

US Biopharmaceuticals

4Q23 Earnings Tracker – Week 5

Earnings Review

Mixed 4Q despite strong results thus far in Biopharma

4Q23 earnings were solid with all but 3 of our companies reporting both revenue and EPS beats. Large cap (DRG +7%) outperformed Biotech (NBI +0.3%, SPX+5%).

Exhibit 1: 4Q23 US Biopharma revenue and earnings performance

Thus far, 11 of 14 companies have beat on revenue and 12 of 14 beat on EPS

	4Q23		2024 Guidance	
	Revenue	EPS	Revenue	EPS
J&J (JNJ)	BEAT	BEAT	MAINTAINED	MAINTAINED
Pfizer (PFE)	MISS	BEAT	MAINTAINED	MAINTAINED
Merck (MRK)	BEAT	BEAT	ABOVE	ABOVE
Bristol (BMY)	BEAT	BEAT	ABOVE	ABOVE
Regeneron (REGN)	BEAT	BEAT	-	-
AbbVie (ABBV)	BEAT	BEAT	MAINTAINED	RAISED
Vertex (VRTX)	BEAT	BEAT	ABOVE	ABOVE
Eli Lilly (LLY)	BEAT	BEAT	ABOVE	IN-LINE
Amgen (AMGN)	BEAT	BEAT	ABOVE	BELOW
Gilead (GILD)	BEAT	BEAT	ABOVE	BELOW
Biogen (BIIB)	MISS	MISS	IN-LINE	ABOVE
Royalty Pharma (RPRX)	IN-LINE	BEAT	MAINTAINED	MAINTAINED
Moderna (MRNA)	BEAT	BEAT	MAINTAINED	-
BioMarin (BMRN)	BEAT	IN-LINE	BELOW	BELOW

BofA Global Research, Bloomberg, *rev guidance floor maintained, **Implied raise

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See pages 2-4 for a recap of 4Q calls and read-throughs to our coverage universe

Exhibit 2: Consensus 2024 annual projected growth pre- and post-4Q23 reporting

Overall, the outlook for 2024 growth looks positive

	Revenue		EPS	
	Prior	Post	Prior	Post
JNJ	3.6%	3.8%	7.7%	7.5%
PFE	2.6%	2.2%	19.7%	19.6%
MRK	5.7%	6.1%	464.8%	466.3%
BMY	1.4%	2.2%	(5.9%)	(7.0%)
REGN	5.7%	6.3%	1.0%	1.8%
ABBV	(0.5%)	(0.1%)	1.2%	0.7%
VRTX	8.3%	8.5%	9.0%	9.8%
LLY	17.0%	20.2%	97%	99%
AMGN	16.1%	17.1%	5%	5%
GILD	1.8%	1.4%	6.5%	5.6%
BIIB	(1.2%)	(3.7%)	6.3%	5.2%
RPRX	(11.6%)	(11.3%)	(16.6%)	(16.4%)
MRNA	(55.9%)	(56.7%)	N/A	N/A
BMRN	16.9%	15.8%	41.0%	35.9%

BofA Global Research, Company Reports, Bloomberg

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Abbreviations:

BMO: Before market open

AMC: After market close

M&A: Mergers and acquisitions

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Company 4Q23 Earnings Updates

Read-throughs from Biopharma 3Q earnings:

- **Sanofi:** [Read-through from Sanofi 4Q23 earnings](#)
- **Roche:** [Read-through from Roche 4Q23 earnings](#)
- **Novo:** [Read-through from Novo 4Q23 earnings](#)
- **GSK:** [Read-through from GSK 4Q23 earnings](#)

Week 1

J&J. J&J reported solid 4Q results on top (+\$323M; +7.2 % y/y op) and bottom lines (+\$0.01; +11.2% y/y op) and maintained 2024 guidance (+\$24M, -\$0.03 midpt vs. consensus) driven by both Innovative Medicine (+\$178M; +4.0% y/y op) and MedTech (+\$186M; +13.4% y/y op). Pharma outperformance was driven primarily by Immunology franchise (+\$196M, including +\$173M from Stelara) while Oncology franchise was in line with expectations (+\$19M) while Carvykti was slightly below expectations (-\$13M) with flat q/q growth. Turning to 2024 guidance, J&J reaffirmed revenue/ EPS guidance while expecting ~50 bps operating margin improvement (vs. flat to 2023). Maintain Neutral rating [Initial thoughts on JNJ 4Q23 results](#) and [thoughts post the JNJ call](#).

