

BIOTECHNOLOGY UPDATE

Ryan O. Issakainen, CFA | Senior Vice President | ETF Strategist

Despite some volatility along the way, biotechnology stocks have significantly outperformed the S&P 500 Index over the past couple years, a trend that began in earnest after the surprise results of the 2016 elections. Since then (11/8/2016 – 1/31/2019), the First Trust NYSE Arca Biotechnology Index Fund (FBT) has posted a cumulative return of 60%, outperforming the S&P 500 Index by 28%. Below is an update to an article we wrote last year on some of the trends in the biotechnology industry that we believe may contribute to continued outperformance looking forward.

Regulatory Environment Remains Favorable

Government regulation can have a significant impact on the biotechnology industry. Fortunately for investors, the current legislative and regulatory environment appears to be a tailwind for biotechnology stocks. The passage of the 21st Century Cures Act in 2016 was aimed at promoting innovation and improving patient care, in part by streamlining the FDA's drug and device approval processes. Since the law was passed, the FDA has announced several important changes to expedite approvals and apply its oversight more efficiently. In June 2018, the FDA announced an overhaul of the Center for Drug Evaluation and Research (CDER) that would increase the number of drug review divisions from 19 to 30. In January 2019, the FDA announced plans to add 50 more clinical reviewers for cell and gene therapy products, an area of significant scientific research and advancement.

The results of the agency's efforts can be seen in the number of drug and device approvals. In 2018, the FDA approved a record 59 new drugs, well above the 10-year average of 36.¹ Novel medical device approvals reached a record high as well with 106, surpassing the 99 approved in 2017.

Innovation Continues

Innovation in the biotechnology industry is accelerating, highlighted by advances in cutting edge gene and cell therapies for cancer treatment. The first gene therapy treatment was approved by the FDA in August 2017. Since then, 15 other gene and cell therapies have been approved. The pipeline is robust too, with the FDA noting a large increase in the number of gene and cell therapy investigational new drug (IND) applications, and projecting to receive more than 200 applications annually by 2020.

In our opinion, the application of database systems, or "big data," and other innovations from outside the industry will likely contribute to further biotechnology innovation. The National Institute of Health's All of Us Research Program expects to have over one million participants, each contributing data such as biological samples, health records, and surveys. Beginning in 2019, the program plans to make the data available to researchers and scientists to utilize for research. In January 2019, FDA Commissioner Dr. Scott Gottlieb stated, "Advances in material science, digital health, 3-D printing and other technologies continue to drive an unparalleled period of invention in medical devices". We expect advances both inside and out of the biotechnology industry to remain a driver of returns for investors.

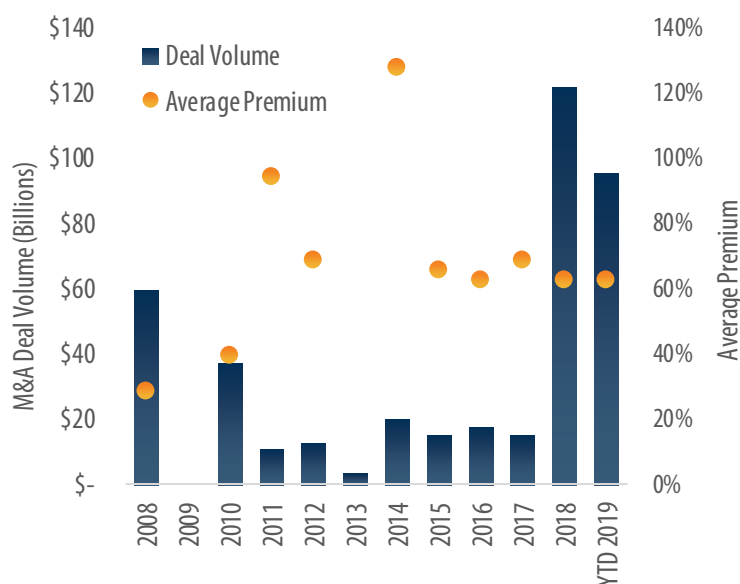
M&A Activity is Accelerating

M&A activity has long been a catalyst for investor returns in biotechnology, and today is no different. In 2018, there were 10 M&A deals targeting public companies worth over \$1 billion, at a combined value of \$122 billion (See Chart 1).¹ For comparison, there were just 2.7 deals per year, averaging \$19 billion, over the prior ten years. M&A activity

