

US Biopharmaceuticals

US Biopharma: 4Q23 Earnings Preview

Price Objective Change

Commercial execution a key focus in 4Q and 2024

With J&J having already reported 4Q results (see [our J&J 4Q post-call note](#)), we think sentiment into the remaining biopharma earnings is muted, neither broadly bullish or bearish, with company-specific factors driving results. For 4Q, we like Merck and Gilead and see consensus estimates as beatable. We have a more cautious view of Bristol into 4Q as we suspect that the launch portfolio sales will continue to lag, similar to prior quarters in 2023. Snapshots are below and on page 3; full previews starting on page 4.

Biopharma highlights

AbbVie: We've raised our 2024 US Humira sales forecast to \$7B, bringing our EPS est. to \$11.00 (-\$0.09 cons) and revs to \$53.8B (+\$33M cons). Overall, we expect solid 4Q results. Maintain Neutral but raising PO to \$165 (from \$160) on updated EPS forecasts.

Bristol: We are slightly below cons on 2024 revenue / EPS (\$45.3B and \$6.90 vs. \$45.7B and \$7.20 cons) but modestly ahead on new launches (\$5.9B vs. \$5.8B cons)

Eli Lilly: We increased our PO to \$750 (from \$700) on the back of Zepbound demand; for 2024, we're above on revenue and EPS: \$41B (cons: \$39B) / \$13.30 (cons: \$12.44).

Merck: We're above cons on 2024 top and bottom lines (rev: \$65.0B vs. \$63.3B cons; EPS: \$8.60 vs. \$8.40), driven by strong commercial execution (core & new launches). Maintain Buy but raise PO to \$135 (from \$130) on solid growth trajectory.

Pfizer: We are within the pre-announced 2024 guidance range for total revs (BofA \$61.0B; +\$544M cons) and EPS (BofA \$2.10; -\$0.17 cons). Oncology outlook following commercial reorganization and COVID product uptake will be key topics on the 4Q call.

Large Cap Biotech highlights

Amgen: For 2024, we're slightly below cons on revenue (\$32.3B vs. 32.5B cons) and EPS (\$19.75 vs. \$19.90 cons) due to competitive pressure for core / new launches.

Biogen: For 2023 we're in-line with the Street at \$9.9B (-\$4M cons)/ \$14.90 (-\$0.06), but as we expect steeper erosion for its core product portfolio, we're lower in 2024E at \$9.7B (-\$39M cons)/ \$15.75 (-\$0.08). As such, we reduced our PO to \$280 (from \$290).

BioMarin: On 2024, we're higher than the Street on rev (\$3.1B vs \$2.8B) and EPS (\$3.40 vs. \$2.96) given higher Voxzogo demand (BofA \$711M; cons \$643M). We've reduced our Roctavian forecasts marginally, which drove a lower PO (\$150 from \$170).

Gilead: We are above consensus on 4Q rev (\$7.2B, +\$109M cons) and EPS (\$1.85, +\$0.10 cons), driven by robust oncology and HIV sales (+3% y/y). For 2024, we are above consensus with \$8.6B (+\$237M cons) rev / \$8.05 EPS (+\$0.86 cons).

Moderna: For 2024, we're in-line on COVID-19/ RSV vaccine sales at \$3.9B (-\$7M)/ \$194M (+\$3M), respectively, but model rev/ EPS of \$4.2B/- \$7.35 vs \$4.3B/ -\$7.08 cons.

Regeneron: In 4Q, we could see Dupixent (\$3.3B, +\$197M cons) offsetting the US Eylea miss. On 2024, we forecast \$13.2B (-\$538M cons) rev / \$41.90 (-\$2.13 cons) EPS. Maintain Underperform but increase PO to \$710 (from \$700) on Dupixent outlook.

Royalty: We expect few surprises in 4Q as RP guided to 2023 cash receipts of \$3.05B. Our 2024 forecasts are \$2.9B (+\$69M cons) adj. receipts / \$3.95 (+\$0.14 cons) adj. EPS.

Vertex: In 2023, we're at \$9.9B (+\$52M) and \$15.05 (+\$0.07) for rev/ EPS, respectively, and for 2024, we're at \$10.7B (+\$79M) and \$16.90 (+\$0.46). Moreover, as we've included vanzacaftor in our NPV, we increased our PO to \$540 (from \$450).

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Exhibit 1: BofA PO changes

Find a summary of PO changes below

Ticker	New PO	Old PO
ABBV	\$165	\$160
BIIB	\$280	\$290
LLY	\$750	\$700
MRK	\$135	\$130
VRTX	\$540	\$450
BMRN	\$150	\$170
REGN	\$710	\$700

Source: BofA Global Research

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Abbreviations:

HIV: human immunodeficiency virus
T2D: type 2 diabetes
IBD: inflammatory bowel disease
RSV: respiratory syncytial virus
RP: Royalty Pharma

See additional abbreviations on p. 7.

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4Q23 Earnings Calendar

Exhibit 2: Schedule of 4Q Calls

Includes calls—and dial in details—announced to date

Date	Company	Ticker	Rating	Time (EST)	Dial-In	Passcode
Week 1						
January 23rd	Johnson & Johnson	JNJ	Neutral	8:30 AM	877-869-3847	
Week 2						
January 30th	Pfizer	PFE	Neutral	10:00 AM	800-456-4352	Retrieve PIN
February 1st	Merck	MRK	Buy	9:00 AM	Webcast	
February 2nd	Bristol	BMJ	Neutral	8:00 AM	833-816-1116	Retrieve PIN
	Regeneron	REGN	Underperform	8:30 AM	844-543-0451	Retrieve PIN
	AbbVie	ABBV	Neutral	9:00 AM	Webcast	
Week 3						
February 5th	Vertex	VRTX	Buy	4:30 PM	833-543-2124	
February 6th	Lilly	LLY	Buy	10:00 AM	Webcast	
	Amgen	AMGN	Neutral	4:30 PM	Webcast	
	Gilead	GILD	Buy	5:00 PM	Webcast	
Week 4						
	Biogen	BIIB	Buy	8:00 AM	Webcast	
Week 5						
	Moderna	MRNA	Neutral	TBD		
Not Yet Announced						
	89bio	ETNB	Buy			
	Acumen	ABOS	Buy			
	Amylyx	AMLX	Buy			
	BioMarin	BMRN	Buy			
	Caribou	CRBU	Buy			
	CRISPR	CRSP	Buy			
	Janux	JANX	Buy			
	Kiniksa	KNSA	Buy			
	Kymera	KYMR	Neutral			
	LianBio	LIAN	Underperform			
	LYEL	Lyell	Buy			
	Neumora	NMRA	Underperform			
	Royalty Pharma	RPRX	Buy			
	Sana	SANA	Buy			
	Turnstone	TSBX	Buy			

