

Biogen Inc.

Thoughts Post the 4Q23 Call

Maintain Rating: NEUTRAL | PO: 280.00 USD | Price: 244.74 USD

Focus remains on Leqembi + Skyclarys as core biz declines

BIIB shares are under pressure today (-6%; NBI index -2%) on underwhelming 2024 guidance and weaker 4Q performance from Skyclarys (Friedrich's ataxia), Leqembi (early Alzheimer's), and the base business (e.g., SMA franchise + Biosimilars). While there were a few bright spots, namely Tysabri + Tecfidera, sentiment is more anchored on Leqembi + Skyclarys based on our investor discussions. On that front, Biogen highlighted there is now ~1K patients on Skyclarys in the US, up from ~860 in 3Q, and that it has improved logistics (reduced time from start form to shipment by 45%) and access (64% of covered lives with policy in place). But given the modest growth seen from 3Q of only ~140 additional patients on therapy, investors will be concerned that growth will continue to moderate (2024 BofA \$363M; cons \$389M). On Leqembi, Biogen provided updated framework on its collaboration with Eisai with the intention for a more blended commercial model (increasing the US field team by ~30%; ~260 pts added per week in January), comparable to Biogen/ Eisai's strategy in Japan (recently launched). All in all, we expect 2024 to be another year of commercial investment on both assets, particularly given the required patient/ prescriber awareness + infrastructure build for Skyclarys and Leqembi, respectively. Nevertheless, we expect these continued investments to set Biogen up favorably for 2025+, but our '23-'26 revenue CAGR of -1% is still meaningfully lower than peers. As such, we think the risk/ reward is well balanced at current levels, so we maintain our Neutral rating and \$280 PO.

Catalysts may alter the narrative, but more wood-to-chop

Given investor sentiment is tied to Biogen's new product cycle, we'd say there's acute focus on its upcoming catalysts. Indeed, Biogen remains on track to submit regulatory packages for Leqembi subQ (1Q) + IV maintenance dosing (1Q), and we expect an EU regulatory decision for Leqembi in 1H24. That said, we'd argue that positive outcomes are already baked into shares at these levels, and we need more line of sight into Biogen's earlier pipeline (e.g., dapirolizumab pegol for SLE, phase 3, and BIIB105 for ALS, phase 1/2, results both in mid-2024) before we see meaningful upside to shares.

Model Changes

We updated our model to reflect 2023 actuals + 2024 guidance and now forecast \$9.51B rev/ \$15.15 EPS for 2024 (see page 3 for more details).

Estimates (Dec) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	17.67	14.72	15.15	17.00	18.40
GAAP EPS	20.91	7.97	8.44	10.33	11.78
EPS Change (YoY)	-7.6%	-16.7%	2.9%	12.2%	8.2%
Consensus EPS (Bloomberg)			15.64	18.18	20.45
DPS	0	0	0	0	0
Valuation (Dec)					
P/E	13.9x	16.6x	16.2x	14.4x	13.3x
GAAP P/E	11.7x	30.7x	29.0x	23.7x	20.8x
EV / EBITDA*	8.9x	10.9x	10.1x	9.4x	8.9x
Free Cash Flow Yield*	3.2%	4.9%	5.1%	5.6%	6.0%

* For full definitions of *IQmethod*SM measures, see page 6.

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Timestamp: 13 February 2024 12:16PM EST

13 February 2024

Equity

Key Changes

(US\$)	Previous	Current
2024E Rev (m)	9,720.2	9,510.5
2025E Rev (m)	9,722.2	9,463.9
2026E Rev (m)	9,898.4	9,606.4
2024E EPS	15.75	15.15
2025E EPS	18.05	17.00
2026E EPS	19.65	18.40

Geoff Meacham

Research Analyst
BofAS
+1 646 855 1004
geoff.meacham@bofa.com

Alexandria Hammond

Research Analyst
BofAS
+1 646 855 1654
alexandria.hammond@bofa.com

Charlie Yang

Research Analyst
BofAS
charlie.yang@bofa.com

Susan Chor

Research Analyst
BofAS
susan.chor@bofa.com

John Joy

Research Analyst
BofAS
john.joy@bofa.com

Stock Data

Price	244.74 USD
Price Objective	280.00 USD
Date Established	26-Jan-2024
Investment Opinion	B-2-9
52-Week Range	220.86 USD - 319.76 USD
Mkt Val (mn) / Shares Out (mn)	35,536 USD / 145.2
Free Float	99.8%
Average Daily Value (mn)	229.89 USD
BofA Ticker / Exchange	BIIB / NAS
Bloomberg / Reuters	BIIB US / BIIB.OQ
ROE (2024E)	14.5%
Net Dbt to Eqty (Dec-2023A)	-4.0%
ESGMeter TM	High

