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METHODOLOGY

This edition of BDO's Biotech Brief examines the December reconstitution of the 10-K SEC filings of companies listed on the NASDAQ Biotechnology Index, which includes organizations classified as biotechnology or pharmaceutical companies according to the Industry Classification Benchmark with a minimum market capitalization of at least \$200 million and an average daily trading volume of at least 100,000 shares. BDO used CalcBench to conduct this data analysis.



At the end of 2021 the NASDAQ Biotech Index (NBI) fell flat, underperforming the S&P 500 benchmark by more than 25 percentage points.

Following the highs of 2020, this decline in valuation is expected and could lead to industry consolidation.

THE BIOTECH RECAP

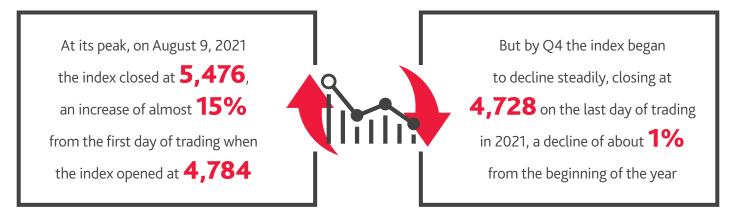
With names like Moderna and Pfizer regularly making headlines last year, large biotechs drew the attention of retail investors. Small- and mid-cap companies lagged, possibly the result of clinical trial delays.

For companies on the NBI, research areas of focus include gene therapy, mRNA and immunotherapy.

Despite declining valuations in the sector, available cash increased, creating the perfect environment to support dealmaking and industry consolidation.

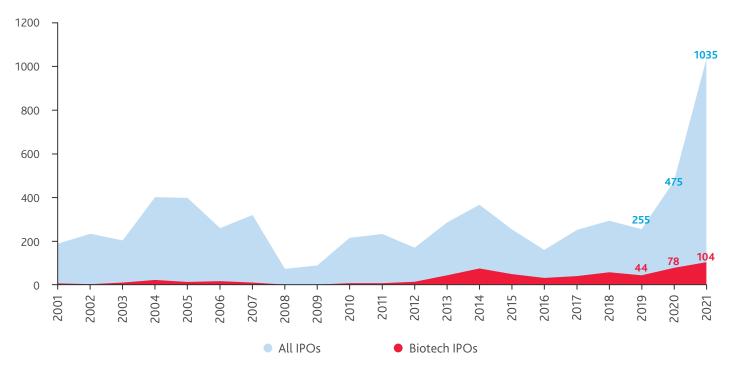
BIOTECH IN 2021

At year-end 2021, 372 companies made up the NASDAQ Biotechnology Index, with 129 newly added companies — a record total following 2020's high of 100 new companies. However, overall, the index displayed lackluster performance:



Fifty-three of the 129 newly added companies went public for the first time. Despite underwhelming performance by the NBI, 2021 was still a set-piece year for biotech IPOs, with 104 biotech companies going public, not including SPACs.

BIOTECH IPOS VS ALL IPOS 2001-2021



The small-cap biotech space has seen significant growth in the past few years, as more investment has flowed into biotech startups. Now, these companies are maturing and going public.

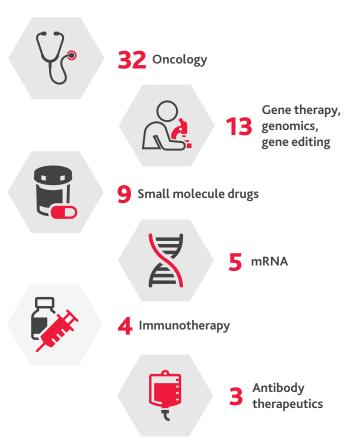
What's notable is that in December, biotech companies needed to have a market capitalization of at least \$200 million to be added to the NBI reconstitution, but by early February, about 20% of companies on the NBI saw their market capitalization fall below that threshold.

GENETHERAPY, MRNA, IMMUNOTHERAPY **DOMINATES RESEARCH FOCUS**

Of the companies that make up the NBI, their research focus areas include oncology drugs, gene therapy, gene editing and genomics, immunotherapy, mRNA and small molecule therapies.

TOP RESEARCH AREAS FOR COMPANIES NEWLY ADDED TO THE NBI

Number of companies, newly added to the NBI, that are conducting research in the following areas:



Companies on the NBI are researching gene therapy and gene editing medicines for rare or severe genetic diseases, such as sickle cell anemia, cystic fibrosis, and many other monogenic diseases. Additionally, research into immunoneurology has the potential to treat neurodegenerative diseases, such as Alzheimer's and Parkinson's. In the mRNA space, biotechs are developing RNA therapeutics, novel COVID/Influenza mRNA vaccines as well as vaccines for many other infectious and non-infectious diseases.

