

Nasdaq Next Generation 100: Index Research Highlights October 2020

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Nasdaq Next Generation 100 Index: Methodology

- Rebalanced quarterly (March, June, September, December)
- Reconstituted annually (effective after the close of trading on the third Friday in December)
- Global companies listed on Nasdaq, including ADRs
- Modified market-cap weighting process with quarterly and annual weight adjustments

The Nasdaq Next Generation 100 Index[®] is designed to measure the performance of the next generation of Nasdaq-listed non-financial companies; that is, the largest 100 companies outside of the NASDAQ-100 Index[®].

Constituent Weighting

- Index Securities' initial weights are determined by dividing each Index Security's market capitalization by the aggregate market capitalization of all Index Securities
- No index security weight may exceed 4%

Performance & Risk

Nasdaq Next Generation 100 Performance

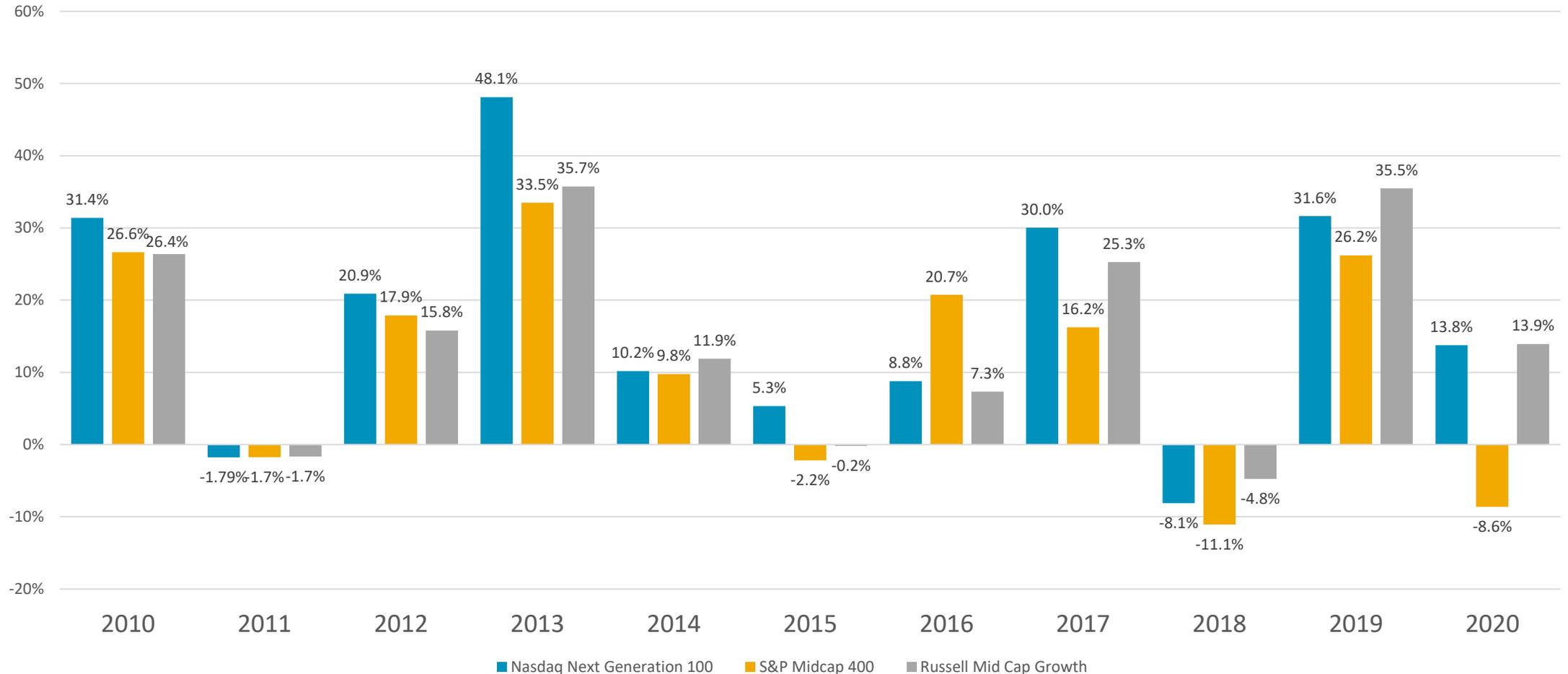
Cumulative Price Performance vs. Midcap Market Benchmarks thru September 30, 2020

- Index launched on 8/24/2020, and simulated performance dates back to 12/18/2009
- On a price return basis, the index gained 391% from start date of backtest thru 9/30/2020
- S&P Midcap 400 Index rose only 160%
- Russell Mid Cap Growth Index increased 293%



Nasdaq Next Generation 100 Performance

Total Returns by Calendar Year vs. Midcap Market Benchmarks thru September 30, 2020



MPT Stats: 3 Year & Total

vs. Large Cap Benchmarks

vs. Mid Cap Benchmarks

3 Years:

Stats	Nasdaq Next Generation 100	Nasdaq 100	S&P 500
Ann. Return	14.79%	25.36%	12.28%
Alpha	--	-8.70%	0.64%
Beta	--	1.03	1.19
R ²	--	0.80	0.87
Sharpe Ratio	0.58	1.20	0.60
Up Mkt Capture	--	83.37%	121.72%
Down Mkt Capture	--	113.47%	110.50%

Stats	Nasdaq Next Generation 100	S&P Midcap 400	Russell Mid Cap Growth
Ann. Return	14.79%	2.90%	16.23%
Alpha	--	11.78%	-2.20%
Beta	--	0.97	1.08
R ²	--	0.89	0.95
Sharpe Ratio	0.58	0.06	0.71
Up Mkt Capture	--	131.02%	107.33%
Down Mkt Capture	--	89.70%	111.53%

Total
(12/31/09-
9/30/2020):

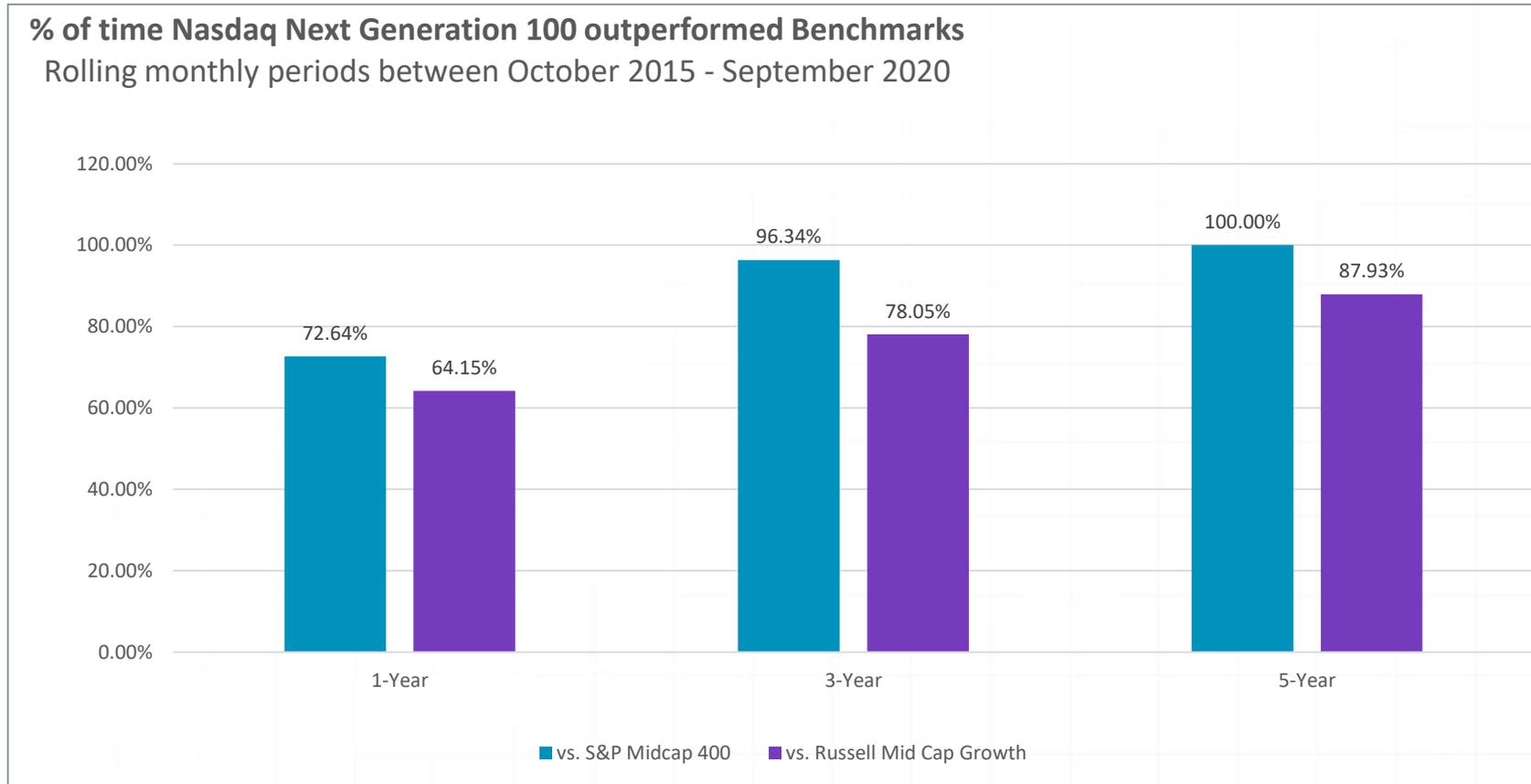
Stats	Nasdaq Next Generation 100	Nasdaq: Nasdaq 100	S&P 500
Ann. Return	16.57	19.14%	13.13%
Alpha	--	-1.17%	1.42%
Beta	--	0.96	1.17
R ²	--	0.76	0.83
Sharpe Ratio	0.90	1.15	0.91
Up Mkt Capture	--	89.15%	121.88%
Down Mkt Capture	--	96.15%	109.02%

Stats	Nasdaq Next Generation 100	S&P Midcap 400	Russell Mid Cap Growth
Ann. Return	16.57%	10.85%	14.56%
Alpha	--	5.48%	0.96%
Beta	--	0.99	1.07
R ²	--	0.87	0.94
Sharpe Ratio	0.90	0.61	0.87
Up Mkt Capture	--	115.57%	113.81%
Down Mkt Capture	--	92.38%	107.26%

Sharpe Ratio uses the FTSE 3 Mo. T-Bill for the risk-free index.

