Bioventix (BVXP) VIC

Disclosure: I have owned Bioventix for many years, it is one of the few companies where I have never trimmed, and the only one where every year I add to my position. I first wrote about it two years ago in a write up in another venue, just in case you see similarities with this one, particularly on the company history/management and the explanation of the business model. Despite the share appreciation, I believe this company is a true gem, it is definitely under the radar, it has years of growth ahead with one of the best profit margins I have ever encountered. Just in case there is any question, to my knowledge BVXP is not involved in any project regarding antibodies targeting COVID-19. To finalize I need to rush before BVXP no longer qualifies as a micro cap.

Description:

Bioventix (BVXP) is a UK company that creates and manufactures sheep monoclonal antibodies (SMAs). Bioventix sells its antibodies to manufacturers of blood-testing machines (e.g. Siemens, Roche). Those manufacturers incorporate the (SMAs) in reagent packs for use in their machines.

BVXP sells liquid "physical" SMAs and derives royalties from their downstream use. BVXP receives royalties each time a test is performed. Royalties are perpetual, and the model creates very high margins (80% net operating margin as per the last calendar year), substantial free cash flow (all earnings are converted into cash) and enables the company to maintain a pristine balance sheet with zero debt and increasing cash balances, while funding an ever-growing dividend.

BVXP has grown revenues for the last eight years at **20% *CAGR*** and given the royalty business model, earnings after tax have grown at an impressive **23% *CAGR.***

2018 marked a key year for BVXP as Siemens released its Troponin test to the market, which BVXP had been developing exclusively for Siemens since 2006. Troponin is a test that plays a critical role in the diagnosis of heart attacks, it will allow clinicians to rule in/ rule out a myocardial infarction in a fast and much accurate way. I originally expected a much quicker adoption of the new test, Siemens and hospitals decided to keep using the old regent packs and were changing gradually leading to a slower adoption than my initial estimates, this makes the effect of Troponin very small for Bioventix as of date, however revenues have just started to be more meaningful as per management latest remarks. Surprisingly growth has been above my expectations on the old existing antibodies, which shows the quality of the business.

The Troponin test is expected to be widely adopted and the source of the majority of BVXP's revenues going forward. China presents an additional, large market opportunity, with a growing number of new diagnostic companies with clear evidence of interest in BVXP's antibodies, and finally growth will immediately continue with the ramp up of the latest projects: The pollution exposure assay, the prototype lab-based Elisa Method and the recently launched T40/thyroxine, androstadiene and biotin.

I believe Troponin, and to a lesser extent revenue from new markets especially China and the new projects mentioned above, are at least a £5m opportunity that will ensure BVXP can sustain 20% - 30% growth rates for **at least** the next five years. Importantly, these new revenue streams have virtually no incremental costs, with any additional £ in sales will flow directly to the bottom line, and revenues will be incremental to BVXP's existing perpetual royalties (with the exception of royalty streams from NT ProBNP).

Bioventix latest results showed revenue for the semester ending 31/DEC2/2020 growing 17% at £5.1M and profits before tax with a growth of 26% at 4.1M. Annualizing those numbers and with 5.2 million diluted shares outstanding and excluding cash, BVXP trades at 21,7 times this year (2021/2020) EV/EBIT.

I firmly believe this multiple is very attractive for an asset light compounder that has 80% net operating margins, has grown earnings at a 23% CAGR for the last eight years, with a ROE over 100% excluding cash, and will benefit from one of the most important tests for heart attacks ever produced (Troponin test) which will ensure high rates of growth for years if not decades, while producing new antibodies and maintaining the existing revenue streams. All while the company distributes generous dividends, eliminating any risk of capital allocation. In the last financial year Bioventix paid £0.73 per share in regular dividends and announced a special dividend of £0.47, which is becoming less of extraordinary as it occurs regularly.

Management and Company's history:

Peter Harrison,62, is the CEO, founder and retains an 8.0% shareholding (down from 20%). The other major shareholders are Sanford de Land, and Liontrust both smart and long-term investors, I have met the PM of Sanford de Land, in fact thanks to him I learnt about the company a few years back.

In 1991 Mr Harrison joined KS Biomedix and KS established a division to create sheep monoclonal antibodies. In 2003 Xenova Group acquired KS Biomedix and Mr Harrison led a management buy-out that culminated in the creation of Bioventix.

