What Happens to Stocks Added to the Nasdaq-100?

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March 18, 2021

Last year, the difference between the Nasdaq-100 index and other large-cap indexes was made quite clear, as the NDX outperformed the S&P 500 by 31.3%. This outperformance was driven by the inclusion of stocks like AMZN, AAPL, TSLA, NFLX and MRNA, the exclusion of financials, and the underweighting to energy and materials stocks.

Today, we dig deeper into what makes the Nasdaq-100 unique and look at what happens when new tickers are added to the index.

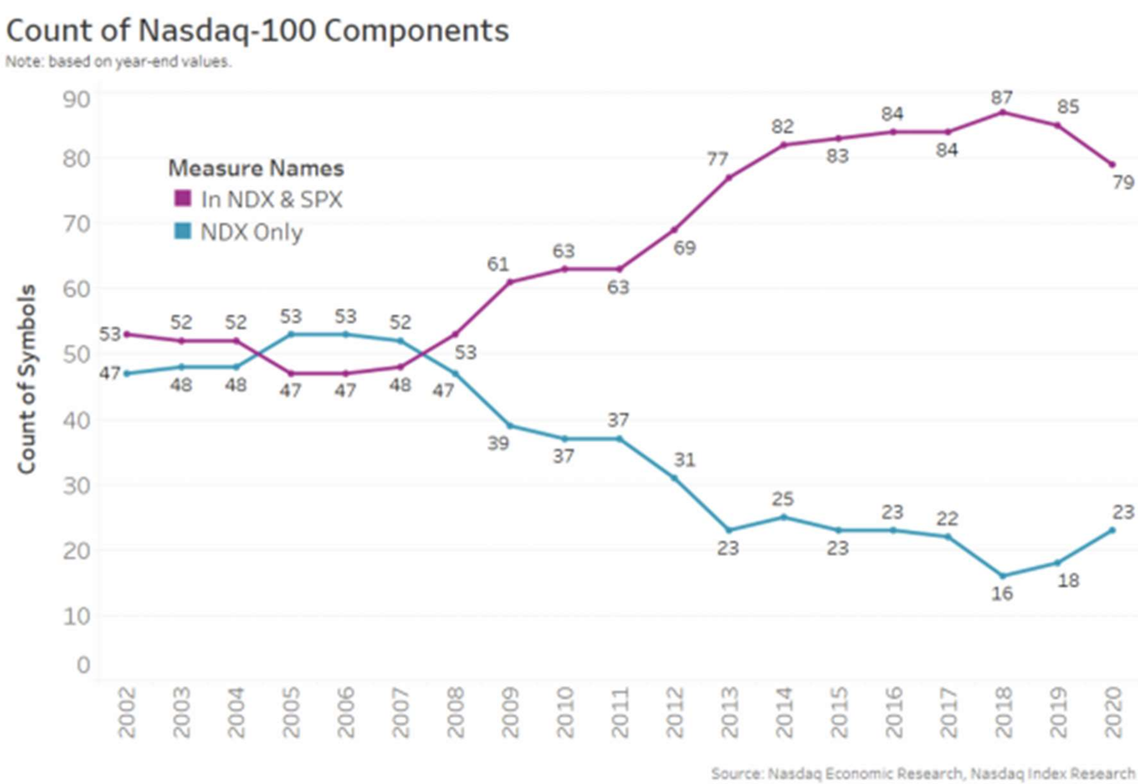
The Nasdaq-100 is quite different than the S&P 500

Although both the S&P 500 and the Nasdaq-100 are market-cap-weighted U.S. large-cap indexes, our analysis shows that they have been consistently quite different in terms of the companies included.

Obviously, the Nasdaq-100 is more concentrated—focused on representing the top 100 Nasdaq listings rather than the top 500 U.S. listings decided by a committee. But all of the largest companies in the Nasdaq-100 are also included in the S&P 500 index, including Apple, Microsoft, Amazon, Alphabet, Facebook, and (now) Tesla. In fact, around 80% of the companies in the Nasdaq-100 are also in the S&P 500 (Chart 1, note that dual-class shares mean there are more than 100 tickers in the Nasdaq 100 index).

That hasn't always been the case. Fifteen years ago, the overlap was less than 50%. However, as Nasdaq companies have grown, so too has their representation in broader U.S. indexes. As of 2020, the components of the Nasdaq-100 index represented 31% of total U.S. equity market cap, compared with just 11% in 2003.