(Total Return)

Rolling Win Rate vs. Midcap Benchmarks



(Total Return)

Batting Average / Win Rate: NGX vs. Benchmarks

Monthly “Batting Average” measures the frequency of success since 2010. This ratio is calculated by taking the number of period where the manager equals or outperforms the selected benchmark, divided by the total number of periods.

Nasdaq Next Generation 100 vs.	1 Year	3 Year	5 year	Total
S&P Midcap 400	0.83	0.64	0.62	0.61
Russell Mid Cap Growth	0.58	0.50	0.58	0.60

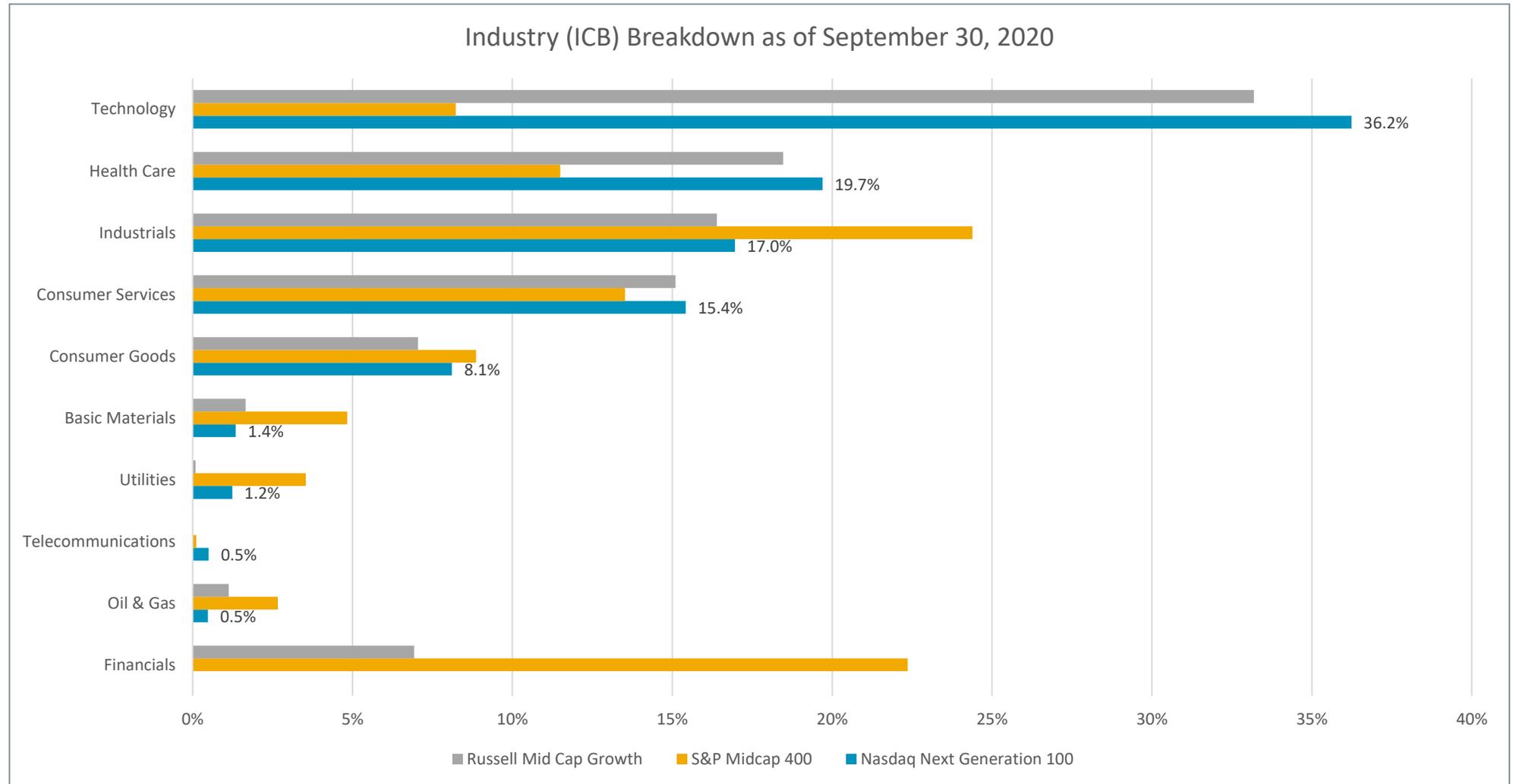
Nasdaq Next Generation 100 vs.	1 Year	3 Year	5 year	Total
NASDAQ 100	0.33	0.28	0.32	0.47
S&P 500	0.58	0.50	0.53	0.56

(Total Return)

Index Composition Analysis

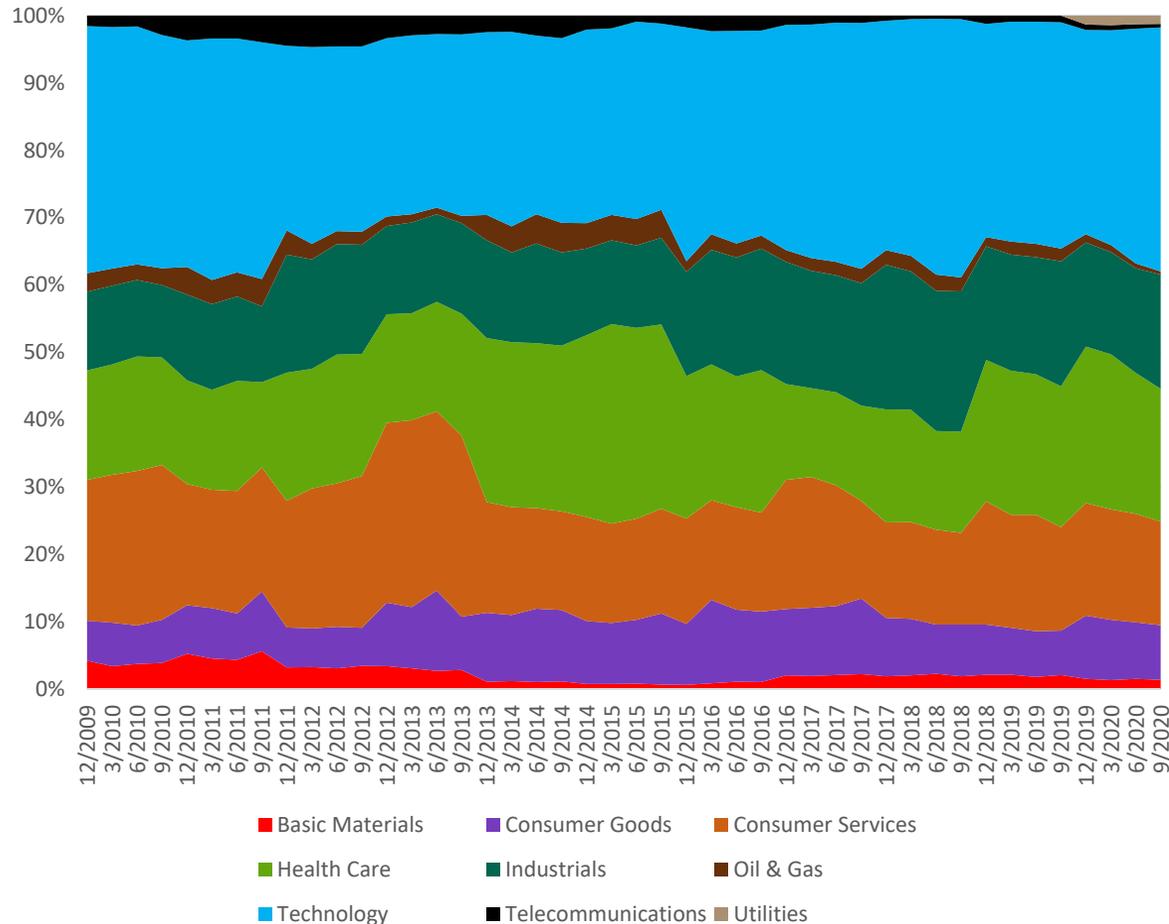
Industry Exposure

- The Nasdaq Next Generation 100 Index is overweight Technology and Health Care relative to other midcap benchmarks
- The index is underweight Oil & Gas, Financials, Utilities, and Basic Materials



Industry Exposure History

Index Weight by ICB Industry Since 2009, by Quarter

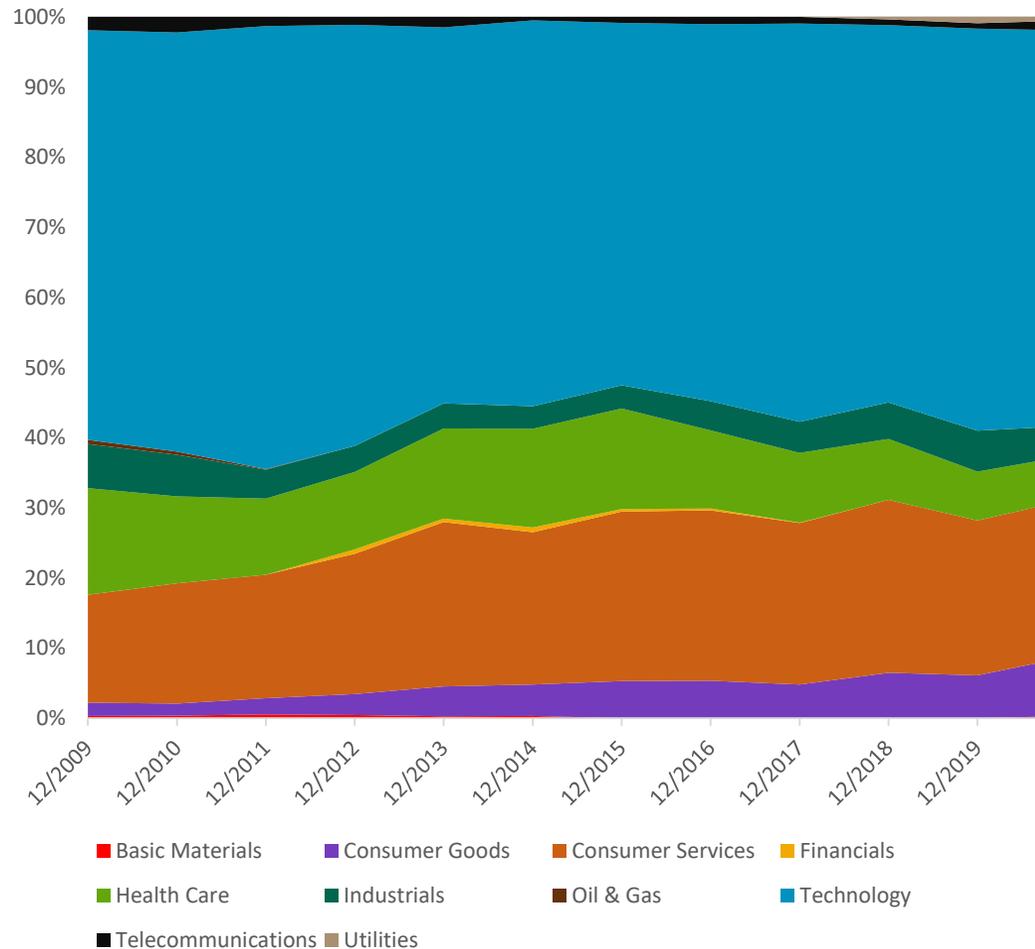


- The overweight towards Technology has remained nearly constant throughout the backtest.
- Consumer Services briefly held the highest sector weight in 2012, but that has since been trimmed from 26.74% down to 15.42% as of September 30, 2020.
- Health Care’s weight has increased, rising from 16.26% in 2010 to 19.70% as of September 30, 2020 – though below its peak of 27.03% at the end of 2014.