Company Reports

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Exhibit 3: BofA Estimates vs Consensus

Overall we're above consensus on Biopharma revenue, but below consensus estimates on earnings

2024E Revenue Estimates (\$M)					2024E EPS Estimates		
Company	Ticker	BofA	Consensus	Δ (%)	BofA	Consensus	Δ (%)
Pharma							
AbbVie	ABBV	\$53,803	\$53,770	0.1%	\$11.00	\$11.09	(0.1%)
Pfizer	PFE	\$61,060	\$60,517	0.9%	\$2.10	\$2.27	(7.5%)
Merck	MRK	\$64,963	\$63,315	2.6%	\$8.60	\$8.40	2.4%
Bristol	BMJ	\$45,310	\$45,721	(0.9%)	\$6.90	\$7.20	(4.2%)
Regeneron	REGN	\$13,215	\$13,753	(3.9%)	\$41.90	\$44.03	(4.8%)
Lilly	LLY	\$41,230	\$39,208	5.2%	\$13.30	\$12.44	6.9%
Amgen	AMGN	\$32,271	\$32,507	(0.7%)	\$19.75	\$19.90	(0.8%)
Gilead	GILD	\$28,636	\$27,660	3.5%	\$8.05	\$7.19	12.0%
Royalty	RPRX	\$2,848	\$2,779	2.5%	\$3.95	\$3.71	6.5%
Biotech							
Vertex	VRTX	\$10,668	\$10,589	0.7%	\$16.90	\$16.44	2.8%
Biogen	BIIB	\$9,720	\$9,759	(0.4%)	\$15.75	\$15.83	(0.5%)
Moderna	MRNA	\$4,228	\$4,312	(1.9%)	-\$7.35	-\$7.08	(3.8%)
BioMarin	BMRN	\$3,050	\$2,847	7.1%	\$3.40	\$2.96	14.9%

BofA Global Research Ests, Bloomberg Consensus Ests

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AbbVie

ABBV US – Rating: NEUTRAL (B-2-7) | PO: 165.00 USD | Price: 162.04 USD

ABBV shares have traded well this year, uplifted by recent macro tailwinds that have also buoyed the sector (YTD: +7%; +4% DRG). That said, we think sentiment for ABBV into 4Q earnings and 2024e guidance have grown more positive since 3Q, as management comments at this year's January HC conference (see [our AbbVie conference takeaways](#)) indicated growing confidence in the 2024e EPS floor of \$11.00. Specifically, we thought commentary on retaining Humira parity across a majority of covered lives and rebounding Aesthetics with new filler launches seemed to square with our channel checks. As such, we're now just modestly below consensus on US Humira sales this year (2024e: BofA \$7.0B; cons \$7.1B), and above on Aesthetics (BofA \$5.7B; cons \$5.6B). That said, despite bullish expectations for Skyrizi in 2024 with label expansion into UC (BofA \$10.3B; cons \$10.1B), net net we are still lower on 2024 EPS at \$11.00 compared to consensus' \$11.09. We think a combination of more limited Rinvoq growth drivers (BofA \$4.9B; cons \$5.4B) and lower gross margins due to the impact of potential acquisitions (ImmunoGen and Cerevel) still support our more muted 2024 growth outlook. Furthermore, expectations for navitoclax (see [our ASH 2023 myelofibrosis update](#)) and Teliso-V regulatory timelines remain uncertain, though we could see some tailwinds to Venclexta sales with data in MDS forthcoming. We maintain Neutral but are increasing our PO to \$165 (from \$160) after updating our EPS forecasts.

- We saw more modest US Humira scripts step-down, comparable q/q Rinvoq scripts growth, and slower q/q Skyrizi scripts growth in 4Q compared to 3Q
- As per seasonal consumer trends and recent launches, we expect better Aesthetics sales in 4Q
- Our 4Q EPS estimate of \$2.73 and 2023 EPS forecast of \$11.05 includes the recently disclosed \$282M IPR&D charge.

Exhibit 4: AbbVie Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs consensus.

	4Q23		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Humira (US)	\$2,775	\$2,734	(8.1%)	(44.6%)	\$12,195	\$12,162	\$6,951	\$7,182
Humira (OUS)	493	\$473	(6.5%)	(14.0%)	\$2,173	\$2,153	\$1,804	\$1,790
Skyrizi	2,279	2,379	7.2%	44.6%	\$7,648	7,747	\$10,324	10,158
Rinvoq	1,184	1,176	6.7%	53.8%	\$3,898	3,890	\$4,876	5,363
Imbruvica	764	842	(15.8%)	(31.5%)	\$3,457	3,535	\$2,871	3,023
Venclexta	575	568	(2.5%)	11.5%	\$2,274	2,268	\$2,676	2,517
Aesthetics	1,424	1,345	14.9%	10.6%	\$5,347	5,272	\$5,721	5,630
Botox therapeutics	763	755	2.0%	4.8%	\$2,978	2,970	\$3,211	3,146
Vraylar	805	782	7.2%	42.5%	\$2,775	2,750	\$3,339	3,373
Total Revenue	\$13,959	13,962	(7.7%)	(7.7%)	\$53,976	54,039	\$53,803	53,770
	4Q23		Change		2023E		2024E	
\$ in millions except per share	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	\$13,959	\$13,962	0.2%	(7.7%)	\$53,976	\$54,039	\$53,803	\$53,770
COGS	2,287	2,305	(0.6%)	8.3%	8,636	8,658	8,958	8,630
Gross Profit	11,672	\$11,656	0.4%	(10.3%)	45,340	45,381	44,845	45,140
SG&A	3,179	3,266	(4.5%)	0.9%	12,711	12,801	12,886	12,720
R&D	1,802	1,814	4.8%	3.5%	6,909	6,929	7,048	7,060
Operating Profit	6,409	6,576	(1.6%)	(18.6%)	24,942	25,651	24,911	25,361
EBT	5,813	6,208	(6.7%)	(21.6%)	23,277	22,848	22,914	23,211
Taxes	962	1,009	(1.9%)	(2.9%)	3,608	3,647	3,323	3,650
Net Income	4,859	5,156	(7.5%)	(24.3%)	19,669	19,913	19,592	19,966
Non-GAAP EPS	\$2.73	\$2.89	(7.4%)	(24.1%)	\$11.05	\$11.09	\$11.00	\$11.07
Shares Outstanding – Diluted	1,773	1,774	0.1%	(0.3%)	1,773	1,774	1,774	1,774

