July 31, 2017

ValueInvestor INSIGHT

The Leading Authority on Value Investing

The following excerpt, reprinted with permission, is from an interview with Connor Browne as part of a feature titled "Investing in Healthcare" in the July 31, 2017 issue of *Value Investor Insight*.

INVESTOR INSIGHT

Connor Browne
Thornburg Investment Management

"It's not a clean, capitalist model, which makes for unpredictability and outcomes that don't always make rational sense."

Describe the key pros and cons you see in investing in healthcare.

Connor Browne: The big positive is there is generally a consistent and reliable source of demand for healthcare products and services. While there is some discretionary spend, most of it is non-discretionary so, as part of a portfolio, well-chosen healthcare positions should hold up a bit better in the case of an economic downturn.

There are some unique challenges. Wherever you are in the world, coverage, reimbursement and spending are directly or indirectly impacted by government. It's not a clean, capitalist model, which makes for more unpredictability and outcomes that don't always make rational sense.

How do you tend to deal with that kind of unpredictability?

CB: We've been actively investing in healthcare stocks since 1995, a period that included true regulatory reform in the case of the Affordable Care Act in the U.S. For the most part the status quo is a reasonable forward assumption, but you need to constantly assess the potential impacts regulatory change could have on your companies and mind your exposures accordingly.

We'd love to only make investments dependent on a company's competitive execution in the markets they serve, but that's not the world we live in. We look at regulatory risk in somewhat the same way as we do interest rates or energy prices. Know the risk exposure you have, think through the specific impacts possible in a probabilistic way, and invest with enough upside to your calculation of intrinsic value that you have a margin of safety to compensate for something out of your control going against you.

Is today's U.S. regulatory environment making certain healthcare sectors more or less appealing?

CB: We're not finding much opportunity in hospitals or managed care, but not just because of the regulatory environment. In the hospital space, for example, we worry that there are too many beds in the U.S., the rationalization of which could be problematic given the debt burdens of so many publicly traded hospital companies.

In the case of managed care, we like the administrative-services-only [ASO] business, where large employers who self-insure pay a UnitedHealth or Anthem or Cigna just to do the benefit design and contract negotiation. But fully insured patients still drive the vast majority of these companies' profits. There we find the outcomes much less predictable, in part because of the discussion going on in Washington. That's making the stocks of such companies less interesting to us.

Are you more active in medical devices?

CB: Medical-device investing is different today than it was during the early 2000s. Then it was more like investing in pharmaceutical companies – you were looking for exciting new products you thought could grow a lot more than the consensus was expecting. There was Boston Scientific with drug-eluting stents, say, or Guidant with defibrillators. It was a very product-driven model.

Today the major device players are more diversified, with a number of potential growth drivers and, increasingly, scale advantages. One example we own is Medtronic [MDT], which after its purchase of Covidien in 2015 has a well-diversified product portfolio, is generating incremental growth from new-product development and emerging-market expansion, and is building a very interesting "solutions" business. There it's going to customers offering to take over the supply management of a relevant lab or hospital department where the company can bundle a full array of products. The goal is to help bend the healthcare cost curve while capturing market share. You can only do that with size and Medtronic appears to be gaining traction there.

Is the market missing something like that today in Medtronic's stock?

CB: With organic growth and operating leverage, we think Medtronic can increase

EPS at around 10% annually. The shares [now around $85] aren't dirt cheap, but they trade at less than 16x consensus next year's earnings. At 18x our calendar 2019 EPS estimate, the shares would trade around $110.

Describe the case for a new pharmaceutical-company investment of yours, Ireland-based Alkermes [ALKS].

CB: A model that has worked for us investing in pharmaceutical companies is in our base case to assess only the opportunity for approved, on-the-market products, taking out the risk of the FDA saying yes or no. We will arrive at a detailed value for the clinical-stage development pipeline as well, but only to give us a directional feel for upside optionality.

Alkermes focuses on central-nervous-system disorders and has developed particular expertise in converting oral treatments into long-acting injectables. Our investment case is largely tied to the potential we see in two of the company's existing products, Vivitrol and Aristada. Vivitrol is delivered by a monthly shot and treats opioid dependence by blocking the receptors in the brain that are sensitive to such drugs, taking away the high. It has proven an effective way to treat opioid addiction and we believe its current 2.5% share of the market can reach 12% by 2023, which would take the product's revenues from around $200 million last year to almost $1.5 billion in 2023. The Street view is projecting only about half as much growth.

