

## What's Driving the Recovery In Biotechnology ETFs?

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### Summary of Q1 2018 ETF Flows and Trends<sup>1</sup>

- » Total US-listed ETF Assets reached \$3.45 trillion at the end of Q1 2018, a 22.9% year-over-year increase. Total estimated net asset flows in Q1 2018 totaled \$66 billion, a 50% drop from the prior quarter, marking the slowest quarter for total estimated net inflows since Q2 of 2016.
- » International Equity ETFs received the strongest estimated net inflows in Q1 2018, totaling \$33 billion, only slightly less than the prior quarter. Year-over-year, International Equity ETF assets increased by over 43%.
- » Taxable Bond ETFs received the second highest estimated net inflows with \$15 billion, bringing the category's year-over-year increase in total assets to 20%.
- » Sector Equity ETFs received \$10 billion in estimated net inflows, increasing year-over-year assets by 14%, while the broader US Equity ETFs category received \$1.3 billion in estimated net inflows, increasing year-over-year assets by 19%.
- » Commodities ETFs and Alternatives ETFs, which received \$2.5 billion and \$3.1 billion in estimated net inflows, respectively, were the only two categories that had greater estimated net inflows in Q1 2018 than the prior quarter.

Table 1

US Category Group	Total US-Listed ETF Assets		Estimated Net Asset Flows	
	As of 3/31/2018	Year-over-year % change	Q1 2018	Prior Quarter (Q4 2017)
US Equity	\$1,547,214,481,576	19.3%	\$1,296,868,172	\$60,545,759,724
International Equity	\$758,149,848,650	43.2%	\$33,242,773,551	\$34,047,260,949
Taxable Bond	\$553,653,446,784	20.2%	\$14,764,072,227	\$21,585,279,260
Sector Equity	\$430,491,923,442	14.1%	\$10,149,356,431	\$14,958,142,181
Commodities	\$70,539,924,613	10.1%	\$2,528,473,660	(\$589,271,236)
Alternative	\$48,967,399,079	9.9%	\$3,104,977,233	\$37,432,573
Municipal Bond	\$30,103,562,965	21.5%	\$800,103,375	\$1,896,727,994
Allocation	\$12,184,952,046	17.2%	\$72,976,766	\$100,309,490
<b>Total</b>	<b>\$3,451,305,539,155</b>	<b>22.9%</b>	<b>\$65,959,601,415</b>	<b>\$132,581,640,935</b>

Source: Morningstar, as of 3/31/18. Includes all US-listed exchange-traded funds, exchange-traded notes and other exchange-traded products. All net inflow and outflow numbers are estimates based on information provided by Morningstar.

In the year leading up to the 2016 US presidential election, biotechnology stocks did not fare well. While the S&P 500 Index produced a 6.7% total return in 2016 prior to the market close on Election Day (12/31/15-11/8/16), the First Trust NYSE Arca Biotechnology Index Fund (FBT) lost 20.5% and the NASDAQ Biotechnology Index lost 22.4%.<sup>2</sup> One issue that caused anxiety for many biotech investors was a concern that the next president—at that time assumed by many to be Hillary Clinton—would impose price controls on the industry. Whether or not these fears were warranted, Mrs. Clinton had spooked biotech stocks in the Fall of 2015 when she tweeted her intent to take on “price gouging” in the specialty drug market.

Following the unexpected results of Election Day, with concerns about potential price controls easing, investors were left to reconsider some of the other, more positive factors for biotech stocks. In the rally that followed, FBT produced a 47.7% cumulative return, outperforming the S&P 500 Index by 20.8% (11/8/16-3/29/18). However, not all biotechnology indices (and their associated ETFs) benefitted equally from the rally. For example, the NASDAQ Biotechnology Index's cumulative return was just 23.4% during this stretch, underperforming the S&P 500 Index by 3.5%.<sup>2</sup> Below, we discuss some of the trends that have impacted returns for biotech stocks in recent quarters. We then compare how differences in biotechnology index methodologies have impacted returns, considering why these differences may also be important going forward.

### Trends Impacting Biotechnology

#### Regulation is Becoming More Efficient

The potential benefits of regulating drugs and medical products are intuitive. Patients want assurances that the possible benefits and risks of the treatments they've signed up for have been rigorously studied by independent authorities. On the other hand, excessive regulations may hold back progress in developing potential new cures and treatments. Regulators face a difficult task in attempting to maintain an optimal amount of regulation, especially as regulations tend to accumulate over time.

Fortunately for biotechnology companies and patients seeking novel cures, bipartisan efforts are underway to make regulations more efficient. On December 13, 2016, one of the last bills that President Obama signed into law was the 21st Century Cures Act. According to the US Food and Drug Administration (FDA), the Cures Act was designed “to help accelerate medical product development and bring new innovations and advances to patients who need them faster and more efficiently.”

Past performance is not a guarantee of future results and there is no assurance that the events or improvements mentioned herein will continue.