Source: BofA Global Research estimates, Visible Alpha, Bloomberg

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Amgen

AMGN US – Rating: NEUTRAL (B-2-7) | PO: 290.00 USD | Price: 285.04 USD

AMGN shares have outperformed the biotech sector YTD (+8%; +1% NBI) as investors continue to see Amgen as a “value play” in the obesity space. That said, expectations are low heading into the first data readout for AMG786 non-incretin in 1H24 (could be as early as 4Q earnings) since management had already handicapped the expectations. Moreover, in our view, it’s unlikely that a non-incretin-based agent could demonstrate a more favorable profile than a GLP-1 especially with a small, shorter duration trial (see [recent conference AMGN takeaways](#)). In our view, the AMG133 could be a potentially differentiated obesity drug with monthly dosing regimen, assuming there are no safety signals observed coming out of phase 2 readout later this year (2H). Importantly, we don’t anticipate outperformance coming from the core business, including new launch portfolio and Horizon portfolio, in the near-term given the competitive dynamics (Otezla, Lumakras, Enbrel) and uncertainty on incremental addressable patient population (Tepezza). Heading into 4Q, we’d argue that the focus is less on the numbers and 2024 guidance, but rather investors are looking for commentary on the obesity portfolio and other data readouts. 2024 is set up to be a catalyst rich year for Amgen, including 1) AMG 786 / 133 for obesity (phase 1 data in 1H24 and phase 2 data in late 2024, respectively), 2) Tezspire for COPD (phase 2 data in 1H24), 3) Uplinza phase 3 data in myasthenia gravis and IgG4-related disease (2H24), 4) rocatinlimab for atopic dermatitis (first phase 3 data in 2H24), and 5) AMG 670 phase 2 IPF data in 2H24. That said, we don’t anticipate near-term inflection on the company’s business await for data readouts in 2H. Maintain Neutral rating and \$315 PO.

Exhibit 5: Amgen Variance Table

We’ve provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Aranesp & Epogen	395	376	6.0%	(14.5%)	1,609	1,609	1,471	1,436
Neulasta/ Neupogen	123	135	(1.2%)	(44.6%)	732	732	466	567
Otezla	605	599	6.7%	(1.8%)	2,164	2,164	2,120	2,290
Enbrel	1,025	1,053	(0.9%)	(6.6%)	3,707	3,707	3,386	3,396
Prolia & Xgeva	1,599	1,588	6.2%	8.3%	6,125	6,125	6,374	6,369
Evenity	331	322	7.9%	47.2%	1,173	1,173	1,408	1,385
Repatha	437	434	7.6%	31.2%	1,655	1,655	1,925	1,917
Blinicyto	235	233	6.9%	43.4%	855	855	1,058	1,002
Amgen Biosimilars	398	411	3.4%	2.9%	1,593	1,593	1,641	1,781
Lumakras	80	80	53.8%	12.7%	283	283	365	408
Tezspire	195	187	21.1%	146.8%	585	585	904	916
Tepezza	521	489	15.0%	5.6%	1,825	1,825	2,193	2,222
Total Revenue	8,098	8,127	17.3%	18.4%	28,092	28,117	32,271	32,507

	4Q23		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	8,098	8,127	17.3%	18.4%	28,092	28,117	32,271	32,507
COGS	1,161	1,266	2.1%	8.4%	4,456	4,570	5,222	5,200
Gross Profit	6,937	6,864	20.3%	20.3%	23,636	23,601	27,049	27,587
SG&A	1,499	1,617	16.0%	2.1%	5,253	5,392	6,002	6,385
R&D	1,598	1,556	49.3%	23.8%	4,804	4,763	5,389	5,546
Pre-tax Income	3,107	3,014	(2.2%)	22.2%	12,099	11,974	12,808	13,180
Taxes	544	509	6.4%	59.9%	2,045	1,963	2,177	2,251
Net Income	2,564	2,505	(3.9%)	16.4%	10,055	11,011	10,630	10,928
Non-GAAP EPS - Diluted	4.75	4.61	(4.2%)	16.2%	18.68	18.56	19.75	19.90
Shares Outstanding - Diluted	540	539	0.4%	0.2%	538	538	538	537

Source: BofA Global Research, Visible Alpha, Bloomberg

BofA GLOBAL RESEARCH



Biogen

BIIB US – Rating: NEUTRAL (B-2-9) | PO: 280.00 USD | Price: 245.27 USD

Following CEO Chris Viehbacher’s fireside chat at the investor conference earlier this month (see [our thoughts on the discussion here](#)), BIIB shares have been under pressure (YTD: -5%; +1% NBI) in large part we suspect due to 2024 being emphasized as a year of execution versus growth. Indeed, we’re of the continued view that Biogen’s new product cycle of Leqembi with partner Eisai (Alzheimer’s), Skyclarys (Friedrich’s ataxia) and Zurzuvae (PPD) look promising, but we’d argue there’s still wood-to-chop (e.g., reimbursement negotiations/ physician education). However, in 1H24 we should get a better sense of how Biogen’s progress, including 1) if Leqembi hits >10k patients treated by 1Q24, 2) the status of its FDA submission for subcutaneous Leqembi (see [our thoughts on the 6-mo results here](#)) + Leqembi maintenance dosing, 3) real-world safety of Leqembi, and 4) likely EU approval of Skyclarys (already received a positive CHMP opinion), which could go a long way in assuaging our concerns. Turning to the P&L, for 2023, we’re in-line with the Street at \$9.9B (-\$4M cons)/ \$14.90 (-\$0.06), but as we expect steeper erosion for its core product portfolio (e.g., MS/ SMA), we’re modestly lower in 2024 at \$9.7B (-\$39M cons)/ \$15.75 (-\$0.08). Moreover, as we’ve lowered our forecasts for Biogen’s core product portfolio, we’ve reduced our PO to \$280 (from \$290) as we increased the WAC from 4.5% to 6%. We maintain our Neutral rating as we’d say the risk/ reward looks well balanced at these levels.