Pfizer. As Pfizer gave prior FY 2023 and 2024 guidance along with closure of the Seagen acquisition ([see our note on the Seagen deal closure](#)), top- and bottom-line results were largely within expectations. That said, Pfizer reported mixed 4Q results with a revenue miss of \$14.2B (vs. cons \$14.8B) while beating on EPS at \$0.10 largely due to IPR&D adjustments (vs. cons -\$0.21). Higher revenues were driven by lower Paxlovid returns (+\$316M cons), while the ex-COVID business, performed below expectations (-\$509M) with Prevnar and Ibrance missing consensus. Separately, Abrysvo (RSV vaccine) had a solid quarter with \$515M in sales (cons: \$398M). See additional comparison of key 4Q results. We maintain Neutral, \$35 PO. [Initial thoughts on PFE 4Q23 results](#) and [thoughts post the PFE 4Q23 call](#)

Week 2

Merck. Merck delivered another strong commercial quarter (+\$138M ahead on revenues / +\$0.17 EPS), driven by Keytruda (+\$253M) and ProQuad (+\$165M) while Gardasil missed modestly (-\$92M). Further, 2024 rev guidance midpoint of \$63.45B and non-GAAP EPS guidance midpoint of \$8.52 are modestly above expectations and look beatable. Indeed, we continue to like Merck's strong growth (2024-27e CAGR: +6%) driven by core assets (i.e., Keytruda, Gardasil) and new launches. Further, the company had a disciplined strategy towards Keytruda LOE and made solid progress, including 1) Daiichi collaboration, 2) the Prometheus deal, and 3) new launches from sotatercept (see our [KOL call takeaways on sotatercept](#)), V116, and HER3-DXd. Maintain Buy and \$135 PO. [Initial thoughts on MRK 4Q23 results](#) and [thoughts post the MRK 4Q23 call](#)

Regeneron. Regeneron marginally beat on the top- and bottom-line in 4Q23 with revenues of \$3.4B (vs. \$3.3B cons) and EPS of \$11.86 (vs. \$10.62 cons); given recent strength in shares, we expect trading to be flattish today. 4Q US Eylea sales of \$1.34B and Eylea HD sales of \$123M were in-line with pre-announced results. Furthermore, there was little surprise with Dupixent sales at \$3.2B (vs. \$3.2B cons) and Kevzara sales of \$112M (vs. \$99M cons) given Sanofi reported 4Q results yesterday (see our Sanofi 4Q read-through note). US Praluent sales were above consensus (\$61M vs \$40M cons) while Libtayo modestly beat at \$244M (vs. \$243M cons). Lastly, Sanofi collaboration revenue of \$993B (vs. \$995M cons) was in-line, while Bayer collaboration revenue of \$377M (vs. \$370M cons) beat slightly. Guidance for 2024 included: 1) adjusted R&D of \$4.3-4.5B, 2) adjusted SG&A of \$2.5-2.65B, 3) gross margin on net product sales 89-91%, and 4) an effective tax rate of 10-12%. Maintain Underperform rating and \$710 PO. [Initial thoughts on REGN 4Q23 results](#) and [thoughts post the REGN 4Q23 call](#).



Bristol Myers. Bristol beat 4Q top and bottom lines (+\$274M revs, +\$0.18 EPS vs. cons) and issued better-than-expected 2024 revenue guidance (low single-digit increase vs. consensus 1%). Of note, the non-GAAP EPS guidance midpoint of \$7.25 excludes Karuna and Rayzebio transactions while consensus \$7.11 may include the acquisition impact (-\$0.43). Higher revenues were driven by Eliquis (+\$93M), Revlimid (+\$63M), and New Launches (+\$63M; Reblozyl +\$46M). Overall, while the quarter and 2024 guidance look solid, a consistent commercial performance and growth momentum from the new launches are crucial to Bristol's story. To that end, we think it will take time before seeing a meaningful sales inflection from new launches. Maintain Neutral and \$60 PO. [Initial Thoughts on BMY 4Q23 Earnings](#) and [thoughts post the BMY 4Q23 call](#).

