Biogen Inc. (BIIB)

$285.50 (As of 01/17/20)

Price Target (6-12 Months): **$300.00**

Long Term: 6-12 Months	**Zacks Recommendation:** (Since: 01/02/19) Prior Recommendation: Underperform	**Neutral**
Short Term: 1-3 Months	**Zacks Rank:** (1-5)	**3-Hold**
	Zacks Style Scores:	VGM:A
	Value: A | Growth: B | Momentum: A	

Summary

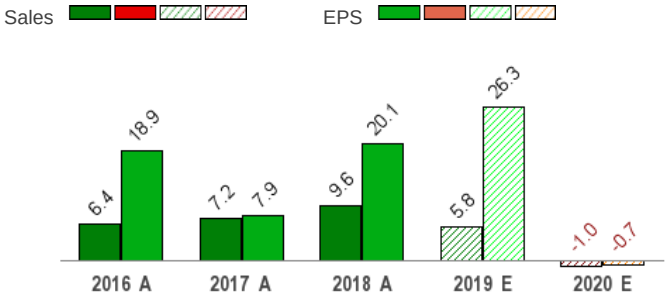
Biogen's efforts to diversify beyond MS to other areas like Alzheimer's are commendable. Spinraza has multi-billion dollar potential. Several data readouts are expected in 2020. Its intention to seek U.S. approval of Alzheimer's drug, aducanumab, a few months after it halted late-stage studies on the same drug following a futility analysis, gave a major boost to the stock. However, Biogen is heavily reliant on sales of its MS drugs which is a highly competitive disease space. Also, potential competition to Spinraza from competitors' gene therapy programs for SMA is a concern. Though Biogen's CNS pipeline is attractive, it is a high-risk area. The stock has underperformed its industry in past year. Estimates have declined slightly ahead of Q4 earnings. Biogen has a positive record of earnings surprises in the recent quarters.

Price, Consensus & Surprise

Data Overview

52 Week High-Low	**$344.00 - $215.78**
20 Day Average Volume (sh)	**1,231,412**
Market Cap	**$51.5 B**
YTD Price Change	**-3.8%**
Beta	**1.09**
Dividend / Div Yld	**$0.00 / 0.0%**
Industry	**Medical - Biomedical and Genetics**
Zacks Industry Rank	**Top 37% (94 out of 254)**
Last EPS Surprise	**10.9%**
Last Sales Surprise	**1.6%**
EPS F1 Est- 4 week change	**-0.4%**
Expected Report Date	**01/30/2020**
Earnings ESP	**0.2%**
P/E TTM	**8.8**
P/E F1	**8.7**
PEG F1	**1.2**
P/S TTM	**3.6**

Sales and EPS Growth Rates (Y/Y %)



Sales Estimates (millions of $)

	Q1	Q2	Q3	Q4	Annual*
2020	3,391 E	3,559 E	3,568 E	3,592 E	14,086 E
2019	3,490 A	3,617 A	3,600 A	3,529 E	14,235 E
2018	3,131 A	3,357 A	3,439 A	3,526 A	13,453 A

EPS Estimates

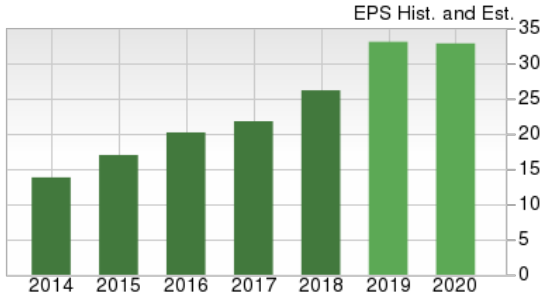
	Q1	Q2	Q3	Q4	Annual*
2020	$7.75 E	$8.38 E	$8.40 E	$8.36 E	$32.86 E
2019	$6.98 A	$9.15 A	$9.17 A	$7.90 E	$33.09 E
2018	$6.05 A	$5.80 A	$7.40 A	$6.99 A	$26.20 A

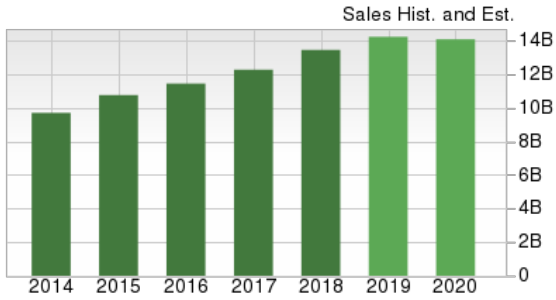
*Quarterly figures may not add up to annual.