We expect key 4Q call topics to include: 1) Leqembi/ Skyclarys launch progress, including patient/ prescriber feedback, number of patients treated, and reimbursement dynamics, 2) updates on Biogen’s “Fit for Growth” strategy, and 3) BD outlook.

Exhibit 6: Biogen Variance Table

We’ve provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

\$ in millions	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Tecfidera Total	272	272	13.7%	(8.4%)	1,040	1,037	849	1,003
Interferon Total	262	272	(5.6%)	(15.3%)	1,088	1,114	948	1,012
Tysabri	461	443	1.1%	(5.5%)	1,874	1,849	1,521	1,582
Vumerity	168	172	1.2%	11.1%	587	595	696	684
Total MS	1,163	1,139	2.1%	(6.6%)	4,589	4,627	4,014	4,156
Spinraza	443	447	(1.1%)	(3.3%)	1,772	1,774	1,705	1,699
Skyclarys	66	60	(65.9%)	(62.1%)	132	88	376	374
Biosimilars	192	195	(89.4%)	(89.9%)	774	778	851	843
Total Product Sales	1,885	1,842	4.4%	-1%	7,296	7,267	7,062	7,243
CMO, royalty and other (includes Leqembi)	149	182	(51.0%)	(22.1%)	976	990	866	769
Anti-CD20 therapeutic programs	396	434	(5.9%)	(11.5%)	1,650	1,710	1,793	1,753
Total Revenue	2,436	2,462	(3.7%)	(4.2%)	9,921	9,925	9,720	9,759

\$ in millions	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	2,431	2,462	(3.9%)	(4.5%)	9,921	9,925	9,720	9,759
COGS	694	634	5.3%	21.6%	2,610	2,547	2,380	2,318
Gross Profit	1,736	1,828	(7.2%)	(12.0%)	7,312	7,378	7,340	7,441
R&D	589	576	9.2%	(2.2%)	2,282	2,275	2,173	2,106
SG&A	603	601	9.1%	(4.5%)	2,293	2,301	2,069	2,193
Operating Income (non-GAAP)	580	604	(19.2%)	(16.6%)	2,583	2,579	2,909	2,902
Other Income (net)	(70)	(66)	(367.4%)	953.4%	(21)	(14)	(183)	(192)
Pre-Tax Income (non-GAAP)	511	545	(31.4%)	(25.9%)	2,562	2,565	2,726	2,719
Taxes	97	85	(11.4%)	(5.5%)	393	384	418	434
Net Income to Biogen (non-GAAP)	414	458	(34.9%)	(29.5%)	2,168	2,180	2,307	2,259
Non-GAAP EPS	2.83	3.12	(35.2%)	(30.1%)	14.90	14.96	15.75	15.83
Shares Outstanding - Diluted	146	145	1.1%	0.9%	146	145	146	145

Source: BofA Global Research, Visible Alpha, Bloomberg

BofA GLOBAL RESEARCH

BioMarin

BMRN US – Rating: BUY (B-1-9) | PO: 150.00 USD | Price: 93.04 USD

BMRN shares have been under pressure (YTD: -5%; +1% NBI) as it remains a “show me story” in our view, particularly given questions on new CEO, Alexander Hardy’s clinical/commercial strategy and skepticism on strategic interest after an investment by an activist fund, Elliott (see [our thoughts on the disclosure here](#)). Indeed, during the 4Q call, we expect investors will be focused on management’s 2024 guidance strategy (e.g., will product level or only rev/ EPS) as it will be Mr. Hardy’s first earnings call at BioMarin and could pose as an opportunity to set the stage for his tenure at BioMarin. Moreover, we expect investors will be waiting for BioMarin to set some sort of commercial expectations for its new product cycle of Voxzogo (achondroplasia) and Roctavian (gene therapy for hemophilia A) following a tough 2023 for Roctavian in regards to regulatory + commercial hurdles. On that note, we have lowered our forecasts for Roctavian and now forecast sales of \$248M, \$454M, and \$683M for 2024-2026 as we expect a slower launch than initial expectations based on our prescriber channel checks. On 2024, we’re modestly higher than the Street on revenue (\$3.1B vs \$2.8B cons) and EPS (\$3.40 vs. \$2.96), as we expect Voxzogo to continue its outperformance (BofAe \$711M; cons \$643M). But, as we’ve reduced our Roctavian forecasts for 2024+, we’ve lowered our PO to \$150 (from \$170). Nevertheless, we continue to like risk/reward for BMRN shares, especially given the potential upside on strategic interest, so we’re maintaining our Buy rating.

- On the call we expect questions on 1) Roctavian’s launch progress, 2) BioMarin’s OpEx spend (e.g., could we see a cost restructuring plan like Biogen’s?), and 3) timing for Voxzogo’s label expansion opportunities (e.g., hypochondroplasia).
- For 4Q/2023, we’re incrementally higher than the Street on revenue and EPS at \$691M (+\$57M)/ \$2.5B (+\$56M) and \$0.58 (+\$0.13)/ \$2.05 (+\$0.02).