AbbVie. Overall, 4Q results were solid with total revenue of \$14.3B (vs. \$14.0B cons) and EPS of \$2.79 (vs. \$2.76 cons) beating, due to higher revenues across most key products. We expect ABBV shares to trade up modestly on 2024 EPS outlook and bullish long-term guidance. AbbVie's I&I portfolio overall was solid, though with a slight miss on US Humira at \$2.7B (vs. \$2.8B cons, -\$30M) offset by Skyrizi sales of \$2.4B (+\$32M cons) and Rinvoq sales of \$1.3B (+\$85M cons). In heme/onc, Imbruvica sales continue to decline (-19% y/y), though 4Q results of \$903M (vs. \$843M cons) beat as well as Venclexta sales of \$589M (vs. \$570M cons). Aesthetics slightly beat at \$1.4B (+\$18M). Lastly, both Vraylar revenue of \$789M (vs. \$782M cons) and Ubrelvy sales of \$234M (vs. \$233M cons) were slightly better, though mostly in-line. AbbVie also raised 2024 EPS guidance to \$11.05-\$11.25 (midpoint \$11.15), bringing the floor EPS to \$11.05 (from \$11.00). That said, consensus expectations for EPS have risen to \$11.25 from \$11.09 in the last couple of weeks (BofA: \$11.00) Maintain Neutral and \$172 PO. [Initial thoughts on ABBV 4Q23 results](#) and [thoughts post the ABBV 4Q23 call](#).

Week 3

Vertex . Vertex had a strong 4Q, with outperformance on both the top- (revenue: \$2.5B, +\$8M), and bottom-line (\$4.20, +\$0.11) driven by Trikafta (\$2.3B; +\$22M) offsetting the other Cystic fibrosis (CF) revenue declines (\$184M; -\$18M). That said, we'd say investors are more focused on **1)** the strong pivotal results for its next-generation triple, for Cystic fibrosis (CF) and regulatory submission timeline of mid-2024, and **2)** 2024 CF revenue guidance of \$10.65B at the midpoint (BofA \$10.7B, cons \$10.6B). We expect investors will find this set up favorable, even with Vertex's 2025 multiple of >20x, and believe there's potential for beat/ raises throughout 2024. Moreover, the guidance points to 2024 being a year of clinical + commercial execution, which makes sense based on Vertex's new product cycle. We maintain Buy and our \$540 PO as Vertex's new product cycle creates a dynamic new story, particularly following the pivotal results for VX-548 in acute pain (see [our thoughts on the results here](#); plans to submit NDA by mid 2024) that is supported by strong revenue from its core CF business. Maintain Buy and \$550 PO [Initial thoughts on VRTX 4Q23 results](#) and [thoughts post the VRTX 4Q23 call](#).

Lilly. Lilly had another strong quarter with substantial upside on both revenue (\$9.4B; +\$395M consensus) and non-GAAP EPS (\$2.49; +\$0.31). Given the multiple, there were a lot of worries about 2024 guidance, but revenue was above expectations at \$41B (midpoint; BofA \$41.2B; cons \$39.5B) and non-GAAP EPS guidance was in-line at \$12.45 (midpoint; BofA \$13.30; cons \$12.56), both of which still have good upside potential, in our view. Indeed, Mounjaro's 4Q beat at \$2.2B (+\$435M cons) and favorable launch dynamics for Zepbound (\$176M; +\$51M cons) should help to bolster investors' concerns on the likelihood of beat + raises throughout 2024. We remain confident in Lilly's clinical + commercial execution and maintain our 2024 forecasts for Mounjaro at \$9B (+\$920M cons) and Zepbound at \$2.8B (-\$435M cons). Maintain buy and \$800 PO [Initial thoughts on LLY 4Q23 results](#) and [thoughts post the LLY 4Q23 call](#).

