointing 2022

- Cumulative total returns through December 31, 2023 were 847% for NDX (15.1% annualized) – more than doubling the returns of 348% for SPX (9.8% annualized).



Source: Nasdaq, Bloomberg. Data as of 12/31/2023

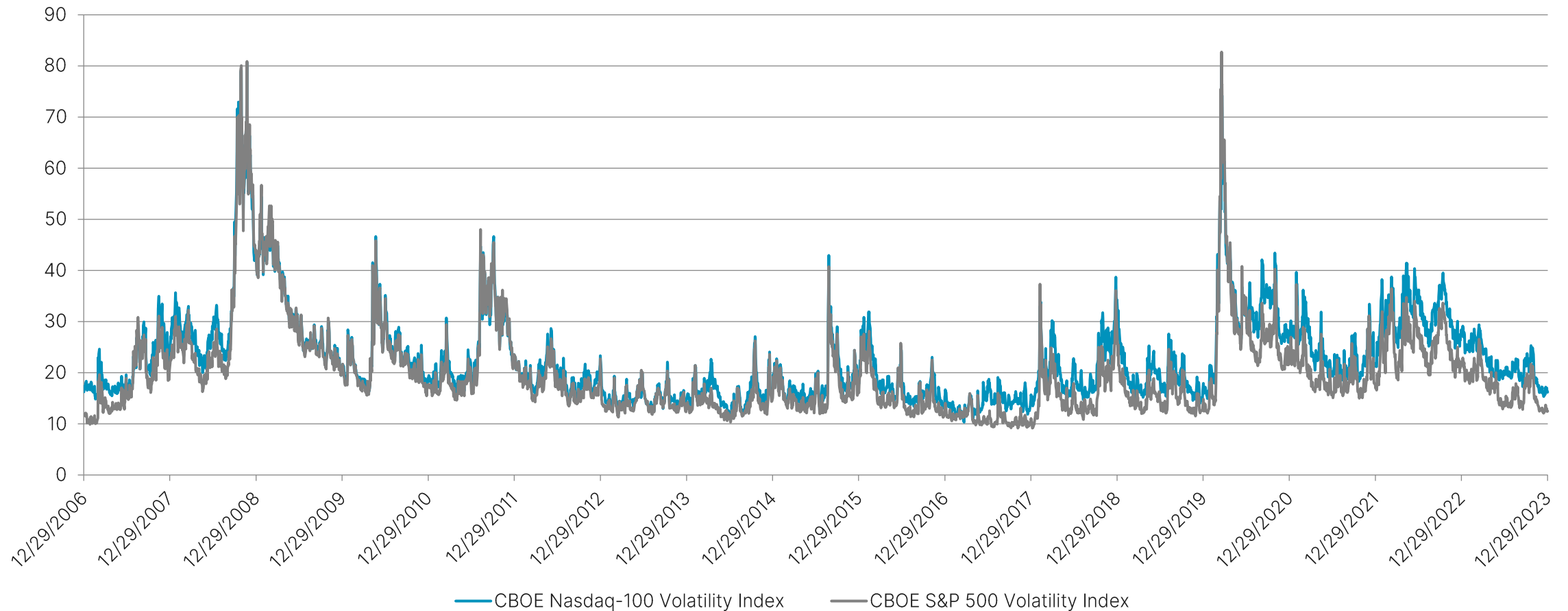
Performance Data (Total Return)

Year	Calendar Year Return		Correlation	Calendar Year Volatility	
	Nasdaq-100	S&P 500	NDX + SPX	Nasdaq-100	S&P 500
2007	19.24%	5.49%	0.890	18.68%	15.99%
2008	-41.57%	-37.00%	0.945	42.22%	40.89%
2009	54.61%	26.46%	0.935	26.47%	27.25%
2010	20.14%	15.06%	0.949	19.48%	18.06%
2011	3.66%	2.11%	0.948	23.75%	23.24%
2012	18.35%	16.00%	0.920	15.44%	12.74%
2013	36.92%	32.39%	0.901	12.49%	11.16%
2014	19.40%	13.69%	0.924	14.06%	11.36%
2015	9.75%	1.38%	0.947	17.85%	15.50%
2016	7.27%	11.96%	0.916	16.17%	13.11%
2017	32.99%	21.83%	0.801	10.32%	6.69%
2018	0.04%	-4.38%	0.949	22.70%	17.04%
2019	39.46%	31.49%	0.950	16.31%	12.46%
2020	48.88%	18.40%	0.937	36.29%	34.37%
2021	27.51%	28.71%	0.877	18.52%	13.08%
2022	-32.38%	-18.11%	0.967	32.43%	24.13%
2023	55.13%	26.29%	0.920	18.08%	13.08%

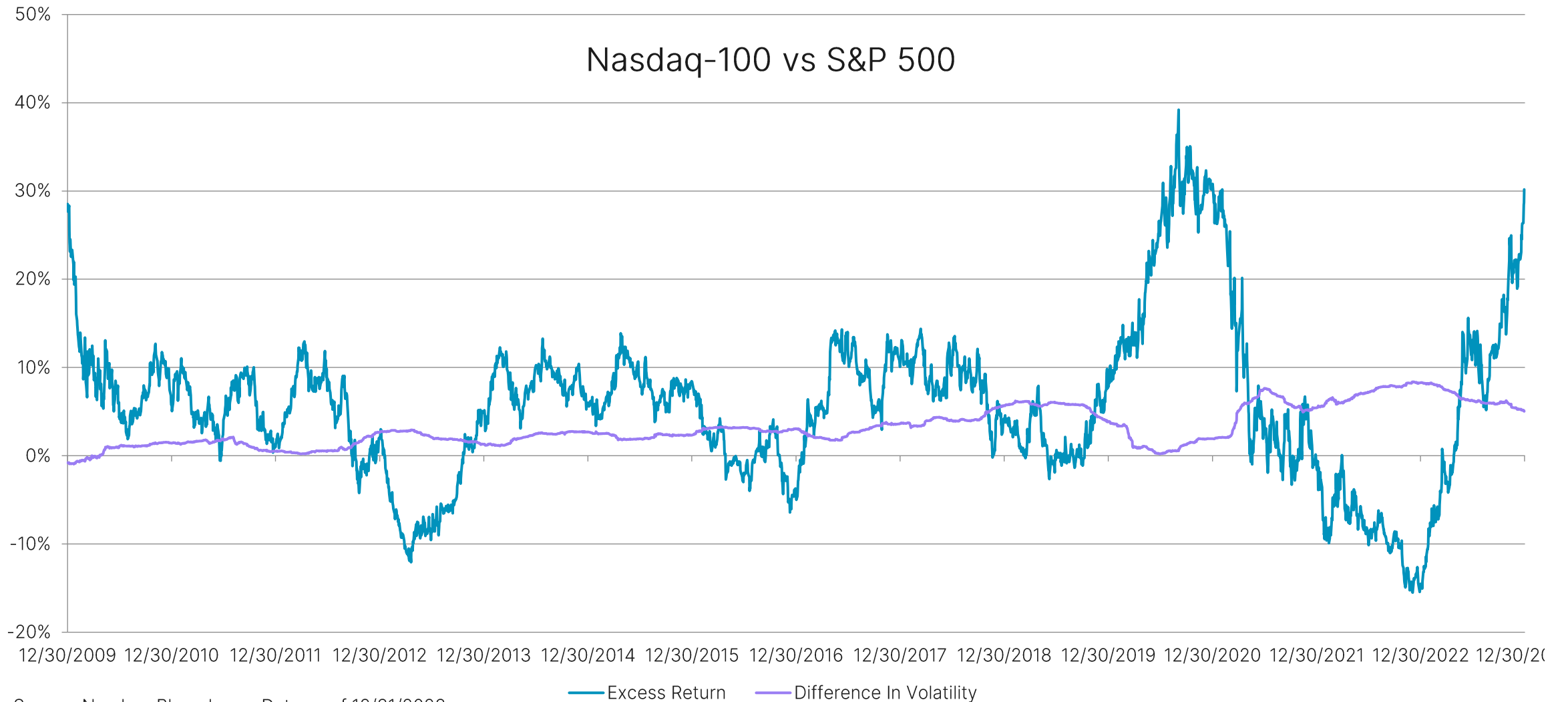


Historical Volatility

- Both the Nasdaq-100 and the S&P 500 have had very similar volatility over last 15+ years



1-Year Excess Return vs. Volatility



Source: Nasdaq, Bloomberg. Data as of 12/31/2023.

— Excess Return — Difference In Volatility

Morningstar Rankings

Invesco QQQ Trust QQQ ★★★★★  Morningstar Medalist Rating
 Performance | Medalist Rating as of May 11, 2023 | [See Invesco Investment Hub >](#)










QQQ, largest fund tracking NDX, ranked in the top (99th) percentile across all funds in its category (10 & 15-year basis)

[Quote](#) [Chart](#) [Fund Analysis](#) [Performance](#) [Sustainability](#) [Risk](#) [Price](#) [Portfolio](#) [People](#) [Parent](#)

Performance [Returns](#) [Distributions](#)

Trailing Returns

[Day End](#) **[Month End](#)** [Quarter End](#)

Total Return %	1-Month	3-Month	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	Earliest Available	
Total Return % (Price)	5.59	14.59	54.85	54.85	9.98	22.40	17.66	20.17	9.44	
Total Return % (NAV)	5.53	14.52	54.76	54.76	9.95	22.41	17.66	20.16	9.45	
Category (NAV)	4.98	13.83	36.74	36.74	4.68	15.74	12.03	14.50	—	
Index (NAV)	4.19	13.88	40.25	40.25	6.57	17.53	13.44	15.69	—	
Quartile Rank										—
Percentile Rank	26	32	4	4	6	2	1	1	—	
Tax Adj. Returns %*	5.42	14.41	54.33	54.33	9.67	22.07	17.29	19.77	9.20	
Percentile Rank (tax)	21	26	5	5	3	1	1	1	—	
Tax Cost Ratio	—	—	—	0.28	0.26	0.28	0.31	0.32	0.23	
# of Invest. in Cat.	1,222	1,216	1,200	1,200	1,118	1,031	810	599	—	

USD | All data based off of NAV except where noted | ETF return as of Dec 31, 2023 | Category: Large Growth as of Dec 31, 2023 | Index: Morningstar US LM Brd Growth TR USD as of Dec 31, 2023 | Earliest Available Mar 10, 1999 | Time periods greater than 1 year are annualized | Tax-adjusted returns are calculated using load.