Aristada is a long-acting version of Bristol-Myers' Abilify, for the treatment of schizophrenia. About 10% of schizophrenia patients today use the long-acting version of any drug for treatment, with Aristada accounting for only 3% of that 10%. We project that long-acting drugs will grow to 20% of the market and that Aristada can capture 25% of that by 2023. If we're right, annual revenues would increase from $50 million today to $1 billion by 2023. Again, that's roughly twice Street expectations.

What is your "directional feel" on the company's new-drug pipeline?

CB: Management has not always been quite as balanced as they could have been in describing the opportunities versus risks in the pipeline, but we generally believe in the leadership of the development effort and the science behind it. Two pipeline products of particular interest today are in phase-III testing, one for treating depression and another for treating schizophrenia without associated weight gain. Again, we're not relying on these drugs coming to market, but we think there is material positive optionality from one or more doing so.

What upside do you see in the share price from today's $55.20?

CB: Our base case, driven by growth from Vivitrol and Aristada, is for earnings to reach $5.50 per share by 2022. At that point the company would be growing EPS at 30%-plus, so a 20x forward multiple would be reasonable and result in a share price of around $110 in a few years. If we layer in success for the two pipeline opportunities, EPS could be $10 in 2022.

INVESTMENT SNAPSHOT

Alkermes
(Nasdaq: ALKS)

Business: Development, manufacture and sale of pharmaceuticals for treatment of chronic diseases including schizophrenia, depression, addiction and multiple sclerosis.

Share Information (@7/28/17):

Price	**55.22**
52-Week Range	41.93 - 63.40
Dividend Yield	0.0%
Market Cap	$8.46 billion

Financials (TTM):

Revenue	$780.7 million
Operating Profit Margin	(-26.0%)
Net Profit Margin	(-25.6%)

Valuation Metrics
(@7/28/17):

	ALKS	S&P 500
P/E (TTM)	n/a	23.9
Forward P/E (Est.)	120.0	18.9

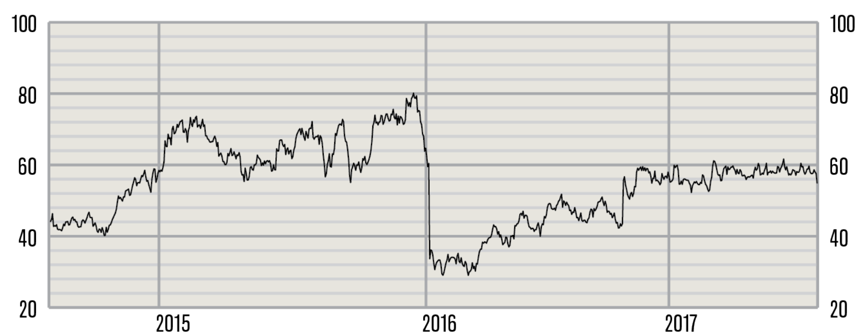
Largest Institutional Owners
(@3/31/17):

Company	% Owned
Fidelity Mgmt & Research	14.9%
Wellington Mgmt	13.1%
T. Rowe Price	12.2%
Vanguard Group	7.9%
BlackRock	5.2%

Short Interest (as of 7/14/17):

Shares Short/Float	4.8%

ALKS PRICE HISTORY



THE BOTTOM LINE

The company reminds Connor Browne of Gilead Sciences at a similar stage 15 years ago, when it was ramping up early-cycle products and developing a number of promising new ones. Driven by growth in two key products that he expects to far exceed consensus expectations, he believes the company's shares could double within the next few years.

Sources: Company reports, other publicly available information

Patient Capital

Smart investors try to mitigate the risk of investing in pharmaceutical companies by not counting on the success of in-development pipeline drugs. When the market doesn't follow the same approach, as with Alkermes, how to respond?

A model many value investors follow when investing in pharmaceutical stocks is to make buy or sell decisions based only on their assessment of approved, on-the-market drugs. They'll value the development pipeline, but only as a gauge on upside optionality, not a justification to own.

Connor Browne of Thornburg Investments took just such an approach in making the case last summer for Alkermes plc, which specializes in treatments for central-nervous-system disorders [*VII*, July 31, 2017]. He thought the market was significantly underestimating the extent to which on-market drugs Vivitrol, for opioid dependence, and Aristada, for schizophrenia, would benefit from growing end markets and market-share gains. On his base-case $5.50 per share in company earnings by 2022, he believed the shares could double from the then-current price of $55. Attractive pipeline opportunities could result in much higher upside, but he wasn't counting on them at all.