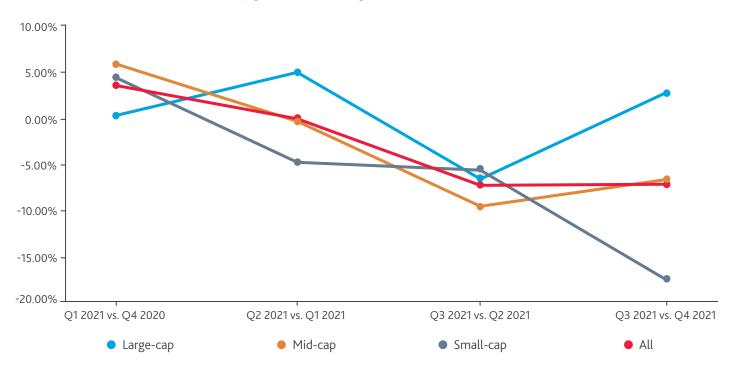
These research areas have generated strong investor interest for several years, and we believe they represent a step-change in novel therapies which will continue to attract investors well beyond 2022.



WHAT'S BEHIND THE MARKET DIP?

At the end of Q4 2021, large-cap stocks saw a 3% average share price gain, compared to the previous quarter. However, mid-cap stocks saw a decline of 7% and small-cap stocks saw a decline of 17%. On average, that is a decline of 7% across company sizes.

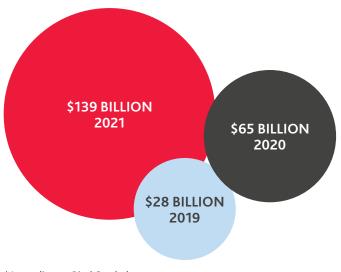
AVERAGE CHANGE IN SHARE PRICE, QUARTER OVER QUARTER



Large-cap stocks fared the best, likely because these were the companies grabbing headlines for their COVID-19 vaccines, diagnostics and therapeutics, which attracted retail investors. The top 20 largest companies on the NBI had a positive year-end 2021, with an average return of 27.6%, but that was offset by small-cap and newly listed biotechs. Small-cap biotechs were unable to capture that enthusiasm.

Further, more dollars are being directed to the private markets, especially when it comes to biotechnology.

CAPITAL RAISED BY PRIVATE EQUITY AND VENTURE CAPITAL FOR BIOTECH AND PHARMACEUTICAL DEALS*



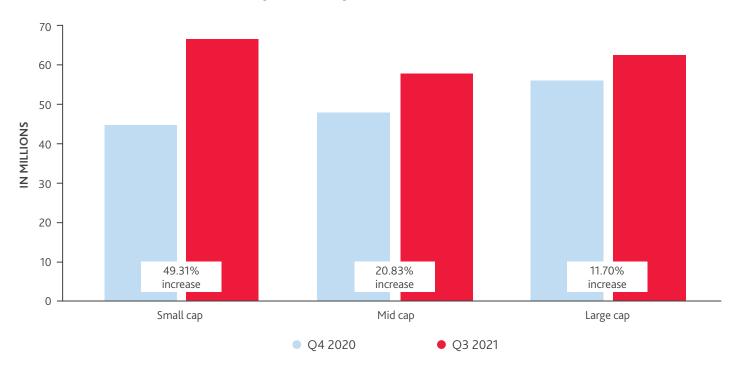
Dollars raised for biotech investments by PE and VC funds has exploded in 2021. Biotech is still attractive for private investors due to optimism around efficiency in the drug development cycle, new areas of R&D and, up until recently, attractive exit paths in the form of a SPAC or IPO. As the public market has seen a decline, we may see the private markets begin to cool slightly in the year ahead.

Delays due to COVID-19 are another potential reason for the stock slump. Clinical trial enrollment was <u>lower</u> in 2021, perhaps due to patients, especially those who are immunocompromised, feeling hesitant to travel and enroll in clinical trials during the pandemic. This low enrollment likely led to delays in the drug development pipeline, curbing ambitions for smaller biotechs.

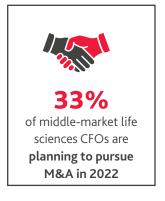
^{*}According to PitchBook data

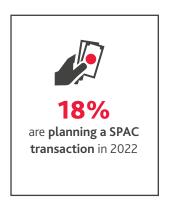
Despite a decline in stock prices, cash and marketable securities increased by anywhere from 11% for large-cap companies, to almost 50% for small-cap companies:

CASH AND MARKETABLE SECURITIES Q4 2020 TO Q3 2021

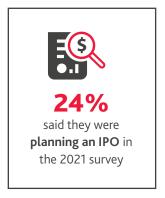


With more cash available, we expect to see increased M&A in the biotech space in 2022. As valuations of small-cap biotechs have declined, they become attractive acquisition targets for larger companies. According to BDO's 2022 <u>survey of life sciences CFOs</u>, M&A is on the agenda in 2022.









Another indicator that more M&A is on the horizon – cycles of industry consolidation. Biotech historically moves through periods of sell offs, followed by mergers and acquisitions. As current offerings of large biotech companies age out of exclusivity, they begin to look to diversify their drug portfolio.

Biotechs in 2022 will need to ensure drugs in their development pipeline can continue to move forward, especially as supply chain delays cause drugmakers to grapple with rising prices, drug fraud and other supply challenges. For startups and small-cap biotech, 2022 may be the year to consider a deal with a larger biotech firm, rather than pursue an IPO.

CONTACTS

Considering M&A or pursuing an IPO? See how the team at BDO can help you strike the best deal and guide you through the process.



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