Exhibit 7: BioMarin Variance Table

We’ve provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23		Change		2023E		2024E	
\$ in millions except per share	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Kuvan	38	40	(12.4%)	(29.9%)	182	181	123	122
Palynziq	90	84	14.5%	24.9%	307	300	414	358
Total PKU	128	123	5.0%	1.6%	488	481	536	480
Naglazyme	113	114	3.7%	12.3%	435	437	457	458
Aldurazyme	33	34	141.9%	(11.2%)	122	123	123	123
Vimizim	175	171	9.9%	14.8%	700	697	727	726
Total MPS	321	319	14.0%	10.6%	1,257	1,256	1,306	1,307
Brineura	56	45	36.8%	31.7%	174	164	208	192
Roctavian	5	5	490%	N/A	6	6	248	162
Voxzogo	163	136	32.2%	143.6%	487	460	711	643
Total Product Sales	672	627	18.3%	27.9%	2,412	2,366	3,010	2,786
Royalties & License Revenues	18	14	40.6%	52.5%	52	48	40	46
Total Revenue	691	634	18.8%	28.5%	2,464	2,408	3,050	2,847
COGS	151	138	21.2%	18.8%	531	519	647	596
Gross Profit	540	496	18.2%	31.5%	1,933	1,889	2,403	2,251
SG&A	240	240	7.1%	(2.4%)	902	901	927	948
R&D	207	203	8.3%	19.9%	748	739	846	805
Operating Income	77	46	199.6%	(414.2%)	210	194	557	437
Interest & Other	24	8	47.3%	239.6%	49	31	32	22
EBT	101	51	141.1%	(672.7%)	259	225	588	460
Taxes	30	11	2204.0%	(271.8%)	52	33	118	78
GAAP Net Income	71	39	75.2%	(28541%)	207	192	471	388
Non-GAAP Net Income	112	94	24.4%	78.0%	411	408	684	629
Non-GAAP EPS – Diluted	0.58	0.45	24.6%	74.9%	2.05	2.03	3.40	2.96
Shares Outstanding – Diluted	195	195	2.0%	4.8%	200	194	201	197

Source: BofA Global Research; Visible Alpha; Bloomberg



Exhibit 7: BioMarin Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

4Q23**Change****2023E****2024E**

BofA GLOBAL RESEARCH

Bristol Myers Squibb

BMJ US – Rating: BUY (B-1-7) | PO: 80.00 USD | Price: 56.26 USD

BMJ shares had a difficult 2023 and continue to underperform versus peers (YTD: -3%; +4% DRG), which is not surprising given the underperformance of the new product portfolio and low expectations heading into 4Q. Indeed, since 3Q earnings, Bristol has been prepping investors that the company does not anticipate a meaningful inflection from the launch portfolio until 2025+. To that end, we expect investors to be hyper-focus on 2024 guidance, looking for sign of incremental weakness/strength in the launch portfolio versus what the management conveyed prior. Indeed, besides top and bottom lines (2024 BofA \$45.3B revenue and \$6.90 EPS and vs. consensus' \$45.7B and \$7.20), investors will be focusing on the new launches guidance (2024 BofA \$5.9B vs. \$5.8B consensus, including Mirati/Karuna/RayzeBio). Of note, consensus EPS likely does not fully reflect all the acquisitions that are expected to close by 1H. Turning to 4Q, while commercial performance from core products (i.e., Opdivo and Eliquis) and the Big 9 new launches will remain top of mind for most investors, we expect the focus to be on incremental commentary on the outlook, reimbursement, and competitive dynamics for Camzyo, Sotyktu, Abecma/ Breyanzi, and Reblozyl. Ultimately, while we could see modest multiple expansion in 2024 (perhaps 1 turn), we still expect investors to focus on the LOE headwinds especially if we don't see material product sales upside from new launches. We maintain Buy rating and \$60 PO.

- Key near-term catalysts include: 1) Opdualag phase 2 data in 1L NSCLC (1Q24) and in 1L liver cancer (2024), 2) Karuna's KarXT approval (PDUFA Sept 26) and AbbVie/Cerevel's emraclidine's two pivotal data readouts in 2H24 3) Krazati KRAS G12C confirmatory data.

Exhibit 8: Bristol Myers Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Opdivo	2,265	2,377	(0.4%)	2.2%	8,887	8,999	9,500	9,975
Eliquis	2,702	2,800	(0.1%)	0.5%	12,034	12,166	12,398	12,776
Orencia	938	971	1.4%	3.9%	3,554	3,587	3,617	3,625
Sprycel	516	525	(0.3%)	(10.8%)	1,920	1,919	1,658	1,919
Yervoy	618	589	6.7%	8.8%	2,290	2,261	2,404	2,362
Revlimid	1,433	1,362	0.3%	(36.6%)	6,080	5,548	4,050	4,109
Pomalyst / Imnovid	806	845	(12.9%)	(8.1%)	3,410	3,399	3,270	3,193
Reblozyl	267	273	7.7%	34.2%	955	949	1,230	1,320
Abecma	116	116	24.7%	(7.2%)	488	488	630	645
Zeposia	131	129	6.5%	65.8%	432	430	730	695
Opdualag	195	185	17.7%	87.9%	632	622	955	941
Camzyos	87	86	27.9%	443.8%	230	234	500	501
Total Revenue	\$10,929	\$11,011	(2.6%)	(2.7%)	\$44,806	\$44,937	\$47,582	\$46,626

	4Q23		Change		2023E		2024E	
\$ in millions except per share	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	\$11,041	\$11,222	0.2%	(3.1%)	\$44,623	\$44,733	\$45,310	\$45,721
COGS	2,689	2,735	5.8%	7.1%	10,553	10,547	10,965	11,183
Gross Profit	8,352	8,471	(1.5%)	(6.0%)	34,070	34,189	34,345	34,730
SG&A	1,793	2,007	(7.5%)	(20.9%)	7,407	7,621	7,589	7,939
R&D	2,222	2,338	2.0%	(11.5%)	8,858	8,979	8,971	9,331
IPR&D	533	402	566.3%	925.0%	846	592	800	708
Income Before Taxes	3,853	4,147	(17.8%)	(11.5%)	18,089	18,383	16,726	17,446
Taxes	698	759	28.5%	46.6%	2,786	2,847	2,572	2,836
Adjusted Net Income	\$3,152	\$3,387	(23.8%)	(18.6%)	15,285	15,518	13,948	14,595
Non-GAAP EPS - Diluted	\$1.55	\$1.65	(22.9%)	(15.3%)	\$7.35	\$7.46	\$6.90	\$7.20
Shares - Diluted	2,040	2,040	(1.2%)	(4.0%)	2,080	2,080	2,023	2,023

Exhibit 8: Bristol Myers Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23	Change	2023E	2024E
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Source: BofA Global Research, Bloomberg, Visible Alpha

BofA GLOBAL RESEARCH

Eli Lilly & Co.