While individual salaries are not reported in the financials, the AIM admission document highlighted Mr Harrison salary of only £120.000 in 2014. This is a very small salary that helps explain some of his share sales and ensures his main objective is to increase Bioventix's value.

A few weeks back the company announced the appointment of Bruce Hiscock as CFO. Bruce comes from being the CEO and CFO of everyLIFE technologies and has more than 30 years experience and has led several CFO roles. It is an interesting hire and I look forward to seeing what he is going to bring to the company.

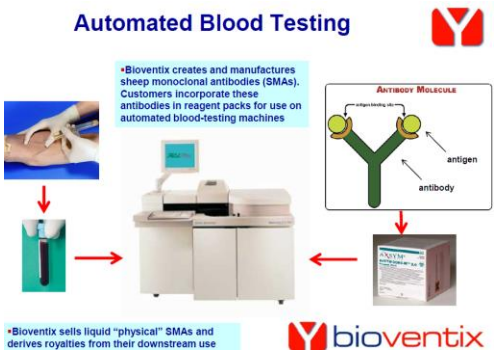
Bioventix Business Model:

Blood testing can be performed in three ways: Large automated machines (very large number of samples), Point of care (one sample, one patient, one test) and Lab kits.

Bioventix's antibodies are involved in all three areas but the vast majority of the revenues come from the **large automated machine segment.** This segment is dominated by the manufacturers of the machines, such as Roche, Siemens, Abbott, and J&J.

In an automated machine, a blood sample can be tested for different elements of a testing menu, such as testosterone, heart disease or fertility. The machine has specific areas for the test menu and each segment will be divided into each individual test. Each individual test has a reagent pack that is responsible for testing a particular molecule (e.g. testosterone). Every reagent pack has to have an antibody to facilitate the test. Antibodies are created to bind to a particular molecule so it can perform the test. Bioventix basically creates and supplies the antibodies and sells them to the makers of the reagent packs for the machines.

The below slide helps illustrate:



How Bioventix generates revenues: Bioventix has a commercial arrangement with its clients agreeing that when a customer (e.g. Hospital) operates a test with antibodies from Bioventix in its reagent packs, Bioventix then derives a downstream royalty on the use of the antibody on that test (irrespective of its size). Bioventix also generates revenue by suppling the antibody.

For example, each time a test is performed in a hospital on a Siemens machine that uses a Bioventix antibody, the hospital pays to Siemens and from that sale Bioventix receive a royalty per test (around 2%). These royalties are perpetual.

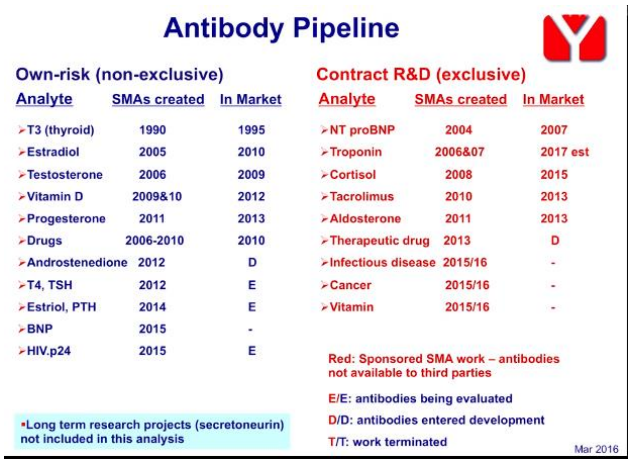
Bioventix's activities are divided into two kinds of projects:

- Own Risk (Non-Exclusive): Bioventix pays the R&D and can sell the products to anyone.

- Contract R&D (Exclusive): R&D is paid by their customers and they can commercialize the product only with that customer (this is the case for Troponin).

Both projects share the perpetual royalty model.

Below is an old slide (they stopped using it) showing the split of projects and how long it takes to get an SMA In Market; In Market means a SMA in use on a machine generating revenue for Bioventix.