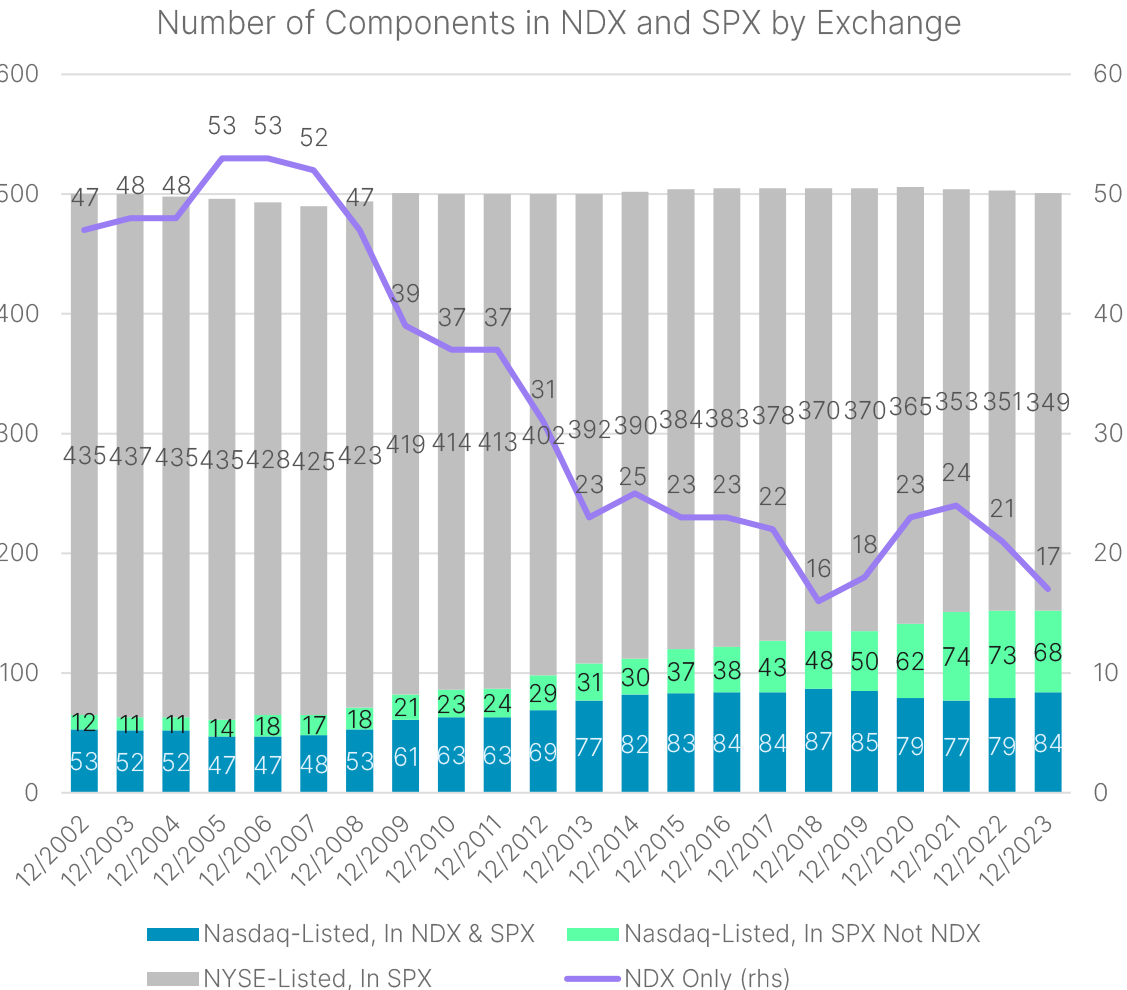
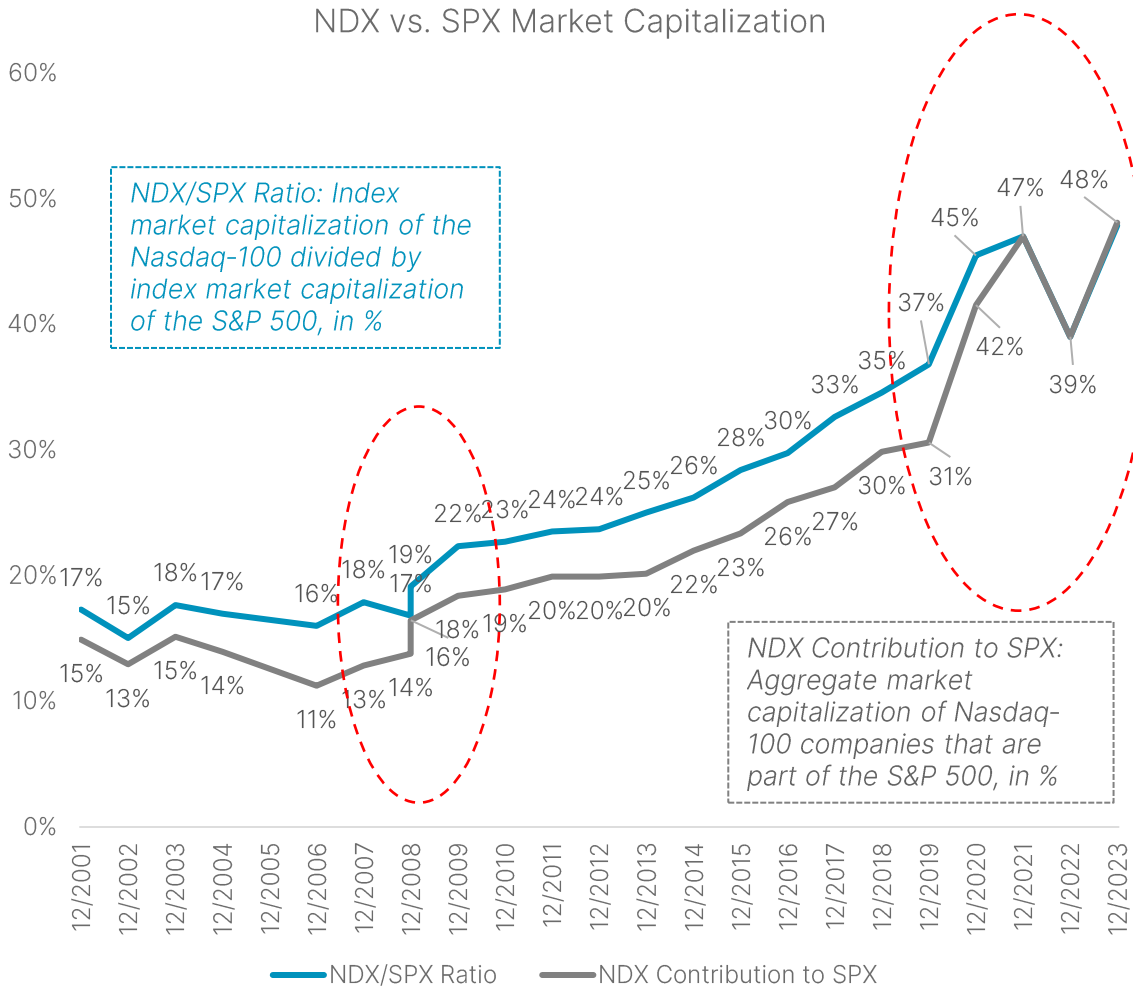


Coveted Placement

The 100 that Make the Index



Nasdaq-100 vs. S&P 500: Composition Over Time



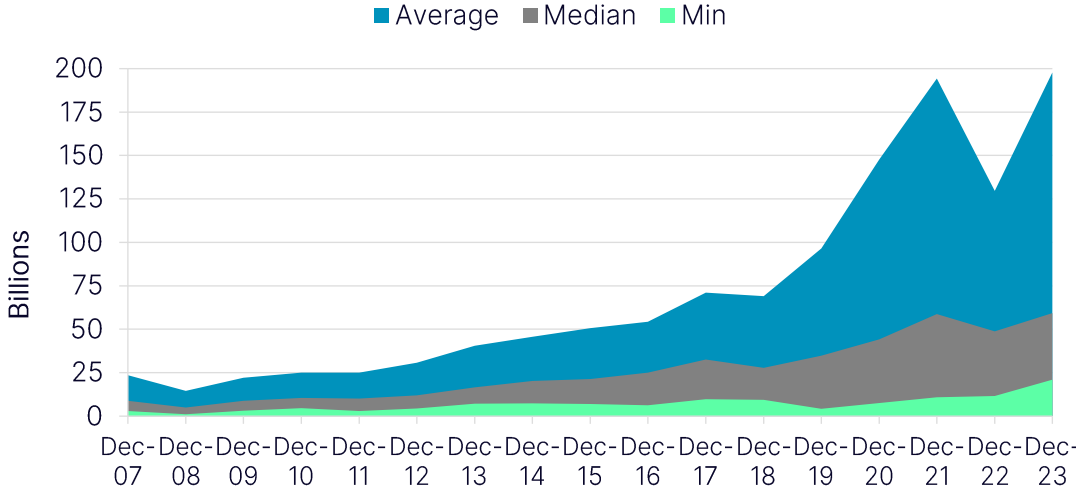
Source: Nasdaq Global Indexes, Bloomberg. Data as of 12/31/2023.

