

Biotech Investing Framework

Biological processes to help human needs

What is biotechnology?

Biotech is one of the industries within the Healthcare sector. The focus of biotech companies is to use biological processes— involving living organisms—to address human needs. One of the largest emphases from the industry is creating therapies and drugs that combat and, in some cases, cure debilitating health disorders.

Forces that impact biotech investments

We believe there are three major forces that impact biotech investments and different approaches seek to capitalize on different combinations of these forces:

1. Market/Macro

- a. There are market environments that have historically favored the biotech industry as a whole. For instance, a more “risk-on” environment that encourages investing in areas that have less of an established cash-flow favors investing in biotech.
- b. Regulation and public policy often have an impact on the entire industry. Regulation and policy that encourages innovation and investment tend to favor the biotech industry.

2. Thematic

- a. Themes are trends in the industry that transcend business cycles.
- b. Within biotech, themes are often categorized by
 - i. types of disorders that companies are addressing, like neurological or cardiovascular diseases;
 - ii. types of approaches being used, like precision medicine or oncology/immunotherapy.
- c. Within the biotech industry, themes can gain or lose momentum based on demand and/or scientific developments.
- d. Themes can be driven by long-term demand and developments, like oncology, or immediate demand and scientific developments, like COVID-19.

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3. Company Specific

- a. There are two main ways to fundamentally evaluate a company's likelihood to succeed or fail in the long-term:
 - i. Qualitative analysis: Considers a company's intangible qualities, like competitive advantages, the competency of the management team, and the value of the products it is creating.
 - ii. Financial analysis: Considers a company's financial strength and business model to estimate its future profitability.
- b. Biotech companies have events such as clinical trials, FDA approvals, and conference presentations that act as either a validation or setback to their business and have a tremendous impact on their immediate stock price.

Different approaches to biotech investing

Different approaches seek to take advantage of different combinations of the three forces that impact biotech investments. We outline six approaches here:

1. **Long term investment in the industry** — Investors who are simply convinced that the biotech industry as a whole will be more profitable in the future than it is now and are not bothered if their investments are up or down in the near term may choose to buy an index fund that holds a large basket of many biotech companies and hold on to it for a long time.
2. **Time the industry** — Investors who see the near term ups and downs of the industry as a way to boost their returns may attempt to time the market by buying a biotech index fund before market/macro forces drive the industry up and sell out of the fund before it goes back down.
3. **Long term investment in the themes** — Investors who have a positive outlook for a particular theme within biotech may choose to invest in a fund that invests in all of the companies within that theme and stay invested through the ups and downs.
4. **Time themes** — Investors seeking to invest in the themes that have the most immediate momentum may choose a fund that tactically shifts its holdings to invest in broad baskets of companies all positioned to take advantage of a particular theme as it catches momentum.
5. **Long term investment in the companies** — Investors who believe that deep research and expertise can help identify biotech companies that are most likely to succeed may choose to buy and hold individual companies or select a fund managed by experts who will buy companies and only sell when the company's investment thesis is reached or when the company proves unlikely to reach its

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investment thesis within an expected timeframe.

6. **Time companies** — Investors seeking to invest in companies immediately before an important event or acquisition may choose to frequently trade in and out of stocks to time these events or invest in a fund that uses this strategy.

Evaluating a biotech fund

We believe there are four key aspects of a biotech fund that investors should evaluate to determine if the fund is right for them:

1. **People** — Unless the fund is merely tracking an index, the portfolio managers and analysts are critical to the success of the fund. Investors have varying preferences as to the ideal credentials for the portfolio management teams of biotech funds. Some prefer portfolio managers that come from a scientific or medical background while others prefer a background in finance and investing.
2. **Approach** — As outlined above, there are many different approaches to investing in biotech. Different approaches will yield different returns over longer or shorter time horizons and will be impacted differently by the three major forces—market/macro, thematic, and company specific.
3. **Process** — Understanding a fund’s process can help an investor distinguish good luck from skill during periods of good performance and help distinguish bad luck from incompetence during periods of poor performance.
4. **Performance** — When evaluating performance it is important to consider the appropriate time horizon and risk tolerance for the fund’s investment thesis and hold the fund accountable accordingly. For instance, an investor may be willing to settle for lower long-term returns if it means avoiding short-term underperformance. Other investors may be willing to underperform for shorter periods of time if the fund tends to outperform over longer periods of time.