Antibody Pipeline

Own-risk (non-exclusive)

Analyte	SMAs created	In Market
T3 (thyroid)	1990	1995
Estradiol	2005	2010
Testosterone	2006	2009
Vitamin D	2009&10	2012
Progesterone	2011	2013
Drugs	2006-2010	2010
Androstenedione	2012	D
T4, TSH	2012	E
Estriol, PTH	2014	E
BNP	2015	-
HIV.p24	2015	E

Contract R&D (exclusive)

Analyte	SMAs created	In Market
NT proBNP	2004	2007
Troponin	2006&07	2017 est
Cortisol	2008	2015
Tacrolimus	2010	2013
Aldosterone	2011	2013
Therapeutic drug	2013	D
Infectious disease	2015/16	-
Cancer	2015/16	-
Vitamin	2015/16	-

Red: Sponsored SMA work – antibodies not available to third parties

E/E: antibodies being evaluated

D/D: antibodies entered development

T/T: work terminated

•Long term research projects (secretoneurin) not included in this analysis

Mar 2016

The only exception to the revenue model is the analyte NT proBNP which has two revenue streams that terminate. One was terminated in August 2017, the other terminates in 2021.

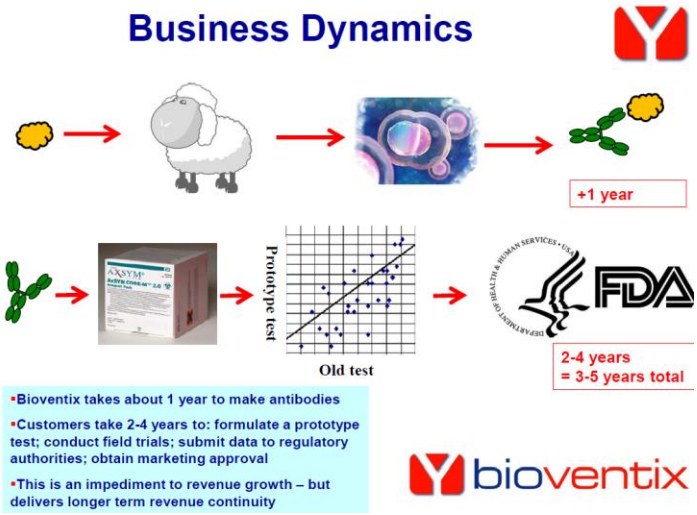
Bioventix's Know How

Bioventix does not have intellectual property nor patents on any of its antibodies. It only has the "Know how", but as I will explain below, this is not an impediment for Bioventix to generate perpetual royalties and it is not a risk to its business model.

Bioventix started its activity in 2003, while roughly at the same time an incident in France led to the discovery that some tests for testosterone in women and children with the same blood sample produced different results in different machines, in other words the antibodies were not effective and new ones without the deficiency needed to be produced. Bioventix created a new version that performed equal results and were tested by Roche which published a prototype assay in 2008. This assay mentioned Bioventix's antibody's efficacy to facilitate and improve the test. The test was on the market in 2009 and today that antibody for testosterone is the market dominant globally (as per the CEO).

The main reason to drop antibodies is when tests do not work; however, once a test is accurate it makes little sense for a manufacturer to switch antibodies given the lengthy process to get them to market.

The slide below helps illustrate the entire process in order to get an antibody to market:



As shown above, the process can be as little as two years and as long as 12 (Troponin). Customers incur in heavy investments to conduct field trials, submit data and finally market the new test. It makes little sense for a customer to drop an antibody that works and spend years and money in this process again for an uncertain outcome, which is why I think Bioventix is well protected.

As of date, no antibody from Bioventix has been dropped from an existing test. Of course, this is backward looking and does not mean that tomorrow all the antibodies cannot be discarded. There is always that possibility, but the fact that not a single antibody has ever been dropped to date (Bioventix was founded in 2003) shows the quality of its services.

Competitive Dynamics

The global market for in-vitro diagnostics is estimated to be at $63 billion. In it the market for Immunoassays (the market for antibodies is part of it) represents approximately $19 billion.

Bioventix produces monoclonal antibodies are produced in sheep, while the majority of monoclonal antibodies are produced in mice. Sheep has more diverse antigen recognition than mice and a better immune response to small antigens.