Nasdaq-100 Index: Constituent Size vs. S&P 500

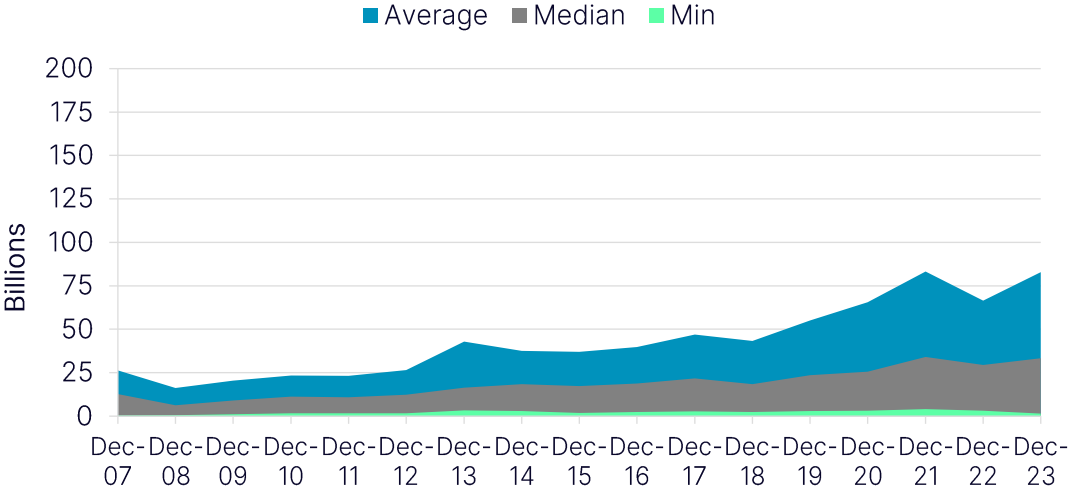
Average, median and minimum market caps of the NASDAQ-100 and the S&P 500

- All figures dropped during the financial crisis and had been steadily rebounding until year-end 2021. In 2022, a highly unfavorable macroeconomic environment of elevated inflation, rising interest rates, and geopolitical uncertainty led to the first broad-based annual losses in markets since 2008.
- 14 of the last 15 years the average market cap has been higher in NDX than SPX. As of year-end 2023, NDX: \$198B, SPX: \$83B.
- The median market cap has been higher for NDX than SPX in each of the last eleven years — as of year-end 2023 the medians were \$59.2B for NDX and \$33.4B for SPX. Despite any large companies, the market cap of NDX tends to be truer to large cap than SPX.
- The smallest company in NDX (\$21.1B) has been larger than the smallest company in SPX (\$1.4B) for the last fifteen years.

NASDAQ-100: MARKET CAP



S&P 500: MARKET CAP



New Additions During FY 2023

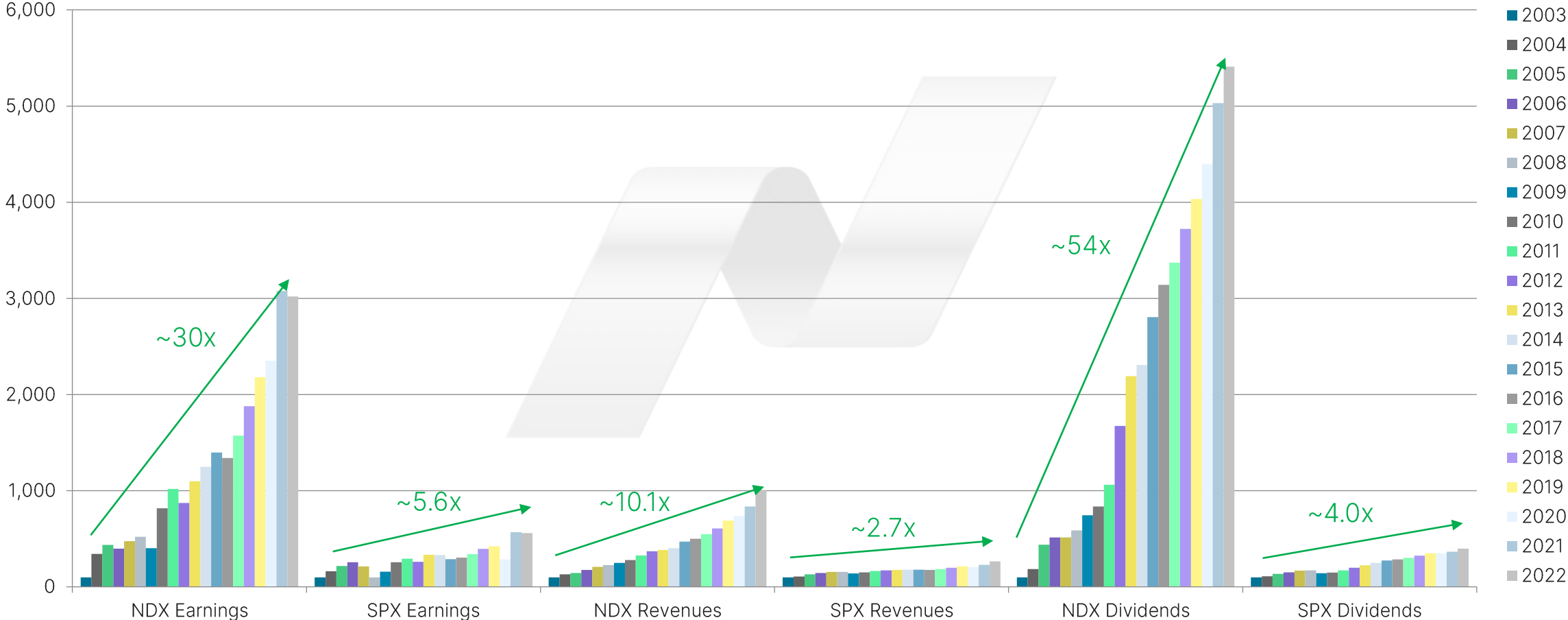
Effective Date	SEDOL	Ticker	Company Name	ICB Industry	ICB Sector	Market Cap, \$Bn	FY'23 Return, %
6/7/2023	BL6JPG8	GEHC	GE HealthCare Technologies Inc.	Health Care	Medical Equipment and Services	35.2	32.4
6/20/2023	2583576	ON	ON Semiconductor Corporation	Technology	Technology Hardware and Equipment	36.0	33.9
7/17/2023	BD8FDD1	TTD	The Trade Desk, Inc.	Consumer Discretionary	Media	32.1	60.5
12/18/2023	BYQQ3P5	CCEP	Coca-Cola European Partners plc	Consumer Staples	Beverages	30.6	20.6
12/18/2023	BBM5MD6	CDW	CDW Corporation	Technology	Technology Hardware and Equipment	30.5	27.3
12/18/2023	BN13P03	DASH	DoorDash, Inc.	Technology	Software and Computer Services	36.7	102.6
12/18/2023	BF2FJ99	MDB	MongoDB, Inc.	Technology	Software and Computer Services	29.5	107.7
12/18/2023	2749602	ROP	Roper Technologies, Inc.	Technology	Software and Computer Services	58.2	26.2
12/18/2023	B424494	SPLK	Splunk Inc.	Technology	Software and Computer Services	25.7	77.0
12/18/2023	2122117	TTWO	Take-Two Interactive Software, Inc.	Consumer Discretionary	Leisure Goods	27.4	54.6



Fundamentals Drive Performance



Nasdaq-100 vs. S&P 500: Fundamentals Over Time



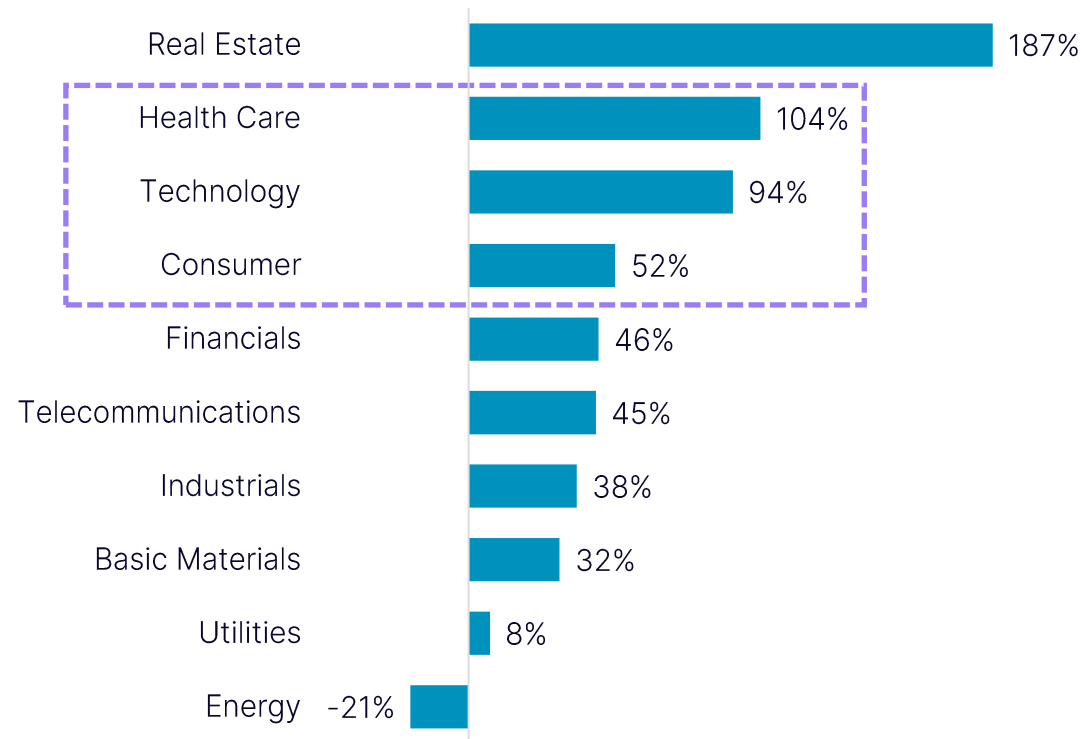
Current TTM Dividend Yield: 0.87% (NDX) vs. 1.50% (SPX)

Source: Nasdaq, Factset, Bloomberg. Data as of 12/31/2022. Current TTM Dividend Yields as of 8/18/2023.