The data in the charts and tables, including the Zacks Consensus EPS and Sales estimates, is as of 01/17/2020. The reports text is as of 01/20/2020.

Overview

Based in Cambridge, MA, Biogen Inc. is one of the world's leading biotechnology companies, which focuses on developing innovative therapies for treating serious neurological and neurodegenerative diseases, including its core growth areas of multiple sclerosis (MS) and neuroimmunology, Alzheimer's disease (AD) and dementia, movement disorders including Parkinson's disease and progressive supranuclear palsy (PSP), neuromuscular disorders, including spinal muscular atrophy (SMA) and amyotrophic lateral sclerosis (ALS) and ophthalmology.





Key multiple sclerosis/MS drugs in its portfolio are Tecfidera, Avonex and Tysabri. Other approved/marketed products include Fumaderm (severe psoriasis), Fampyra (improvement of walking in MS patients), Plegridy (MS) and Spinraza (spinal muscular atrophy (SMA)). Key MS drugs Tecfidera and Tysabri accounted for around 32% and 14%, respectively, of the company's 2018 total revenues. Spinraza accounted for almost 13% of Biogen's total revenues in 2018.

On Feb 1, 2017, Biogen completed the spin-off of its hemophilia business into a new company called Bioverativ. Bioverativ began trading under the ticker symbol "BIVV" on the NASDAQ stock market from Feb 2.

Biogen also generates significant royalties from partnership agreements with other pharmaceutical and biotechnology companies. It has collaborations with companies like Roche (Rituxan and Gazyva – cancer and Ocrevus – PPMS and RMS), Eisai (aducanumab and BAN2401– Alzheimer's disease) and Ionis (Spinraza – spinal muscular atrophy).

Biogen garnered total sales of $13.45 billion in 2018, up 10% year over year.

Reasons To Buy:

> Biogen's newest drug Spinraza is performing well and has multi-billion dollar potential. Biogen is frequently in-licensing assets some of which have transformative potential.

- **MS – Key Focus Area:** Biogen holds a strong position in the MS market with a wide range of products including Avonex, Tysabri, Tecfidera and Plegridy. Biogen's MS revenues (including royalties) were $9.1 billion in 2018. According to the company, the worldwide MS market is worth about $19 billion with 850K patients being treated for the disease. Biogen estimates that its products cover about 38% of all treated MS patients across the world (about 2.3 million) including progressive forms of the disease.

  Avonex posted sales of $1.9 billion in 2018. The rollout of Avonex Pen in the EU and the United States has increased patient and physician interest in the product. Meanwhile, Tysabri, the company's second MS product, continues to contribute significantly to the top line despite carrying a "black box" warning for the risk of progressive multifocal leukoencephalopathy (PML) and other cautionary messages. Biogen had recorded Tysabri revenues of around $1.9 billion in 2018. Another MS treatment, Plegridy, launched in 2014, raked in sales of $448 million in 2018. Tecfidera recorded revenues of $4.3 billion in 2018.

  Meanwhile, Roche's Ocrevus (ocrelizumab) was approved for the treatment of relapsing MS (RMS) and primary progressive MS (PPMS) in Mar 2017. Though Ocrevus poses strong competition for Biogen's MS drugs, Biogen is receiving royalties on U.S. sales of Ocrevus.

  Meanwhile Biogen is working on consolidating its position in the MS market by bringing new treatments to market. In November 2017, Biogen in-licensed worldwide commercialization rights to Alkermes' Vumerity (BIIB098), which the company claims has a potentially differentiated profile to Tecfidera. Vumerity gained FDA's approval for relapsing forms of MS in October 2019.

  Also, the company strengthened its patent position for Tecfidera through a settlement and licensing agreement with Forward Pharma in 2017. Biogen gained favorable rulings for both its IPR proceeding and interference cases related to Tecfidera.

