

Biogen

Ticker Site BiG	BIIB
Ticker BiGlobal Trade	BIIB
Ticker BT24	BIIB
Ticker BiG Power Trade	BIIB
P/E Ratio 2018E	13.47
P/BV Ratio	5.59
EV/EBITDA	9.27

Source: Bloomberg;

Price and Performance (Values in USD)

Price	340.03
52 week high	388.67
52 week low	249.17
YTD	6.7%
Average daily volume (un)	1,709,546
Market Capitalization (mn)	68,497
Beta	1.28
Dividend	0.00
EPS	11.94

Source: Bloomberg;

Analysts Consensus (last 3 months)

Buy	22
Hold	9
Sell	0

Source: Bloomberg;

Financial Data

Sales (USD mn)	12,274
EBITDA (USD mn)	6,425
Number of Employees	7,300
ROA	13.0%
ROE	24.9%
D/E	0.47

Source: Bloomberg;

Notes:

All quotes were updated in Bloomberg at 16h10 of September 13th, 2018.

Relevant Information:

Use the following link to view our most recent publications:

<https://www.big.pt/InformacaoMercado s/TradingIdeas/Index/-1>

Use the following link to see our recommendation history:

<https://www.big.pt/pdf/Newsletters/nld.pdf>

Biogen (Ticker: BIIB US)

Description

Biogen is a global biopharmaceutical company, specialized in medicines for Multiple Sclerosis and Spinal Muscular Atrophy. It is currently doing clinical trials for drugs to slow the progression of Alzheimer's Disease. In 2017, 68% of revenues were registered in US.

Biogen trades in NYSE with a market capitalization of USD 68.5bn and has more than 7,000 employees.

Investment Case

Biogen has a strong balance sheet, high margins and low valuation. Its sales are however, very concentrated in 4 products and 2 specific diseases, which consequently increases the risk of a regulatory change or a competitive product disrupting the company's sales growth.

Considering the pros and cons we do not see an investment in Biogen as attractive at the current levels, as the low valuation does not offset the current risks.

Relative Valuation

Biogen has a low P/E ratio when compared with industry average, while EBITDA margin is above at 50% vs industry's 29%. The company does not distribute dividends and the net debt / EBITDA ratio is below industry average.

Name	Country	Market Cap (mn)	Currency	P/E 2018E	EV/Sales	Div. Yield	NetDebt/ EBITDA	Margin EBITDA
ASTRAZENECA PLC	BRITAIN	71,839	GBP	21.8	4.7	3.6%	2.3	28.9%
NOVO NORDISK A/S-B	DENMARK	766,850	DKK	19.4	6.5	2.5%	-0.4	45.5%
GLAXOSMITHKLINE PLC	BRITAIN	74,425	GBP	13.4	3.3	5.3%	3.6	22.2%
SANOFI	FRANCE	94,493	EUR	13.8	3.1	4.0%	3.2	19.3%
MERCK KGAA	GERMANY	38,200	EUR	16.8	3.1	1.4%	2.7	25.7%
MERCK & CO. INC.	UNITED STATES	185,794	USD	16.4	4.3	2.7%	1.6	24.1%
PFIZER INC	UNITED STATES	248,612	USD	14.2	4.5	3.2%	1.3	37.8%
SHIRE PLC	UNITED STATES	40,091	GBP	11.3	4.5	0.6%	3.2	35.6%
RECKITT BENCKISER GROUP PLC	BRITAIN	45,934	GBP	19.6	4.3	2.6%	3.3	25.5%
FRESENIUS SE & CO KGAA	GERMANY	35,218	EUR	18.4	1.9	1.2%	2.5	19.8%
GILEAD SCIENCES INC	UNITED STATES	95,890	USD	11.2	3.8	3.0%	-0.2	51.5%
ABBVIE INC	UNITED STATES	141,191	USD	11.9	5.6	3.5%	2.8	38.1%
ALLERGAN PLC	UNITED STATES	64,610	USD	11.7	4.9	1.5%	11.5	12.7%
AMGEN INC	UNITED STATES	129,131	USD	14.3	5.4	2.6%	0.4	52.2%
BRISTOL-MYERS SQUIBB CO	UNITED STATES	98,451	USD	16.8	4.1	2.6%	-0.2	19.6%
NOVARTIS AG-REG	SWITZERLAND	209,967	CHF	16.4	3.7	3.4%	1.3	29.1%
BAYER AG-REG	GERMANY	65,260	EUR	11.9	3.7	3.9%	5.7	22.5%
ELI LILLY & CO	UNITED STATES	113,810	USD	19.4	4.1	2.1%	1.4	15.9%
BIODERMA INC	UNITED STATES	68,497	USD	13.5	4.7	n.a.	0.2	50.3%
Average exc. Biogen				15.5	4.2	2.77%	2.6	29%