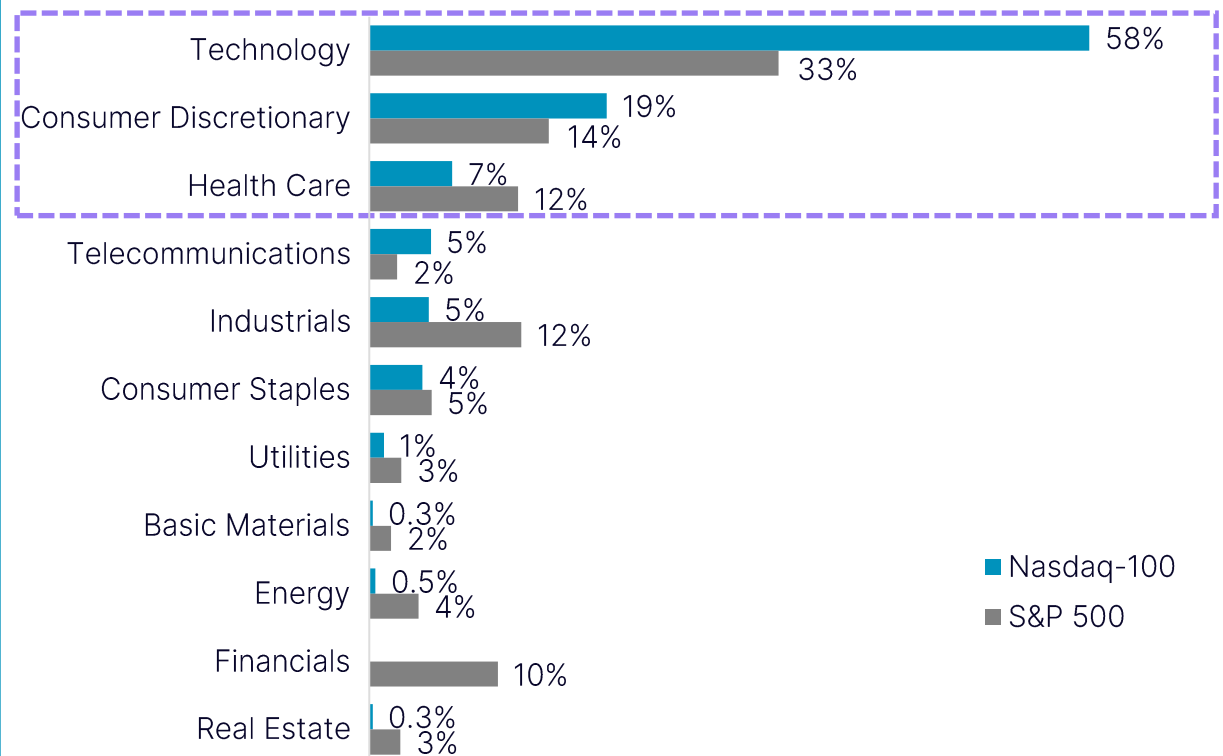
The Decade of the Nasdaq-100

The underlying story for the rise in the Nasdaq-100 is that the U.S.'s economic growth is shifting from capital-intensive, traditional industries (Industrials, Materials & Energy) to the “new-economy” sectors such as Health Care, Technology & Consumer. (Note: Real Estate was by far the smallest sector, representing ~1% of aggregate revenue.)

10-Year Sales Growth Across Industries in US Large & Midcaps



Industry (ICB) Weights (%) of Nasdaq-100 vs. S&P 500



Nasdaq-100 Index: Fundamentals

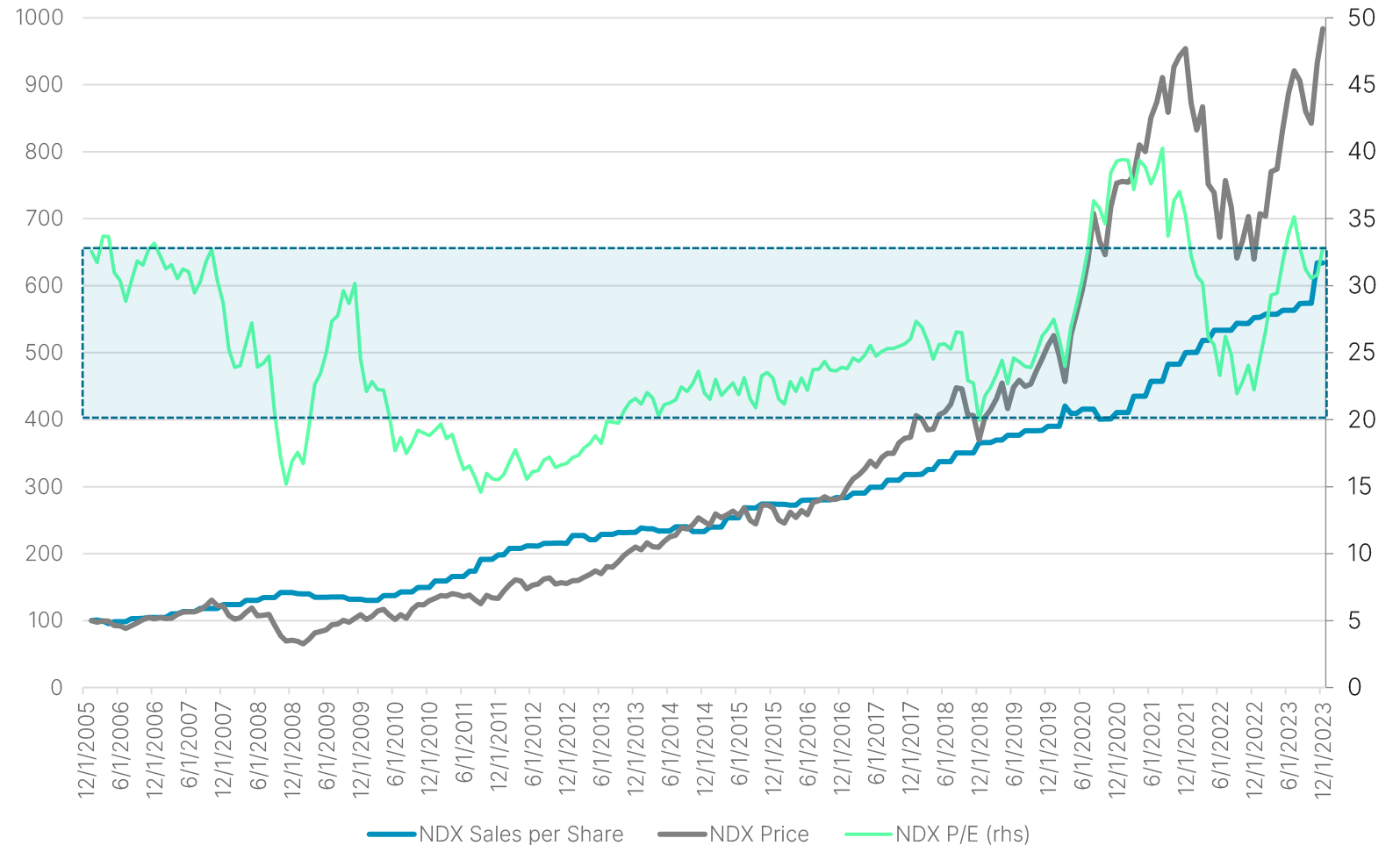
- The fundamental data behind the NASDAQ-100 has drastically improved over the past decade despite a volatile economy and the greatest financial market collapse since the Great Depression.
- Earnings, the most basic number to value a company, have skyrocketed, showing maturation of the companies as they increase revenues but reduce costs. Costs have been controlled, shares were bought back, dividends have increased and P/E has contracted.
- Since 2003, NDX has had a Compound Annual Growth Rate (CAGR) of:
 - + 20% in earnings
 - + 13% in revenues
 - + 23% in dividend value
 - - 8% in P/E
- The shift in NDX fundamentals has resulted in significant outperformance over other US large cap indexes.



Nasdaq-100 Index: Valuation vs. Sales Growth

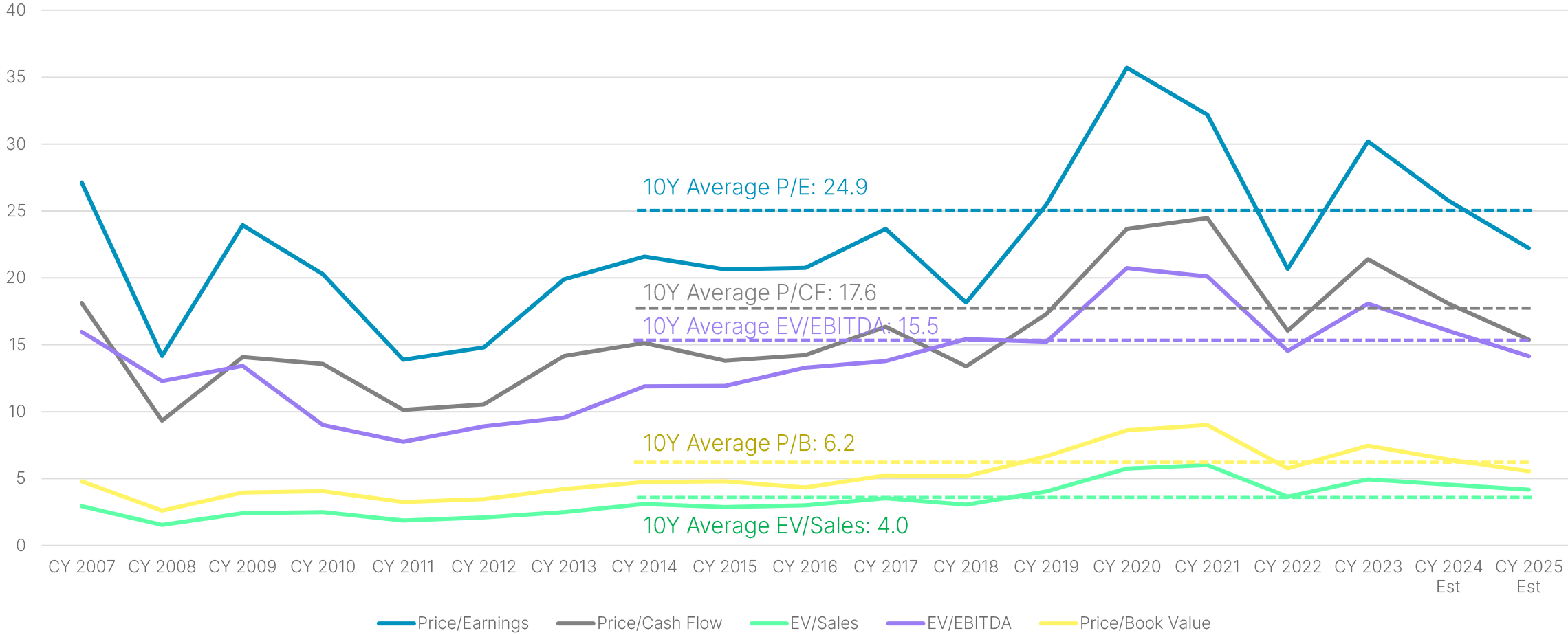
Sales Growth vs. Price Return vs. P/E

- From 2014-2019, NDX P/E ratio (TTM basis) had stabilized in the low-to-mid 20s, below where it was in the mid-2000s
- The trend briefly diverged during 2020-2021, with P/E climbing to a range in the mid-to-upper 30s
- Fundamental story has been the main driver of long-run recovery, rewarding the growth of NDX companies
- Sales: +534%
Price: +884%
Valuation: 1%