- **Growth Opportunities beyond MS:** As competition in the MS market intensifies, Biogen is trying to diversify its pipeline and aims to be a leader in neuroscience and the adjacent therapeutic area. In 2017 and 2018, Biogen added seven and six new clinical stage programs, respectively, to its neuroscience pipeline by striking external deals.

  Biogen is looking to strengthen its Alzheimer's disease (AD) and other neurodegenerative disorders pipeline. The December 2016 FDA approval of Biogen's spinal muscular atrophy (SMA) treatment, Spinraza (nusinersen), consolidated its position in the neurological disease market with the drug being the first and only treatment to be approved in the U.S. for SMA. The market potential of the disease is huge. The drug has performed beyond expectations witnessing strong patient uptake in the United States and internationally and has now become the standard of care in SMA. Biogen has also expanded its collaboration with Ionis to identify new gene therapies for the treatment of SMA as well as a broad range of neurological diseases. Biogen retains the option to license therapies arising out of this collaboration. In December 2018, Biogen exercised its option to in-license early-stage candidate BIIB067 form Ionis, which is being developed for a subtype of familial amyotrophic lateral sclerosis (ALS). In July, Biogen acquired two programs from AliveGen, targeting the myostatin pathway for potential muscle enhancement across a range of neuromuscular diseases including SMA. In early 2019, Biogen signed a new collaboration with Skyhawk Therapeutics to develop an oral splicing modulator for multiple diseases, including MS and SMA.

  Biogen is also building a portfolio of best-in-class treatments for stroke and acute neurology. In May 2018, Biogen purchased a phase III candidate, BIIB093/Cirara from Remedy Pharmaceuticals, which is being studied for the treatment of large hemispheric infarction (LHI), a severe form of stroke with no available therapy. Biogen believes that BIIB093 has the potential to generate peak revenues of more than $1 billion.

  In 2015, Biogen acquired Convergence Pharmaceuticals in a bid to expand its neuropathic pain portfolio. The June 2019 acquisition of gene therapy maker Nightstar Therapeutics provided Biogen with two potentially mid- to late-stage clinical assets (BIIB111 and BIIB112) in inherited retinal disease.

  We believe the company will continue pursuing deals to add late-stage and commercial assets to its portfolio.

- **Pipeline Diversification:** Biogen plans to streamline its operations and re-allocate resources to high-priority R&D and commercial growth opportunities. Biogen plans to strengthen existing efforts in multiple sclerosis and spinal muscular atrophy while continuing to focus R&D efforts in the field of neuroscience. Biogen believes that by 2020, up to $400 million annually should be freed up to be redirected toward these opportunities. The company also spun off its hemophilia business in February 2017, which allows it to focus on neurology, its key area of expertise.

  Promising pipeline candidates include opicinumab (a potential remyelination therapy in MS - phase II), BIIB074/vixotrigine (trigeminal neuralgia – phase II, small fiber neuropathy – phase II), BIIB054 (Parkinson's – phase II), BIIB092/ gosuranemab (AD – phase II), BIIB104 (cognitive impairment associated with schizophrenia (CIAS)- phase IIb), dapirolizumab pegol (active systemic lupus erythematosus [SLE] - phase IIb), BIIB111 (choroideremia – phase III), BIIB093 (LHI – phase III, brain contusion – phase II), tofersen/BIIB067 (ALS with SOD1 mutations – phase III) and BAN2401 (Alzheimer's – phase III). Between now and end of 2020, important data readouts are expected across clinical programs in MS, PSP, lupus, epilepsy, Parkinson's disease and others.

- **Exploring Biosimilar Opportunity:** Biogen is also working with Samsung BioLogics to bring new biosimilars to market. Samsung Bioepis, the joint venture between the two companies, markets three anti-TNF biosimilars in the EU – Flixabi (a biosimilar referencing Remicade), Benepali (a biosimilar referencing Enbrel) and Imraldi (a biosimilar referencing Humira). Biosimilars revenues rose 43% in 2018. Biogen has a 49.9% stake in Samsung Bioepis. Biogen is optimistic that its biosimilars business has the opportunity to potentially double over the next couple of years.

- **Restructuring Initiative to Drive Cost Savings:** With its focus on streamlining operations and increasing efficiencies, in October 2015, Biogen announced a restructuring program. Under the program, it discontinued several pipeline programs and executed an 11% reduction in

its workforce. The restructuring program generated annual cost savings of about $250 million which were invested in pipeline development and commercial activities. In the third quarter of 2016, Biogen initiated additional cost saving measures that included the realignment of its organizational structure and achieve further targeted cost reductions.