Chart 1: Count of NDX constituents from 2002 through 2020



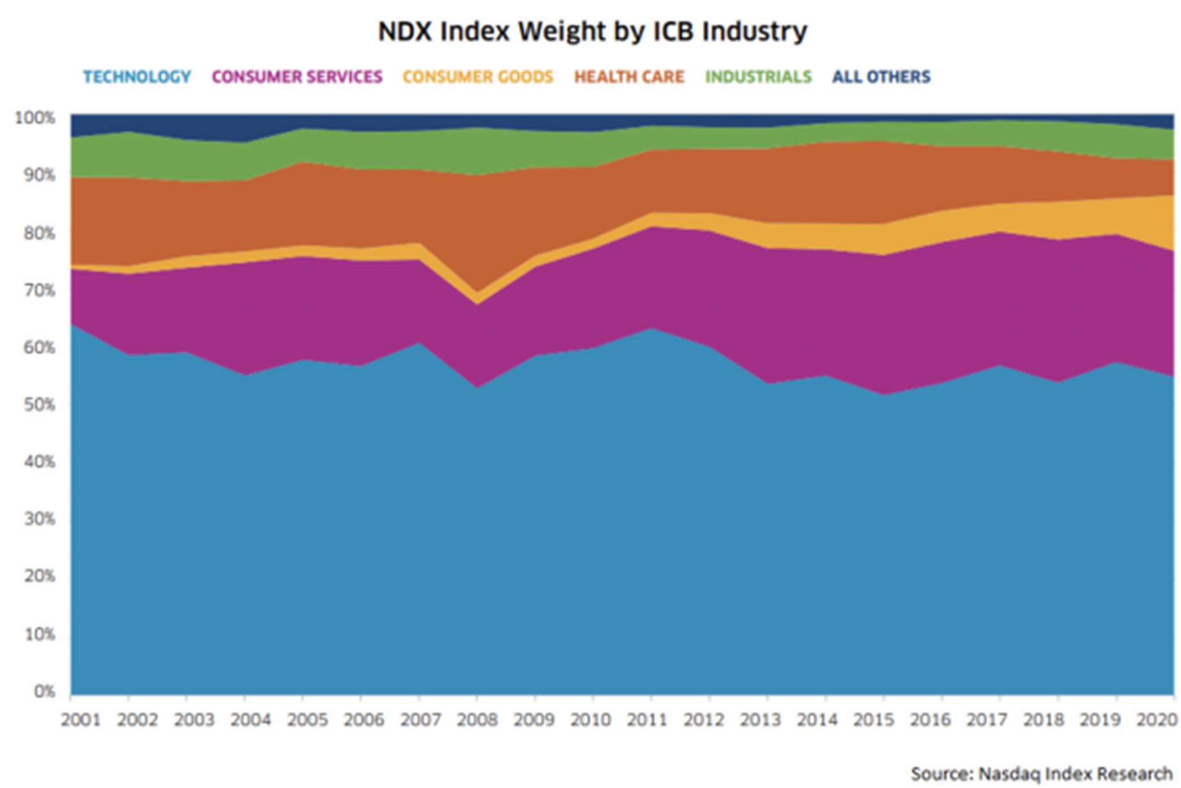
So, what keeps the Nasdaq-100 so different?

There are a few rules that the N-100 follows that are different from other large-cap indexes. Namely:

- Eligible securities must be Nasdaq listings.
- The index specifically excludes financials (based on ICB sector criteria.
- Many of the new, growth-oriented, U.S. firms choose Nasdaq to list. That has resulted in a different sector mix, where "new economy" stocks dominate, resulting in technology being the largest sector, ranging anywhere between 52% and 64% over the past 19 years (Chart 2).

The S&P 500 is not exactly the top 500 U.S. listings; it is the top 500 U.S. listings that its committee has determined are eligible. It has some of its own unique S&P 500 inclusion requirements. One, in particular, requires companies to have positive earnings over the trailing four quarters, resulting in delayed entry for many new companies (like GOOG and TSLA).