LLY US – Rating: BUY (B-1-7) | PO: 750.00 USD | Price: 623.35 USD

We're increasing our PO for Lilly to \$750 (from \$700) on the back of the clinical and commercial success for its incretin franchise, mainly tirzepatide, with our bullishness bolstered by CEO Dave Ricks fireside discussion at the investor conference earlier this month (see [our thoughts on the Lilly discussion here](#)). Indeed, of top of mind, Zepbound's (tirzepatide) launch in obesity is off to a strong start, with robust TRx trends that are higher than what was seen for competitor Novo's Wegovy (covered by Jain + Parry), supporting our 2024 forecast of \$2.8B (+\$65M cons). Looking to 2024, we're forecasting revenue of \$41B (+21%; consensus: \$39B) and non-GAAP EPS of \$13.30 (+101%; consensus: \$12.44) with a robust \$12B contribution from Mounjaro (Type 2 diabetes), Zepbound (obesity), Omvoh (Ulcerative colitis) and donanemab (Alzheimer's). In terms of Lilly's outlook, which has been a point of investor debate, we wouldn't be surprised if initial 2024 guidance bracketed consensus or was modestly lower based on precedent. Given Lilly's >40x 25E P/E multiple (peers: 18x), some could find this set up disappointing, but, in our view, Lilly's story is about upside potential in 2025+ as we still view 2024 as a year of commercial investment. Maintain Buy.

- On the call, we expect investor focus to be on 1) Mounjaro/ Zepbound's ongoing launches, including reimbursement + supply dynamics, 2) implications of LillyDirect on both launches, 3) donanemab's commercial strategy, and 4) timing of Verzenio's CYCLONE 2 readout in mCRPC.

Exhibit 9: Eli Lilly Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23E		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Trulicity	1,819	1,798	8.7%	(6.1%)	7,282	7,261	7,009	6,940
Jardiance	811	755	15.7%	32.4%	2,757	2,702	3,406	3,263
Mounjaro	1,744	1,729	23.7%	524.6%	4,701	4,623	9,013	7,678
Zepbound	157	121	N/A	N/A	157	121	2,803	2,738
Total endocrinology	5,614	5,048	18.9%	41.2%	19,536	19,113	25,875	21,639
Cyramza	261	269	16.7%	(5.9%)	983	991	963	988
Verzenio	1,208	1,176	16.1%	49.5%	3,926	3,888	5,033	5,017
Total oncology	1,988	1,928	13.8%	20.4%	6,763	6,691	8,095	7,926
Emgality	195	195	15.6%	11.0%	687	687	761	773
Donanemab	0	0	N/A	N/A	0	0	126	272
Total neuroscience	313	322	(82.3%)	(18.9%)	2,829	2,838	1,241	1,310
Taltz	784	794	5.3%	10.8%	2,759	2,769	3,142	3,082
Omvoh	21	15	169.2%	N/A	29	27	201	146
Total I&I	1,069	1,037	8.3%	14.5%	3,762	3,719	4,321	4,105
Total cardiovascular/other	285	298	3.1%	(20.0%)	1,151	1,216	993	1,048
Total Revenue	9,269	8,973	(2.4%)	26.9%	34,040	33,670	41,230	39,208
	4Q23E		Change		2023E		2024E	
\$ in millions except per share	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	9,269	8,973	(2.4%)	26.9%	34,040	33,670	41,230	39,208
COGS	1,772	1,809	2.1%	24.4%	6,689	6,726	8,291	7,780
Gross Profit	7,497	7,164	(3.4%)	27.5%	27,351	26,944	32,939	31,428
SG&A	1,773	1,847	(1.7%)	7.9%	7,252	7,326	8,122	8,126
R&D	2,274	2,329	(5.6%)	13.9%	9,024	9,079	10,405	10,130
Operating Income	2,851	2,882	395.5%	42.7%	6,897	7,330	13,399	12,874
Interest & Other	(44)	(44)	(204.2%)	(200.8%)	74	73	32	12



Exhibit 9: Eli Lilly Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23E		Change		2023E		2024E	
Pre-Tax Income	2,807	2,843	354.6%	37.5%	6,971	7,408	13,431	12,975
Taxes	301	356	(42.4%)	102.2%	1,403	1,458	1,875	1,791
Net Income (non-GAAP)	2,506	2,490	2543.4%	32.4%	5,969	5,958	12,022	11,255
Non-GAAP EPS	\$2.77	\$2.69	2543.5%	32.6%	\$6.60	\$6.57	\$13.30	\$12.44
Shares Outstanding - Diluted	903	906	(0.0%)	(0.2%)	904	904	904	904

Source: BofA Global Research, Bloomberg, Visible Alpha

BofA GLOBAL RESEARCH

Gilead Sciences Inc.

GILD US – Rating: BUY (B-1-7) | PO: 95.00 USD | Price: 76.76 USD

Following disappointing EVOKE-01 results (see [our note on the EVOKE-01 update](#)), GILD shares were pressured (YTD: -1%; +1% NBI). That said, we are bullish going into 4Q as we expect another solid quarter of commercial execution and are modestly above consensus on total revenue (\$7.2B, +\$109M cons) and non-GAAP EPS (\$1.85, +\$0.10 cons). Further, our monthly HIV IQVIA scripts analyses demonstrated that Gilead TRx were up +3% y/y, driven primarily by TRx growth from Biktarvy (+12% y/y) and Descovy (+2% y/y) (see our [analyses on HIV market trends – January '24 edition](#)). On the lenacapavir (Q6M subcutaneous) PURPOSE-1 study for HIV PrEP, we think expectations are that data will be positive and view commercial priming to further penetrate the addressable market as the more challenging hurdle. Looking to oncology, we continue to see strong growth with Trodelvy growing +71% y/y (+10% compared to 3Q expectations) and +31% y/y growth for Kite in 2023. Further, at the company's recent investor presentation, management had guided to >\$3B from oncology sales in 2023 (see [our Gilead conference takeaways](#)). Looking ahead to 2024/2025 oncology estimates, we could see upside to Trodelvy estimates (BofA and consensus, \$1.4B) with line extension following pivotal trial readouts in 2024: TROPiCS-04 in 2L+ mUC and ASCENT-03 in 1L mTNBC (PD-L1). Furthermore, we could see tailwinds to the heme/onc portfolio if preliminary iMMagine-1 pivotal data (2H24) from Gilead/Arcellx's BCMA CAR-T proves to be comparably efficacious, but safer than J&J/Legend's Carvykti. We maintain Buy on GILD and \$95 PO.