Reasons To Sell:

Biogen is heavily reliant on sales of its MS drugs, which is a highly competitive disease space. Though Biogen's CNS pipeline is attractive, it is a high-risk area.

- **Shares Underperforming Industry:** Biogen's shares declined 15.4% in the past one year, comparing unfavorably with a decrease 3.5% for the industry.

- **Slowing MS Market Trends:** The overall trends in the multiple sclerosis market are gradually slowing down. The competitive landscape remains challenging for Biogen's MS products with newer, competitive entrants. The recent Ocrevus launch by Roche is adversely impacting MS franchise sales, mainly Tysabri. Moreover, treatments like Novartis' Gilenya and Sanofi's Aubagio pose competitive threat to Tysabri.

  Biogen's U.S. Interferon revenues are also experiencing declining trends due to patients transitioning to other oral or high efficacy MS therapies. Global MS revenues, excluding Ocrevus royalties, declined 4% in 2018. Volumes of Tecfidera and Tysabri are expected to decline in the United States in 2019.

- **Safety Concerns of MS Drugs:** We remain concerned that an increase in the number of PML cases associated with the use of Tysabri could lead to a slowdown in Tysabri sales going forward. Additional instances of PML cases could hamper the product's acceptance in the medical community thereby limiting its sales growth.

  Since the emergence of the first PML case in a patient on Tecfidera, increased caution is being exercised by physicians and patients. These issues are being faced in the more mature markets of Europe like Germany as well. Additional PML cases would have a negative impact on Tecfidera sales.

  In March 2018, Biogen announced the decision to withdraw Zinbryta from the markets, less than two years of its approval, due to growing safety concerns and limited commercial adoption of the drug due to its restrictive label. The company decided to discontinue marketing of the drug on grounds of its complex and evolving benefit/risk profile.

  Also '514 patent for Tecfidera that provides market exclusivity in the US until 2028 is being challenged in an IPR in the patent office and a litigation in a district court which creates an overhang for Biogen's stock in 2019.

- **Development and Regulatory Setbacks:** Although Biogen has an impressive pipeline, we remind investors that product development involves a high degree of risk. Development and regulatory setbacks for late-stage candidates would be a major disappointment for the company. Pipeline setbacks include disappointing phase II data on opicinumab for RMS, dexpramipexole's (amyotrophic lateral sclerosis) failure to achieve the primary endpoint in a phase III study and the discontinuation of the development of lumiliximab for the treatment of relapsed and front-line chronic lymphocytic leukemia (CLL). Biogen also announced that it will no longer develop Tecfidera and a second interferon beta-1a for rheumatoid arthritis and ulcerative colitis, respectively. The company also decided to discontinue the development of Parkinson's disease candidate, vipadenant. Biogen has terminated the development of neublastin (neuropathic pain) as well following disappointing phase II data. Meanwhile, Tysabri failed to achieve the primary endpoint in a phase II study for acute ischemic stroke and a phase III study for secondary progressive multiple sclerosis (SPMS). Biogen has also discontinued a phase III program for Tecfidera in SPMS, the development of anti-TWEAK in lupus nephritis, and certain activities in immunology and fibrosis research. In 2016, Biogen discontinued the development of amiselimod, which was being evaluated for the treatment of autoimmune diseases.

  In early 2018, Pfizer halted development of Tysabri for acute ischemic stroke (AIS) as Tysabri did not demonstrate improvement in clinical outcomes compared to placebo in a phase IIb study in AIS patients.

  In March 2019, Biogen/Eisai announced the discontinuation of ENGAGE and EMERGE phase III studies on aducanumab in early AD as a futility analysis showed that the studies were unlikely to meet their primary endpoints. In October, Biogen revealed plans to pursue U.S. regulatory approval of aducanumab based on positive results of a new analysis of larger dataset, which became available after the discontinuation of the studies. However, the FDA may not approve aducanumab particularly with mixed outcome results across the two studies. Also, the FDA may require additional studies to be conducted

  In September 2019, Biogen and Eisai discontinued two late-stage studies on elenbecestat. The decision was taken following a safety review conducted by the Data Safety Monitoring Board. The board's recommendation to discontinue the studies was due to unfavorable risk-benefit ratio.