Chart 2: Sector allocation of Nasdaq-100 over time

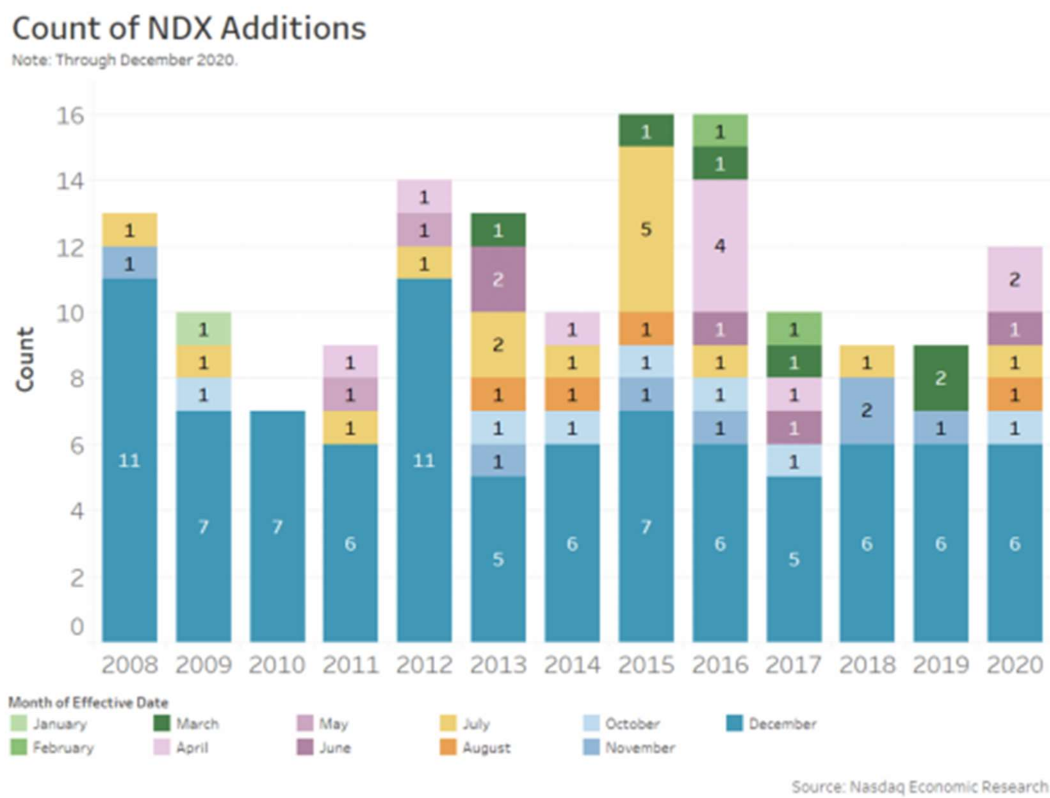


How do companies get into the Nasdaq 100?

The Nasdaq-100 is officially rebalanced once each year, on the 3rd Friday in December. Not surprisingly, that's also when most new additions take place (Chart 3). However, index changes can happen during the year if a company is acquired or if securities fail the 'Continued Eligibility Criteria,' which includes becoming too small during the year. Historically around 10% of the companies rotate out of the Nasdaq-100 each year (although usually, these are the smaller companies, so the impact on turnover is lower).

In order to be added to the Nasdaq-100, companies must first be "eligible." That means they are not financials etc., but the rules do allow for securities like ADRs with enough U.S. liquidity. They are then ranked based on market cap, and the largest 100 qualify for next year's index. The list of annual additions and deletions is usually announced in early December, per the NDX methodology.

Chart 3: Number of Nasdaq-100 additions per annum (color by month)



Nasdaq 100 addition boosts share price

The Nasdaq-100 is also a popular index with investors, including more than $140 billion from the QQQ ETF and more than $170 billion average trading volume in e-mini and micro e-mini Nasdaq-100 futures, as well as other mutual funds and tracking strategies.

