ETFS S&P Biotech ETF

Part of the Future Present Range
Biotechnology –
A wonder of the world

• Biotech encompasses some of the oldest and most important technologies in the world, such as penicillin and vaccines

• Because biotech breakthroughs can be so consequential (think manufactured insulin, BOTOX), this sector has huge potential upsides

• CURE will be Australia's first ETF to provide pure exposure to US biotechnology stocks

Introduction

Quick quiz: what do beers and wine, vaccines and antibiotics, biofuels and fertilisers have in common?
Answer: they're all forms of biotechnology.

Biotechnology may run like an obscure six syllable word, but most of what's in your fridge – and almost everything in your alcohol cupboard – owes to biotechnology. Alcohol is produced by fermentation, which is one of the oldest – and let's be honest: most popular – types of biotech. Most food relies on some kind of biotech, including pesticides and fertilisers used to grow plants. As well as the antibiotics and genetically modified cattle feed that grow livestock.

ASX Code - CURE | MER = 0.45%
Biotechnology

Biotechnology accounts for 20% of the healthcare sector

Biotech therapies are those made with, or derived from a living organism

Bio drugs provide novel and targeted treatments

New therapies are providing solutions for previously untreatable diseases

Bio drugs accounted for 1/3 of novel drugs approved by the FDA in 2018

Healthcare biotech – creating the modern world

While there are many types of biotech, the most important by far has been healthcare biotech. Insulin manufacturing, which has improved the lives of countless diabetics, is a kind of biotechnology. Most crucially of all, antibiotics and vaccines, which have saved the lives of countless millions, are also types of biotech.

Most of the major biotech breakthroughs we know took place in the 20th century (penicillin in the 1920s; measles and polio vaccines in the 1950s). But in the 21st century, discussion has been raised about biotech’s prospects to build cancer-beating medicine, solve world hunger with new generations of crops, and end global warming with greener fuels.

This may sound like wishful thinking, but in biotechnology the sky is always blue. After all, in the 1800s who would have anticipated that smallpox, measles and polio would mostly be eradicated 200 years later (with biotech to help us get there)? And in 1900, when 20% of US males died before their first birthday, who could have guessed that we wouldn’t hit that mortality rate until 62-years of age in the year 2018?

What do biotech companies do?

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A wonder for investors

As well as a wonder for human kind, healthcare biotech has also performed wonders for investors. The S&P Biotechnology Select Industry Index, an index that measures the performance of the biotech healthcare sector in the US, has delivered a total return of more than 18% a year for the past 10 years. This compares very favourably with the ASX 200, which has provided a total return of around 7.5% as well as the S&P Global Healthcare Index, which has provided an annual total return just under 12%.

![Graph showing total return (%)](chart.png)

**Source:** Bloomberg as at 31 October 2018

Why has biotech performed so well?

Partly because there is never a shortage of demand. Regardless of the business cycle, people need medicines; sick people need treatments – meaning demand for biotech is inelastic. But making things better biotech has been boosted by deep seated demographic trends. These include a growing global population, which ensures there are more people to cure. But also, an aging population in industrialised countries whose effects on the healthcare sector have been well-documented.

David and Goliath – The less obvious sources of demand

Support for biotech also derives from less obvious sources, like intellectual property laws. Value in biotech – as in other parts of healthcare, including pharmaceuticals – is heavily driven by IP laws and patents. If a new company discovers an important drug and patents it, they’ll be in a good position to make a lot of money. As patents are, in effect, legalised monopolies.

But here’s the rub: patents eventually expire, and when they do, competitors can flood the market with copycat products. This puts pressure on profit margins and sends companies looking for new ideas with fresh patents (which allows for higher margins). The commercial pressures that come with patent expiry are particularly pronounced when a company has many patents set to expire at once. These moments – called ‘patent cliffs’ – can cause boards of directors to sweat, as several product lines can come under attack from competition at once.

Patent cliffs can be a real problem for incumbent healthcare companies. But these cliffs create real opportunities for small biotech firms, as they mean deep pocketed incumbents can get desperate for new IP. This means that promising small young biotech companies are often acquired at juicy multiples when they have interesting IP, which we’ll discuss further below.
Case Studies – Amgen and Celgene

Biotechnology is extremely complicated and different from many other technologies, understanding the processes and application of these treatments is usually not intuitive.