Nasdaq-100 Index: Valuations vs. Long-Run History

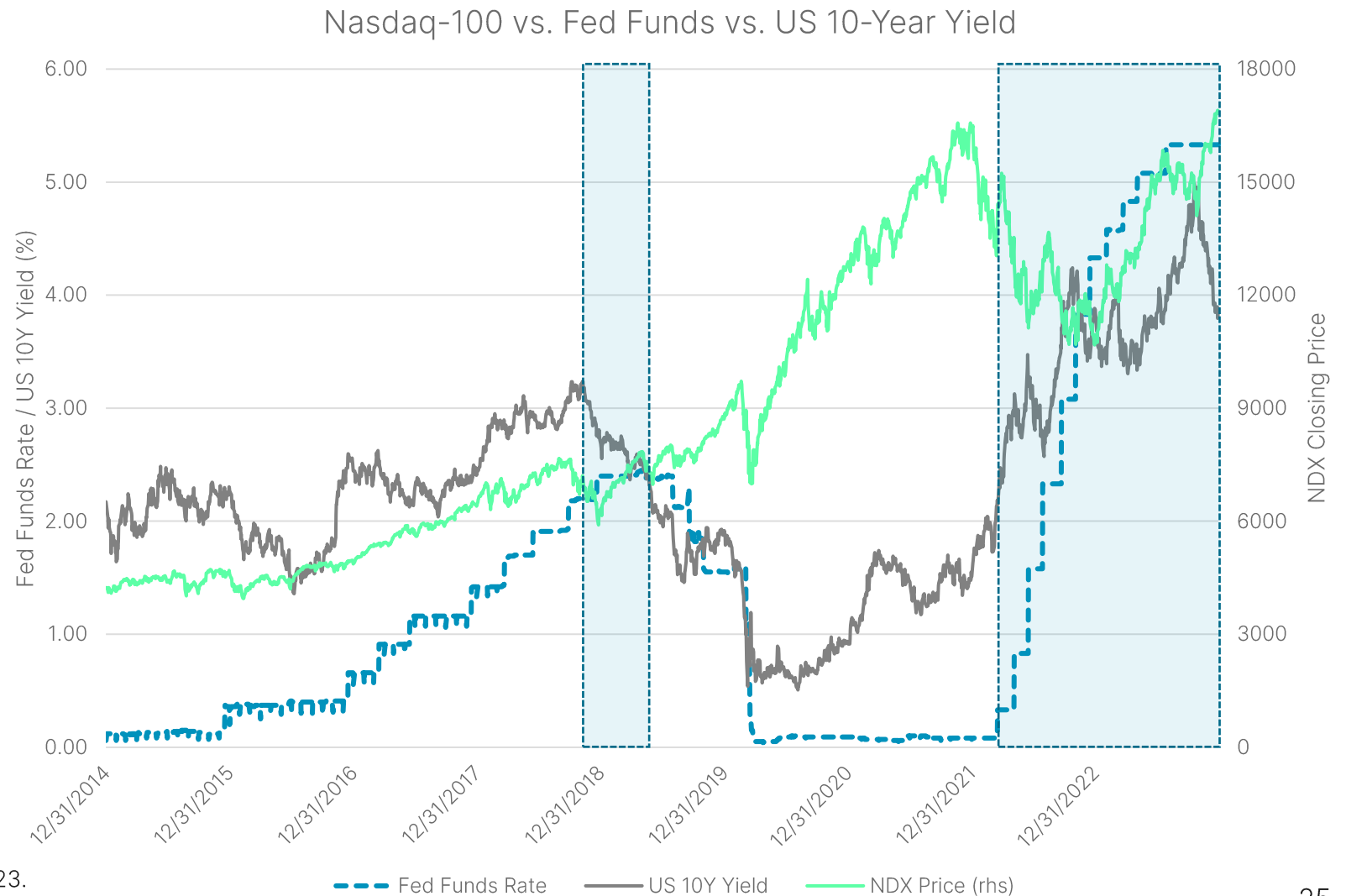
NDX Valuation Ratios, FY 2007-2023 and 2024-2025 Estimated



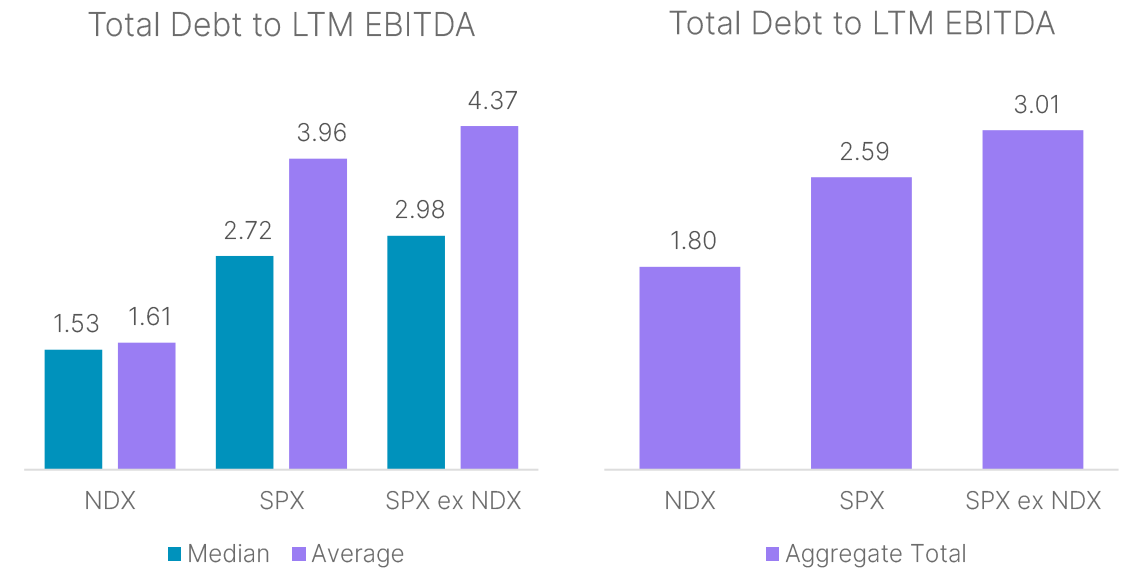
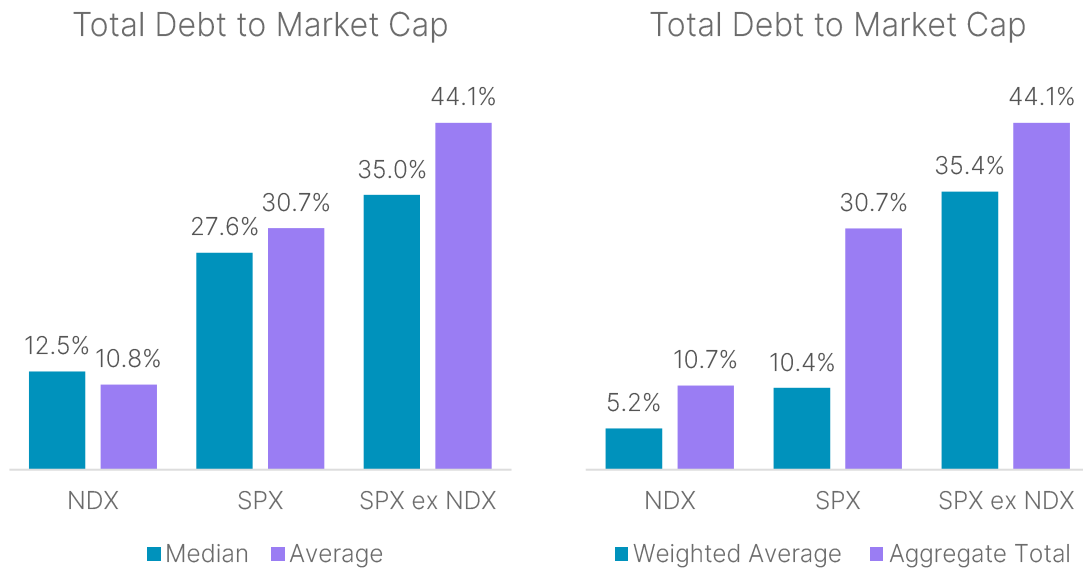
Source: Nasdaq, FactSet, Bloomberg. Data as of 1/23/2024.

Nasdaq-100 Index: Performance vs. Interest Rates

- The last Fed rate hiking cycle began in December 2015, and consisted of 9 hikes of 25 bps each (total = 225 bps)
- The Nasdaq-100 dropped 23% during Q4 of 2018, until the Fed began telegraphing a pause in hikes
- In 2022/3, the Fed raised rates by 525 bps, but has now mostly paused its hikes, with inflation cooling from a peak of ~9% to ~3% annualized
- Fed Funds futures suggest rate cuts beginning in 2024