Amgen. Amgen reported solid 4Q results on top and bottom lines (+\$77M and +\$0.11 vs. cons). Higher revenues were driven by Neulasta (+\$108M) and Prolia / Xgeva (+47M) while Enbrel (-\$38M), Repatha (-\$17M), and Tezspire (-\$13M) performed below expectations. Further, management issued higher-than-expected rev guidance midpoint of \$33.1B (17% y/y) while non-GAAP EPS guidance midpoint of \$19.60 (5% y/y) came in slightly below consensus. That said, the focus has been on obesity portfolio (AMG 786) update this quarter, which remains ongoing (1H24). We expect investors to focus on obesity portfolio updates and expectations on the call. Maintain Neutral, \$315 PO. [Initial thoughts on AMGN 4Q23 results](#) and [thoughts post the AMGN 4Q23 call](#).

Gilead. Gilead reported mixed 4Q results, with revenue of \$7.1B modestly beating (+\$35M cons) while EPS of \$1.72 modestly missed (-\$0.03 cons). The sales beat was mostly driven by Veklury sales of \$730M (vs. \$479M cons). As such, following 4Q results, we expect GILD shares will be weaker. Notably, HIV product sales were lower than expected with 4Q Biktarvy sales of \$3.1B (vs. \$3.2B cons) and Descovy sales of \$509M (vs. \$541M cons). Looking to oncology, Trodelvy sales of \$299M (vs. \$310M cons) and Kite sales of \$466M (vs. \$525M cons) continued to show strong growth y/y but were below consensus forecasts. Separately, Gilead also provided 2024 revenue guidance of \$27.1-27.5B (midpoint: \$27.3B vs. \$27.7B cons, largely on higher Veklury), and non-GAAP EPS guidance between \$6.85-7.25 (midpoint: 7.05 vs. \$7.19 cons). Despite mixed 4Q results, we maintain Buy on GILD (\$95 PO) due to 2024 catalysts, expected to drive growth. [Initial thoughts on GILD 4Q23 results](#) and [thoughts post the GILD 4Q23 call](#).

Week 4

Biogen. Biogen had a mixed 4Q print, with both revenue (\$2.4B; -\$78M consensus) and EPS coming in light at \$2.95 (-\$0.22). Importantly, on 2024, Biogen guided to a low to mid-single digit % decline on revenue (BofA \$9.72B, -2% y/y; cons \$9.72B, -2% y/y) and non-GAAP EPS of \$15.50 at the midpoint (BofA \$15.75, +6% y/y; consensus \$15.64, +6% y/y), which was in-line with expectations, in our view. There weren't many surprises on the Leqembi front following Eisai's earnings, where mgmt provided color that ~2k patients are currently receiving treatment in the US, suggesting it's unlikely Biogen/Eisai will hit 10k patients on treatment by the end of 1Q24. But Biogen did mention it will co-promote Leqembi in the US. Notably, Skyclarys for Friedrich's ataxia missed (\$56M; -\$7M), which we expect to validate investors' concerns on recent outperformance being due to a bolus, given the delay in availability following approval, versus continued strong demand. While Skyclarys isn't particularly meaningful from a P&L perspective, it's incited further interest in Biogen's new product profile and serves as a bellwether for how investors view the Reata deal (Skyclarys approved in EU yesterday). Moreover, Biogen's MS franchise continued to decline from generics/ negative pricing and biosimilars (-\$5M) + the SMA franchise (-\$34M) missed, which we expect to bolster investor concerns on the core business. Maintain Neutral, \$280 PO. [Initial thoughts on BIIB 4Q23 results](#) and [thoughts post the BIIB 4Q23 call](#).