Bioventix's management believes that there are no other companies producing sheep monoclonal antibodies together with its sub-licensees. However, there are a few companies producing sheep antibodies with a different business model such as Randox-life sciences. In addition, there are other companies that can compete with Bioventix that provide a different kind of antibodies such as Abcam which offers rabbit monoclonal antibodies. The diagnostic companies can also compete with Bioventix wit their own internal resource, however they will not be creating sheep but murine antibodies.

Troponin

The biggest cause of deaths worldwide is cardiovascular diseases. Troponin's test will tackle that important disease, it will improve patient care and ensure clinicians can act quicker with a more accurate assessment.

Troponin is a marker for heart attacks. Troponin is a part of a heart muscle that has leaked into the blood. When a person suffers a heart attack, the blood supply to the muscles in the ventricles becomes constricted by a blockage. This causes the heart muscle to die and leak into the blood. When the blood has too much Troponin, it indicates that a heart attack is likely to happen or has happened.

Troponin's tests have been around for a while, what is new in this Siemens test is the substantial increase of the accuracy in establishing if a heart attack is about to happen or has happened. The change is in the acid test for a change in level of Troponin within a few hours (this is key as the patient only needs to wait 30 to 120 minutes). Once a person is submitted to the hospital, a test is performed, and his Troponin levels are tested. After approximately two hours the person is tested again to evaluate if his Troponin levels have changed. In case they have increased, it demonstrates that the person has dying heart muscle, indicating a heart attack. **Siemens' new test measures this change (change in Troponin levels within a few hours) with improved precision at the 99th percentile.**

In 2006 Siemens realized the need to create a better Troponin test, meaning better antibodies needed to be produced and it handed the task to Bioventix. 12 years later and the tests are on the market.

This is the Siemens' press release in 2017 announcing the launch and main points:

- "The presence of cardiac troponin is specific to heart muscle death. The detection of circulating troponins has long been recognized as the gold standard for the diagnosis of AMI in patients who present with chest pain in the emergency room. Fast, accurate troponin testing that delivers actionable results to help clinicians rule-in or rule-out AMI quickly is critical to optimal patient outcomes."

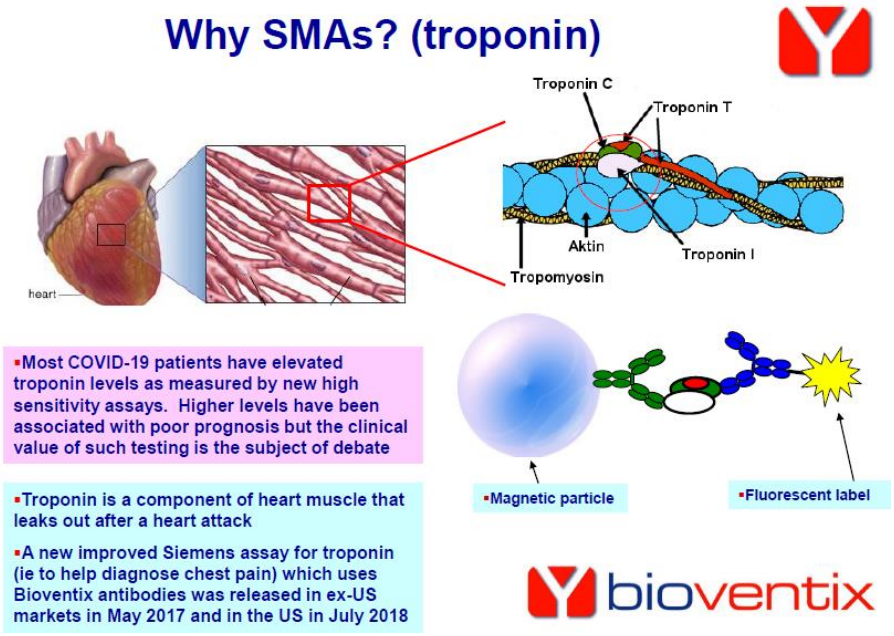
- "Compared to traditional troponin assays, the Siemens Healthineers TNIH assay is able to detect lower levels of troponin and smaller changes to a patient's troponin levels, which may be an early indication of AMI. This design affords clinicians greater confidence in patient results at the low end of the assay range by delivering precision that provides the ability to measure slight, yet critical, changes between serial troponin I values. Precision at the low end is important to minimize analytic variation that could confuse a clinician's assessment of a clinically significant change. With this data in hand, clinicians have the ability to more quickly diagnosis and treat patients with suspected AMI, in some cases in as little as one to three hours."

