Artisan Partners Global Equity Team

Pipelines for Resilient Growth

Resilient Growth

November 2024

When it comes to finding resilient growth in biopharma, Research Analyst Navdeep ("Nav") Singh of the Artisan Partners Global Equity Team takes a consistent approach to an often-volatile sector allowing the team to produce positive results for the portfolio and its investors.

Navdeep ("Nav") Singh
Research Analyst

From Pandemic Travel to Implementing the Checklist

Nav has a background in biology and economics with 18 years of experience researching biopharma companies, first at Goldman Sachs and then at Fidelity. Nav first met Portfolio Manager Mark Yockey during the darkest days of the global pandemic. In fact, Nav's flight from Boston to San Francisco to interview with Mark was one of the first flights that opened up to a handful of brave passengers who boarded planes armed with N95 masks, gloves and Clorox wipes and after initial lockdown orders grounded the airlines in 2020. Nav survived the journey in good order and returned with an opportunity to not only expand his coverage to include a wider number of subsectors in health care, but also to work with someone as passionate and knowledgeable about the sector as he was. The two discovered that they shared the view that health care is a special sector given its capability of making a difference in people's lives while generating long-term investment growth for investors. After Nav joined Artisan Partners, he quickly became known as the "COVID analyst" on the team. However, as all of the analysts soon discovered, everyone would become de-facto COVID analysts given that the pandemic materially affected just about every company across sector and region in a profound way.

One of the first things Nav did upon joining the team was to implement a framework for researching health care companies. It was a checklist, of sorts, for those qualities a company must demonstrate to him and the team before they would consider it a candidate for investment. First, the company's key product or innovation must provide a strong benefit to the patient. In Nav's considerable experience, if a drug materially improves quality of life or life expectancy, then it leads to fast adoption and durable use, providing a long runway for growth. Second, the drug must offer the best solution in the market. While often profitable, "me too" drugs are normally not sufficiently differentiated to provide the kind of large market opportunity and catalyst for earnings growth needed to make an investment worthwhile. This leads to the third quality, namely, that the company must have strong research and development capabilities. Over the years, Nav has discovered that R&D is a linchpin capital investment that can unlock ongoing product innovation and make the company and its stock more resilient. And finally, if the first three qualities are present, then the fourth quality can usually be found as well: pricing power. Nav explains further, "This is especially the case if the drug is making a material impact on someone's life."

Avoiding Binary Risk

One of the largest risks in investing in health care is the binary risk that investors face when a company releases new data on a drug, or a drug goes under FDA review. If the trial goes well and the data is positive, investors will likely see the company's stock price soar. However, if the trial goes poorly and the data shows the drug to be ineffective, then the stock price sinks, taking investor capital with it. Complicating the scenario is the fact that many variables can affect the outcome of a trial, making it very difficult to predict the results ahead of the binary event.

> "In biopharma, we are investing in some of the biggest trends going on right now."

The team's approach is to first establish proof of concept and then try to de-risk the investment process through in-depth knowledge and proper timing. Nav stresses the importance of establishing some type of confirmation that the formulation reacts positively in a human subject, for instance. Then, he and the team conduct a deep dive into all available data for the drug candidate. They talk with doctors, and may even conduct surveys with them, to understand their attitudes about the drug should it have a positive outcome in the trial. Nav and the team will also speak with the company's management team to understand their plans and vision for launching and marketing the drug. These qualitative factors are quantified in a proprietary valuation model that Nav and others build before the trial.

Once the clinical trial results are released, Nav and the team value the stock given all of the known inputs and stand ready to buy it if the price falls below their target value. By waiting until after the trial to buy shares, they may miss some of the stock's upside potential. However, this approach allows them to potentially capture a substantial portion of the gains with much greater certainty than if they had invested before the trial outcome. More importantly, they avoid committing investor capital until they have a solid understanding of the stock's valuation, which usually becomes clearer after a stage 2 or 3 clinical trial data readout.

Autoimmune Disease

It is estimated that as many as 4.5% of the world's population is affected by an autoimmune disease, a condition in which the body's immune system, designed to protect the body by fighting germs and other harmful substances that enter the body, instead turns against itself and attacks healthy cells. In the US, about 10 million people suffer from autoimmune diseases such as multiple sclerosis and rheumatoid arthritis.