ESGMeter is not indicative of a company's future stock price performance and is not an investment recommendation or rating. ESGMeter is independent of BofA Global Research's equity investment rating, volatility risk rating, income rating, and price objective for that company. For full details, refer to ["BofA ESGMeter Methodology"](#).

iQprofileSM Biogen Inc.

iQmethodSM – Bus Performance*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	13.9%	10.4%	11.0%	11.5%	11.6%
Return on Equity	21.2%	15.3%	14.5%	14.9%	14.8%
Operating Margin	31.9%	25.8%	29.7%	33.2%	35.2%
Free Cash Flow	1,144	1,746	1,802	1,989	2,143

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	0.5x	0.9x	0.9x	0.9x	0.8x
Asset Replacement Ratio	0.4x	0.4x	0.4x	0.3x	0.3x
Tax Rate	NA	NM	NM	NM	NM
Net Debt-to-Equity Ratio	10.4%	-4.0%	-16.3%	-27.4%	-37.0%
Interest Cover	NA	NA	NA	NA	NA

Income Statement Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	10,173	9,836	9,511	9,464	9,606
% Change	-7.4%	-3.3%	-3.3%	-0.5%	1.5%
Gross Profit	7,895	7,333	7,150	7,131	NA
% Change	-11.0%	-7.1%	-2.5%	-0.3%	NA
EBITDA	3,879	3,165	3,403	3,675	3,875
% Change	-19.2%	-18.4%	7.5%	8.0%	5.4%
Net Interest & Other Income	(213)	(13)	(200)	(176)	(149)
Net Income (Adjusted)	2,580	2,144	2,220	2,507	2,732
% Change	-9.8%	-16.9%	3.6%	12.9%	9.0%

Free Cash Flow Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	0	2,529	2,624	2,963	3,230
Depreciation & Amortization	638	623	579	537	497
Change in Working Capital	(890)	102	98	14	(43)
Deferred Taxation Charge	(169)	(169)	(169)	(169)	(169)
Other Adjustments, Net	1,805	(1,109)	(1,127)	(1,179)	(1,220)
Capital Expenditure	(240)	(232)	(204)	(177)	(152)
Free Cash Flow	1,144	1,746	1,802	1,989	2,143
% Change	-66.2%	52.6%	3.2%	10.4%	7.7%
Share / Issue Repurchase	(750)	0	0	0	0
Cost of Dividends Paid	0	0	0	0	0
Change in Debt	0	0	0	0	0

Balance Sheet Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	4,893	6,861	8,886	11,097	13,463
Trade Receivables	1,705	1,648	1,594	1,586	1,610
Other Current Assets	3,193	3,102	3,013	3,001	3,039
Property, Plant & Equipment	3,299	2,907	2,531	2,171	1,826
Other Non-Current Assets	11,464	11,137	10,813	10,576	10,398
Total Assets	24,554	25,655	26,838	28,432	30,337
Short-Term Debt	0	0	0	0	0
Other Current Liabilities	3,273	3,164	3,060	3,045	3,090
Long-Term Debt	6,281	6,281	6,281	6,281	6,281
Other Non-Current Liabilities	1,612	1,569	1,529	1,523	1,541
Total Liabilities	11,166	11,015	10,869	10,848	10,912
Total Equity	13,388	14,641	15,969	17,583	19,425
Total Equity & Liabilities	24,554	25,655	26,838	28,431	30,337

* For full definitions of iQmethodSM measures, see page 6.

Company Sector

Biotechnology

Company Description

Biogen is a global biotechnology company that develops, manufactures, and markets therapies for neurological disorders, including multiple sclerosis (MS), spinal muscular atrophy (SMA), and Alzheimer's. BiIB markets five products, Avonex, Plegridy, Tysabri, Tecfidera, and Vumerity that combined have considerable share of the worldwide >\$20B multiple sclerosis market.