- "Cardiovascular diseases remain the biggest cause of deaths worldwide. By 2030, almost (23.6 million people will die from cardiovascular diseases—mainly from heart disease.[3] Siemens Healthineers offers customers the benefit of a comprehensive cardiac menu, including its new high-sensitivity troponin I and a choice of natriuretic peptide solutions."

*acute myocardial infarctions (AMI)

Bioventix started generating revenues from Troponin since January 1st, 2018; however, as previously mentioned Siemens and the hospitals have been slow in changing all the reagent packs and the full adoption has been somehow delayed, which has only pushed back a few years the effects of this new emerging and exiting segment ensuring healthy growth for years to come. The results are starting to emerge as mentioned by Peter in March:

"Sales relating to troponin antibodies grew significantly during the period. Whilst the actual sales were slightly below our expectation, the percentage growth provides encouraging evidence of the roll-out of these new tests and for the future sales performance".



Norway, The free option

Bioventix holds a 10% stake in CardiNor a Norwegian company involved in creating the Secretoneurin (SN) IVD test. CardiNor's research has showed that in heart disease testing the molecule Secretoneurin in addition to NTproBNP and Troponin was additive to help doctors understand the rhythm of the heart and more specifically identify which patients were closer to death.

Bioventix is producing CardiNor's antibodies and in case the project works, Bioventix not only will incur new revenues but also benefit from the new valuation of CardiNor. Bioventix's total investments of £195k include CardiNor's holdings. CardiNor is an early stage company, therefore the probability to get Secretoneurin (SN) IVD test to market is low. We assign no value to this investment but clearly it is a free option.

Bioventix is also involved with a Norwegian Alzheimer's company called Pre Diagnostics AS. Pre Diagnostics AS is developing an IVD test with the aim to detect dementia at an early stage. Bioventix will develop and provide the antibodies for this project.

This Is another high-risk high-reward project for Bioventix that I assign no value to, however the optionality of it is huge.

Financials

BVXP has grown revenues for the last eight years at **20% *CAGR*** and given the royalty business model, earnings after tax have grown at 23**% *CAGR.*** The company has zero debt and a cash balance of £5.5M plus it owns the property where it operates, its operating margins which basically are the same as the margins of profit before taxes are 80% (higher than Google and FB), the company does need extra capital to grow, its expenses are very small (it only has 12 employees).

Interim results reported in March 2020 for the six months ended December 2020 showed a net profit of £3.43m, a 26% increase y/y. This result is extraordinary as revenues coming from Troponin have just started to ramp up, which basically means the growth is exclusively coming from the

existing revenue streams. Management has been overly conservative, as for years it has indicated a plateau in the existing streams, particularly from Vitamin D (biggest source of revenues), however results have proven far better. Bioventix had only two revenue streams that were not perpetual, both coming from NT proBNP. The first ended in August 2017 and the second will end in 2021.

Research and development expenditure is written off in the year in which it is incurred; therefore, all future revenues will impact directly the bottom line. Below you can find the sources of additional revenues for the years to come (excluding troponin), as you can see pollution biomonitoring seems to be an exiting project that is just starting to take off:

Pipeline Development 2020

↑ Increasing potential value				
	high	Secretoneurin/SN (CardiNor) Amyloid (Pre-Diagnostics) Cardiac MyC (King's)	Pollution biomonitoring	
	medium		Biotin (blocking Abs) virus (contract) T4 (thyroxine)	
	Low		thyroglobulin (contract) Vitamin (contract)	Cancer (contract)
		Low	Medium	high
Increasing probability of success →				