- We remain bearish on COVID product demand and are -\$28M below consensus for remdesivir.

Exhibit 10: Gilead Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Genvoya	552	527	9.7%	(13.8%)	2,096	2,071	1,936	1,899
Odefsey	378	349	10.4%	(3.4%)	1,388	1,360	1,322	1,253
Descovy	519	539	1.5%	(3.2%)	1,995	2,016	2,171	2,126
Biktarvy	3,198	3,176	3.7%	9.6%	11,939	11,917	13,309	12,737
Total HIV	4,888	4,831	4.7%	2.5%	18,370	18,307	19,920	18,811
Total HCV	467	436	6.5%	6.5%	1,801	1,759	1,498	1,600
remdesivir/ Veklury	435	463	(31.7%)	(56.5%)	1,900	1,691	1,208	1,159
Trodelvy	332	302	17.2%	71.1%	1,097	1,067	1,423	1,445
Kite	547	525	12.5%	30.8%	1,949	1,949	2,413	2,301
Total Revenue	7,189	7,080	2.0%	(2.6%)	27,186	27,100	28,636	27,660

	4Q23		Change		2023E		2024E	
\$ in millions except per share	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	7,189	7,080	2.0%	(2.6%)	27,186	27,100	28,636	27,660
COGS	1,051	1,012	6.7%	8.6%	3,768	3,729	3,925	3,851
Gross Profit	6,138	6,069	1.2%	(4.3%)	23,418	23,371	24,711	23,808
R&D	1,507	1,465	3.7%	(2.4%)	5,776	5,734	6,095	5,860
SG&A	1,334	1,506	2.8%	(34.0%)	5,798	5,971	6,069	5,816
Operating Income (non-GAAP)	3,197	3,088	(0.8%)	18.7%	10,935	10,754	12,547	11,905

Exhibit 10: Gilead Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23		Change		2023E		2024E	
Net Income (non-GAAP)	2,331	2,201	(19.1%)	10.9%	8,617	8,380	10,018	8,985
Non-GAAP EPS	1.85	1.75	(19.2%)	11.4%	6.85	6.67	8.05	7.19
Shares Outstanding	1,252	1,256	(0.4%)	(0.9%)	1,257	1,257	1,244	1,248

Source: BofA Global Research, Bloomberg, Visible Alpha

BofA GLOBAL RESEARCH



Merck & Co.

MRK US – Rating: BUY (A-1-7) | PO: 135.00 USD | Price: 120.13 USD

MRK shares have seen strong performance YTD (+9%; +4% DRG) as investors looking forward to an exciting launch for sotatercept in PAH (PDUFA date: March 26) and appreciating the company's differentiated revenue growth (2024-2027 CAGR: 6%; peers: 5%) at a reasonable multiple (14x vs. peer 15x) with the only major risk still being the Keytruda LOE (2028+) and the concentration in oncology. Indeed, we believe Merck is poised to deliver another solid commercial quarter (4Q rev: \$14.6B; +130M vs. cons), driven by strong growth from core products (i.e., Keytruda and Gardasil). Indeed, we expect robust growth of Keytruda in 4Q (rev: BofA \$6.4B, +66M vs. cons, +18% y/y), driven by recent approvals in adjuvant lung ([our thoughts on the approval](#)) and 1L la/mUC ([our takeaways](#)), continued market penetration, and solid data updates (e.g., KN-671 perioperative lung, [see our thoughts on KN-671 data](#)). For Gardasil (4Q rev: BofA \$2.1B; +\$146M vs. cons, +43% y/y), we expect strong demand especially from OUS to continue, driven by improved supply and new manufacturing capacity. Looking to 2024 (see [recent conference MRK takeaways](#)), we expect management to set out a beatable guidance, with a number of upside levers, including from new launches, including 1) Sotatercept (PDUFA March 26) in PAH where Merck expects a successful launch globally, 2) V116 adult pneumococcal vaccine (PDUFA June 17) with multibillion dollar peak revenue. 3) HER3-DXd approval (PDUFA June 26) and launch in EGFR lung cancer. Collectively, these three launches could provide meaningful sales in 2024-25 (Consensus projects ~\$500M and \$1.4B, respectively). Ultimately, we remain bullish on MRK shares given its strong core business and a disciplined BD strategy with 5 years of runway to diversity Keytruda. Maintain Buy and raise our PO to \$135 PO (from \$130 PO).

- Three key launches: 1) sotatercept (PDUFA March 26) in PAH, 2) V116 pneumococcal vaccine (PDUFA June 17), and 3) HER3-DXd (PDUFA June 26) in EGFR lung cancer

Exhibit 11: Merck Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23E		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Oncology								
Keytruda - US	\$3,950	\$3,895	4.1%	16.9%	\$15,093	\$14,905	\$17,200	\$16,626
Keytruda - OUS	2,464	2,455	(3.1%)	19.0%	9,725	9,623	11,000	10,696
Keytruda Total	6,414	6,348	1.2%	17.7%	24,818	24,541	28,200	27,284
Vaccines								
Gardasil - US	492	421	(41.3%)	87.6%	2,210	2,154	2,298	2,321
Gardasil - OUS	1,614	1,539	(7.6%)	33.7%	6,910	6,827	8,154	7,793
Gardasil	2,105	1,959	(18.5%)	43.2%	9,119	8,980	10,451	10,160
ProQuad	504	548	(29.3%)	(4.2%)	2,327	2,369	2,396	2,454
Vaxneuvance	261	201	21.5%	NA	750	687	997	870
Cardiovascular								
Januvia/ Janumet	667	691	(20.1%)	(27.1%)	3,245	3,266	2,448	2,474
Janumet	168	288	(33.9%)	(52.5%)	1,104	1,210	776	878
Animal Health	1,296	1,439	(7.5%)	5.3%	5,643	5,677	5,830	5,915
Total Revenue	\$14,623	\$14,493	(8.4%)	5.7%	\$60,107	\$59,904	\$64,963	\$63,315