Year-End	Basic Materials	Consumer Goods	Consumer Services	Health Care	Industrials	Oil & Gas	Technology	Telecom	Utilities
2009	4.18%	5.96%	20.93%	16.26%	11.65%	2.76%	36.70%	1.56%	
2010	5.21%	7.24%	17.99%	15.39%	12.75%	4.07%	33.67%	3.68%	
2011	3.21%	5.92%	18.80%	19.05%	17.53%	3.59%	27.44%	4.46%	
2012	3.36%	9.44%	26.74%	16.11%	13.12%	1.38%	26.52%	3.33%	
2013	1.06%	10.23%	16.46%	24.39%	14.50%	3.78%	27.15%	2.44%	
2014	0.75%	9.32%	15.46%	27.03%	12.86%	3.73%	28.79%	2.05%	
2015	0.61%	9.04%	15.65%	21.15%	15.49%	1.57%	34.72%	1.75%	
2016	2.03%	9.85%	19.15%	14.24%	18.13%	1.78%	33.46%	1.35%	
2017	1.86%	8.69%	14.20%	16.76%	21.48%	2.20%	34.04%	0.77%	
2018	2.09%	5.92%	18.29%	21.01%	17.69%	1.36%	32.38%	1.24%	
2019	1.50%	9.37%	16.74%	23.20%	15.48%	1.25%	30.33%	0.82%	1.30%
2020 (Sept)	1.35%	8.11%	15.42%	19.70%	16.96%	0.48%	36.24%	0.50%	1.24%

Industry Exposure History: Nasdaq-100

Index Weight by ICB Industry Since 2009, by Year



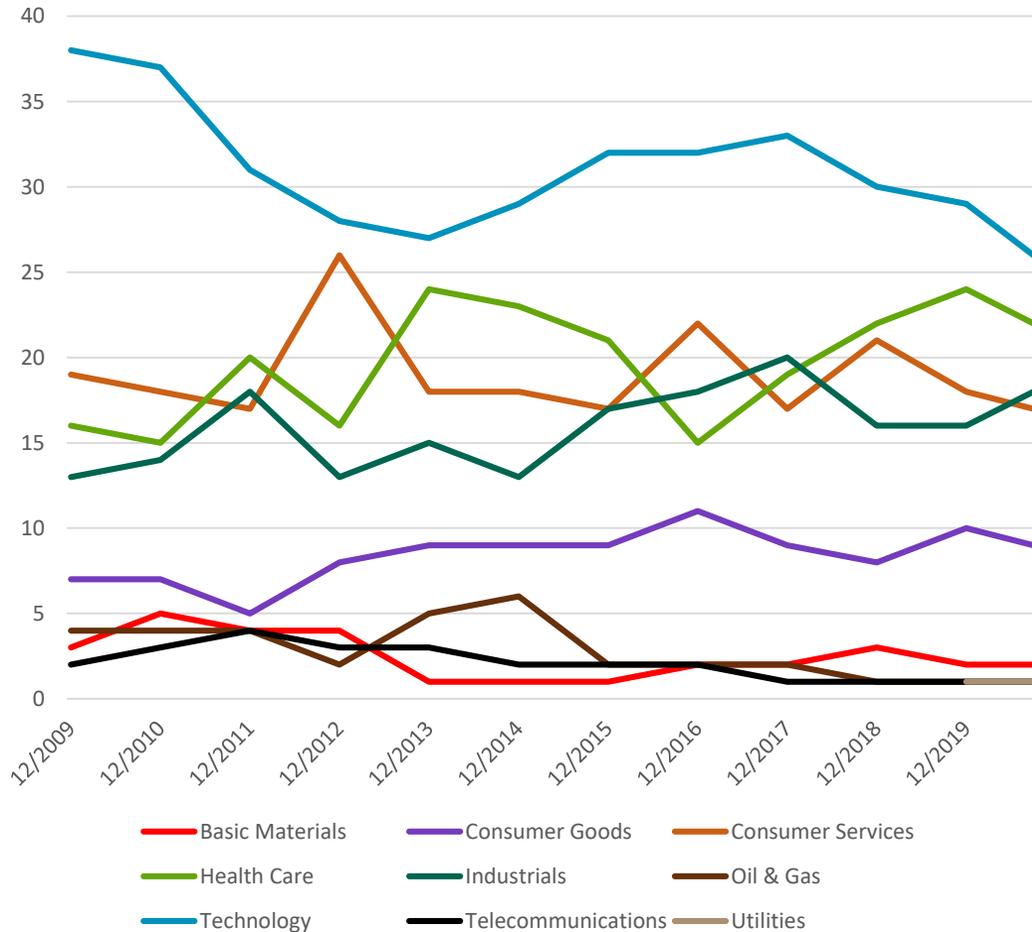
- The overweight towards Technology is also consistent with what we find across the Nasdaq-100 and the broader Nasdaq Stock Exchange, with 56.64% of the weight in the Nasdaq-100 as of September 30, 2020.

Year-End	Basic Materials	Consumer Goods	Consumer Services	Health Care	Industrials	Oil & Gas	Technology	Telecom	Utilities
2009	0.35%	1.89%	15.39%	15.19%	6.27%	0.59%	58.43%	1.89%	
2010	0.38%	1.70%	17.18%	12.38%	5.91%	0.47%	59.76%	2.22%	
2011	0.53%	2.02%	17.67%	10.86%	4.12%	0.11%	63.41%	1.27%	
2012	0.46%	2.76%	19.98%	11.10%	3.75%		60.51%	1.43%	
2013	0.28%	4.07%	23.40%	12.94%	3.60%		53.93%	1.77%	
2014	0.34%	4.25%	21.76%	14.05%	3.19%		55.62%	0.80%	
2015		5.29%	24.19%	14.27%	3.32%		51.83%	1.09%	
2016		5.34%	24.39%	11.11%	4.14%		53.77%	1.25%	
2017		4.77%	23.14%	9.94%	4.45%		56.76%	0.93%	
2018		6.54%	24.59%	8.58%	5.23%		53.92%	0.78%	0.37%
2019		6.10%	22.17%	6.97%	5.84%		57.27%	0.76%	0.89%
2020 (Sept)	0.22%	7.89%	22.25%	6.48%	4.69%		56.64%	1.22%	0.61%