- No significant commercial news from CardiNor & PreDx
- Prototype lab test for pollution exposure established
- First biotin blocking antibodies delivered Dec 2019

bioventix

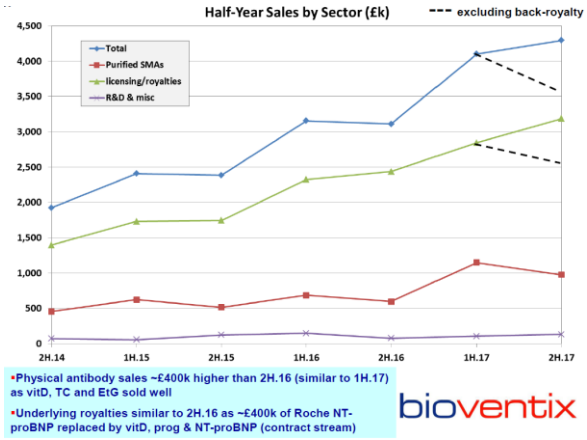
Key Financials

£ ('000)	Year to 30.6.19	½ year to 30.12.18	½ year to 30.12.19	Finncap 2019/20
Sales	9,290	4,364	5,099 (+17%)	10,100
P/(L) before tax (finnCap numbers are adjusted)	6,965	3,246	4,097 (+26%)	7,660
P/(L) after tax (finnCap numbers are adjusted)	5,861	2,746	3,428 (+25%)	6,360
Period-end cash	6,537	5,456	5,530	
Total regular dividend per share (p) Split between Spring/Autumn Special dividend Year dividend total	73 30/43 47 120	30	36	88 36/52

- Revenues increased for vitamin D and some other core antibody products
- Newer product sales (T4, andro & biotin) were individually modest but collectively additive
- Costs include expenditure on the pollution project and higher depreciation related to capex at the Farnham facility

- It is possible that routine diagnostic testing is reduced as hospital resources are refocussed towards COVID-19
- Bioventix has a resilient business and it is our current plan not to deviate from our established dividend policy

***Warning below is an old slide (the company stopped using it), which I am bringing for illustration's purposes only:**



- The bottom line (purple) is R&D paid by customers (contract R&D) to create antibodies for them.
- The red line shows revenues coming from physical antibodies shipped to clients. The lumpiness happens as some clients order regularly (e.g. every three months) and other clients order every year; the timing differs.
- The green line shows the revenues coming from royalties, which is the biggest source of revenues and has the highest margins. This is very important as BVXP is protected from the miniaturization of the technology. **Bioventix receives royalties per test irrespective of the size of the blood sample.**

Bioventix 's costs are in British Pounds while most of the revenues are in US Dollars and Euros. Bioventix does not hedge, therefore it is naturally protected from a fall in the value of the British Pound.

Earnings are flowing almost entirely into cash flow. There is a timing difference with the payment of taxes that can reduce/increase cash flow compared to earnings from time to time. The biggest outflows are dividends and the management team is happy to distribute earnings as long as the company holds a cash balance of not less of 5 million pounds.

Cash £	
As of 31/DEC/2020	5.530.539.00
Expected cash generated 1H/20	4.500.000.00
Dividend Payment (-)	1.882.097.28
Total (expected end of June 2018)	8.148.441.72

The royalty model for Bioventix ensures that the company enjoys extraordinary margins (~80%) as shown above, its ROE excluding cash is higher than 100% and maintains a pristine balance sheet, with an expected net cash position of £8.1m at the end of June 2020, which some of it will be used to pay dividends. This type of characteristics in a company completely uncorrelated to the economic cycle are unheard of.

Valuation and Conclusion

Bioventix is a high growth, high quality business, extremely profitable with a unique business model that guarantees recurring revenues without incremental costs; hence, the company can maintain net operating margins around 70% to 80%. In addition, the most important revenue stream for BVXP (Troponin) has just started to rump up (as mentioned I was expecting this to have been quicker), this combined with the new projects which ensure years of growth makes me think that at a 21x EV/EBIT of this year numbers is a good multiple to pay for such a unique business. Bioventix is unaffected by the economic cycle and a perfect inflation hedge as well.

On top the company will continue returning money to shareholders via dividends and has two free options that can dramatically change Bioventix's story if they were to work out.

Risks

- Peter Harrison is fundamental for Bioventix, not only due to his knowledge but to his connections within the industry. If Mr Harrison is no longer with Bioventix the company might struggle to develop new antibodies and/or commercialize them.

- Bioventix's customers are the largest manufacturers of blood testing machines, – Roche, Siemens, Becton Coulter and J%J. If something happens with any of these companies, Bioventix can be hugely affected.

- Troponin's sales depend exclusively on Siemens, anything that affects Siemens, or the use of the test can have vast consequences to Bioventix.