- **Potential Competition to Spinraza:** Potential competition to Spinraza from Novartis' oral gene therapy for SMA Type 1, Zolgensma, which was approved by the FDA for use in children less than 2 years old in May 2019, is a concern, particularly with the clinical hold placed on Biogen's own gene therapy program. Meanwhile, Roche and PTC Therapeutics filed regulatory applications seeking approval for risdiplam in a broad range of patients with SMA, which if approved, may compete with Spinraza in the future.

Last Earnings Report

Biogen Beats on Q3 Earnings & Sales

Quarter Ending	09/2019
Report Date	**Oct 22, 2019**
Sales Surprise	**1.62%**
EPS Surprise	**10.88%**
Quarterly EPS	**9.17**
Annual EPS (TTM)	**32.29**

Biogen reported third-quarter 2019 earnings per share of $9.17, which comprehensively beat the Zacks Consensus Estimate of $8.28. Earnings rose 24% year over year, backed by higher revenues, lower tax rate and a lower share.

Sales came in at $3.6 billion, up 5% from the year-ago quarter. Sales also beat the Zacks Consensus Estimate of $3.53 billion. Revenue growth was principally driven by higher sales of MS drugs and continued global launch of Spinraza.

Quarter in Detail

Product sales in the quarter were $2.9 billion, up 4% year over year. Royalties on sales of Ocrevus were $188 million in the quarter, up 37% year over year. Revenues from Biogen's share of Rituxan and Gazyva operating profits increased 9% from the year-ago period to $408 million. Other revenues declined 26% in the quarter to $110 million due to lower contract manufacturing revenues, following divestiture of the Hillerod plant in August.

Biogen's MS revenues of $2.35 billion in the reporter quarter, including Ocrevus royalties, rose 2% year over year but declined 2% sequentially. However, excluding Ocrevus royalties, MS revenues were $2.1 billion, almost flat year over year.

Excluding Ocrevus royalties, the total number of patients on Biogen's MS products grew in low single digits versus the prior year.

In the third quarter, decrease in channel inventory hurt U.S. MS product revenues by approximately $30 million compared with a decrease of approximately $30 million in the second quarter and $5 million in the third quarter of 2018.

Tecfidera sales rose 3% year over year to $1.12 billion driven by strong global patient growth. However, Tecfidera global sales declined 2% sequentially. U.S. sales in the quarter were $842.0 million, flat year over year while ex-U.S. sales were $280.4 million, up 13.1%. The number of patients on Tecfidera grew approximately 8% globally.

In the United States, the share of new prescriptions for Tecfidera was flat. In ex-U.S. markets, volumes rose across all large European markets and Japan, which offset pricing pressure in several European countries

Tysabri sales rose 3% year over year and 2% sequentially to $484 million. Tysabri U.S. sales rose 3.9% to $263.0 million in the quarter. International revenues rose 1.6% to $220.6 million.

Combined interferon revenues (Avonex and Plegridy) in the quarter were $530 million, down 10% year over year. Avonex revenues declined 13% from the year-ago quarter to $420 million. Plegridy contributed $110 million to revenues, up 2% year over year.

Sales of Spinraza increased 17% year over year and 12% sequentially to $547.0 million driven by higher sales in the United States as well as ex-U.S. markets.

Spinraza U.S. sales were $236.7 million in the quarter, up 5.7% year over year driven by continued patient growth across both mature and new markets. In ex-U.S. markets, Spinraza sales rose 27.3% year over year to $310.4 million driven by strong performance in established markets such as EU and Japan as well as key markets in both Latin America and Asia Pacific.

The number of patients on Spinraza grew approximately 3% in the United States and 18% outside the United States in the quarter compared with the end of the second quarter.

In the United States, the number of adult patients on Spinraza rose approximately 8% in the quarter compared to the last quarter, with the company making strong progress in capturing the under-penetrated adult segment.

Novartis' new SMA treatment, Zolgensma is approved to treat children under two years old, which represents about 5% of the prevalent market. On the call, the company said that it has begun to see some negative impact of Zolgensma's launch on Spinraza's U.S. sales in this segment.