Royalty. Royalty Pharma (RP) reported largely uneventful 4Q results with portfolio receipts of \$3,049M in-line with pre-announced range. Guidance for 2024 portfolio receipts of \$2.6-2.7B leaves room for upside over the course of 2024, in our view. OpEx guidance for 8-9% of receipts is in-line with prior. Overall, RPRX shares have been strong today and YTD (+7%; DRG index: +10%) mostly driven by positive sentiment on the macro front (particularly from the expectation of lower interest rates) and on moving past the cystic fibrosis risk with phase 3 data for Vertex's vanza combo. We remain confident in RP's deal capacity with \$477M in cash and >\$3B in max leverage capacity (up to ~4.0x leverage vs. current leverage just over 2.0x). Maintain Buy, \$40 PO [See our thoughts post the RPRX 4Q23 call](#).



Week 5

Moderna. Moderna's 4Q print was in-line with expectations following its pre-announcement earlier this year (see [our conference takeaways here](#)), with COVID-19 vaccine revenue at \$2.8B (+\$251M cons) and an EPS beat at \$0.55 (+\$1.56) driven in part by a more favorable manufacturing cost structure. Looking to 2024, Moderna maintained its product sales guidance at \$4B (BofAe \$4.1B, cons \$4.1B) with revenue weighted towards 2H due to the 1) seasonality of COVID-19 sales, and 2) expected approval of Moderna's RSV vaccine, mRNA-1345, in 1H24. Critically though, we didn't receive any updates on the timing for the phase 3 interim readout for Moderna's CMV vaccine, mRNA-1647, where investors expect results in mid-2024, but as the trial is event driven, timing is still unclear. Indeed, given the lack of revenue durability from Moderna's COVID-19 vaccine, even with more favorable market share, we'd say investors are particularly focused on its next leg of growth with its RSV, CMV, and INT assets. Nevertheless, we remain of the opinion that it will be challenging for Moderna to overcome profitability concerns, with investors still skeptical over a "return to organic sales growth in 2025." We maintain Neutral and our \$120 PO as we like the optionality of the platform, but a lack of clarity into near-term commercial dynamics, but there's still a lack of clarity into near term commercial dynamics. [Initial thoughts on MRNA 4Q23 results](#) and [thoughts post the BMRN 4Q23 call](#).

Biomarin. BioMarin had a mixed 4Q print, with outperformance on the topline (\$646M; +\$9M vs. consensus), driven by Voxzogo (\$146M; +\$11M vs. cons), while the bottom-line was in-line (\$0.49; +\$0.04 vs. consensus). Looking to 2024, in-line with commentary at the healthcare conference earlier this year, new CEO Alexander Hardy provided 1) revenue guidance of \$2.75B at the midpoint (BofA \$3.1B; cons \$2.8B), 2) non-GAAP operating margin guidance of 23.5% at the midpoint, and 3) non-GAAP EPS guidance of \$2.70 at the midpoint (BofA \$3.40; cons \$2.93). Given guidance was relatively conservative, we could see BMRN shares pressured, particularly as some investors were hoping for a cost restructuring plan following investment from the activist fund, Elliott (see [our thoughts on the investment here](#)). That said, we think BioMarin remains a dynamic story given Voxzogo's strong ongoing launch + potential for label expansions (e.g., hypochondroplasia), a durable core enzyme replacement therapy (ERT) business, and its relative insulation from the IRA. Maintain Buy, \$130 PO. [Initial thoughts on BMRN 4Q23 results](#) and [thoughts post the BMRN 4Q23 call](#).

Stocks mentioned

Prices and ratings for stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
ABBV	ABBV US	AbbVie	US\$ 176.75	B-2-7
AMGN	AMGN US	Amgen Inc.	US\$ 285.18	B-2-7
BIIB	BIIB US	Biogen Inc.	US\$ 222.48	B-2-9
BMRN	BMRN US	BioMarin	US\$ 89.97	B-1-9
BMJ	BMJ US	Bristol-Myers Squibb	US\$ 51.33	B-2-7
LLY	LLY US	Eli Lilly	US\$ 769.64	B-1-7
GILD	GILD US	Gilead Sciences Inc.	US\$ 72.78	B-1-7
JNJ	JNJ US	Johnson & Johnson	US\$ 160.45	A-2-7
MRK	MRK US	Merck & Co.	US\$ 129.26	A-1-7
MRNA	MRNA US	Moderna	US\$ 99.44	C-2-9
PFE	PFE US	Pfizer	US\$ 27.55	B-2-7
REGN	REGN US	Regeneron Pharmaceut	US\$ 964.89	B-3-9
RPRX	RPRX US	Royalty Pharma	US\$ 31.02	B-1-7
VRTX	VRTX US	Vertex Pharmaceutica	US\$ 426.78	B-1-9