Investment Rationale

We rate Biogen as a Neutral given the commercial potential of lecanemab and Skyclarys, offset by questions over the longer-term durability of the core MS and Spinraza franchises

Stock Data

Average Daily Volume

939,323

Quarterly Earnings Estimates

	2023	2024
Q1	3.53A	3.18E
Q2	4.16A	3.39E
Q3	4.39A	3.33E
Q4	2.95A	3.53E

Model Changes

Exhibit 1: Biogen model updates

Following today's call, we have made the following adjustments to our model

\$ in millions (ex. per share items)	2024E		2025E	
	Prior	Current	Prior	Current
Avonex WW	\$ 691	\$ 691	\$ 595	\$ 595
Plegridy WW	257	257	205	205
Tysabri WW	1,521	1,521	1,238	1,238
Tecfidera WW	849	805	640	607
Vumerity WW	696	696	731	731
Spinraza - WW	1,705	1,705	1,582	1,582
Skyclarys- WW	376	363	649	575
Anti-CD20 therapeutic programs	1,793	1,793	1,840	1,840
Biosimilars	851	847	868	864
Other	750	600	755	605
Total Revenue	\$ 9,720	\$ 9,511	\$ 9,722	\$ 9,464

\$ in millions (ex. per share items)	2024E		2025E	
	Prior	Current	Prior	Current
Revenue	\$ 9,720	\$ 9,511	\$ 9,722	\$ 9,464
COGS	2,380	2,360	2,371	2,333
Gross Profit	7,340	7,150	7,351	7,131
R&D	2,173	2,078	2,055	1,994
SG&A	2,069	2,024	1,818	1,770
Operating Income (non-GAAP)	2,909	2,823	3,286	3,138
Other Income (net)	(183)	(200)	(141)	(176)
Pre-Tax Income (non-GAAP)	2,726	2,623	3,146	2,962
Taxes	418	402	482	454
Net Income to Biogen (non-GAAP)	2,307	2,220	2,662	2,507
Non-GAAP EPS	15.75	15.15	18.05	17.00
Shares Outstanding - Diluted	146	146	147	147

Source: BofA Global Research Estimates.

BofA GLOBAL RESEARCH

Abbreviations:

subQ: subcutaneous

Biz: business

IV: intravenous

SMA: Spinal muscular atrophy

SLE: Systemic lupus erythematosus

ALS: Amyotrophic lateral sclerosis



Price objective basis & risk

Biogen Inc. (BIIB)

Our \$280 price objective is based on a sum-of-the parts net present value (NPV) analysis and a discount rate of 8%. We value the MS franchise at \$66/share, Spinraza at \$30/share, Roche collaboration/royalty at \$60/share, biosimilars at \$7/share, Alzheimer's at \$99/share, Zuruvae at \$3/share, Skyclarys at \$40/share, the pipeline at \$15/share, and net cash at -\$41/share.

Upside risks to our PO are 1) less erosion of Tecfidera, Avonex, Plegridy, and Tysabri than anticipated, 2) Vumerity meaningfully capturing market share, 3) durability of Spinraza, 4) rapid uptake of Leqembi and Skyclarys, and 5) success of a number of pipeline programs

Downside risks are 1) greater-than-expected moderation of MS sales (Tecfidera, Avonex, Plegridy, and Tysabri) due to increased competition/ generics, 2) rapid erosion of Spinraza's market share in SMA, 3) limited success of the R&D pipeline, with many products failing to advance or approved with narrow indications for smaller patient populations, and 4) limited uptake of lecanemab.

