

How to Value a Biotech Company

Even if they don't have products or revenue

Jim Graham

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The biotechnology sector is an exciting, complex, and risky place to invest. Many of the biotech companies trade a lot of options, much more than would be seen on similar sized companies in more boring sectors. That's because while the risks are high, the rewards can be very high as well.

From the fundamental side, they are very hard to value. I can look through the financial statements and follow the news on individual companies, just as in any other sector. But assessing the scientific basis of a new technology requires specialized knowledge. Evaluating the soundness of a drug's clinical trial results requires understanding the design of drug trials and the statistical analysis used to prove success.

I always concentrated heavily in the mathematics and finance, so with my limited knowledge of chemistry, biology, and medicine it's hard for me to really grasp the implications of industry developments. That leaves me with a significant handicap when valuing biotech firms.

Just when analyzing any company, earnings are key. But for biotech firms, this often means estimating probable future returns and then discounting them to their net present value. Because of the long Research and Development phase, with little revenue coming in, determining the prospective earnings of a biotech company is tricky.

I don't usually worry about this too much with large biotech companies like Amgen, Biogen, or Genentech. They have a diverse product line and a history of bringing successfully bringing new products to market. In the past couple years, vertical integration and strong pipelines are actually making the large biotech companies look and act more like large pharmaceutical companies.

But there are over 1,000 biotech companies in North America, but the top 1% of these companies making up a majority of the revenue. Below is a list of the only (ten) biotech firms with market caps over a billion dollars, along with their recent revenue:

	<u>Latest Annual Revenue (mil)</u>	<u>1-yr Revenue Growth</u>	<u>3-yr Revenue Growth</u>	<u>5-yr Revenue Growth</u>
AMGN	\$3,763.0 (12/2001)	25.9%	10.9%	12.9%
DNA	\$2,387.7 (12/2002)	14.7%	19.6%	N/A*
SRA	\$1,546.5 (12/2002)	12.3%	14.3%	N/A*
MEDI	\$847.7 (12/2002)	37.0%	28.6%	55.6%
CHIR	\$914.1 (12/2002)	-19.9%	7.3%	1.0%
GENZ	\$1,223.6 (12/2001)	9.2%	25.2%	17.0%
GILD	\$466.8 (12/2002)	99.7%	38.1%	68.9%
BGEN	\$1,148.4 (12/2002)	10.1%	13.0%	22.7%
IDPH	\$404.2 (12/2002)	48.2%	53.1%	52.3%
CELG	\$135.7 (12/2002)	18.8%	68.9%	175.4%
IVGN	\$629.3 (12/2001)	3.3%	119.3%	N/A*
AFFX	\$224.9 (12/2001)	26.2%	39.7%	70.1%
CLL	\$441.4 (12/2001)	21.6%	N/A*	N/A*
CRL	\$554.6 (12/2002)	19.1%	37.8%	N/A*
MRX	\$212.8 (06/2002)	25.9%	18.4%	26.8%

So without much revenue, or proof of management expertise, I am always a bit apprehensive when dealing with the smaller biotech companies. Often these firms have no products on the market at all – their entire value is predicated on the ability of their research efforts to develop successful new products.

Some of them will be extraordinary winners; the others will bomb completely. To invest in these young companies, you need to know the companies very well. I thought I would go over some of the things that I look for myself when deciding to take a flier on one of these companies.

I start by looking at the company's products, both in development and production. For a company that is already selling products, looking at the sales trends makes it easier to determine growth rates and market potential for the drug.

But these are very inefficient markets, and all investors do not have the same information. That is the problem inherent in valuing development-stage companies. Most of them are losing money, and the value is in products that are not yet approved for sale.

For products "in the pipeline", you can look at the disease that the drug/product intends to target. How large is the market? A drug that cures cancer or heart disease has more profit potential than one targeting an obscure disease.

Another important factor is if it is a treatment or a vaccine. Treatment drugs are used continuously over a long period. Vaccines are a one-time shot, so not nearly as worthwhile from a financial perspective (this is not making any comment on the social perspective).

The news gets more attention (and risk is reduced) as these products progress through the regulatory cycle. Opportunities are often available because these things take time, and investors lose interest and often ignore this progress. Then they get excited when it hits the news, or the product passes a major regulatory hurdle. The real value only changes as clinical trials prove that the drug actually works.

So you need to know what drugs the company is developing, the market size that they may serve, and any possible competition. Next, you want to take a look at is how far the company's products are in the stages of clinical development, and how close the product is to FDA approval. All companies that want to sell drugs and/or biotech products in the US require FDA approval.

Food & Drug Administration (FDA) Approval Process

Phase I (approx. 1 year)	Testing on 20-80 healthy individuals to determine the dosage and safety of the drug.
Phase II (approx. 1-3 years)	Testing on 100-300 patients suffering from the disease or condition to determine effectiveness and potential side effects.
Phase III (approx. 2-3 years)	Testing on 1000-5000 patients suffering from the disease or condition and the side effects brought on by long-term usage are monitored. This stage is the most stringent and rigorous, with some patients receiving the drug, others a placebo.

Estimates are that only 1-2 out of 20 drugs that enter the FDA process gain final approval.

If a company is relatively new at navigating the FDA process, you can expect it to take longer for them to gain approval. For this reason, many small biotech companies partner with larger, more experienced ones. The difference of one year in gaining approval can mean millions of dollars.

Young biotech companies also need strong marketing and drug development partnerships if they are to be successful in the future. The extremely high R&D costs, coupled with very little revenue, forces many biotechnology companies to partner with larger firms if they want to complete product development.

As in any other business, cash is king. Without cash to live on, these small revenue companies are in trouble. As the key to any successful biotech company is solid financing, you also must consider from where the company is getting its money. Take a look under current assets on the balance sheet; the company should have plenty of cash. Looking at the Current Ratio and Working Capital Ratio should help you determine whether they have (or are likely to have) cash problems.

Most biotech companies use equity financing, rather than borrowing. That's partly because equity is cheaper and partly because most banks and creditors would refuse to finance such high risk ventures (and for which there is no collateral).

The next thing to look at is: where is the money being spent? Research and development should be the answer. The companies have to have substantial R&D budgets. Most biotech firms spend a majority of their money on R&D of new products. Some investors believe that the more a company spends on R&D, the better the company.

Even more important though is finding a company that does a lot of research while still controlling costs. That helps then make cash last for the years ahead. For companies with sales, the process is a little easier: you can look at R&D expenditures in relation to revenue, employees, or some other measure. Then compare it to similar biotech firms. This gives some insight into how frugal the company is with their money.

Over the past decade, the biotech industry has been dominated by a small handful of big companies. However, any one of the smaller companies can potentially produce a product that sends them soaring to the top. For considering investing in biotech, doing a simple stock screen based on earnings, revenue, or some other financial figure will probably not uncover the diamond in the rough. You need to research the potential market for a drug, determine whether there are competitive products, and most importantly, predict whether the product will gain final approval.

This doesn't mean you need to be a doctor to analyze a biotech stock, but you do need to understand the area of biotechnology in which the company is situated, and whether or not the risk of investing in the company is worth the reward. Without insight into what these companies are doing, investing in them would be little more than gambling. And I prefer to invest rather than then gamble.