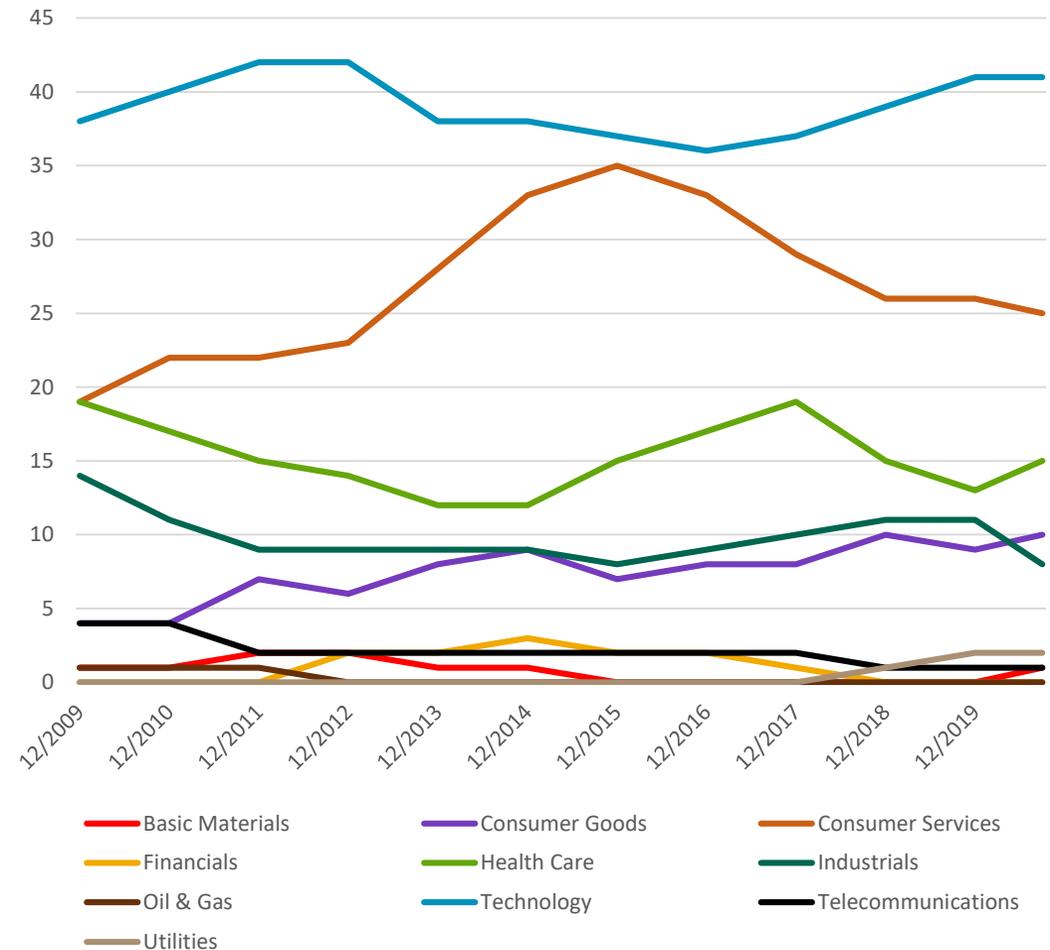
Industry Breakdown By Constituent Count

Since 2009, by Year

Nasdaq Next Generation 100

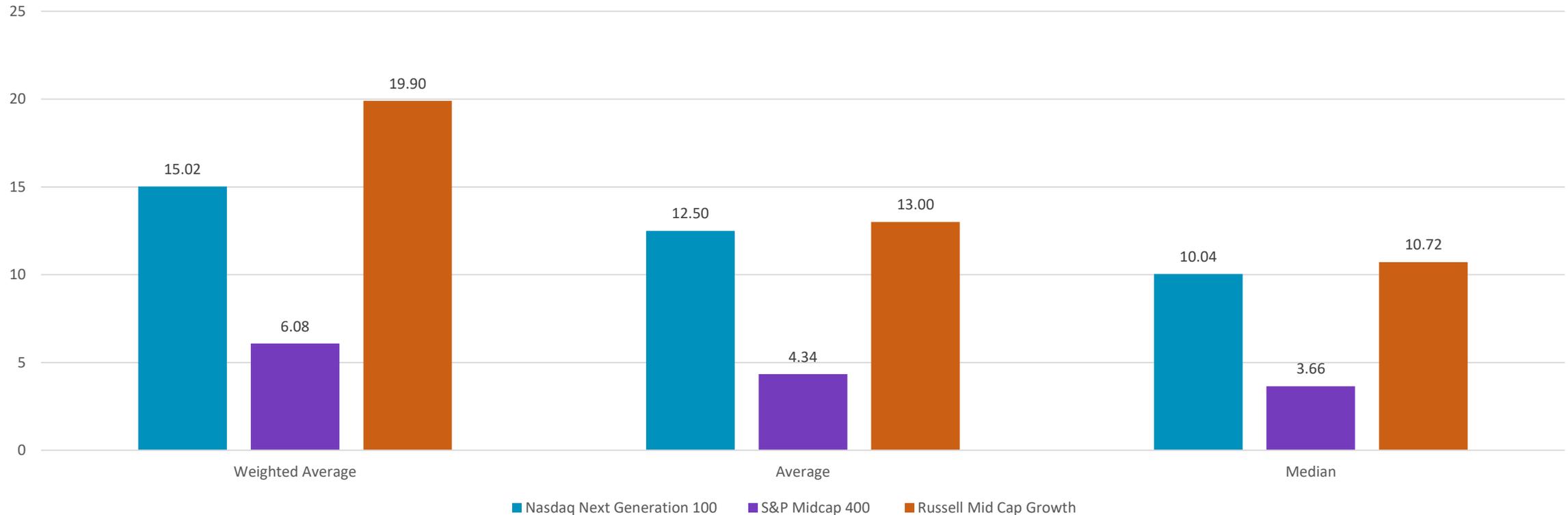


Nasdaq-100



Market Capitalization

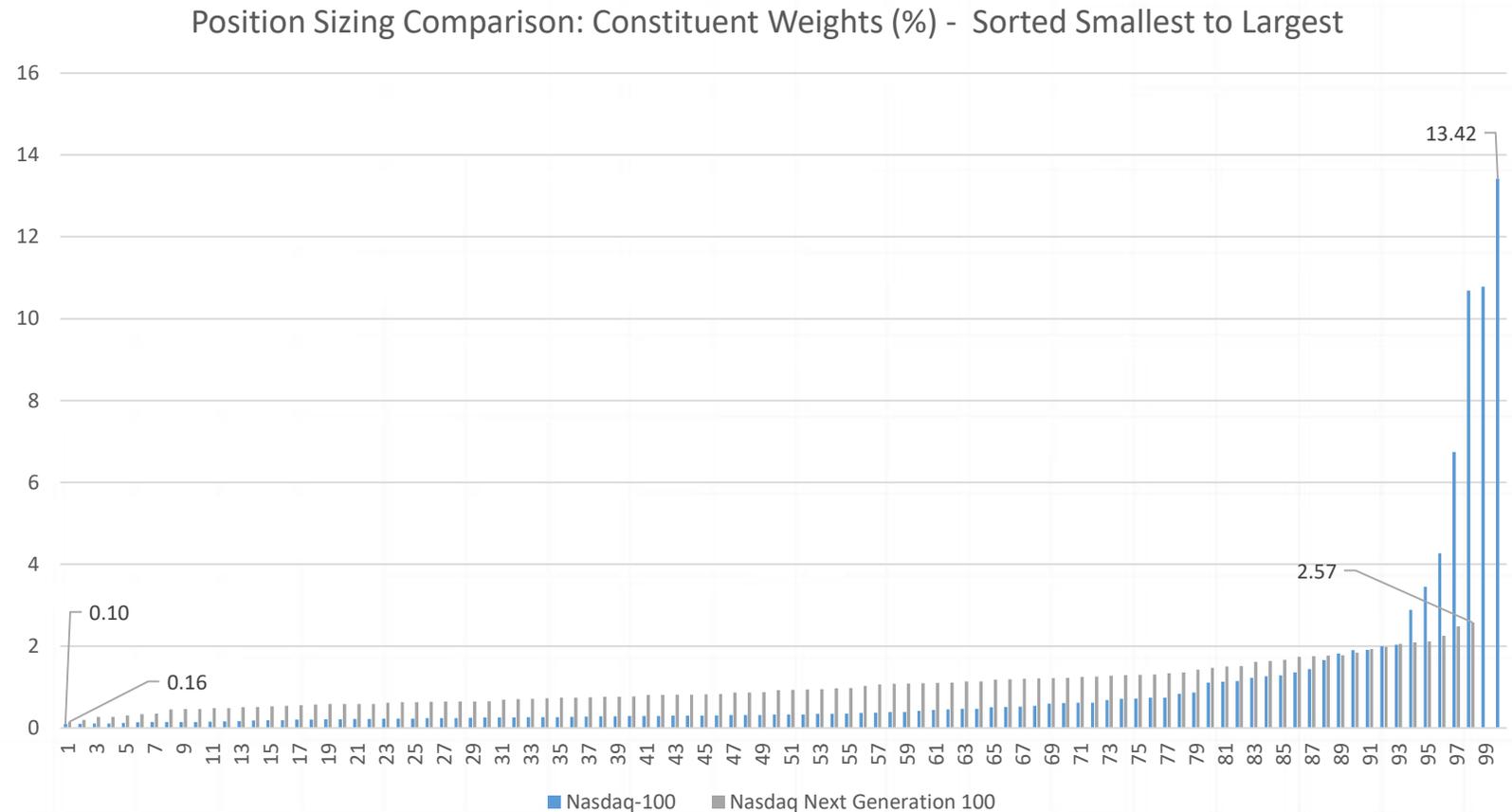
Constituent Market Caps (\$Bn) as of 9/30/2020



The Nasdaq Next Generation 100 Index tilts much smaller than the Nasdaq-100, but still meaningfully above the S&P Midcap 400 and relative equal to the Russell Mid Cap Growth.

Position Sizing vs. Nasdaq-100

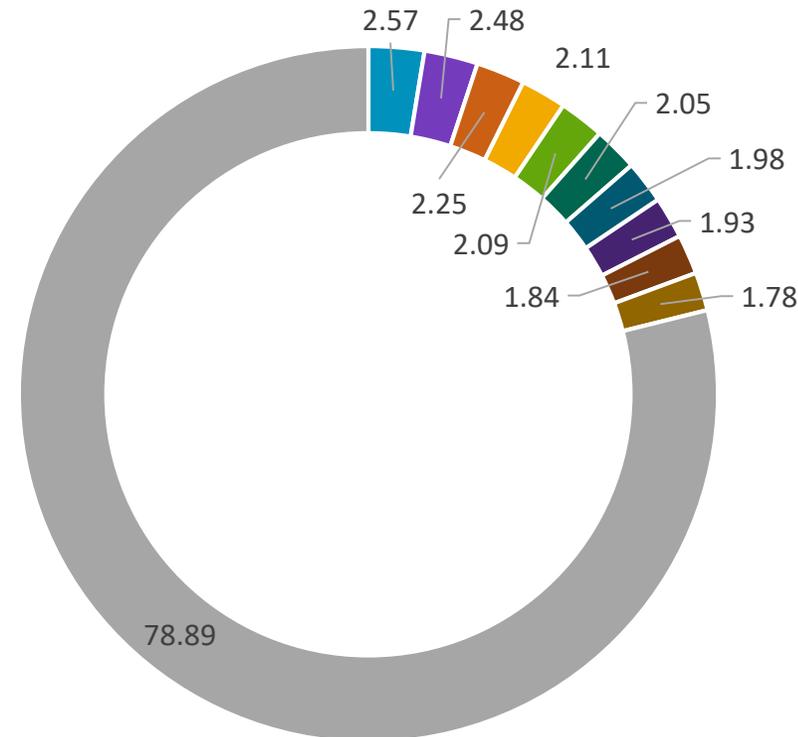
- The Nasdaq Next Generation 100 is market cap weighted, in-line with benchmarks like the Nasdaq-100
- Due to the 4% weighting cap, the index has controls in place to not allow the index to tilt towards specific securities
- The Nasdaq Next Generation 100's largest component has a weighting of 2.57% versus 13.42% for the Nasdaq-100's largest component



Top 10 Holdings: Nasdaq Next Generation 100

- The top ten holdings in the Nasdaq Next Generation 100 account for 21.11% of the index
- The largest constituent is Marvell Tech Group (MRVL) at 2.57%, followed by Okta Inc. (OKTA) at 2.48%, and Atlassian (TEAM) at 2.25%.
- There is large difference in market cap size between the top ten constituents versus the rest of the index. The average market cap for the top ten is \$22.67 billion versus \$11.47 billion for the rest of the index.