Source: BofA Global Research

Price objective basis & risk

AbbVie (ABBV)

Our \$172 price objective (PO) is based on a 50/50 blended valuation of our DCF and 2025 non-GAAP EPS estimate P/E multiple of 13x (giving a value of \$155). Our 13x P/E multiple lags peers (18.0x) due to concentration risk of the company's assets and LOE concerns to limit significant growth in the future. We assume a 7% WACC and a -1% terminal growth in our estimates to arrive at our \$189 DCF valuation.

Downside risks are underachievement of key growth drivers, clinical pipeline failure(s), and reduced cash flow generation to pay down debt or dividend.

Amgen Inc. (AMGN)

Our PO for AMGN is \$315 per share. We value AMGN using a sum of the parts NPV analysis of key marketed drugs (\$240/sh) and pipeline and others (\$156/sh), which assumes a range of weighted average cost of capital (WACC) from 5% and terminal growth rate ranging from -5% to -30% depending on the product lifecycle. Our PO also reflects -\$81/sh in net debt.

Upside risks to our price objective are 1) less than-expected base business erosion 2) stronger-than-expected sales of Lumakras, Tezspire, Tepezza, and 3) competitor clinical trial failures

Downside risks to our price objective are 1) faster-than-expected revenue erosion from



legacy brands, 2) slower-than-expected growth of new drug launches, and 3) clinical trial failures.

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.

BioMarin (BMRN)

Our valuation approach for BMRN shares employs a discounted cash flow analysis of approved and pipeline products reflected in our \$130 price objective. We value BioMarin shares using a sum-of-the-parts net present value (NPV) analysis of approved assets, which assumes a weighted average cost of capital (WACC) of 7% and terminal growth rate of -5.5%. Under our assumptions, our NPV analysis suggests a legacy product value of \$65/share, Roctavian and Voxzogo of \$45/share, early stage pipeline of \$11/share and cash value of \$9/share.

Risks to our price objective are 1) faster-than-expected revenue runoff from Kuvan, 2) competition from other orphan drug developers, 3) slower-than-expected growth of new drug launches, and 4) clinical trial failures.

Bristol-Myers Squibb (BMY)

Our \$60 price objective (PO) is based on a 50/50 blended average of our risk-adjusted discounted cash flow (DCF) and P/E multiple applied to 2024E EPS. Our DCF assumes 7% WACC and -4% terminal growth rate, and we assume an approximate 8x 2024 P/E multiple given an impending patent cliff and risks associated with later-stage pipeline.

Risks to our PO are 1) uninspiring readouts from late-stage trials in key I/O indications, 2) more rapid deceleration of Revlimid erosion than expected, 3) negative outcomes from the company's later-stage pipeline assets in development, 4) pressures from headline risks facing the sector (including drug pricing reform), and 5) negative patent rulings.

Eli Lilly and Company (LLY)

Our \$800 price objective is based on a probability-adjusted net present value (NPV) analysis of franchise verticals including Endocrinology (\$569/share), Oncology (\$122/share), Cardiovascular (\$4/share), Neuroscience (\$13/share), Immunology (\$41/share), other pharmaceutical products and early pipeline assets (\$69/share), as well as approximately -\$17/share in net cash. We use a WACC ranging from 5% for approved products to 9% for pipeline products, depending on the stage of development. We apply terminal values ranging from -12% (cardiology) to 1% (endocrinology) based on projected sales decline following loss of exclusivity within each business vertical.

Risks to our price objective are 1) better-than-expected launches of competing products,

2) emerging clinical data for pipeline assets that does not confirm prior observations, 3) failure to effectively commercialize approved products, 4) potential drug pricing system restructuring in the US.