The market, of course, can behave otherwise. Alkermes' shares hit $67 in February, sparked not by specific news about one of its early-pipeline immuno-oncology drugs, but instead when Nektar Therapeutics signed a large "collaboration" deal with Bristol-Myers Squibb to support clinical trials and secure marketing rights for a similar drug in Nektar's pipeline. That optimism was shunted aside earlier this month, however, on news that the U.S. Food and Drug Administration refused to review Alkermes' new-drug application for a highly anticipated pipeline drug for the treatment of major depressive disorder. On that news the shares fell more than 20%, only to partly rebound two weeks later when the FDA said it would accept the application after all. Whew! The shares now trade at $44.75.

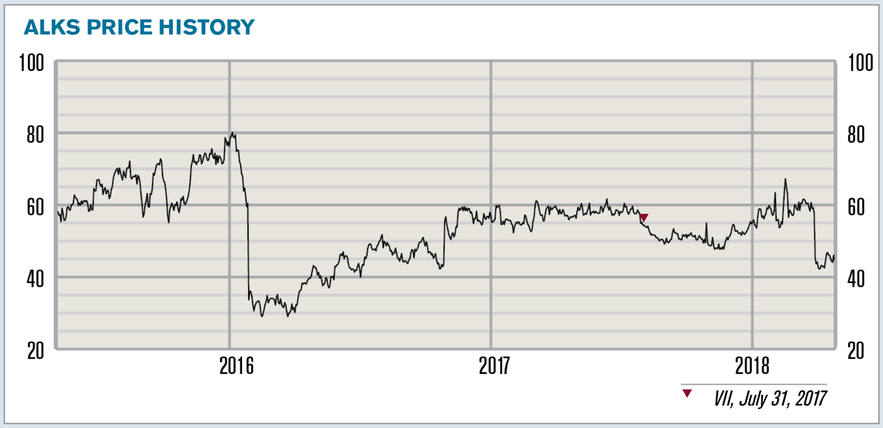
Despite the volatility around the pipeline, Browne says his basic outlook for the company hasn't changed, although he has on recent experience moderated his outlook for opioid treatment Vivitrol. The drug, delivered monthly by shot, treats opioid dependence by blocking brain receptors that are sensitive to such drugs, taking away the high. That offers an attractive alternative to the primary competing treatment, Soboxone, which delivers low levels of opiates in an effort to wean patients from their dependence.

The hurdle faced with Vivitrol, Browne says, is the difficulty in reaching the target patient population. "Part of what gets the company excited is providing effective treatments for underserved populations," he says, "but it's challenging to reach those patients and to get reimbursement." He still believes Vivitrol sales can dramatically increase as it captures more than 10% of the market, but he's modeling that taking longer than originally expected.

As a result, he's lowered his 2022 EPS estimate to $4, which at the 20x multiple he considers reasonable would yield an $80 share price. Having reduced his position on this year's earlier price rise – "We'll do that when the market gets excited about an early-stage pipeline drug," he says – he took his Alkermes stake back to a full 4% following the initially negative FDA news on its depression drug. VII

INVESTMENT SNAPSHOT

Alkermes
(Nasdaq: ALKS)



Share Information (@4/27/18):

Price	**44.74**
52-Week Range	41.15 – 71.22

Valuation Metrics (@4/27/18):

	ALKS	S&P 500
Trailing P/E	n/a	24.1
Forward P/E (Est.)	62.1	17.0

ORIGINAL BOTTOM LINE – July 31, 2017

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NEW BOTTOM LINE

Connor Browne has responded in managing his position in the company more to the market's reaction to company news than the news itself. He still owns a full position in the shares, which trade at a 45% discount to his updated fair-value estimate a few years out.

Sources: Company reports, other publicly available information

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Medtronic is 2.70% of Thornburg Value Fund and 3.13% of Long/Short Equity Fund; Alkermes plc is 1.96% of Thornburg Value Fund, 4.37% of Thornburg Long/Short Equity Fund, and 1.23% of Thornburg Core Growth Fund; Gilead Sciences is 3.98% of Thornburg Value Fund, 4.57% of Thornburg Long/Short Equity Fund, 1.42% of Thornburg Core Growth Fund, as of 8/31/2018. Source: APX.

Earnings per Share (EPS) – The total earnings divided by the number of shares outstanding.

Multiple – A valuation multiple reflects an investment's market value relative to some key metric. Price to earnings ratio (P/E) is a commonly used multiple. It's calculated by dividing a stock's price by the company's earnings per share.

The S&P 500 Index is an unmanaged broad measure of the U.S. stock market.

Before investing, carefully consider the Fund's investment goals, risks, charges, and expenses. For a prospectus or summary prospectus containing this and other information, contact your financial advisor or visit thornburg.com. Read them carefully before investing.

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