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Eventide and Biotech Investing

EVENTIDE'S PEOPLE

The healthcare team consists of professionals with deep technical training and significant real-world and hands-on experience spanning many facets of the healthcare system. Consequently, the team is able to perform deep diligence across multiple dimensions, including technical and financial diligence prior to and during the entire holding periods.

The team currently consists of a portfolio manager, a senior research analyst, and two associate research analysts:



FINNY KURUVILLA, MD, PHD
Portfolio Manager

Dr. Kuruvilla has a unique background in healthcare, statistics, and investing. Concurrent with Eventide, from 2008 through 2016, he was a Principal at Clarus Ventures, a leading healthcare and life sciences venture capital firm. Prior to joining Eventide, from 2005-2008, he was a postdoctoral research scientist in medical genetics at the Broad Institute of Harvard and MIT. From 2003-2007, he was resident, chief resident, and clinical fellow at the Brigham and Women's Hospital and Children's Hospital Boston.

Dr. Kuruvilla holds an MD from Harvard Medical School, a PhD in Chemistry and Chemical Biology from Harvard University, a master's degree in Electrical Engineering and Computer Science from MIT, and a bachelor's degree in Chemistry from Caltech.



JOY GHOSH, PHD
Senior Research Analyst

Dr. Ghosh has a cross-disciplinary background in biopharma/biotech R&D, business development/M&A, and healthcare investing. Prior to joining Eventide, from 2017-2020, he was an Associate and then Vice President at Bain Capital for their Life Sciences Fund. From 2016-2017, he was a Senior Manager at Biogen. From 2009-2016, he was an Investigator at

the Novartis Institutes of Biomedical Research. Prior to Novartis, he was a postdoctoral scientist at Brigham and Women’s Hospital/Harvard Medical School and Boston University School of Medicine.

Dr. Ghosh holds a PhD from the University of Washington, Seattle in Biomolecular Structure and Design and a bachelor’s degree in Biochemistry from the University of Texas at Austin.



BRIAN CHOW, PHD
Associate Research Analyst

Dr. Chow has a PhD in Neuroscience from Harvard University’s Graduate School of Arts and Science, where he studied the biological mechanisms underlying the blood-brain barrier, with the potential to enhance drug delivery to the brain to treat neurological disorders. He published his discoveries as the first author in the journals Nature and Neuron. He has also written two review articles published in Nature Reviews Neuroscience and Trends in Neuroscience.

Dr. Chow holds a B.S. in Biology and Chemistry from the University of California San Diego.



SUAN TUANG, MD, PHD
Associate Research Analyst

Prior to joining Eventide, Dr. Tuang was in the Harvard-MIT MD/PhD program. He has a PhD in Chemistry from MIT, where he developed bioconjugation tools for protein therapeutics, and an MD from Harvard Medical School. He is a 2016 Paul and Daisy Soros Fellow and holds a B.S. in Chemistry from MIT.

EVENTIDE’S APPROACH

The Eventide healthcare team has generally adopted a blend of two approaches: long term investment in themes and long term investment in companies. This means we first identify long-term healthcare themes that we believe have both significant demand and scientific viability. Through our investment process, we

then seek to invest in the companies participating in these themes, which we believe are best positioned to succeed.

A direct consequence of this is that we do not engage in near-term oriented “hype” themes or companies that can quickly become overvalued due to sentimental momentum. We generally seek to invest in companies developing actual medicines, treatments, devices, tools, and technologies because we believe they will succeed by creating a tangible benefit for society.