has been quite lucrative for investors in stocks that have been acquired, with premiums averaging 69% over that stretch. And the level of deal activity doesn't appear to be slowing. Two deals with a combined value of over \$95 billion were announced in the first month of 2019, including the \$89 billion purchase of Celgene Corp by Bristol-Myers Squibb. With large pharmaceutical and biotechnology companies holding ample cash on their balance sheets, seeking ways to replace lost revenue from recent and upcoming patent expirations, we expect more strategic acquisitions in the industry ahead.

CHART 1: BIOTECHNOLOGY M&A ACTIVITY¹

1/1/2008 – 1/31/2019



Why has FBT Outperformed?

In our opinion, FBT may be an effective tool for investors seeking to capitalize on these trends. FBT's equal-weighted index methodology avoids the top-heavy concentration common to many market-cap weighted indices, distributing its portfolio allocation among 30 leading biotechnology stocks. As of 1/31/2019, FBT's top ten holdings accounted for 35% of its portfolio, while the top ten holdings of the NASDAQ Biotechnology Index accounted for 54% of the index. In our view, this hits the sweet spot of diversification, without overly diluting exposure to stock-specific events, such as regulatory approvals, innovative breakthroughs, and M&A activity. In light of these differences, FBT has outperformed the NASDAQ Biotechnology Index by a cumulative 30% over the last two years (1/31/2017-1/31/2019).

Despite strong returns over the past couple years, we believe the biotechnology industry remains an attractive opportunity for investors. We will continue to monitor the trends of streamlined regulation, innovation, and M&A activity, which we see as positives for the industry and investors going forward.

¹Source: Bloomberg. There is no assurance these trends will continue.

For informational purposes only; not a recommendation of First Trust to buy or sell any specific securities.

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PERFORMANCE SUMMARY (%)

FBT Performance*	Inception Date	AS OF 1/31/19			AS OF 12/31/18			
		1 Month	3 Month	1 Year	1 Year	5 Year	10 Year	Since Fund Inception
Net Asset Value (NAV)	6/19/2006	15.77	7.55	2.26	-0.21	12.48	20.24	15.81
Market Price		15.73	7.47	2.17	-0.20	12.48	20.29	15.81
Index Performance**								
NYSE Arca Biotechnology Index SM		15.81	7.70	2.75	0.27	12.96	20.84	16.43
NASDAQ Biotechnology Index		13.40	5.51	-3.38	-8.86	5.54	15.71	12.50
S&P Composite 1500 Health Care Index		5.12	2.25	4.97	6.71	11.40	15.16	11.20
S&P 500 Index		8.01	0.26	-2.31	-4.38	8.49	13.12	8.03

Performance data quoted represents past performance. Past performance is not a guarantee of future results and current performance may be higher or lower than performance quoted. Investment returns and principal value will fluctuate and shares when sold or redeemed, may be worth more or less than their original cost. You can obtain performance information which is current through the most recent month-end by visiting www.ftportfolios.com.

*NAV returns are based on the fund's net asset value which represents the fund's net assets (assets less liabilities) divided by the fund's outstanding shares. Market Price returns are based on the midpoint of the bid/ask spread on the stock exchange on which shares of the fund are listed for trading as of the time that the fund's NAV is calculated. Returns are average annualized total returns, except those for periods of less than one year, which are cumulative. The fund's performance reflects fee waivers and expense reimbursements, absent which performance would have been lower. FBT has a gross expense ratio of 0.56% and a net expense ratio of 0.56%. Expenses are capped contractually at 0.60% per year, at least until April 30, 2019.