Then in May of 2017, Dr. Scott Gottlieb—a President Trump appointee—was sworn in as new Commissioner of the FDA. In a post from the FDA’s website from July 2017 entitled, “How FDA Plans to Help Consumers Capitalize on Advances in Science,” Commissioner Gottlieb laid out the agency’s priorities for implementing Cures Act mandates to make regulation more efficient:

*“We need to make sure that our regulatory principles are efficient and informed by the most up to date science. We don’t want to present regulatory barriers to beneficial new medical innovations that add to the time, cost, and uncertainty of bringing these technologies forward if they don’t add to our understanding of the product’s safety and benefits.”*

Later in the same article, he acknowledged the significant role that regulation plays in determining costs, a key point that is often made by health care companies:

*“New medical innovations are ultimately priced to a measure of the cost of the capital it takes to develop these technologies. This is true not only when it comes to the direct costs of research and development. Cost is also a function of the time and uncertainty of these endeavors.”*

There is evidence that the FDA is making some progress in its goal of improving regulatory efficiency. In 2017, there were more new drug approvals granted by the FDA than there had been in more than 20 years, rebounding to 49 from the 22 approvals in 2016.<sup>3</sup> In our view, more efficient regulation provides a long-term tailwind for the biotechnology industry.

### Innovation is Accelerating

We believe that the quantity of new drug approvals in 2017 may also point to an acceleration of innovation. Some of the most significant milestones for innovation in the biotechnology industry in 2017 involved gene and cell therapy. According to the FDA, the approval of Kymriah, which was granted on August 30, 2017, marked the first-ever approval of a gene therapy in the United States, “ushering in a new approach to the treatment of cancer and other serious and life-threatening diseases.” Essentially, this type of therapy involves collecting white blood cells known as T-cells from a patient, modifying them to include a new gene that directs the T-cells to kill cancer cells, and then infusing them back into the patient’s body. Building upon a growing base of new scientific understanding, treatments like this, which still seem like science fiction to most of us, are increasingly becoming reality.

### Biotech M&A Activity is Booming

Another emerging trend that has boosted the performance of certain biotechnology stocks is merger & acquisition (M&A) activity. During the first month of 2018, there were 3 M&A deals announced in which public biotechnology companies worth at least \$1 billion were targeted, at an average premium of 65.8%, and a combined value of \$23 billion. To put this into perspective, the 10-calendar year-average from 2008-2017 was just 2.7 deals, worth \$19 billion.<sup>4</sup>

As large pharmaceutical and biotech companies seek to bolster their product pipelines, tapping into some of the successful innovations achieved by smaller companies, we believe more M&A deals are likely. As of 3/31/18, the 20 largest global pharmaceutical and biotechnology companies held a combined \$255 billion in cash & marketable securities on their balance sheets, providing a ready source of funding for new acquisitions.<sup>2</sup>

Moreover, prior to recent US corporate tax reform, US companies were subject to a 35% federal corporate tax rate on profits earned overseas if brought back onshore, deterring companies from using cash held overseas for acquisitions. However, this impediment has been removed under the current tax regime, as the so-called repatriation tax levies a one-time 15.5% tax on previously accumulated profits held as cash overseas, whether or not it remains overseas. Thus far, only 1 of the 3 large biotech acquisitions announced in Q1 was made by a US company, but we would not be surprised to see more US biotech and pharmaceutical companies follow suit in deploying “freed-up” cash to make strategic acquisitions.

### Importance of Index Methodology

In our opinion, differences in underlying index methodologies are of critical importance when selecting a biotechnology ETF. The approach employed by FBT’s underlying index is to select 30 stocks, which are equal-dollar weighted, and rebalanced quarterly. In our view, this approach provides ample diversification from single stock risk, without overly diluting exposure to some of the stock-specific events that tend to drive biotechnology returns, such as regulatory approvals, breakthrough innovations, and M&A activity. In contrast, the NASDAQ Biotechnology Index holds 193 stocks, which are weighted by market-capitalization. While this approach provides significant exposure to some of the largest biotech stocks (top 10 holdings represent 54% of index, as of 3/31/18), weightings for many of the smaller holdings are insignificant.

Over the past 15 months, much of FBT’s outperformance vs. the NASDAQ Biotechnology Index has come from the fund’s greater exposure to certain stock-specific events. Table 2 below shows the five stocks that made the greatest contribution to FBT’s total return during that time, annotating the announcement of events that boosted returns. Notably, each of these stocks was held in both portfolios. However, because the size of these companies ranged from \$3 billion to \$8 billion, the NASDAQ Biotechnology Index had much smaller weightings in each, and received less benefit from their outsized returns. Of course, having more stock-specific exposure cuts both ways. The biggest detractor from FBT’s performance during the period came from Intercept Pharmaceuticals, which lost 43.4%, with an average weight of 3.1% in FBT, but just 0.4% in the NASDAQ Biotechnology Index.