In 2019, Spinraza's sales growth rate is expected to moderate from 2018 levels, primarily due to a lower rate of new patient starts as well as the impact of loading dose dynamics as patients transition to dosing once every four months.

In the quarter, biosimilars revenues increased 36.3% year over year to $184 million driven by Imraldi, which generated sales of $49 million in the third quarter compared with $47 million in the second quarter. Benepali recorded sales of $116 million in the quarter, down 6% year over year. Flixabi sales of $18 million rose 63% year over year.

Research and development (R&D) expenses rose 6% year over year to $540 million. R&D costs included approximately $58 million in trial closeout costs for elenbecestat and BG00011. Selling, general and administrative (SG&A) expenses rose 11% year over year to $547 million. In the quarter, Biogen discontinued the phase IIb study of BG00011 for the potential treatment of IPF due to safety concerns.

In the quarter, Biogen repurchased approximately 3.1 million shares worth $718 million. As of Sep 30, it had $3.37 billion remaining under the $5 billion share buyback plan authorized in March 2019.

2019 Guidance

Biogen did not provide any update on its previously issued earnings and sales guidance. The revenue guidance for 2019 is $14.0-$14.2 billion, which indicates a year-over-year growth of approximately 4% to 6%. Adjusted earnings per share are expected between $31.50 and $32.30. The

earnings guidance indicates year-over-year growth of 20% to 23%.

Adjusted R&D costs are expected to be 15.5% to 16.5% of total revenues. Adjusted SG&A costs are expected in the range of 15.5% to 16.5% of total revenues. Adjusted tax rate guidance is 15.5% to 16.5%.

Recent News

To Acquire Early-Stage CNS Drug From Pfizer – Jan 13

Biogen announced that it has signed an agreement with Pfizer to acquire the latter's CNS-penetrant small molecule inhibitor, PF-05251749. Per the terms of the agreement, Biogen will pay $75 in upfront payment to Pfizer along with potential additional development and commercialization milestone payments of up to $635 million. Pfizer is also eligible to receive tiered royalties in high-single digits to sub-teens. The transaction is expected to be completed in the first quarter of 2020. Biogen plans to develop PF-05251749 as a treatment for Sundowning symptom in patients with AD and Irregular Sleep Wake Rhythm Disorder (ISWRD) in patients with PD. The company is planning to initiate a phase Ib study in the fourth quarter of 2020.

Gosuranemab Fails in Phase II Brain Disorder Study — Dec 13

Biogen announced that its phase II study – PASSPORT – evaluating its pipeline candidate, gosuranemab (BIIB092), in patients with progressive supranuclear palsy (PSP) failed to meet its primary endpoint. Notably, patients with PSP suffer from gradual deterioration and death of specific volumes of the brain that leads to loss of balance, slowing of movement, difficulty moving the eyes, and dementia.

Data from the study showed that improvement in PSP patients treated with gosuranemab as measured by PSP rating scale at week 52 was not statistically significant. Moreover, the candidate failed to demonstrate efficacy in patients on key clinical secondary endpoints. Based on these data, the company has decided to discontinue further development of gosuranemab for PSP and other primary tauopathies.

However, Biogen stated that it will continue the development of gosuranemab for treating mild cognitive impairment due to Alzheimer's disease. Currently, the candidate is being evaluated in the phase II TANGO study for this indication.

New Data on Aducanumab at CTAD — Dec 5

Biogen and Eisai presented mixed new data from the ENGAGE and EMERGE phase III studies on its Alzheimer's candidate, aducanumab at the Clinical Trials on Alzheimer's Disease (CTAD) conference in San Diego

In October, Biogen revealed controversial plans to pursue U.S. regulatory approval of aducanumab based on positive results of a new analysis of larger dataset from the discontinued ENGAGE and EMERGE studies, which became available after the studies were ceased.

In March, Biogen and Eisai had discontinued ENGAGE and EMERGE following a futility analysis, which relied on an earlier and smaller dataset. Biogen in October said that a new analysis of the larger dataset showed a different outcome than the one predicted at the time of the futility analysis.