To bring the power of biotech to life we have included case studies looking at different areas of biotechnology. Amgen is one of the world’s biggest biotech companies by market capitalisation. They develop and distribute a number of world class treatments but have to focus on maximising their patents for the time they have them and look forward to the development and/or acquisition of new products.

Celgene is known as leader in the ‘orphan drug’ market, providing treatments for rare diseases. This company has a number of relationships with other biotech firms and research groups to further their product development capabilities.

The Stalwart – Amgen

Amgen is one of the largest biotech companies, it currently has 17 patented products which it produces and distributes. In Australian dollar terms the market capitalisation of Amgen is $173 bn, to put this in perspective Australia’s largest company The Commonwealth Bank has a market capitalisation of $123 bn.

In 2017 the total revenue of Amgen was $21.8 bn US. It is a stalwart of the biotechnology community with its biggest, and very real risk, being ‘patent cliffs’ (as discussed earlier).

Of the 17 products the two biggest are Enbrel and Neulasta making up almost 46% of the revenue of the company in 2017 between them.

Enbrel is a treatment for rheumatoid arthritis (and other related conditions) that is produced using recombinant DNA. Simply put, different DNA strands are combined to produce a protein that reduces the inflammatory response associated with this debilitating condition. In 2017 the revenue from this treatment globally was $5.4 billion USD. This is close to the annual revenue of Medibank, Fortescue Metals or JB Hi-Fi.

The second largest product manufactured and market by Amgen is Neulasta. This drug is a white blood cell booster which reduces the risk of infection for chemotherapy patients. In 2017 Neulasta generated $4.6 billion USD in revenue.

Both products are foundational revenue earners for Amgen but they will be sorely tested in time, as the patent expires and substitutes hit the market. This is why big biotech companies reinvest so much money into new research and/or buy smaller players like to capture new revenue opportunities.

Amgen product sales 2015-2017

Source: Amgen Annual Report 2017

An orphan drug leader – Celgene

Celgene is a biotech company known for its focus on the development and production of orphan drugs and is a world leader in this field. Rare diseases are usually related to an underlying genetic disorder with treatments only able to be developed using relatively new technologies such as whole genome sequencing to identify the cause of a disease.

The flagship product of Celgene is Revlimid, a drug with sales of $8.2bn USD in 2017, making up 65% of Celgene’s revenue. Revlimid is a treatment for patients diagnosed with a rare form of cancer that affects the plasma cells, known as Kahler’s disease. This drug is specifically designed for those patients that are ineligible for stem cell transplantation and is the largest orphan drug on the global market.

Source: Bloomberg, as at 8 November 2018
Real risks, real rewards

Over the long term, biotech indexes have strongly outperformed plain vanilla market-weighted indexes. However, they have done so by taking on more risk.

**Why is biotech riskier?** Partly because the chance of discovering a ‘blockbuster’ new drug – like the chance of creating a blockbuster new anything – is quite small. On average, only 15% new pharmaceutical projects get FDA approval as novel drugs. The cost is also staggering, with the average cost of developing a new drug estimated as costing between US$1-$2.5 billion. Making matters riskier still, investors generally have very little visibility over how clinical trials are progressing. This means that a mystique tends to surround the development process and biotech investing has something of a reputation as being only for insiders. In all, there is a very real chance that biotech ventures fail and that investors get burnt.

The M&A cycle can be very boom and bust. When the going gets good – it can get really good. Anticipating a wave of M&A activity, in 2013 and 2014 the S&P Biotechnology Select Industry Index produced a return of 49% and 45% in those respective years. Yet when the cycle turned in 2016 and M&A activity dried up, the index provided a return of -16%. This is something investors need to be aware of when investing in biotech and, in fact, makes taking exposure through a diversified fund a more compelling argument.

### Industry cumulative average successful rate in stage of development

![Graph showing industry cumulative average successful rate in stage of development]

Source: Amgen Annual Report 2017

*Source: Amgen Annual Report 2017

1. (Biotechnology Report, EY, 2017)

How investors can benefit – enter CURE

How might investors gain exposure to biotechnology? One way might be the ETFS S&P Biotech ETF (CURE), Australia’s first biotech ETF.