Top 10 Constituent Weights vs. Rest of Index

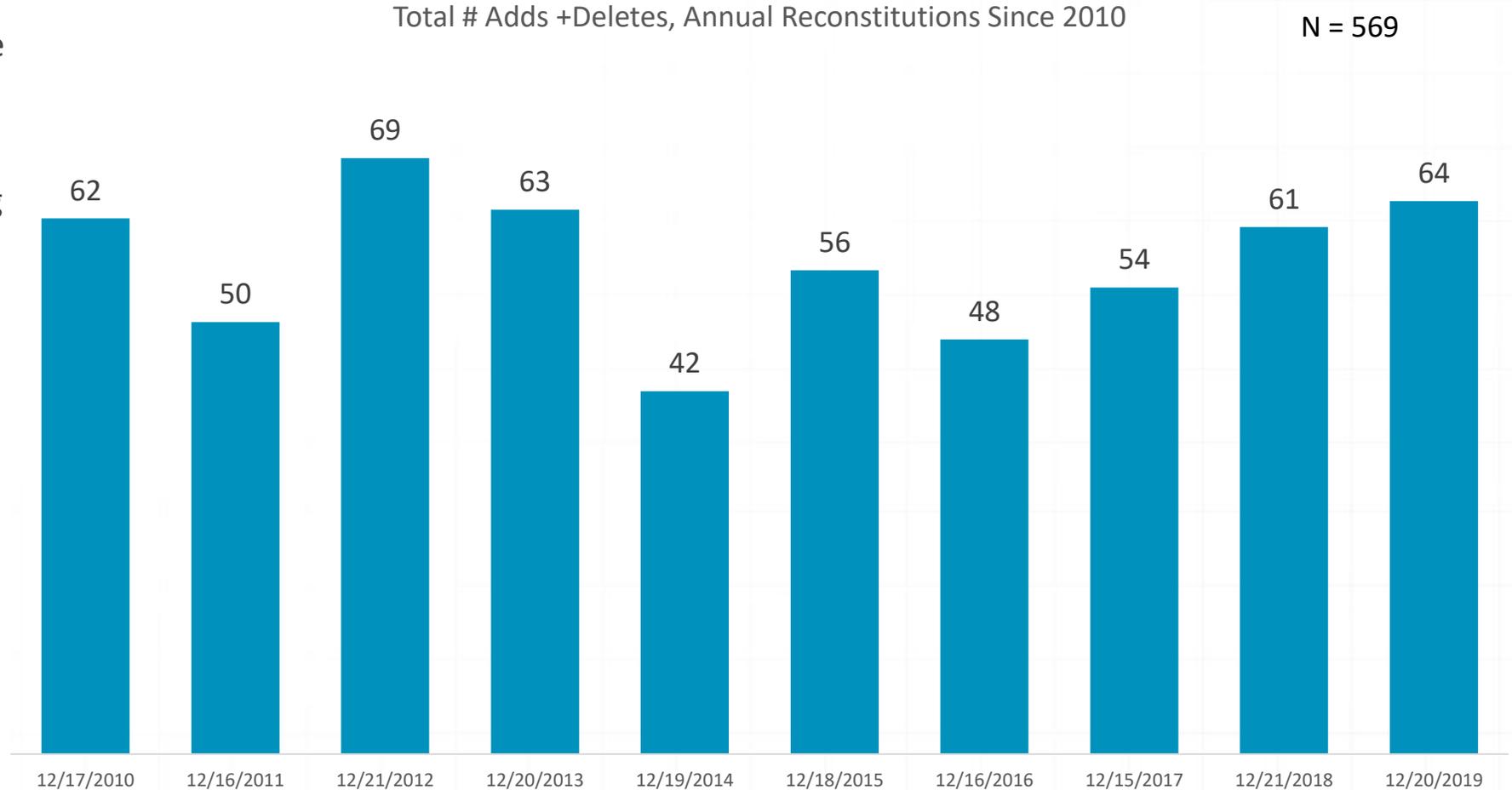


■ MRVL ■ OKTA ■ TEAM ■ LBRDK ■ TTD ■ ODFL ■ YNDX ■ ROKU ■ FTNT ■ ZS ■ Rest

Liquidity and Turnover Analysis

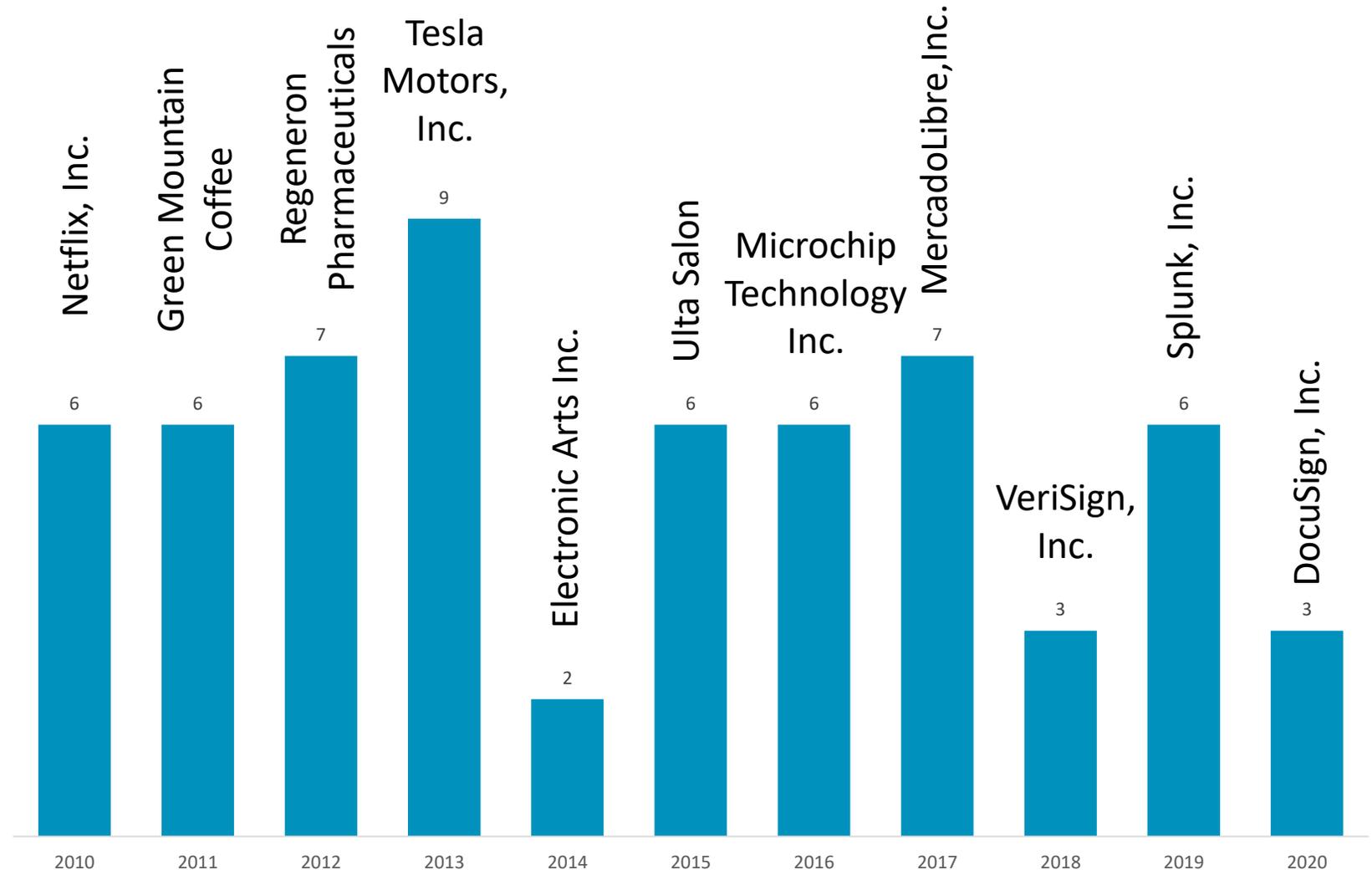
Annual Turnover, 2010-2019

- Since 2010, a total of 569 constituents in the Nasdaq Next Generation 100 Index have turned over entirely, encompassing additions & deletions at each annual reconstitution, as well as intra-evaluation deletions
- Across the 10 annual reconstitutions, total index turnover averaged 58.0% (including up-weights & down-weights)



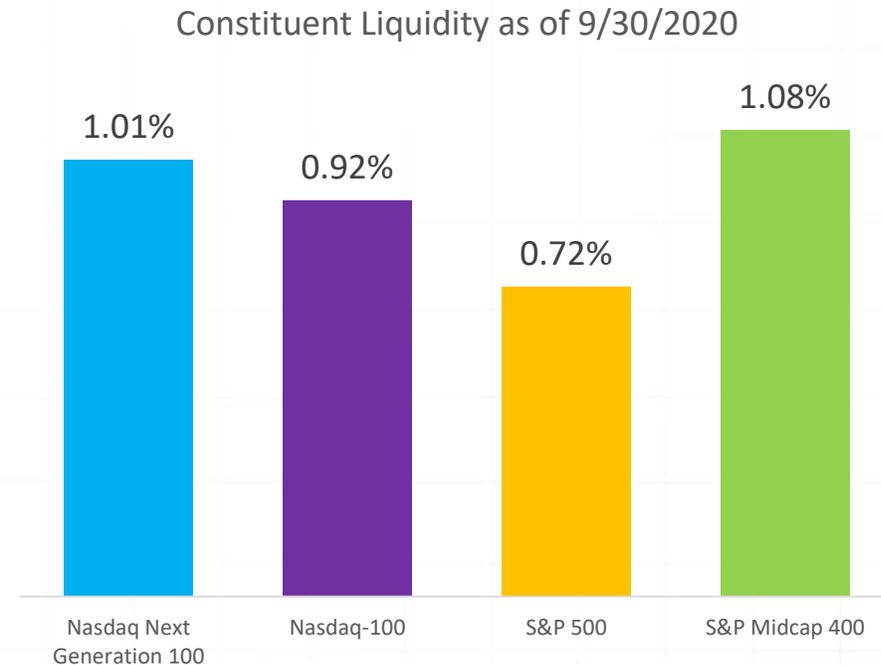
Names Added to Nasdaq-100, 2010-2020

- Since 2010, a total of 61 constituents have “graduated” into the Nasdaq-100
- Some well-known examples are Netflix, Inc. in 2010, Tesla Motors, Inc. in 2013 and VeriSign, Inc. in 2018
- As of September 30, 2020, 35 of the current 100 companies in the Nasdaq-100 had graduated from the Nasdaq Next Generation 100 Index at some point over the past decade (based on simulated backtest and live results)