Source: Bloomberg; BiG Research

Income Sta. (USD mn)	2017	2016
Product sales	10355	9818
Anti-CD20 therapeutic programs	1559	1315
Other	360	316
Revenues	12274	11449
Cost of sales	1630	1479
Research & Development	2254	1973
Sales & Marketing	1936	1948
Amortizations	815	386
Other	296	513
Operating Expenses	6930	6298
EBIT	5344	5150
Other costs	215	217
Taxes	2459	1237
Net Income	2670	3696
Earnings Per Share	11.94	16.96

Source: Bloomberg

Free Cash Flow (USD mn)	2017	2016
Operational Cash Flow	4551	4587
Business Net Income	2670	3696
Depreciations and Amortizations	1081	683
Changes in Working Capital	235	125
Others	565	84
Investment Cash Flow	-2963	-2485
Capex	-3163	-1928
Short term investments	211	-534
Others	-11	-23
Financial Cash Flow	-2380	-1053
Debt change	-561	-3
Share buyback	-1371	-1009
Dividends	0	0
Others	-448	-41
Change in free cash flow	-792	1050
Other and forex	39	-31
Cash and equivalents	1574	2327

Source: Bloomberg

Balance Sheet (USD mn)	2017	2016
Assets	23653	22877
Cash & Equivalents	1574	2327
Short term investments	6200	6734
Goodwill	4633	3669
Receivables	1787	1442
Inventories	903	1002
Property Plant & Equipment	3182	2502
Intangible Assets	3880	3808
Other Assets	1495	1394
Liabilities	11055	10748
Short term Debt	3	5
Long term Debt	5935	6513
Payables & accrued expense	396	280
Accrued Expenses	2901	2904
Other liabilities	1820	1048
Total Shareowner's Equity	12598	12129
Total Equity and Liabilities	23653	22877

Source: Bloomberg

Income Statement

The majority of Biogen's revenues come from product sales (Tecfidera, Interferon, Tysabri and Spinraza), while the rest comes from royalties from collaborations with Roche (Rituxan, Gazyva and Ocrevus). Biogen has been able to achieve high margins vs the sector: EBIT margin of 43% and Net Income margin of 22%.

Free Cash Flow

Biogen uses most of its operational cash flow in capex, while using the rest for repaying debt or returning money to shareholders through share buybacks.

Balance Sheet

Company's net debt / Ebitda ratio is low (0.2x) and so its balance sheet is solid and may be used if the company wants to increase leverage to do an acquisition or increase investments.

Second quarter of 2018 earnings

In the second quarter of 2018, Biogen's revenues were USD 3.36bn, vs estimates of 3.25bn, while EPS were USD 5.8 vs estimates USD 5.19. This positive surprise was mainly driven by higher Spinraza sales.

The company raised its guidance for 2018 revenues from between USD 12.7-13bn to between USD 13-13.2bn. Higher R&D expenses (between 18% to 19% of revenues), will be offset by lower tax rate (between 20.5% to 21.5% non-GAAP) leading to higher EPS (non-GAAP) of USD 24.9 to USD 25.5 (previously USD 24.2 to USD 25.2).

Management Team

Michel Vounatsos (CEO): After working for 20 years in Merck, with leadership positions in Europe, China and US, Vounatsos joined in 2016 Biogen as Executive Vice President. Was elected CEO in January of 2017. He received the medicine certificate from Universite Victor Segalen and his MBA from HEC School of Management in Paris.

In 2017 Michel received from Biogen around USD 13.7mn, including salary (USD 1mn), bonus (USD 2.5mn), stocks (USD 10mn) and other benefits.



Source: Company

Research:

research@big.pt

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Pharmaceutical Sales (USD mn)	2016	2017	% Growth	Weight 2017
Tecfidera	3968	4214	6%	40.7%
Interferon	2795	2646	-5%	25.6%
Avonex	2314	2152	-7%	20.8%
Plegridy	482	494	3%	4.8%
Tysabri	1964	1973	0%	19.1%
Fampyra	85	92	8%	0.9%
Zinbryta	8	53	559%	0.5%
Total Multiple Sclerosis	8820	8977	2%	86.7%
Spinraza	5	884	17574%	8.5%
Total Spinal Muscular Atrophy	5	884	17574%	8.5%
Eloctate	513	48	-91%	0.5%
Alprolix	334	26	-92%	0.3%
Total Hemophilia	847	74	-91%	0.7%
Fumaderm	46	40	-14%	0.4%
Benepali	101	371	269%	3.6%
Flixabi	0	9		0.1%
Total Other Products	147	419	186%	4.1%
Total Company Sales	9818	10355	5%	

Source: Company data

Pharmaceutical Sales (USD mn) by region	2016	2017	% Growth	Weight 2017
US	7050	7017	0%	67.8%
Rest of the World	2768	3338	21%	32.2%
Total Pharmaceutical sales	9818	10355	5%	

Source: Company data

▲ Main Drugs in Pipeline

Tecfidera (41% of sales): This drug is used against relapsing Multiple Sclerosis. In 2017 there was a decrease of sales volume in US of 3% but this was offset by an increase in prices. In the rest of the world volumes rose by 19%, but were partially offset by reductions in price. US represented 78% of total sales of Tecfidera. Biogen expects a modest increase in 2018 due to volume declines in US from increased competition from Ocrevus (Roche).