Gilead Sciences Inc. (GILD)

Our \$95 price objective is based on a sum-of-the parts net present value (NPV) analysis. We forecast sales of key franchises or products to 2030 using a weighted average cost of capital (WACC) of 8%, and include a terminal value where appropriate. Under these assumptions, we value the HIV franchise at \$80/share, HCV and HDV at \$7/share, the Kite platform at \$8/share, remdesivir at \$2/share, Trodelvy at \$9/share, with the pipeline at \$5/share and net cash at -\$15/share.

Upside risks: 1) stronger-than-expected sales of Biktarvy in HIV and faster uptake of Descovy in PrEP, 2) greater durability of HCV revenues, 3) rapid uptake of Kite, 4) and success of the oncology pipeline may lead investors to assign further value to these programs.

Downside risks: 1) moderating sales of Biktarvy, Genvoya, Odefsey, and Descovy due to competition, which may include long-acting injectable formulations, 2) greater than expected erosion of HCV revenues, 3) limited upside from Gilead's CAR-Ts, 4) the oncology pipeline may have limited clinical success or be meaningfully delayed.

Johnson & Johnson (JNJ)

Our price objective of \$180/share is based on a sum of the parts (SOTP) of roughly 18x MedTech multiple, and 14x pharma '24 multiple, slightly below peers given looming loss of exclusivity (LOE) and talc uncertainty, yielding \$57/share, and \$123/share, respectively.

The downside risks to our PO are slower growth in MedTech due to competitive pressure and faster-than-expected erosion from biosimilars to the pharma business.

Upside risks to our PO are better-than-expected launch of new products, better-than-expected clinical data for the pharma pipeline, quick resolution of talc litigation, and constructive M&A.

Merck & Co. (MRK)

Our \$135 price objective (PO) is based on the intrinsic value of Merck standalone. We use a 50/50 blended average of our P/E multiple applied to 2025E EPS (we think the current 17x vs. 18x peer average makes sense to reflect continued strength of Merck's core growth franchises but broader Keytruda concentration risk concerns) and risk-adjusted DCF (7% WACC and -2% terminal growth rate).

Risks to our PO are 1) impressive competitor readouts results in key immuno-oncology (I/O) indications, 2) more rapid declines across the diabetes franchise than expected, 3) negative outcomes from the company's later-stage assets in ongoing development, and 4) pressures from headline risks facing the sector (including drug pricing reform).

Moderna (MRNA)

Our PO of \$120 is based on a probability-adjusted NPV of six different parts including prophylactic vaccines (\$73/share), systemic secreted cell surface therapeutics (\$2/share), cancer vaccines (\$5/share), intratumoral immune-oncology (\$2/share), cardiovascular diseases (\$0/share) and systemic intracellular therapeutics (\$4/share), and net cash (\$34/share). We estimate sales of 46 pipeline programs that are slated to move forward with probability of success ranging from 6% to 95%. We use a WACC of 8-9% and terminal growth rate of -25%.

Upside risks to our PO are: 1) faster than expected pipeline development, 2) cleaner than



expected safety findings, 3) accelerated product approvals, 4) stronger than expected launches, 5) lower competition, 6) moderating cash burn, and 7) potential upside from coronavirus vaccine program.

Downside risks to our PO are: 1) lower than expected revenues from the COVID-19 program, 2) unexpected safety findings, 3) slower than expected pipeline development/approvals, 4) more intense competition, and 5) accelerating cash burn.

Pfizer (PFE)

Our \$35/share for Pfizer is based on a 50/50 blended average of our discounted cash flow (DCF) analysis and P/E multiple based on the large cap global therapeutics group. For our DCF, we use a weighted-average cost of capital (WACC) of 7% and 1% terminal growth for an intrinsic value of \$47/share. Our P/E analysis assumes a 10x multiple of our 2025 EPS estimate, which yields a \$24 intrinsic value.

Downside risks: 1) sales downside, 2) inability for pipeline to overcome patent loss of exclusivities (LOEs) after 2025, 3) M&A transactions that are perceived to be value destructive.