Liquidity Characteristics

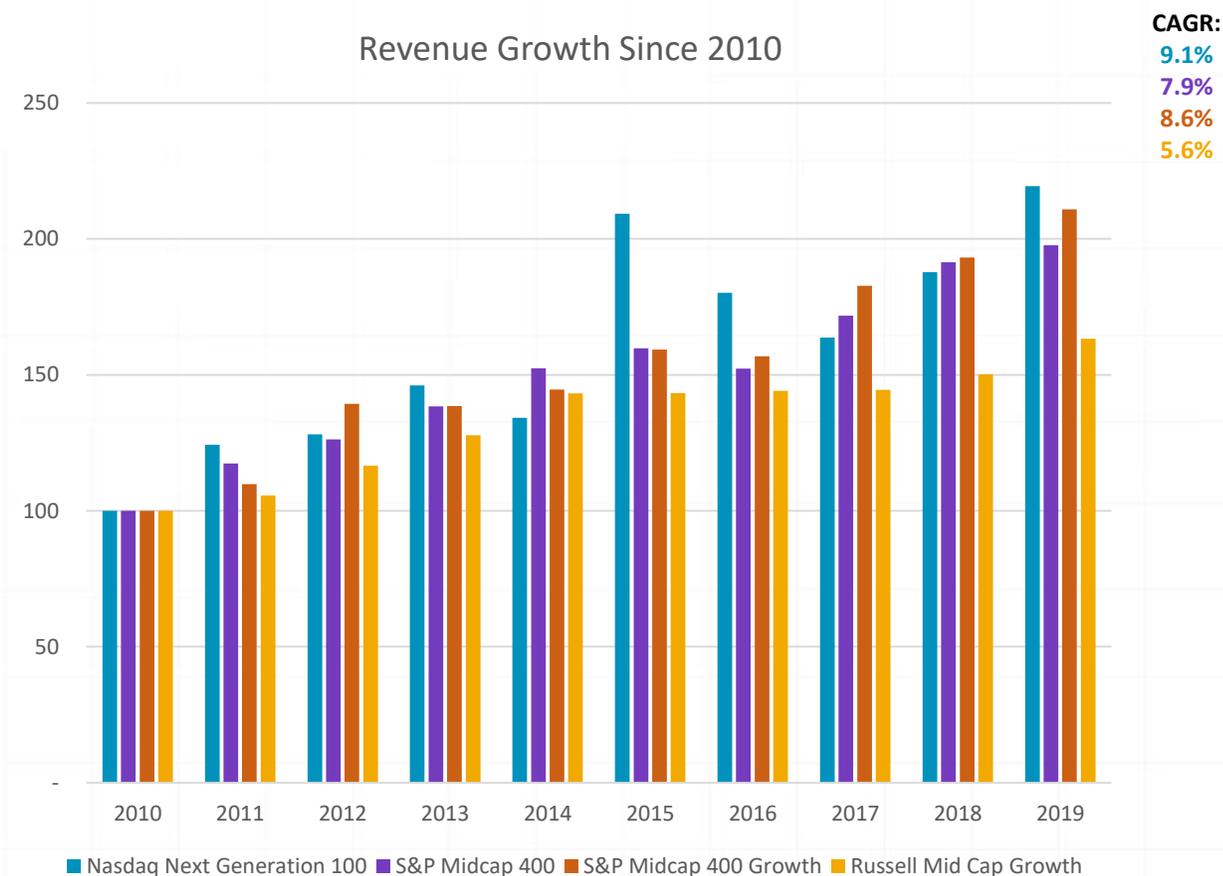
- Our final chart illustrates the liquidity characteristics of the securities in each index as measured by turnover, which is the average daily dollar trading volume (trailing 6 month) for an index divided by its average market capitalization, as of September 30, 2020
- Although the Nasdaq Next Generation 100 Index is skewed towards the lower end of the capitalization spectrum, the index touts greater constituent liquidity than both the Nasdaq-100 and the S&P 500, and closely in-line with the S&P Midcap 400 .



Fundamentals Analysis

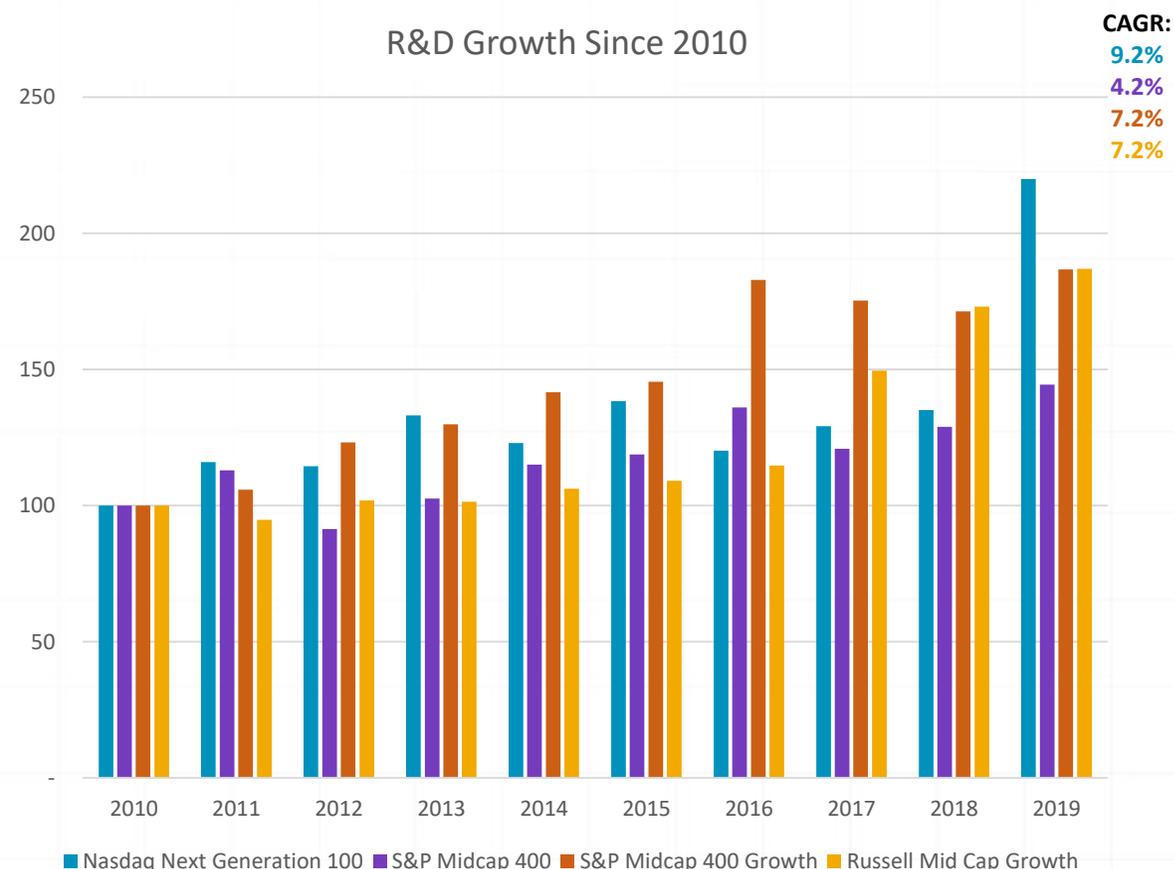
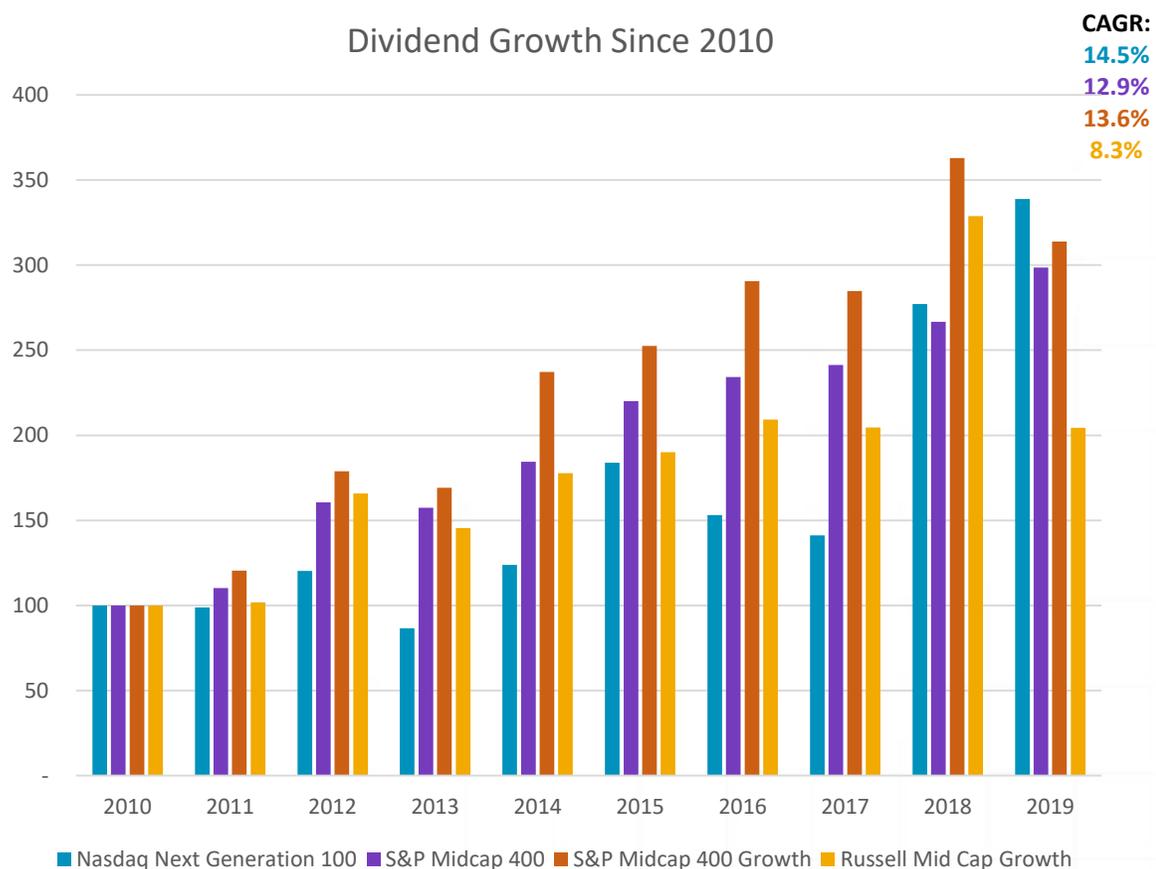
Index Fundamentals vs. Midcap Benchmarks