Nasdaq-100 vs. S&P 500: Debt Ratios



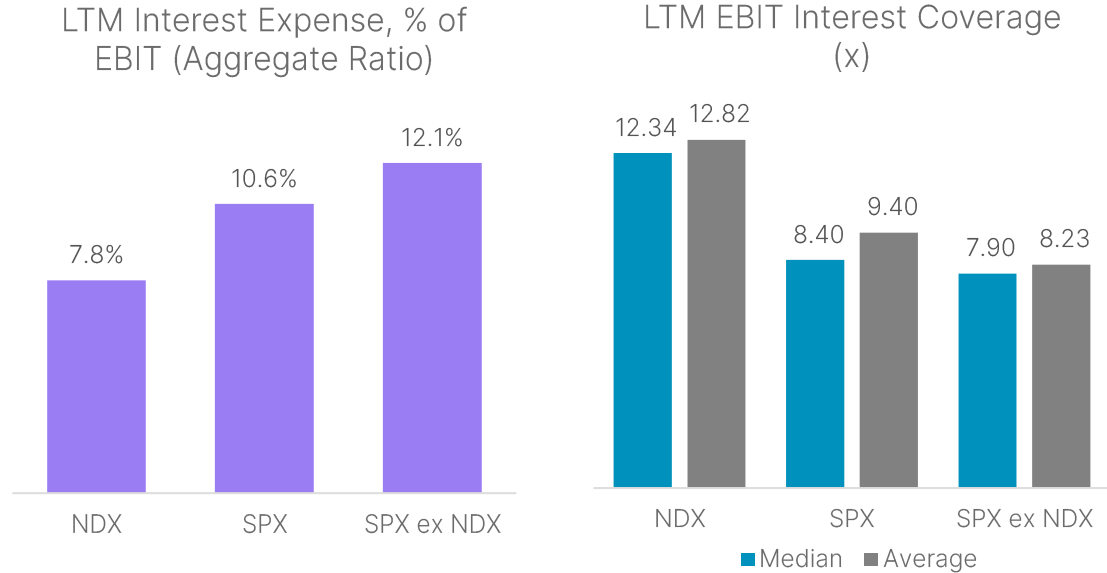
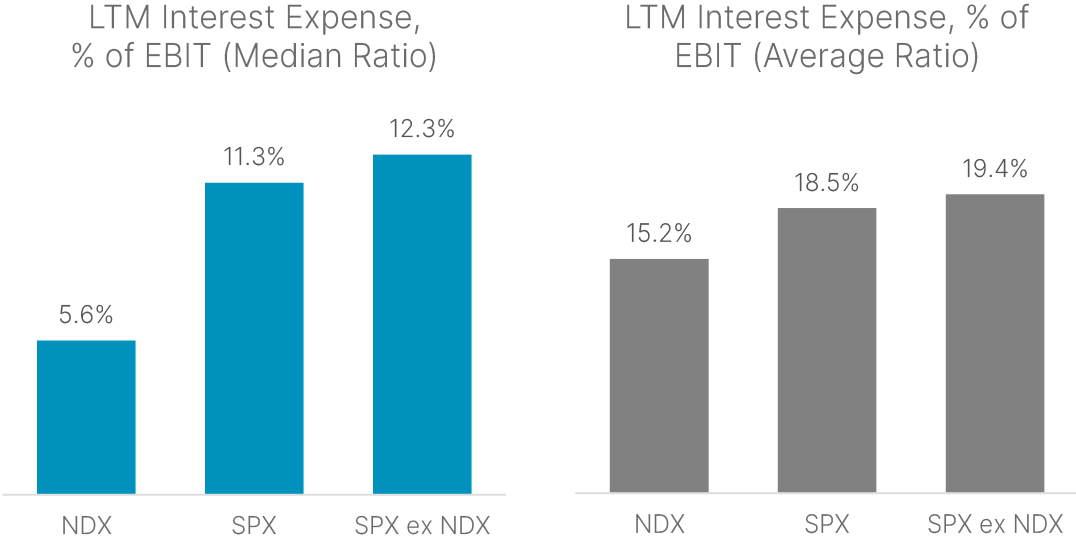
The median company in the Nasdaq-100 Index has a debt-to-market-cap ratio that is **55% lower** than the median for the S&P 500 Index. The average ratio is **65% lower** for NDX

The weighted average ratio of debt-to-market cap in the Nasdaq-100 is **50% lower** than the S&P 500 Index (**85% lower** vs. SPX ex NDX); on an aggregate basis, NDX debt-to-market-cap is **65% lower**

The median company in the Nasdaq-100 has a debt-to-EBITDA ratio that is **44% lower** than the median for the S&P 500 Index (excluding Financials that do not report EBITDA). The average ratio is **59% lower**

On an aggregate basis, Nasdaq-100 debt-to-EBITDA is **31% lower** than the S&P 500 Index (excluding all Financials), and **40% lower** vs. SPX ex NDX (excluding all Financials)

Nasdaq-100 vs. S&P 500: Debt Service Ratios



The median company in the Nasdaq-100 Index has an interest expense burden (as a % of EBIT) that is **51% lower** than the median for the S&P 500 Index. Excludes most Financials and companies with negative reported EBIT

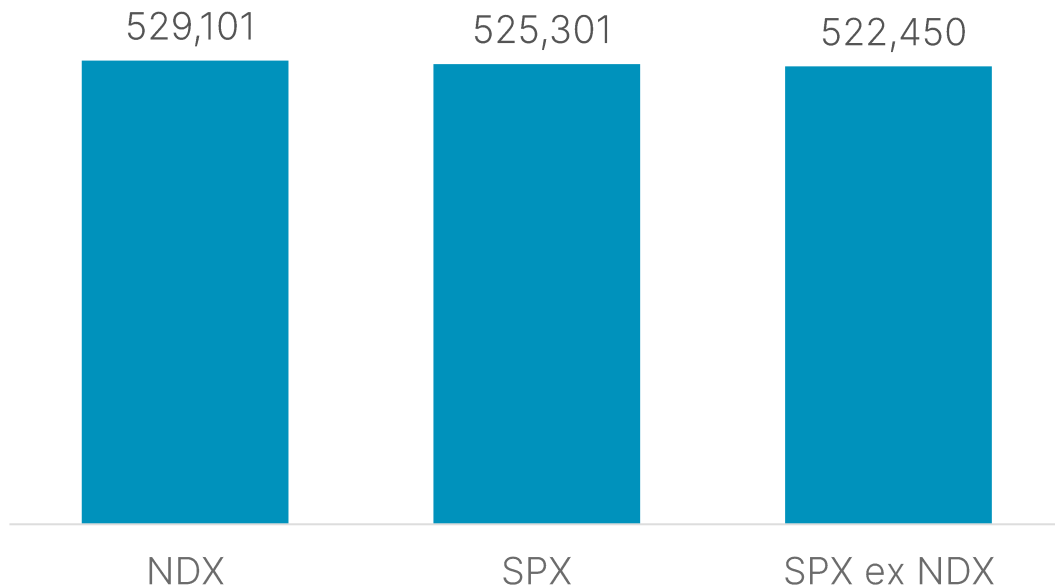
The average company in the Nasdaq-100 Index has an interest expense burden (as a % of EBIT) that is **18% lower** than the average for the S&P 500 Index. Excludes most Financials and companies with negative reported EBIT

The aggregate ratio of interest expense to EBIT across the Nasdaq-100 Index was 7.8%, **26% lower** than the S&P 500 (ex-most Financials) and **35% lower** than SPX ex NDX

The median company in the Nasdaq-100 has EBIT Interest Coverage that is **47% higher (better)** than the median for the S&P 500 (ex-most Financials). The average ratio is **36% higher (56% higher vs. SPX ex NDX)**

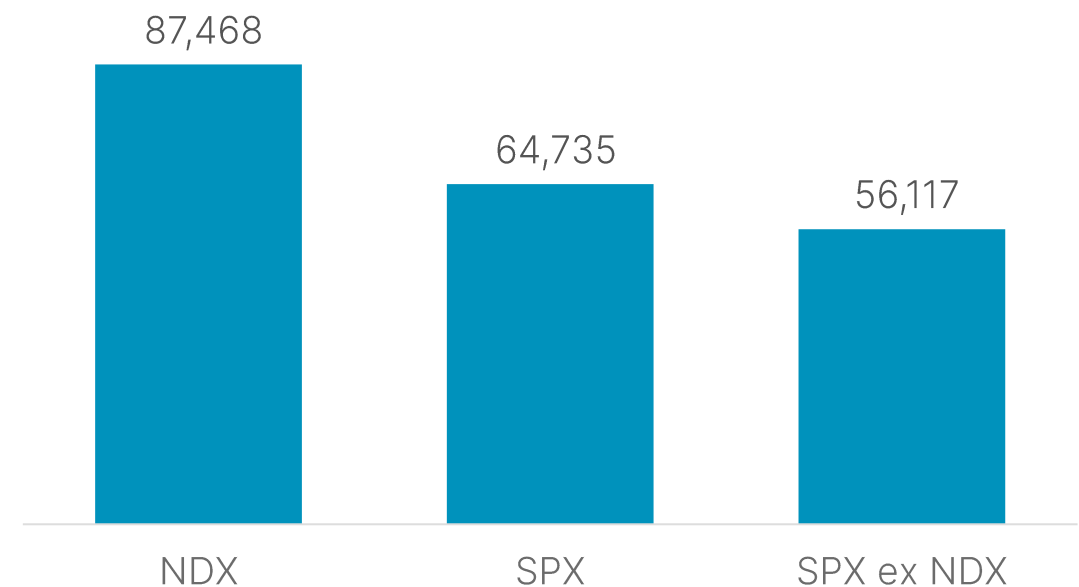
Nasdaq-100 vs. S&P 500: Employee Efficiency

LTM Revenue per Employee



In aggregate, Nasdaq-100 companies generated similar revenue per employee vs. other S&P 500 companies

LTM Profit per Employee



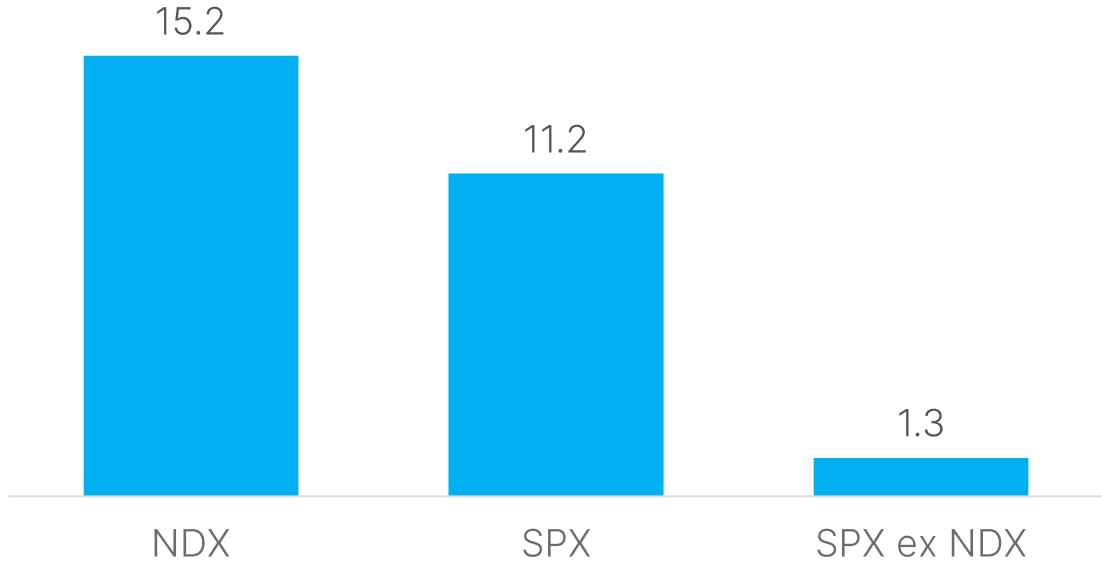
In aggregate, Nasdaq-100 companies generated **35% higher** profit per employee than S&P 500 companies and **56% higher** than SPX ex NDX