CURE offers a simple, cheap and transparent one-stop-shop for tracking the US biotech healthcare segment. CURE does this by tracking the equally weighted S&P Biotechnology Select Industry Index of US biotech companies. This index has been tracked by ETFs since 2006, when an American fund – State Street’s XBI, which is listed on the NYSEArca – began to track it.

Buying an index of biotech companies has the advantage of diversification and reducing single name risk – which, as we have seen, can be substantial in biotech. It has the added advantage of ensuring that investors don’t miss the winners – which can be equally substantial. (Amgen, Biogen, and Gilead, three of the biggest biotech’s, delivered returns of 23% p.a. from 2012-2016)

CURE is equally weighted, which puts an emphasis on smaller companies. Smaller companies, the academic literature shows, tend to be faster moving and better positioned to make breakthroughs. And from an investment point of view, small companies – while doubtless riskier – have historically been better performing. Crucially, they are much more liable to be taken over by a bigger company, with the potential to accrue vast profits, as companies bid for their technology, in a very short period of time.

Charging a management fee of merely 0.45%, CURE is also the cheapest listed product in Australia offering exposure to biotech.

CURE Key Statistics

| Metric                      | Value
|-----------------------------|-------
| MER                         | 0.45%
| Weighting Methodology       | Equal
| Rebalance                   | Quarterly (Mar, Jun, Sep, Dec)
| Constituent Rebalance       | Annual (May)
| Current number of stocks    | 124
| Index Provider              | S&P Dow Jones

Source: S&P Dow Jones, ETF Securities Australia, 31 Oct 2018

Distribution of market size within the S&P biotechnology select industry index

Top ten holdings with examples of key treatments

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Ticker</th>
<th>Example of treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acadia Pharmaceuticals Inc</td>
<td>ACAD</td>
<td>Parkinson’s disease (Nuplazid)</td>
</tr>
<tr>
<td>Viking Therapeutics Inc</td>
<td>VKTX</td>
<td>Metabolic and endocrine disorders</td>
</tr>
<tr>
<td>Alexion Pharmaceuticals Inc</td>
<td>ALXN</td>
<td>Rare diseases</td>
</tr>
<tr>
<td>Sangamo Therapeutics Inc</td>
<td>SGMO</td>
<td>Genetic disorders</td>
</tr>
<tr>
<td>Ionis Pharmaceuticals Inc</td>
<td>IONS</td>
<td>Spinal muscular atrophy</td>
</tr>
<tr>
<td>TESARO Inc</td>
<td>TSRO</td>
<td>Ovarian cancer (Zejula)</td>
</tr>
<tr>
<td>AnaptysBio Inc</td>
<td>ANAB</td>
<td>Inflammatory disorders</td>
</tr>
<tr>
<td>Array Biopharma Inc</td>
<td>AARY</td>
<td>Skin cancer (Braftovi, Mektovi)</td>
</tr>
<tr>
<td>Ligand Pharmaceuticals Inc B</td>
<td>LGND</td>
<td>Drug acquisition and development</td>
</tr>
<tr>
<td>Vertex Pharmaceuticals Inc</td>
<td>VRTX</td>
<td>Cystic fibrosis (Symdeko)</td>
</tr>
</tbody>
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Source: S&P Dow Jones Oct 2018
Biotechnology investment case summary

The investment case for considering biotechnology is a strong one if you are an investor who is prepared to take risk for potential long-term growth.

Biotechnology is one of the oldest of technologies and is unlikely to decline in importance as the world population’s life expectancy continues to increase and, with it, the probability of an individual being affected by disease or living in debilitating circumstances.

Biotechnology is a broad classification covering many very specialised technologies that are both difficult to understand and, with that, difficult to then assess the potential fortunes, or lack of, for each company. With this in mind, investors who do believe in the efficacy of biotechnology as an investment theme, should consider taking the exposure via a diversified fund structure to reduce the impact of inevitable downturns as well as to make sure that gains are captured from a wide number of technologies.

CURE is Australia’s first biotechnology ETF, focusing on the US market where many of the top biotechnology companies locate themselves so they can more easily take part in the world-renowned FDA process, as well as to have access to the US market from a distribution perspective.

CURE has a 0.45% MER and tracks an index that has been in play for over ten years. It is run by ETF Securities who have been managing ETFs since 2003 and are the second oldest ETF provider in Australia.
Talk to us today about diversifying your portfolio

To request more information about our products or research:
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