The EMERGE study met the primary endpoint, showing that patients treated with high dose (10mg/kg) of aducanumab experienced a statistically significant reduction in clinical decline of Alzheimer's disease. At the CTAD, detailed data from EMERGE showed that the higher of the two tested doses ((10mg/kg and 6mg/kg) led to 22% less cognitive decline in patients with early Alzheimer's disease after 78 weeks than placebo based on a standard scale called the Clinical Dementia Rating-Sum of Boxes (CDR-SB). Also, key secondary endpoints were met, which demonstrated improvements in cognition and function.

The ENGAGE study, however, did not meet the primary endpoint. However, Biogen said that data from a post-hoc analysis, from a subset of patients in the ENGAGE study who received higher dose of aducanumab, support the findings from EMERGE study. Biogen is confident that the totality of these data supports a regulatory filing. Biogen plans to submit a biologics license application (BLA) seeking approval of aducanumab to the FDA in early 2020.

Valuation

Biogen's shares are down 15.4% in the trailing 12-month period. While stocks in the Zacks sub-industry are down 3.5%, those in the sector are up 4.8% over the past year. The S&P 500 Index is up 23.8% in the past year.

The stock is currently trading at 3.7X trailing 12-month sales per share which compares to 2.86X for the Zacks sub-industry, 3.18X for the Zacks sector and 3.6X for the S&P 500 Index.

Over the past five years, the stock has traded as high as 11.59X and as low as 2.85X, with a 5-year median of 3.7X. Our Neutral recommendation indicates that the stock will perform in-line with the market. Our $300 price target reflects 3.9X trailing 12-month sales per share.

Valuation Multiples - BIIB

		Stock	Sub-Industry	Sector	S&P 500
P/S TTM	Current	3.7	2.86	3.18	3.6
	5-Year High	11.59	4.96	4.14	3.65
	5-Year Low	2.85	2.1	2.69	2.51
	5-Year Median	3.7	2.64	3.26	3.15
P/E F12M	Current	8.7	N/A	21.79	19.2
	5-Year High	27.13	N/A	21.79	19.34
	5-Year Low	6.74	20.54	15.88	15.17
	5-Year Median	13.13	38.25	18.95	17.44
P/B TTM	Current	3.68	3.92	4.61	4.55
	5-Year High	10.39	5.71	5.02	4.55
	5-Year Low	2.84	2.41	3.42	2.85
	5-Year Median	5.21	3.24	4.28	3.61

As of 1/17/2020

Industry Analysis **Zacks Industry Rank:** Top 37% (94 out of 254)

Top Peers

Pfizer Inc. **(PFE)**	Outperform
Bayer Aktiengesellschaft **(BAYRY)**	Neutral
Bristol-Myers Squibb Company **(BMY)**	Neutral
Gilead Sciences, Inc. **(GILD)**	Neutral
Novartis AG **(NVS)**	Neutral
Roche Holding AG **(RHHBY)**	Neutral
Sanofi **(SNY)**	Neutral
Teva Pharmaceutical Industries Ltd. **(TEVA)**	Neutral