Argenx, a small biotech company that develops therapies for severe autoimmune diseases, was first added to the portfolios by the team in 2021. Its most important drug, VYVGART®, is an advanced treatment option for patients with generalized myasthenia gravis (gMG), a rare and chronic autoimmune disease that causes debilitating muscle weakness. VYVGART® is the most effective FDA-approved treatment for adults with gMG. By destroying and removing harmful antibodies, it can help reduce the disruption between the nerves and the muscles, which reduces the debilitating symptoms. VYVGART® has been on the market for almost three years, generating $1.2 billion in 2023. According to Nav, it has the potential of exceeding $3.5 billion in annual sales for treating gMG alone.

Above and beyond having developed an innovative drug for a terrible disease, what Nav likes about Argenx is the opportunity it has to leverage this intellectual property across multiple diseases. He mentions two others, "Vyvgard showed positive phase 3 data for treating idiopathic thrombocytopenic purpura (ITP), a condition that occurs when the immune system mistakenly attacks platelets or when the body doesn't make enough platelets." Platelets are blood cells that form blood clots to help stop bruising and bleeding. Another condition that Nav cites is chronic inflammatory demyelinating polyneuropathy (CIDP). CIDP is a neurological disorder that results in progressive weakness and reduced senses in the arms and legs due to damage to the fat-based protective covering on nerves. Additionally, VYVGART® is in late-stage testing for treating chronic skin disease pemphigus vulgaris (PV) and myositis which attacks the muscles. There are no current cures for these conditions. If VYVGART® is approved for treating these diseases, then Argenx could expand the breadth and depth of its immunology pipeline, unlocking an estimated $6.5 billion in additional peak sales. This is a perfect example of a *pipeline in a drug*.

> "How many more diseases will Vyvgard work in? Argenx has plans to evaluate it in at least 15 more."

"We like this space because sometimes mechanisms like this can act across multiple diseases." He elaborates, "When investors have a line of sight for that much money with these drugs, the increase in stock price could take Argenx from being a mid-cap to a large-cap company."

Another company that Nav and the team currently likes is UCB, a Belgian biotechnology firm that specializes in developing drugs that treat severe immunological and neurological diseases. Earlier this year, it launched

Bimzelx®, a treatment that quickly became the standard for care for psoriasis and several other autoimmune disorders meaning that it is so widely accepted that doctors can avoid legal risk by prescribing it. It has become the leading treatment for psoriasis, a $12 billion market expected to grow to $26 billion by the end of the decade. It's success has helped more than double UCB's stock price this year. The team projects Bimzelx® could reach $5 billion in peak sales in total.

In addition, UCB is finding success in other drugs in its portfolio, including EVENITY® for postmenopausal osteoporosis and FINTEPLA for childhood epilepsy. These relatively new treatments are increasingly gaining approval outside the US, Europe and Japan and are adding to the stock's upside support. Like VYVGART®, Bimzelx® is also a pipeline within a drug, offering diverse therapeutic applications and providing UCB with an engine for steady growth.

Health Care Industry Structure

The health care sector is comprised of several subsectors, each with its own investment profile. Pharmaceutical companies are those using artificial or chemical sources to make drugs. Those companies or divisions that derive products from the extraction or manipulation of living organisms are considered to be biopharmaceutical or biopharma companies. Biotech is a subset of biopharma and consists of smaller, innovative companies that are primarily engaged in development.

As shown in Exhibit 1, large pharmaceutical and biopharma companies—global drug companies with market caps in hundreds of billions of dollars—generally have less business and market risk associated with them than smaller, more innovative biotech firms, which have higher revenue exposure to early-stage drug candidates. Often, small biotech companies are prone to large swings in revenues—from potentially having no revenue to generating significant revenue if a new breakthrough drug achieves commercial success, and their often-volatile stock prices reflect this fact. Nevertheless, both big pharma and small biotech companies face clinical risk, the risk that an experimental treatment may fail to produce the desired medical outcome.