Interferon (26% of sales): Interferon is not a drug but a group of signaling proteins that are released by host cells in response to the presence of viruses, bacteria, parasites or tumor cells. This signal will activate immune cells such as natural killer cells and macrophages increasing this way the host defenses. They also protect cells from virus infections. It is sold by Biogen under the names Avonex and Plegridy to treat Multiple Sclerosis. The sales in US represent 71% and declined by 12% in volumes, being partially offset by price increases. In the rest of the world volumes also fell, by 14%. Biogen expects volumes to continue to fall due to higher competition, including biosimilars.

Tysabri (19% of sales): Is a humanized monoclonal antibody, used in the treatment of MS and Crohn's disease. In the US (56% of sales) volumes dropped by 4%, being partially offset by price increases. In the rest of the world there was a 12% increase in volumes. Globally the company anticipates a decrease in sales for 2018 thanks to the competitive environment, specially related with Ocrevus.

Spinraza (9% of sales): This drug is used to treat motor neuron loss in spinal muscular atrophy (SMA) by increasing survival motor neuron (SMN) proteins that facilitate the communication between the brain and body muscles. It is expected to face increasing competition from Roche's drug, Risdiplam.

Eloctate and Alprolix: These were two drugs which were spin-off to Bioverativ in January of 2017, and consequently only had revenues attributed to Biogen during that month.

Biogen has also revenues from **Anti-SD20 Therapeutic Programs**, which are mainly from pre-tax profits on the sale of Rituxan and Gazyva from Genentech (Roche group) in US. Biogen also receives royalty revenues from sales of Ocrevus (Roche). These represented almost 13% of total Biogen revenues in 2017, and grew by 18% from 2016, helped by volume and price increases.

Biogen's **Other Revenues** come from a partnership with AbbVie (drug Zynbryta) and services agreement with Samsung Bioepis.

▲ Drugs in Pipeline (waiting for approval)

Aducanumab: It was developed with Neurimmune and targets patients with Alzheimer's Disease. Alzheimer is a progressive neurodegenerative disease that damages healthy cells in the brain. This has been linked to amyloid plaques, abnormal protein deposits that build up in the brain. Aducanumab binds to and may reduce amyloid plaques from the brain, potentially slowing the progress of the disease. This drug is already in phase 3 as is also the drug E2609 which works in a similar way (but only expected to end trial in 2020).

▲ M&A

Spin off of Bioverativ: In January of 2017, the company did the spin-off of Bioverativ and for each 2 shares of Biogen, shareholders received one share of Bioverativ.

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Risks

Competition: Pharmaceutical companies are always subjected to competitive pressures of new drugs that are launched in the market. This will be reflected in the market price and may lead to a drop in margins. In the case of Biogen there are competitive pressure related to its MS drugs, mainly from Ocrevus sales and to its drug Spinraza from the new drug Risdiplam (Roche).

US drug prices: Donald Trump has criticized multiple times healthcare companies for raising prices. US represent 68% of Biogen’s revenues.

Small Pipeline: In Biogen’s case, 95% of pharmaceutical sales come from only 4 drugs, being 3 of them for the same disease (MS). Any change in prices, competition, regulations may have a deep impact in the company’s total sales.

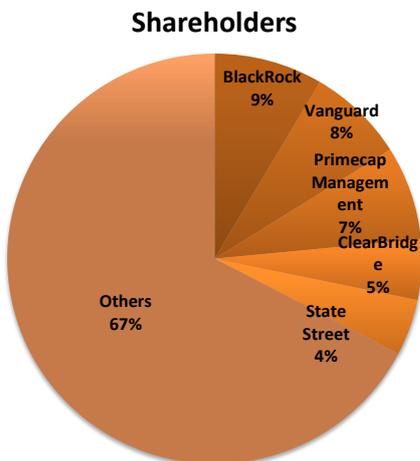
Rating		
Agency	Rating	Outlook
S&P	A-	STABLE
Moody's	Baa1	STABLE

Source: Bloomberg

Chart analysis



Source: BiGlobal Trade (partner Saxo Bank); BiG Research



Source: Bloomberg

Calendar

October 24th, 2018: Earnings 3Q18

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 - Buy, expected absolute return above 15%;
 - Accumulate, expected absolute return between +5% and +15%;
 - Keep/Neutral, expected absolute return between -5% and +5%;
 - Reduce, expected absolute return between -5% and -15%;
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PSI20 Notes in the last 12 months as of 30th of June of 2018:

	Number of Recommendations	%
Accumulate/Buy	3	75,0%
Keep/Neutral	0	0,0%
Reduce/Sell	1	25,0%
Total	4	100,0%

Source: BiG Research

Trading Ideas in the last 12 months as of 30th of June of 2018:

	Number of Recommendations	%
Profit Taking	11	78,6%
Stop Loss	1	7,1%
In Place	2	14,3%
Total	14	100,0%

Pair Trades in the last 12 months as of 30th of June of 2018:

	Number of Recommendations	%
Profit Taking	0	0%
Stop Loss	0	0%
In Place	0	0%
Total	0	0%

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