**Performance information for the NYSE Arca Biotechnology IndexSM is for illustrative purposes only and does not represent actual fund performance. Indexes do not charge management fees or brokerage expenses, and no such fees or expenses were deducted from the performance shown. Indexes are unmanaged and an investor cannot invest directly in an index.

The NYSE Arca Biotechnology IndexSM is an equal dollar weighted index designed to measure the performance of a cross section of companies in the biotechnology industry that are primarily involved in the use of biological processes to develop products or provide services. The NASDAQ Biotechnology Index includes securities of NASDAQ-listed companies classified as either Biotechnology or Pharmaceuticals which also meet other eligibility criteria. The S&P Composite 1500 Health Care Index is a capitalization-weighted index of companies classified by GICS as health care within the S&P Composite 1500 Index. The S&P 500 Index is an unmanaged index of 500 stocks used to measure large-cap U.S. stock market performance.

The NYSE Arca Biotechnology IndexSM is a trademark of the NYSE Group, Inc. or its affiliates ("NYSE") and is licensed for use by First Trust. The fund is not sponsored or endorsed by NYSE. NYSE makes no representation or warranty, express or implied, to the owners of the fund or any member of the public regarding the advisability of investing in the fund or the ability of the fund to track the performance of the various sectors represented in the stock market. NYSE has no obligation to take the needs of the owners of the fund into consideration in determining, composing or calculating the Index. NYSE is not responsible for and has not participated in any determination or calculation made with respect to issuance or redemption of the fund.

You should consider the fund's investment objectives, risks, and charges and expenses carefully before investing. Contact First Trust Portfolios L.P. at 1-800-621-1675 or visit www.ftportfolios.com to obtain a prospectus or summary prospectus which contains this and other information about the fund. The prospectus or summary prospectus should be read carefully before investing.

ETF Characteristics

FBT lists and principally trades its shares on the NYSE Arca, Inc.

The fund's return may not match the return of the NYSE Arca Biotechnology IndexSM. Securities held by the fund will generally not be bought or sold in response to market fluctuations.

Investors buying or selling fund shares on the secondary market may incur customary brokerage commissions. Market prices may differ to some degree from the net asset value of the shares. Investors who sell fund shares may receive less than the share's net asset value. Shares may be sold throughout the day on the exchange through any brokerage account. However, unlike mutual funds, shares may only be redeemed directly from the fund by authorized participants, in very large creation/redemption units. If the fund's authorized participants are unable to proceed with creation/redemption orders and no other authorized participant is able to step forward to create or redeem, fund shares may trade at a discount to the fund's net asset value and possibly face delisting.

Risk Considerations

The fund's shares will change in value, and you could lose money by investing in the fund. One of the principal risks of investing in the fund is market risk. Market risk is the risk that a particular stock owned by the fund, fund shares or stocks in general may fall in value. There can be no assurance that the fund's investment objective will be achieved.

The fund may invest in small capitalization and mid capitalization companies. Such companies may experience greater price volatility than larger, more established companies.

Biotechnology and pharmaceutical companies are subject to changing government regulation which could have a negative effect on the price, profitability and availability of their products and services. Biotechnology and pharmaceutical companies face increasing competition from generic drugs, termination of their patent protection and technological advances which render their products or services obsolete. The research and development costs required to bring a drug to market are substantial and may include a lengthy review by the government, with no guarantee that the product will ever be brought to market or show a profit. Many of these companies may not offer certain drugs or products for several years, and as a result, may have significant losses of revenue and earnings.

First Trust Advisors L.P. is the adviser to the fund. First Trust Advisors L.P. is an affiliate of First Trust Portfolios L.P., the fund's distributor.

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