Quantifying Innovation

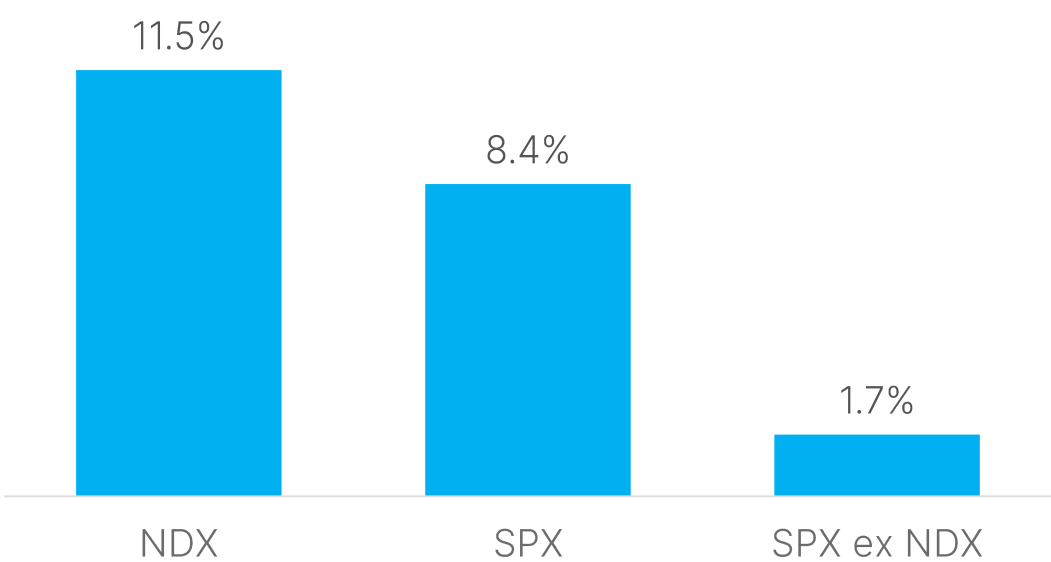
Research and Development Powerhouse

- R&D is a key driver of innovation and economic growth
- Companies in the Nasdaq-100 spend about 1.4x in R&D, on average, compared to those in the S&P 500; 83 of the Nasdaq-100 are currently part of the S&P 500; excluding overlapping companies, Nasdaq-100 spent 11.4x as much in R&D as S&P 500 companies
- Calculating R&D as a percent of sales in the last 12 months, Nasdaq-100 companies averaged 36% higher than S&P 500; excluding overlapping names, they spent nearly 7x as much on average

Weighted Average Annual R&D Expense, \$Bn

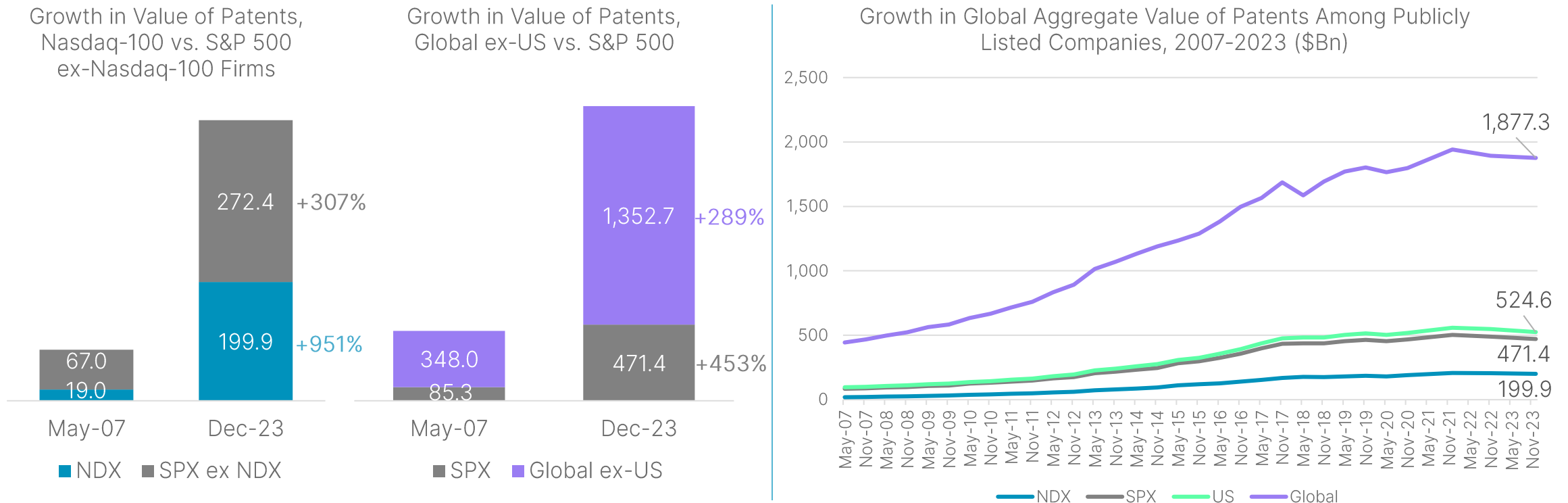


Weighted Average R&D as % Sales



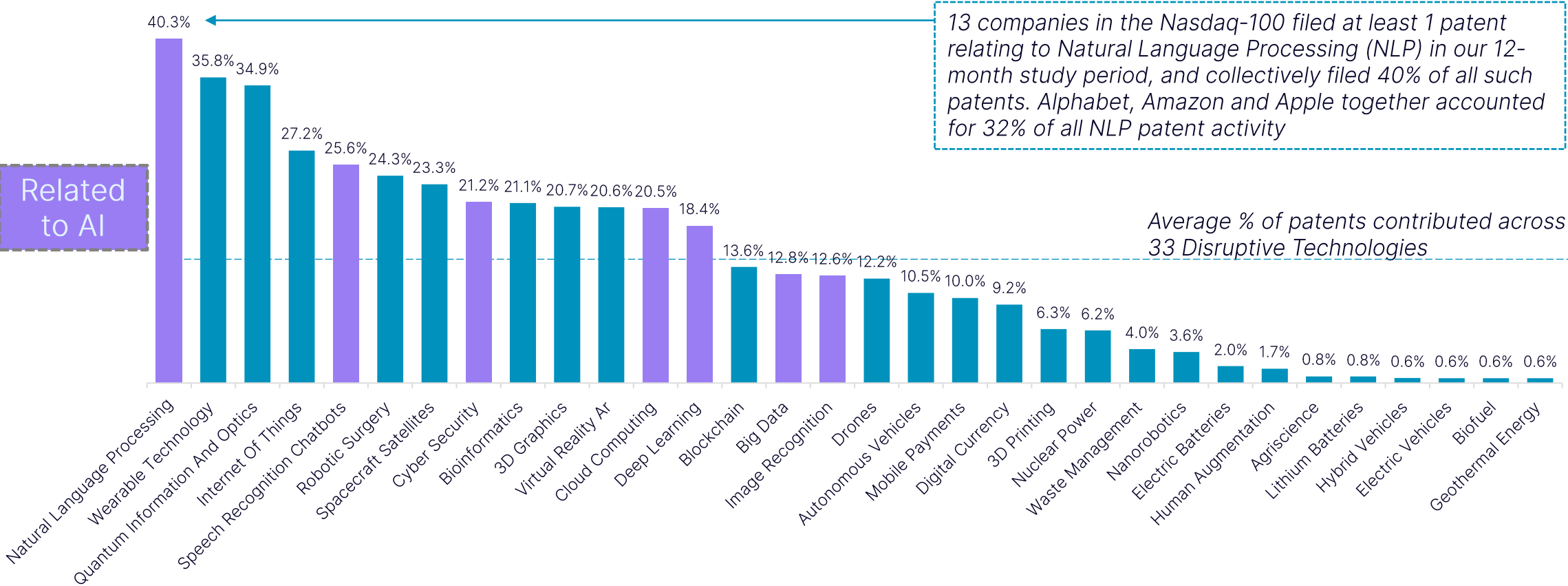
Accelerating Growth of Intangible Assets

The current crop of Nasdaq-100 constituents has grown the value of their patents by ~10.5x since May 2007, vs. ~4x across all publicly-listed, tracked companies globally. Growth for the S&P 500 overall was ~5.5x, but only ~4x excluding the contribution of overlapping Nasdaq-100 firms. Global growth ex-US was also ~4x



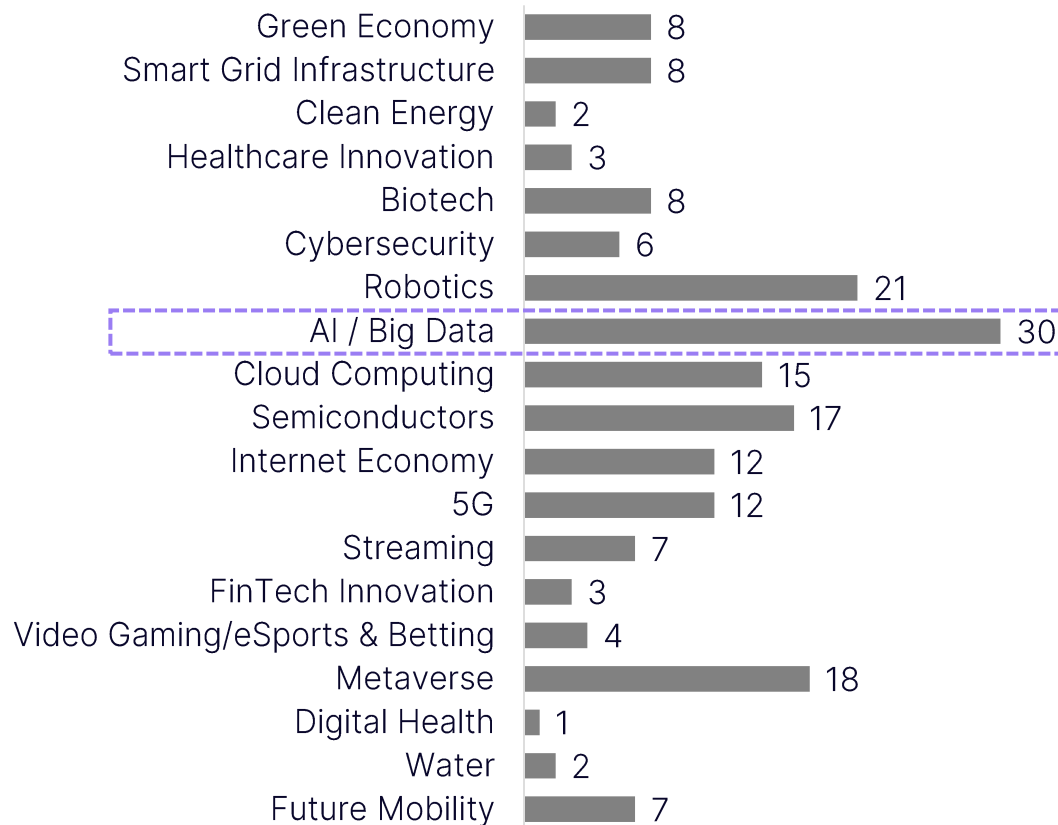
Disruptive Technology and R&D: Nasdaq-100

- 65 companies in the Nasdaq-100 (representing 83% of index weight) recently filed patents across one or more of 35 key areas of Disruptive Technology relating to Artificial Intelligence, Energy Transition, Healthcare, etc.