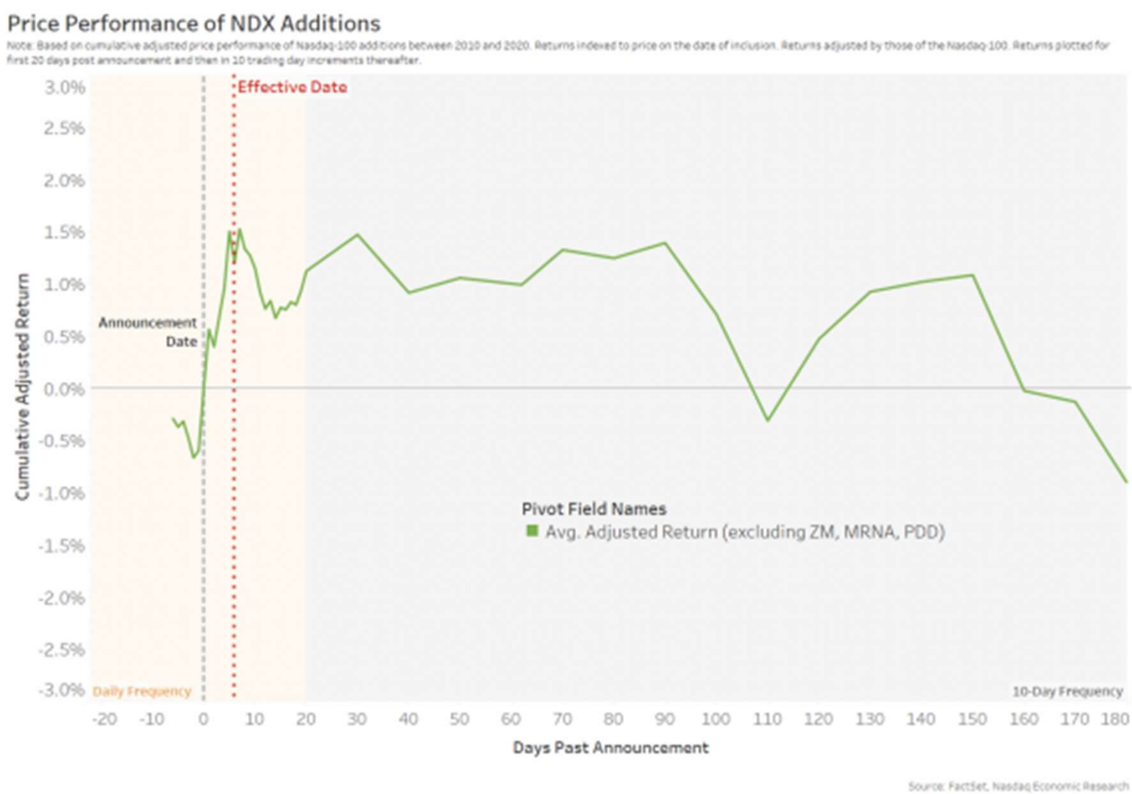
There is a wealth of research that studies the potential "membership effect" of being added to a popular index. Although some studies have shown mixed results, a significant amount of research finds index inclusion associated with increased investor demand, elevated stock valuations, and decreased cost of capital. Few, though, have studied the effect of Nasdaq-100 addition, until now.

We calculated the cumulative market-adjusted performance of new Nasdaq-100 additions from 2010 through 2020. From five days pre-announcement to post-index inclusion, we find the average market-adjusted return was over 1%. Note that we exclude the top outliers in our sample (ZM, MRNA, PDD that benefitted from the "new normal" brought on by COVID-19 in addition to their index addition. Alone these tickers added around three percentage points to the longer-run average. We also find that the average outperformance mostly holds out at least 90 days after indexers have traded. Recall that index funds are designed to trade only when an index modifies its constituents. This makes index funds some of the longest-term holders of stocks. Longer-term results show outperformance of index inclusions tends to fall back in line with the broad index after around six months, consistent with some academic studies of other indexes.

The data also show that much of the outperformance is priced in *before* indexers trade (red line in Chart 4). That's because the market is efficient, and traders know that being added to the index will increase valuations (and demand from indexers in the short term). In fact, most index research shows that the announcement is more impactful on prices than the actual index trade demand. On the trade date, the market often absorbs the index flows with minimal additional market impact, just as we see here too.

However, not all additions outperform the market upon announcement. Based on our sample, only 64% of new additions increased on the first day after the announcement.

Chart 4: NDX addition returns over time



For comparison, the S&P 500 is estimated to have closer to $4.6 trillion in index trackers. That creates even more demand from indexers. We calculated that new S&P 500 additions between 2018 and 2020 (i.e. tickers added to S&P 500 that were not previously in either the S&P 600 or S&P 400 saw an average outperformance of 3.4% in the five days post announcement.

Nasdaq-100 inclusion matters

Although the Nasdaq-100 index is different from other large-cap indexes, inclusion into the index still matters.

Its performance during 2020 highlighted how many of the constituents are "new economy" stocks that help drive U.S. innovation (and help us work and play while in quarantine and cure COVID).

But most importantly, we see that the index has also attracted enough investors that being added to the index is good for an issuer too, boosting returns and helping reduce the costs of attracting new capital.

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