**Table 2: Five Largest Contributors to FBT Performance (12/31/16-3/31/18)**

Company Name	Ticker	Announcement Type	Announcement Date	Equity Market Capitalization: Day Before Announcement	As of Market Close on Day Before Announcement			
					Weighting in FBT	Weighting in NASDAQ Biotechnology Index	Post-Announcement: 1-Day Return	Cumulative Total Return: through 3/31/18
Nektar Therapeutics	NKTR	Innovation <sup>5</sup>	11/11/2017	\$5.1 billion	4.7%	0.8%	14.2%	227.0%
Juno Therapeutics	JUNO	Merger & Acquisition <sup>6</sup>	8/28/2017	\$3.3 billion	3.6%	0.5%	18.7%	183.1% <sup>6</sup>
Kite Pharma	KITE	Merger & Acquisition <sup>6</sup>	8/28/2017	\$8.0 billion	4.4%	1.2%	28.0%	29.4% <sup>6</sup>
Alnylam Pharmaceuticals	ALNY	Innovation <sup>7</sup>	9/20/2017	\$6.9 billion	3.0%	1.0%	51.7%	58.7%
Neurocrine Biosciences	NBIX	Regulatory approval <sup>8</sup>	4/12/2017	\$3.6 billion	3.1%	0.6%	24.9%	99.9%

Source: Bloomberg. Portfolio holdings are subject to change without notice and are not intended as recommendations of individual securities.

<sup>1</sup>Based on Morningstar data, as of 3/31/18. Includes all exchange-traded funds, exchange-traded notes, and other exchange-traded products.

<sup>2</sup>Source: Bloomberg.

<sup>3</sup>Source: Barclays 2018 Biotech/Pharma Outlook January 3, 2018.

<sup>4</sup>Source: Bloomberg. Including deals announced in which public companies worth at least \$1 billion were targeted.

<sup>5</sup>On 11/11/17, NKTR announced positive results for its investigational medicine, NKTR-214, at an analyst and investor event at the Society for Immunotherapy of Cancer Annual Meeting.

<sup>6</sup>Performance for KITE and JUNO through completed acquisition date. On 8/28/17, KITE Pharma announced it had entered into an agreement with Gilead Sciences to be acquired for \$180/share, a 29.4% premium over the previous market close. The acquisition was completed on 10/3/17. Speculation about a potential acquisition of Juno by Celgene, which already owned a portion of the company, fueled a rally in Juno shares on 8/28/17. Juno was later acquired by Celgene for \$87/share in a deal announced on 1/22/18. The acquisition was completed on 3/7/18.

<sup>7</sup>On 9/20/17, Alnylam Pharmaceuticals announced positive results for its APOLLO Phase 3 study of Patisiran.

<sup>8</sup>On 4/11/17, Neurocrine Biosciences disclosed that the FDA had approved INGREZZA™ for the treatment of adults with tardive dyskinesia (TD).

Despite the relatively strong returns for many biotechnology stocks over the past 15 months, we believe the industry still represents an attractive opportunity. While midterm elections are right around the corner, and campaign rhetoric could heighten volatility—as we’ve seen in the past—we believe that more efficient regulation, accelerating innovation, and potential M&A activity, will continue to provide tailwinds for investors. As illustrated on the previous page, however, not all biotechnology ETFs, or their underlying indices, are created equal. We believe investors should pay close attention to how these differences may impact returns going forward.

*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](http://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 Index<sup>SM</sup>. 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.

The information presented is not intended to constitute an investment recommendation for, or advice to, any specific person. By providing this information, First Trust is not undertaking to give advice in any fiduciary capacity within the meaning of ERISA and the Internal Revenue Code. First Trust has no knowledge of and has not been provided any information regarding any investor. Financial advisors must determine whether particular investments are appropriate for their clients. First Trust believes the financial advisor is a fiduciary, is capable of evaluating investment risks independently and is responsible for exercising independent judgment with respect to its retirement plan clients.

## Performance Summary (%)

As of 3/29/18	Inception Date	Quarter	YTD	1 Year	3 Year	5 Year	10 Year	Since Fund Inception
<b>FBT Performance*</b>	6/19/06							
Net Asset Value (NAV)		6.63	6.63	26.04	3.97	19.61	19.40	17.57
Market Price		6.70	6.70	26.13	4.00	19.61	19.41	17.57
<b>Index Performance**</b>								
NYSE Arca Biotechnology Index <sup>SM</sup>		6.74	6.74	26.66	4.48	20.11	20.02	18.19
NASDAQ Biotechnology Index		0.06	0.06	9.81	-1.88	15.38	16.01	14.25
S&P Composite 1500 Health Care Index		-0.50	-0.50	12.35	6.17	14.47	12.68	11.29
S&P 500 Index		-0.76	-0.76	13.99	10.78	13.31	9.49	8.91

*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](http://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 Index<sup>SM</sup> 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 Index<sup>SM</sup> 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 Index<sup>SM</sup> 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.