Regeneron Pharmaceuticals Inc. (REGN)

Our \$710 price objective is based on a probability-adjusted net present value (NPV) analysis of Eylea, including outside of US (OUS) revenues from the Bayer collaboration (\$160/share), Sanofi collaboration revenue including Dupixent and other product revenues (\$335/share), Libtayo (\$60/share), early pipeline assets (\$65/share), and the rest from net cash. We use a weighted-average cost of capital (WACC) ranging from 7% for approved products to 10% for pipeline products and terminal growth ranging from -3 to 3%. Upside risks to our price objective are 1) better-than-expected Eylea growth trajectory, 2) a larger contribution of Dupixent to Regeneron's topline from commercial uptake in new indications, and 3) better-than-expected economics realized by Regeneron from joint ventures. Downside risks to our price objective are 1) slower-than-expected growth from product sales, particularly Eylea and Dupixent, 2) failure to obtain approval for additional indications for Dupixent, and 3) pipeline setbacks.

Royalty Pharma (RPRX)

Our \$40/share price objective is based on a probability-adjusted SOTP NPV analysis which includes current growth products (\$32/sh, 79% of our valuation), and projected revenues from future investments (\$13/sh, 33%). We project out revenues through 2038, apply a WACC of 5% (mature products) to 8% (future growth products), and use terminal growth rates ranging from -5% (current growth products) to 5% (future growth products), in-line with other mature biopharma companies. We calculate net cash as - \$5/sh (-11% of our valuation).

Downside risks: 1) current portfolio royalties do not reach current assumed levels, 2) new investments fail to replicate historical returns, 3) new corporate structure and shareholder base adversely impacts historically low tax rate, 4) competition in the royalty investing space makes it harder to attain new value accretive investments, 5) patent/royalty expiries are not replaced by new royalty streams.

Vertex Pharmaceuticals Inc. (VRTX)

Our 12-month price objective for Vertex of \$550/share is based on our net present value (NPV) analysis. We forecast sales for each of the approved products, Kalydeco, Orkambi, Symdeko, and Trikafta through 2030. We assume a weighted-average cost of capital (WACC) of 9%, in line with peer companies of similar size and risk and varying terminal growth rates for each asset based on its characteristics and patent life (-50% to 2%). Given these assumptions, we estimate a value of \$3/share for Kalydeco, \$1/share for Orkambi, \$0/share for Symdeko, \$417/share for Trikafta, \$6/share for Casgevy, \$8/share for VX-548, \$58/sh for vanzacaftor, \$53/share in net cash, and \$4/share for the pipeline.

Risks to our price objective are 1) payer pushback on pricing, 2) difficulty in securing reimbursement agreements, particularly in the EU, 3) clinical trial failures, and 4) new competitors in cystic fibrosis.

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.

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BofA Securities is currently acting as financial advisor to Bristol-Myers Squibb Co. in connection with its proposed acquisition of RayzeBio, Inc., which was announced on December 26, 2023.

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
	BioXcel Therapeutics	BTAI	BTAI US	Greg Harrison, CFA
	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
	Gilead Sciences Inc.	GILD	GILD US	Geoff Meacham
	HUTCHMED	HCM	HCM US	Alec W. Stranahan
	Immatics	IMTX	IMTX US	Alec W. Stranahan
	Insmid Incorporated	INSM	INSM US	Jason Zemansky
	Intellia Therapeutics	NTLA	NTLA US	Greg Harrison, CFA
	Janux Therapeutics	JANX	JANX US	Alec W. Stranahan
	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
	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	Alec W. Stranahan
	Y-mAbs Therapeutics, Inc	YMAB	YMAB US	Alec W. Stranahan
UNDERPERFORM				
	AlloVir, Inc.	ALVR	ALVR US	Jason Zemansky

US - Biopharmaceuticals Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
	CureVac	CVAC	CVAC US	Geoff Meacham
	Day One Biopharmaceuticals	DAWN	DAWN US	Alec W. Stranahan
	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

Disclosures

Important Disclosures

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%

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