- Compared to similar midcap benchmarks from S&P and Russell, Nasdaq Next Generation 100 constituents have grown their revenues at a higher rate over the past decade, while the trend in earnings growth presents more of a mixed picture



Index Fundamentals vs. Midcap Benchmarks

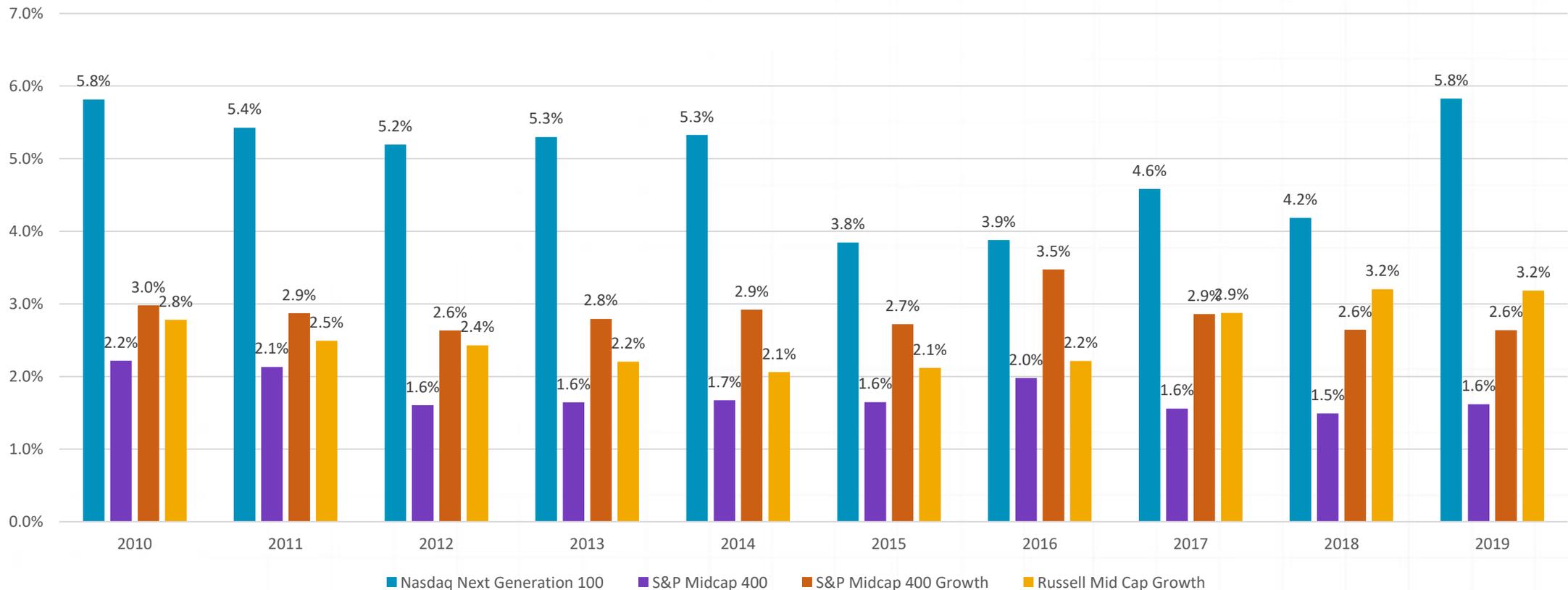
- Compared to similar midcap benchmarks from S&P and Russell, Nasdaq Next Generation 100 constituents have grown their dividends and R&D expenditures at a higher rate over the past decade



R&D Intensity vs. Midcap Benchmarks

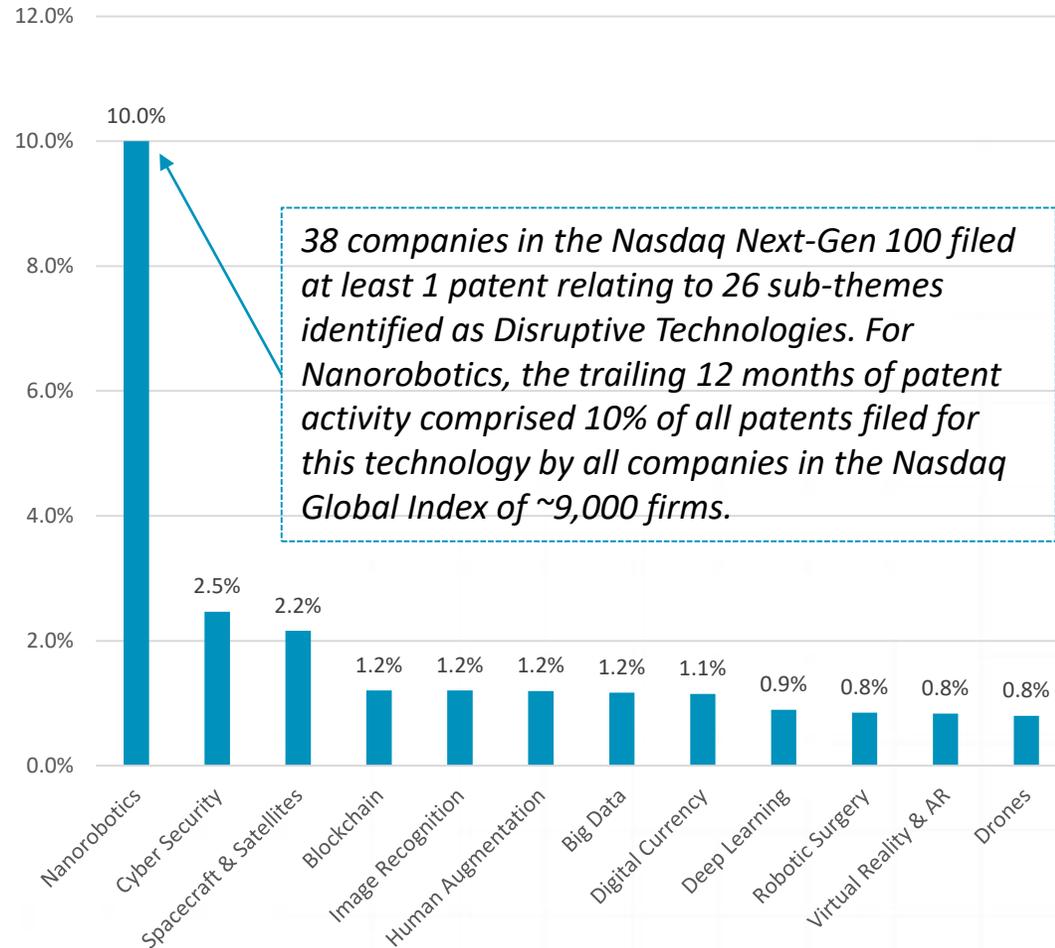
- Compared to similar midcap benchmarks from S&P and Russell, Nasdaq Next Generation 100 constituents consistently spend a higher proportion of their total revenues on research & development

R&D Expense as % of Revenue



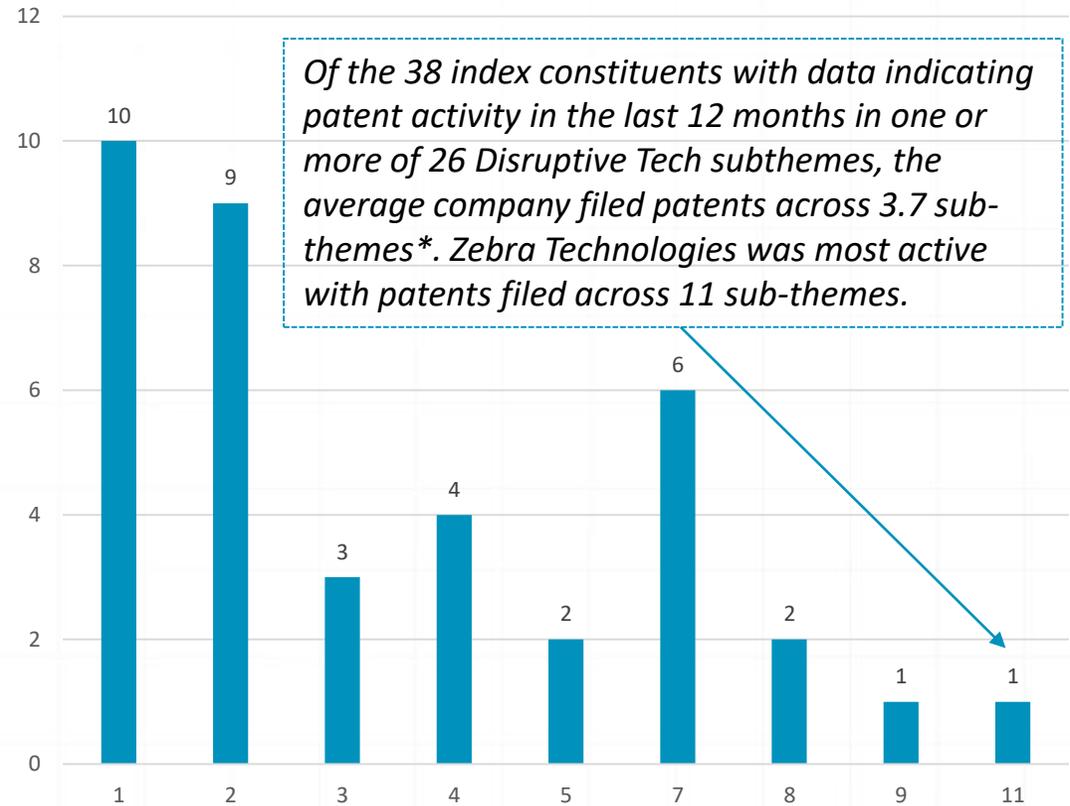
Technology and R&D

Patent Contribution by Index Constituents



38 companies in the Nasdaq Next-Gen 100 filed at least 1 patent relating to 26 sub-themes identified as Disruptive Technologies. For Nanorobotics, the trailing 12 months of patent activity comprised 10% of all patents filed for this technology by all companies in the Nasdaq Global Index of ~9,000 firms.