Medical technology companies, or "medtech," generally have lower risk associated with their cashflows than pharmaceutical or biopharma companies. While some medtech companies have high product design and development costs and must perform pre-market and post-market clinical trials, they generally face lower failure risks than do pharma and biopharma drug makers. Nav has found, however, that many of these companies lack the pricing power that the larger drug companies have.

Finally, life sciences and contract manufacturing organizations often offer investors steady growth within health care without clinical risk. Many of these companies provide the tools and services—from lab equipment to running a drug company's clinical trials—that are necessary for the industry to function properly.

The health care industry was severely tested during the pandemic, and it proved to be resilient as players from all parts of the ecosystem worked together to quickly develop new vaccines, test equipment and run trials needed to rise to the challenge. In the end, each of these areas played a critical role in the fast response to COVID-19, and many people benefited from new knowledge and capabilities gained in the process. In fact, in many ways, the response to COVID-19 showed the world the immense power of innovation within the health care industry. This was highlighted by the industry developing and deploying a vaccine within one year of the initial outbreak, an unprecedented response.

The Long War

Progress in medicine often happens slowly, over time, by winning many little battles. It is in this context that the battles against obesity, autoimmune disease and hundreds of other types of disease often involve developing resilient pipelines and pipelines within drugs that can continue to deliver innovative new treatments for years to come. This type of resiliency eventually wins wars—and it's what drives Nav's unfaltering interest in health care investing every day.

Exhibit 1

SUBSECTOR	DESCRIPTION	RISK PROFILE	EXAMPLES	FY1 EBIT MARGIN
Large Pharmaceutical or Biopharma Companies	Researches, develops, and markets organic or chemical drugs	Moderate, clinical risk	Novo Nordisk	47.4%[1]
Small Biotech Companies	Primarily focused on advanced research and developing new treatments	High, clinical risk	Argenx	2.8% [1]
Medical Technology (MedTech)	Connects patient care with technology, including medical devices	Low, some clinical risk	Stryker	21.7% [1]
Life Sciences Tools & Equipment	Provides equipment to pharmaceutical companies	Low, no clinical risk	Thermo Fisher Scientific	17.8%[1]
Contract Development and Manufacturing (CDMO) or Contract Manufacturing Organizations (CMO)	Provides development and manufacturing infrastructure to pharmaceutical companies	Low, no clinical risk	Lonza Group	17.5%[2]

[1]FactSet 30 Sep 2024. [2]FactSet 30 Jun 2024.

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Carefully consider the Fund's investment objective, risks and charges and expenses. This and other important information is contained in the Fund's prospectus and summary prospectus, which can be obtained by calling 800.344.1770. Read carefully before investing.

Current and future portfolio holdings are subject to risk. The value of portfolio securities selected by the investment team may rise or fall in response to company, market, economic, political, regulatory or other news, at times greater than the market or benchmark index. A portfolio's environmental, social and governance ("ESG") considerations may limit the investment opportunities available and, as a result, the portfolio may forgo certain investment opportunities and underperform portfolios that do not consider ESG factors. International investments involve special risks, including currency fluctuation, lower liquidity, different accounting methods and economic and political systems, and higher transaction costs. These risks typically are greater in emerging and less developed markets, including frontier markets. Securities of small- and medium-sized companies tend to have a shorter history of operations, be more volatile and less liquid and may have underperformed securities of large companies during some periods. Growth securities may underperform other asset types during a given period.

This summary represents the views of the portfolio managers as of 30 Sep 2024. Those views may change, and the Fund disclaims any obligation to advise investors of such changes. For the purpose of determining the Fund's holdings, securities of the same issuer are aggregated to determine the weight in the Fund. The holdings mentioned above comprised the following percentages of the Fund's total net assets as of 31 Dec 2024: Artisan International Fund – Novo Nordisk A/S 2.1%, Argenx SE 3.9%, UCB SA 2.9% and Medacta Group SA 0.8%. Artisan Global Equity Fund – Novo Nordisk A/S 1.6%, UCB SA 0.4%, Medacta Group SA 0.3% and Stryker Corp 1.4%. Portfolio holdings are subject to change without notice and are not intended as recommendations of individual securities.

Earnings Before Interest & Tax (EBIT) is an indicator of a company's profitability, calculated as revenue minus expenses, excluding tax and interest.

FY1 is the current forecast year.

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