During periods of momentum, active traders that have short-term time horizons can position themselves to temporarily outperform long-term fundamental approaches. It is our belief that our approach of identifying high-value companies—as determined by our investment process—positioned within prominent themes leads to long-term outperformance.

EVENTIDE'S PROCESS

Eventide's healthcare team begins its process with identifying and understanding the most prominent, needs-driven themes within healthcare. These themes are often gauged on their 3, 5, and 10-year trajectories. For instance, we ask ourselves if there will be significant developments in precision oncology over the course of the next 3, 5, and 10 years.

Our team of analysts then perform deep research to understand the science and technology that play important roles in the development of each of the themes and seek out companies that we believe to be best positioned to execute those developments. We evaluate each company through our qualitative analysis—looking at management teams and ethical operations—and financial analysis—using a fundamental discounted-cash flow based valuation process—to determine what we believe to be the company's intrinsic value. We seek to invest in companies when they are trading or raising capital at a price that is less than their intrinsic value.

Our determination of a company's intrinsic value includes performance assumptions based on key company events such as clinical trial results, FDA approvals, or conference presentations. We seek to remain invested in companies until they achieve each of these assumptions—proving their investment thesis—or we determine that they have become unlikely to achieve these assumptions.

For a more detailed explanation of our process, please see the [Eventide Healthcare & Life Sciences Fund Product Profile](#).

Through our investment process, we then seek to invest in the companies participating in these themes, which we believe are best positioned to succeed.

Investors should consider their investing time horizon when assessing whether a fund's volatility and returns are appropriate for them.

EVENTIDE'S PERFORMANCE

There are many ways to evaluate a fund's performance. Investors should consider their investing time horizon when assessing whether a fund's volatility and returns are appropriate for them. The Eventide Healthcare & Life Sciences Fund has an investment objective of long-term capital appreciation, meaning it is most appropriate for long-term investors who are seeking capital appreciation. Historically, the long-term performance of the Fund has been favorable compared to its industry benchmark, the S&P Biotechnology Select Industry Index¹, while experiencing short-term periods of underperformance.

For a more detailed review of our performance, please see the [Fund's Fact Sheet](#) and [Commentary](#).

¹ The S&P Biotechnology Select Industry Index represents the biotechnology sub-industry portion of the S&P Total Markets Index. The Fund also has a benchmark of the S&P 500 Total Return Index. This is an index created by Standard & Poor's of American stocks with the largest market capitalization. Investors cannot directly invest in an index, and unmanaged index returns do not reflect any fees, expenses, or sales charges. The volatility of an index may be materially different than that of the Fund, and investors should not expect the Fund to achieve the same results as a listed index.

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Mutual funds involve risk including the possible loss of principal. Past performance does not guarantee future results. The Fund's ethical values screening criteria could cause it to under-perform similar funds that do not have such screening criteria. The Fund can invest in smaller-sized companies which may experience higher failure rates than larger companies and normally have a lower trading volume than larger companies. The Fund can have risk associated with the biotechnology and pharmaceutical industry in which these companies may be heavily dependent on clinical trials with uncertain outcomes and decisions made by the U.S. Food and Drug Administration. The Fund can have risk related to option investing. There are special risks associated with investments in foreign companies including exposure to currency fluctuations, less efficient trading markets, political instability and differing auditing and legal standards. The Fund can invest in private companies. Private investments include various risks including but not limited to lack of liquidity, capital commitment risk, and valuation risk. Private companies may not be financially profitable and have uncertain futures, subjecting them to additional risks.

Investors should consider a fund's investment objectives, risks, charges and expenses carefully before investing or sending money. This and other important information can be found in the prospectus, which can be obtained at <https://www.eventidefunds.com/prospectus> or by calling 1-877-771-EVEN (3836). Please read the prospectus carefully before investing. Eventide Mutual Funds are distributed by Northern Lights Distributors, LLC, Member FINRA/SIPC, which is not affiliated with Eventide Asset Management, LLC.