of Companies (y-Axis) vs. # of Active Sub-Themes

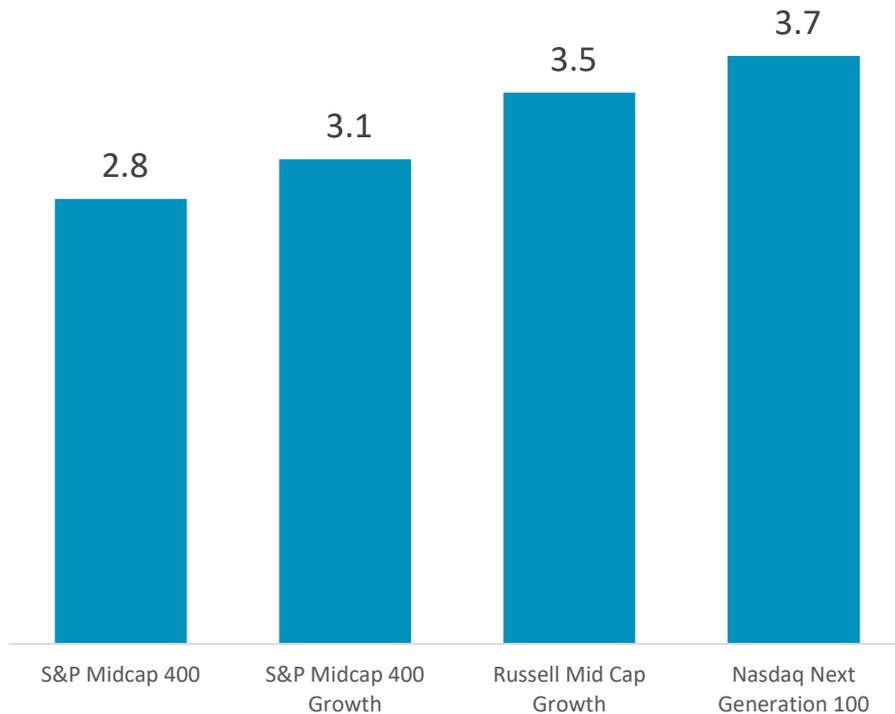


Of the 38 index constituents with data indicating patent activity in the last 12 months in one or more of 26 Disruptive Tech subthemes, the average company filed patents across 3.7 sub-themes*. Zebra Technologies was most active with patents filed across 11 sub-themes.

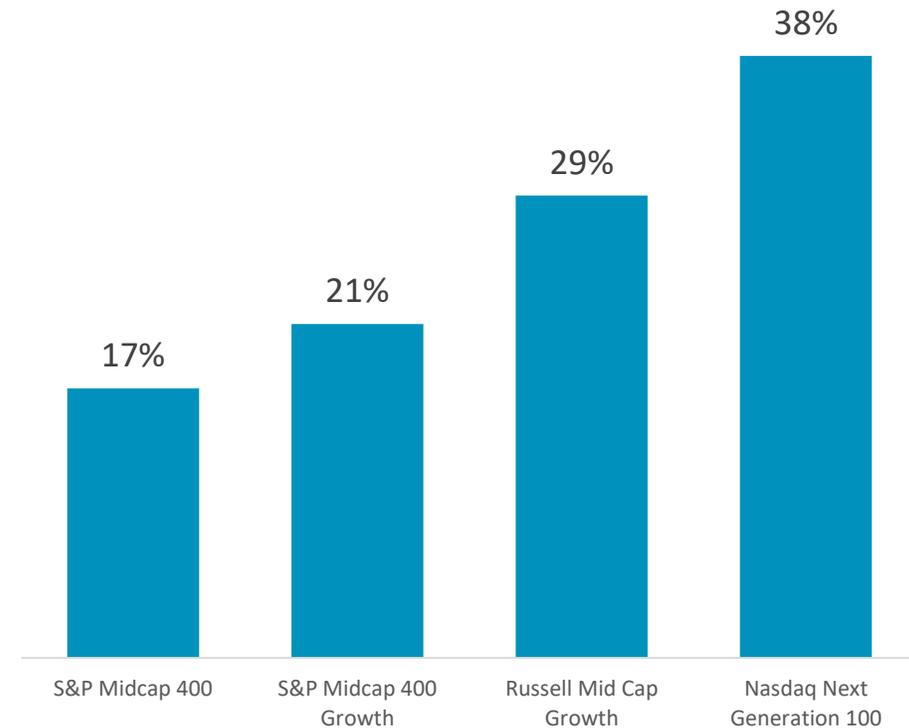
Technology and R&D

- Compared to similar midcap benchmarks from S&P and Russell, Nasdaq Next Generation 100 constituents tend to engage in more areas of disruptive technology patents, on average. The index also exhibits a higher proportion of overall constituents registering some level of patent activity across these 35 patent sub-themes

Average # of Sub-Themes per Active Company



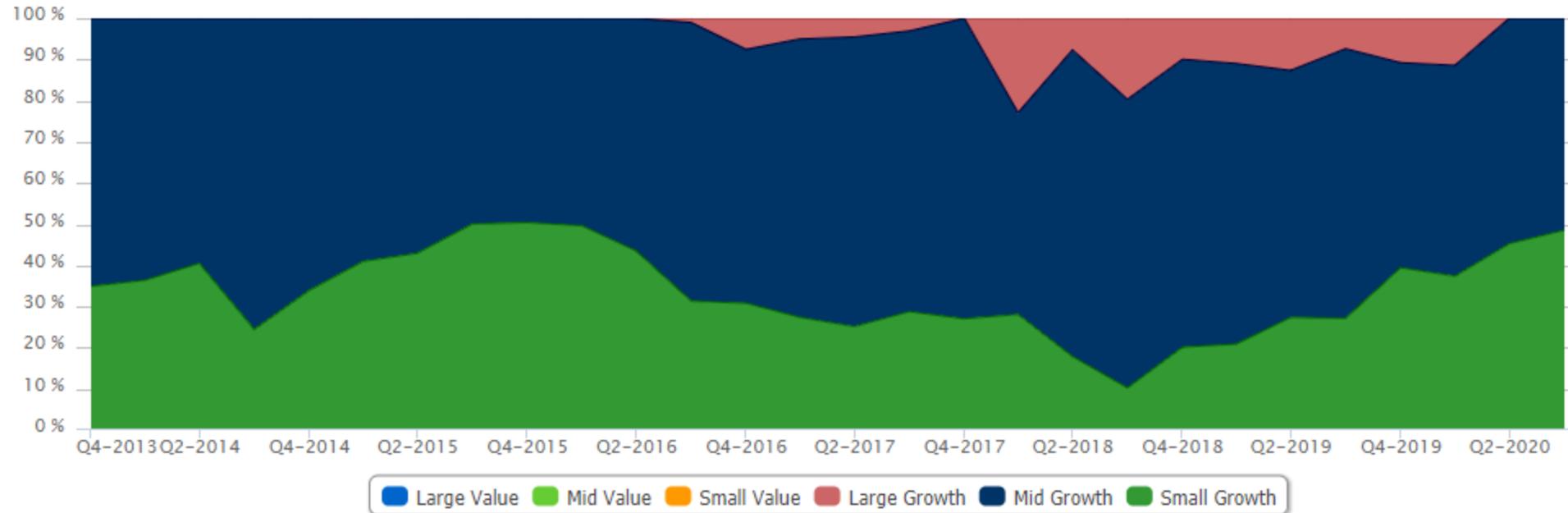
% of Index Constituents with Patent Activity



Style & Factor Analysis

Russell Style Regression

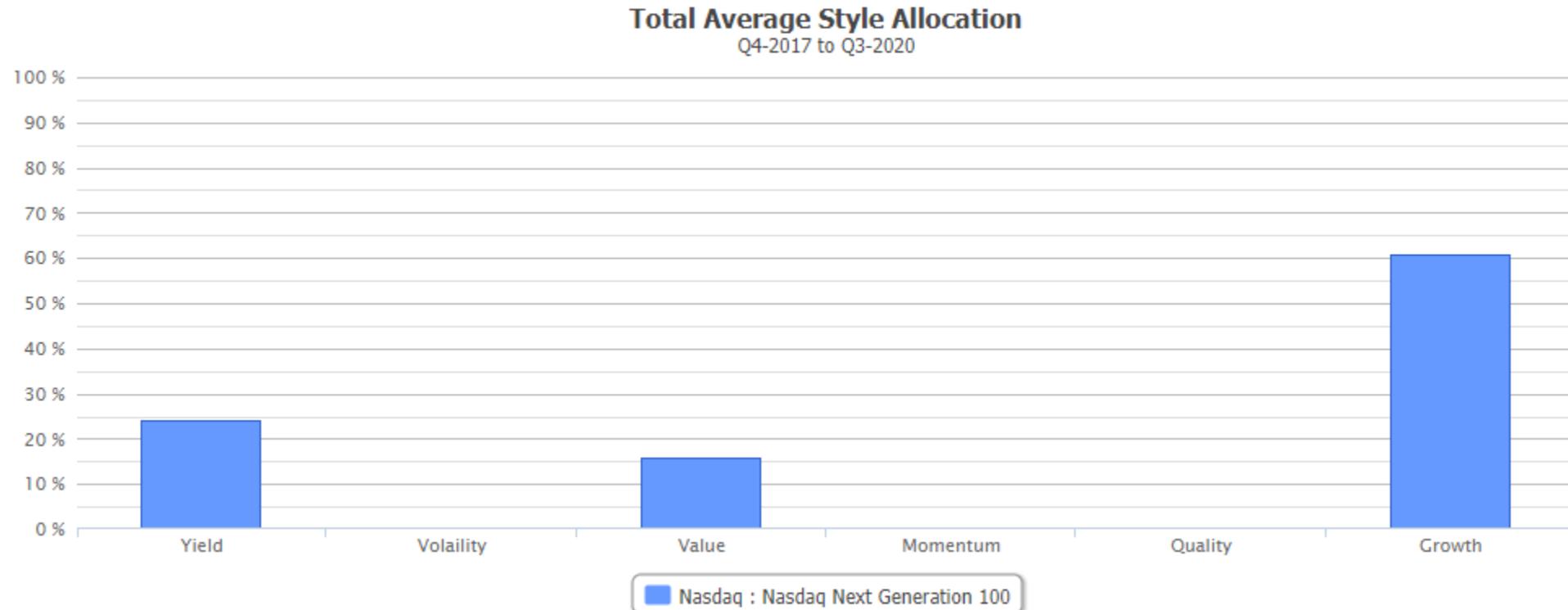
12 Quarter Rolling Style Allocation
Nasdaq : Nasdaq Next Generation 100
Q1-2011 to Q3-2020



Index's style exposure, based on regression analysis, is loaded towards Mid-Growth and Small-Growth.

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Nasdaq Factor Family Style Regression



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