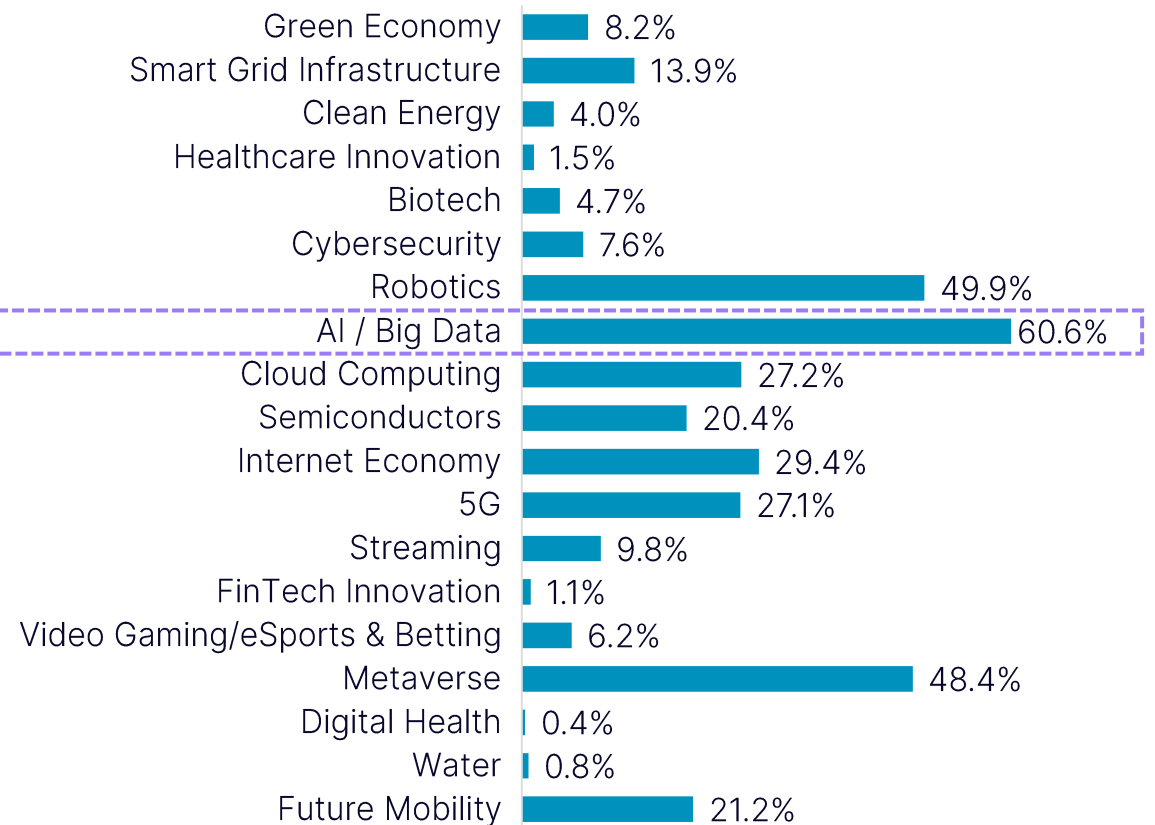


Nasdaq-100 by Thematic Exposures

of Constituents per Theme



Index Weight per Theme

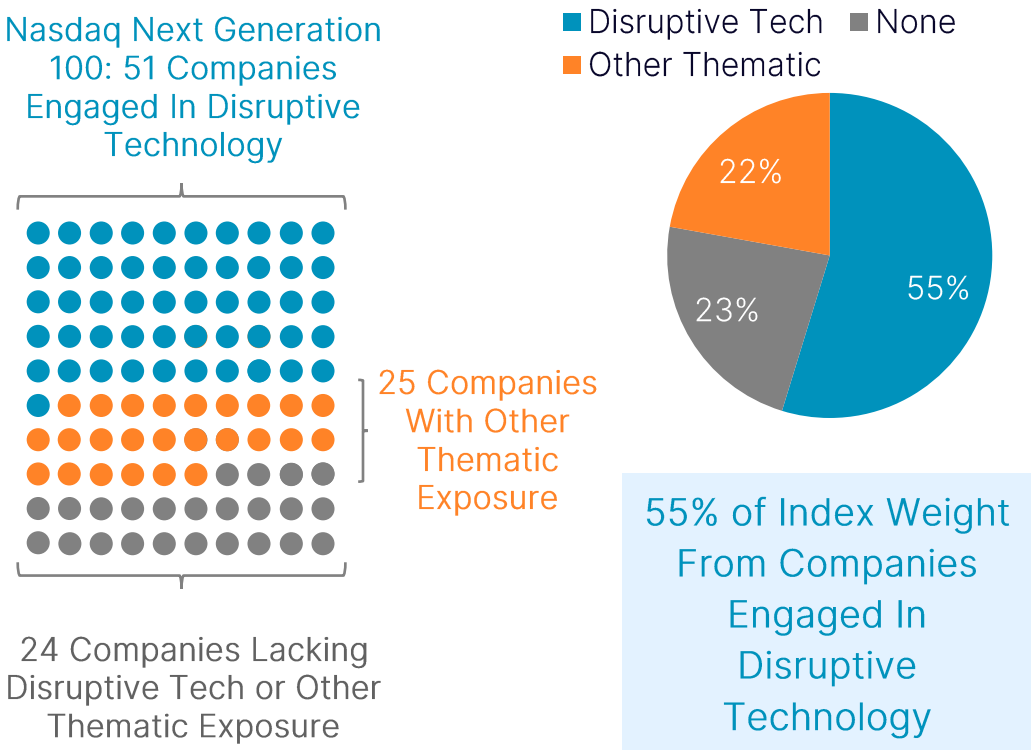
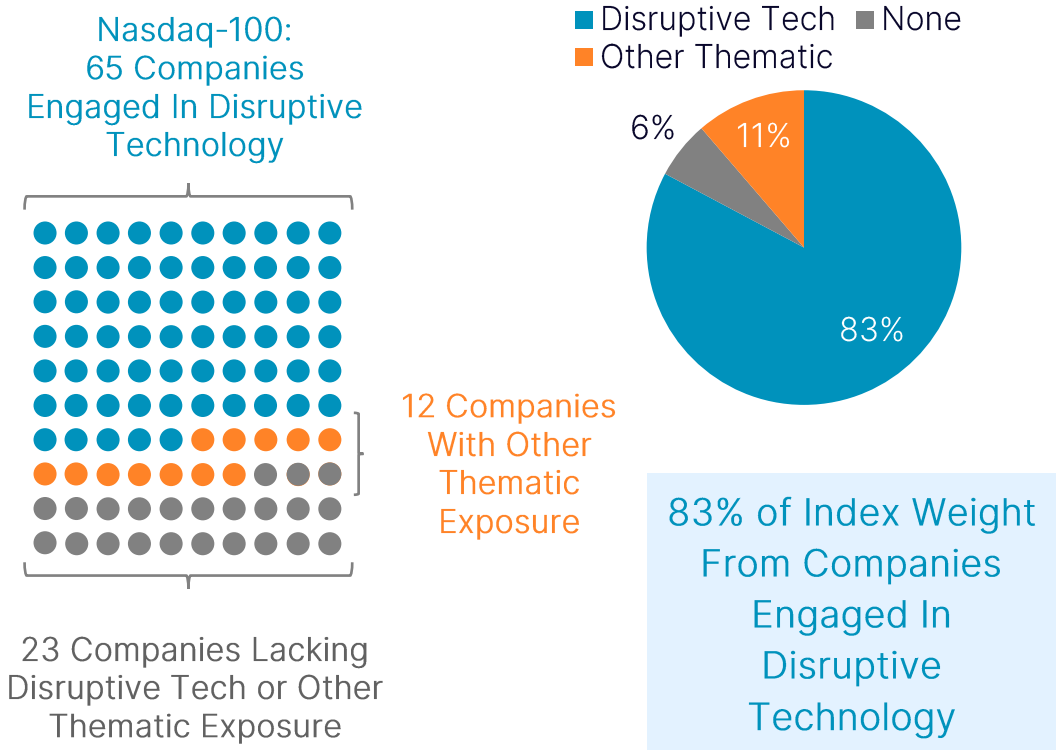


Source: Nasdaq, FactSet. Data as of 12/29/2023.

Based on overlap with existing Nasdaq Thematic Indexes, except for 5G, Streaming, and Video Gaming/eSports & Betting where competitor products were analyzed.

Nasdaq Innovation Suite & Disruptive Tech

The Nasdaq-100 Index and the Nasdaq Next Generation 100 Index (collectively, the “Innovation Suite”) both contain substantial exposures to multiple relevant investment themes, particularly within Disruptive Technology as defined by the patent-driven methodology of the Nasdaq Global Disruptive Technology Benchmark Index



Source: Nasdaq, FactSet. Data as of 12/29/2023. Based on overlap with Nasdaq Global Disruptive Technology Benchmark Index.

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