Analyst Certification

I, Geoff Meacham, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

US - Biopharmaceuticals Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	89bio, Inc	ETNB	ETNB US	Geoff Meacham
	Acumen Pharma	ABOS	ABOS US	Geoff Meacham
	Agios Pharmaceuticals	AGIO	AGIO US	Greg Harrison, CFA
	Amylyx Pharmaceuticals	AMLX	AMLX US	Geoff Meacham
	BioMarin	BMRN	BMRN US	Geoff Meacham
	BridgeBio Pharma	BBIO	BBIO US	Greg Harrison, CFA
	Caribou	CRBU	CRBU US	Geoff Meacham
	CRISPR Therapeutics	CRSP	CRSP US	Geoff Meacham
	Eli Lilly and Company	LLY	LLY US	Geoff Meacham
	HUTCHMED	HCM	HCM US	Alec W. Stranahan
	Immatics	IMTX	IMTX US	Alec W. Stranahan
	Insmo Incorporated	INSM	INSM US	Jason Zemansky
	Intellia Therapeutics	NTLA	NTLA US	Greg Harrison, CFA
	Janux Therapeutics	JANX	JANX US	Geoff Meacham
	Keros	KROS	KROS US	Greg Harrison, CFA
	Kiniksa Pharmaceuticals, Ltd.	KNSA	KNSA US	Geoff Meacham
	Krystal Biotech	KRYS	KRYS US	Alec W. Stranahan
	Kura Oncology	KURA	KURA US	Jason Zemansky
	Liquidia Corporation	LQDA	LQDA US	Greg Harrison, CFA
	Lyell Immunopharma	LYEL	LYEL US	Geoff Meacham
	MeiraGTX	MGTX	MGTX US	Alec W. Stranahan
	Merck & Co.	MRK	MRK US	Geoff Meacham
	Mineralys Therapeutics	MLYS	MLYS US	Greg Harrison, CFA
	Neumora Therapeutics	NMRA	NMRA US	Geoff Meacham
	Rani Therapeutics	RANI	RANI US	Geoff Meacham
	Regenxbio, Inc.	RGNX	RGNX US	Alec W. Stranahan
	Revolution Medicines	RVMD	RVMD US	Alec W. Stranahan
	Rocket Pharmaceuticals, Inc.	RCKT	RCKT US	Greg Harrison, CFA
	Royalty Pharma	RPRX	RPRX US	Geoff Meacham
	Sana Biotechnology	SANA	SANA US	Geoff Meacham

US - Biopharmaceuticals Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	SpringWorks	SWTX	SWTX US	Alec W. Stranahan
	Syndax Pharmaceuticals	SNDX	SNDX US	Jason Zemansky
	Traverse Therapeutics Inc	TVTX	TVTX US	Greg Harrison, CFA
	Turnstone Biologics	TSBX	TSBX US	Geoff Meacham
	Vertex Pharmaceuticals Inc.	VRTX	VRTX US	Geoff Meacham
	Werewolf Therapeutics	HOWL	HOWL US	Jason Zemansky
	Xencor	XNCR	XNCR US	Alec W. Stranahan
NEUTRAL				
	AbbVie	ABBV	ABBV US	Geoff Meacham
	Alector, Inc	ALEC	ALEC US	Greg Harrison, CFA
	Amgen Inc.	AMGN	AMGN US	Geoff Meacham
	Arcus Biosciences	RCUS	RCUS US	Jason Zemansky
	Beam Therapeutics	BEAM	BEAM US	Greg Harrison, CFA
	Biogen Inc.	BIIB	BIIB US	Geoff Meacham
	Bristol-Myers Squibb	BMJ	BMJ US	Geoff Meacham
	Cytokinetics, Incorporated	CYTK	CYTK US	Jason Zemansky
	Editas Medicine	EDIT	EDIT US	Greg Harrison, CFA
	Erasca	ERAS	ERAS US	Alec W. Stranahan
	Esperion	ESPR	ESPR US	Jason Zemansky
	Exscientia	EXAI	EXAI US	Alec W. Stranahan
	IGM Biosciences	IGMS	IGMS US	Greg Harrison, CFA
	Johnson & Johnson	JNJ	JNJ US	Geoff Meacham
	Kymira Therapeutics	KYMR	KYMR US	Geoff Meacham
	Moderna	MRNA	MRNA US	Geoff Meacham
	Pfizer	PFE	PFE US	Geoff Meacham
	Recursion Pharmaceuticals, Inc.	RXR	RXR US	Alec W. Stranahan
	Tyra Biosciences	TYRA	TYRA US	Greg Harrison, CFA
	Vir	VIR	VIR US	Geoff Meacham
	Y-mAbs Therapeutics, Inc	YMAB	YMAB US	Alec W. Stranahan
UNDERPERFORM				
	AlloVir, Inc.	ALVR	ALVR US	Jason Zemansky
	CureVac	CVAC	CVAC US	Geoff Meacham
	Day One Biopharmaceuticals	DAWN	DAWN US	Alec W. Stranahan
	LianBio	LIAN	LIAN US	Geoff Meacham
	Novavax	NVAX	NVAX US	Alec W. Stranahan
	Regeneron Pharmaceuticals Inc.	REGN	REGN US	Geoff Meacham
	Reneo Pharmaceuticals	RPHM	RPHM US	Jason Zemansky
	TG Therapeutics	TGTX	TGTX US	Alec W. Stranahan
	United Therapeutics Corporation	UTHR	UTHR US	Greg Harrison, CFA
RSTR				
	BioXcel Therapeutics	BTAI	BTAI US	Greg Harrison, CFA
	Gilead Sciences Inc.	GILD	GILD US	Geoff Meacham