Industry Comparison Industry: Medical - Biomedical And Genetics

Industry Peers

	BIIB Neutral	X Industry	S&P 500	BAYRY Neutral	GILD Neutral	SNY Neutral
VGM Score	A	-	-	B	B	B
Market Cap	51.52 B	189.35 M	24.65 B	78.09 B	79.68 B	128.31 B
# of Analysts	27	3	13	2	13	5
Dividend Yield	0.00%	0.00%	1.73%	2.61%	4.00%	2.26%
Value Score	A	-	-	A	A	A
Cash/Price	0.08	0.23	0.04	0.08	0.28	0.00
EV/EBITDA	7.51	-3.78	14.11	8.58	7.75	11.91
PEG Ratio	1.15	1.62	2.08	0.97	3.68	1.96
Price/Book (P/B)	3.68	4.04	3.39	1.52	3.84	2.01
Price/Cash Flow (P/CF)	9.00	13.21	13.81	5.54	8.60	9.81
P/E (F1)	8.69	28.31	19.19	10.39	8.99	14.71
Price/Sales (P/S)	3.62	13.62	2.69	1.52	3.56	3.20
Earnings Yield	11.51%	-15.48%	5.21%	9.65%	11.13%	6.79%
Debt/Equity	0.35	0.02	0.72	0.82	1.11	NA
Cash Flow ($/share)	31.74	-1.07	6.94	3.78	7.33	5.23
Growth Score	B	-	-	D	C	B
Hist. EPS Growth (3-5 yrs)	16.34%	16.50%	10.56%	NA	-12.33%	0.29%
Proj. EPS Growth (F1/F0)	-0.70%	7.26%	7.57%	14.81%	-0.02%	5.96%
Curr. Cash Flow Growth	11.67%	20.28%	14.73%	60.37%	-24.62%	8.92%
Hist. Cash Flow Growth (3-5 yrs)	19.17%	8.03%	9.00%	6.70%	21.29%	-4.43%
Current Ratio	1.91	5.12	1.24	1.29	2.96	1.32
Debt/Capital	25.81%	3.91%	42.99%	45.00%	52.58%	28.06%
Net Margin	37.91%	-197.98%	11.14%	-2.89%	12.04%	8.61%
Return on Equity	46.14%	-64.11%	17.16%	13.42%	37.50%	24.23%
Sales/Assets	0.54	0.20	0.55	0.35	0.36	0.63
Proj. Sales Growth (F1/F0)	-1.15%	17.19%	4.16%	2.64%	0.57%	3.06%
Momentum Score	A	-	-	B	B	F
Daily Price Chg	-0.22%	-0.15%	0.27%	-0.21%	-0.35%	0.10%
1 Week Price Chg	1.95%	1.78%	0.39%	3.56%	-0.06%	1.69%
4 Week Price Chg	-4.06%	6.15%	2.95%	5.63%	-3.54%	1.61%
12 Week Price Chg	-0.06%	18.24%	7.76%	12.31%	-4.58%	10.48%
52 Week Price Chg	-15.62%	-4.89%	22.29%	13.59%	-8.26%	21.85%
20 Day Average Volume	1,231,412	229,656	1,536,375	372,491	6,559,765	1,206,363
(F1) EPS Est 1 week change	0.00%	0.00%	0.00%	0.00%	0.00%	-0.91%
(F1) EPS Est 4 week change	-0.38%	0.00%	0.00%	0.00%	0.00%	-0.46%
(F1) EPS Est 12 week change	1.87%	0.34%	-0.40%	-3.59%	-1.87%	-1.37%
(Q1) EPS Est Mthly Chg	-0.51%	0.00%	0.00%	NA	0.00%	NA

Zacks Stock Rating System

We offer two rating systems that take into account investors' holding horizons: Zacks Rank and Zacks Recommendation. Each provides valuable insights into the future profitability of the stock and can be used separately or in combination with each other depending on your investment style.

Zacks Recommendation

The Zacks Recommendation aims to predict performance over the next 6 to 12 months. The foundation for the quantitatively determined Zacks Recommendation is trends in the company's estimate revisions and earnings outlook. The Zacks Recommendation is broken down into 3 Levels; Outperform, Neutral and Underperform. Unlike many Wall Street firms, we have an excellent balance between the number of Outperform and Neutral recommendations. Our team of 70 analysts are fully versed in the benefits of earnings estimate revisions and how that is harnessed through the Zacks quantitative rating system. But we have given our analysts the ability to override the Zacks Recommendation for the 1200 stocks that they follow. The reason for the analyst over-rides is that there are often factors such as valuation, industry conditions and management effectiveness that a trained investment professional can spot better than a quantitative model.

Zacks Rank

The Zacks Rank is our short-term rating system that is most effective over the one- to three-month holding horizon. The underlying driver for the quantitatively-determined Zacks Rank is the same as the Zacks Recommendation, and reflects trends in earnings estimate revisions.

Zacks Style Scores

The Zacks Style Score is as a complementary indicator to the Zacks rating system, giving investors a way to focus on the highest rated stocks that best fit their own stock picking preferences.

Academic research has proven that stocks with the best Value, Growth and Momentum characteristics outperform the market. The Zacks Style Scores rate stocks on each of these individual styles and assigns a rating of A, B, C, D and F. We also produce the VGM Score (V for Value, G for Growth and M for Momentum), which combines the weighted average of the individual Style Scores into one score. This is perfectly suited for those who want their stocks to have the best scores across the board.

Value Score	A
Growth Score	B
Momentum Score	A
VGM Score	A

As an investor, you want to buy stocks with the highest probability of success. That means buying stocks with a Zacks Recommendation of Outperform, which also has a Style Score of an A or a B.

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