iQmethodSM Measures Definitions

Business Performance

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

Quality of Earnings

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

Valuation Toolkit

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

EV / EBITDA

Numerator

$\text{NOPAT} = (\text{EBIT} + \text{Interest Income}) \times (1 - \text{Tax Rate}) + \text{Goodwill Amortization}$

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

Numerator

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash & Equivalents

EBIT

Numerator

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

$\text{EV} = \text{Current Share Price} \times \text{Current Shares} + \text{Minority Equity} + \text{Net Debt} +$

Other LT Liabilities

Enterprise Value

Denominator

$\text{Total Assets} - \text{Current Liabilities} + \text{ST Debt} + \text{Accumulated Goodwill}$

Amortization

Shareholders' Equity

Sales

N/A

N/A

Denominator

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

Denominator

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

$\text{Market Cap} = \text{Current Share Price} \times \text{Current Basic Shares}$

Sales

Basic EBIT + Depreciation + Amortization

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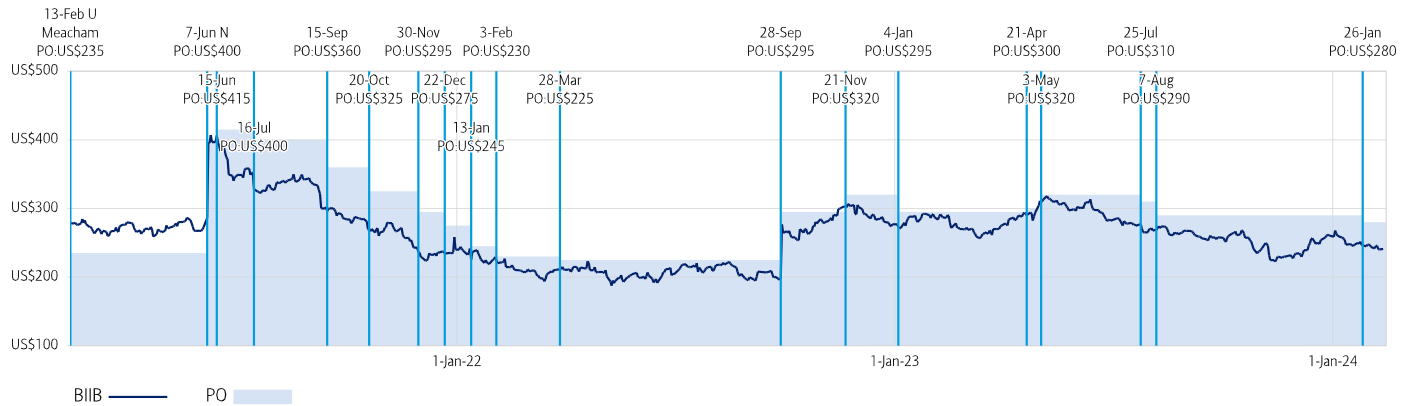
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Disclosures

Important Disclosures

Biogen Inc. (BIIB) Price Chart



B: Buy, N: Neutral, U: Underperform, PO: Price Objective, NA: No longer valid, NR: No Rating

The Investment Opinion System is contained at the end of the report under the heading "Fundamental Equity Opinion Key". Dark grey shading indicates the security is restricted with the opinion suspended. Medium grey shading indicates the security is under review with the opinion withdrawn. Light grey shading indicates the security is not covered. Chart is current as of a date no more than one trading day prior to the date of the report.

Equity Investment Rating Distribution: Health Care Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	234	60.94%	Buy	115	49.15%
Hold	80	20.83%	Hold	36	45.00%
Sell	70	18.23%	Sell	29	41.43%

Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	1895	53.62%	Buy	1083	57.15%
Hold	832	23.54%	Hold	454	54.57%
Sell	807	22.84%	Sell	383	47.46%

^{R1} Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R2}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R2} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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