	4Q23E		Change		2023E		2024E	
\$ in millions except per share	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	\$14,623	\$14,493	(8.4%)	5.7%	\$60,107	\$59,904	\$64,963	\$63,315
COGS	3,269	3,242	(11.2%)	(2.8%)	13,825	13,798	12,908	13,596
Gross Profit	11,355	11,262	(7.6%)	8.5%	46,282	46,190	52,055	50,772
SG&A	3,034	3,054	23.2%	15.4%	10,579	10,599	11,304	11,234
R&D	8,819	8,498	167.5%	190.6%	29,693	29,372	13,967	14,074
Earnings before Taxes	(654)	(448)	NM	NM	5,811	6,018	26,185	24,650
Taxes	(381)	(274)	NM	NM	2,301	2,408	4,321	3,821
Adjusted Net Income	(\$270)	(\$170)	NM	NM	\$3,503	\$3,601	\$21,858	\$20,821
Non-GAAP EPS	-\$0.11	-\$0.10	NM	NM	\$1.37	\$1.38	\$8.60	\$8.40
Diluted Shares	2,568	2,547	0.9%	0.8%	2,551	2,550	2,541	2,521

Source: BofA Global Research, Bloomberg, Visible Alpha; * Prometheus acquisition cost hasn't fully reflected in cons numbers

BofA GLOBAL RESEARCH



Moderna

MRNA US – Rating: NEUTRAL (C-2-9) | PO: 120.00 USD | Price: 99.70 USD

We don't expect any surprises on Moderna's 4Q23 call given management's preannouncement (\$6.7B COVID-19 sales) during the January healthcare conference ([see our thoughts on Moderna's presentation here](#)). However, we could get some clarity on if the European Commission (EC) decides to initiate the tender procedure to acquire COVID-19 vaccines from Moderna which is notable, as it would provide upside over its 2024 COVID-19 revenue guidance of \$4B and our forecasts (BofA \$3.86B; cons \$3.87B). That said, we'd argue even if the EC opts in, the upside would likely only be modest and not enough to help overcome Moderna's P&L profitability concerns that have continued to weigh on shares, in our view. Indeed, while Moderna reiterated its 2024/ 2025 financial framework, with a return to growth for sales in 2025, we forecast -24%/ +1%/ +15% growth from 2025-2027, significantly below that of Biopharma peers. Moreover, we estimate that Moderna will remain unprofitable until 2030 as we expect its revenue growth won't be able to offset its high OpEx spend, though we do have OpEx declining from 2024-2025. In terms of what to expect for 2024, we're in-line on COVID-19/ RSV vaccine sales at \$3.9B (-\$7M)/ \$194M (+\$3M), respectively, but we model rev/ EPS of \$4.2B/- \$7.35 vs \$4.3B/ -\$7.08 for the Street. In terms of what's next for Moderna, we don't expect it will get credit for its next generation COVID-19 vaccine (e.g., refrigerator-stable; phase 3 results expected in 1H24), but we'd say investors will be acutely focused on the RSV launch (approval likely March/ April), potential interim results from the phase 3 CMV vaccine trial, seasonal flu vaccine regulatory submission, and phase 3 results for the seasonal flu + COVID-19 vaccine (sometime in 2024). Maintain Neutral, \$120 PO.

- As mentioned above, we expect questions on Moderna's CMV vaccine during the call, as we could receive an interim analysis in 2024. That said, the interim analysis is event driven (25% accrual as of Sept. 2023) and management stressed it's unclear, if and when in 2024, we will receive the results, but they expect to provide updates on accrual at the Vaccines Day (March 27th).
- Recall, Pfizer and GSK (covered by Jain/ Parry) launched RSV vaccines in 2023, with strong uptake. While Moderna's RSV vaccine looks competitive from an efficacy/ safety standpoint, KOLs we've spoken to have stressed the challenges of being third to market, particularly given the lack of longer-term follow up.

Exhibit 12: Moderna Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus

	4Q23E		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
\$ in millions								
COVID-19 vaccine	2,208	2,242	25.7%	(54.6%)	6,067	6,042	3,859	3,866
RSV vaccine	0	0	N/A	N/A	0	0	194	191
Total Revenue	2,668	2,303	45.7%	(47.5%)	6,705	6,334	4,228	4,312
	4Q23E		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
\$ in millions except per share								
Revenue	2,668	2,303	45.7%	(47.5%)	6,705	6,334	4,228	4,312
COGS (non-GAAP)	1,366	1,177	(39.0%)	(28.8%)	5,130	4,991	1,617	1,513
Gross Profit	1,302	1,126	(417.6%)	(58.9%)	1,575	1,343	2,611	2,800
SG&A	483	443	9.3%	28.8%	1,562	1,512	1,515	1,354
R&D	1,372	1,360	18.3%	13.3%	4,811	4,797	4,604	4,562
Operating Income (non-GAAP)	(553)	(608)	(72.5%)	(135.0%)	(4,798)	(4,666)	(3,508)	(3,068)
Interest & Other	97	67	79.6%	29.3%	330	287	200	156
Pre-Tax Income (non-GAAP)	(456)	(541)	(76.7%)	(130.3%)	(4,468)	(4,379)	(3,308)	(2,912)
Taxes (non-GAAP)	(25)	(62)	(101.5%)	(113.4%)	894	695	(496)	(325)
Net Income (non-GAAP)	(430)	(575)	(88.2%)	(129.4%)	(5,361)	(5,361)	(2,812)	(2,809)
Non-GAAP EPS	(\$1.13)	(\$1.35)	(88.2%)	(131.3%)	(\$13.95)	(\$13.71)	(\$7.35)	(\$7.08)
Shares Outstanding - Diluted	381	397	0.0%	(5.9%)	384	394	383	393

Source: BofA Global Research, Bloomberg, Visible Alpha

BofA GLOBAL RESEARCH



Pfizer

PFE US – Rating: NEUTRAL (B-2-7) | PO: 35.00 USD | Price: 27.47 USD

PFE shares are off to a rough start, down -5% YTD (+4% DRG), as investors remain skeptical of the company's turnaround story. We think there will be few surprises to the 4Q print as Pfizer has already provided preliminary 2024 guidance: 1) total revenue \$58.5-61.5B (including ~\$5B Comirnaty, ~\$3B Paxlovid), 2) adjusted SG&A \$13.8-14.8B, 3) adjusted R&D \$11-12B, 4) effective tax rate ~15%, and 5) adjusted diluted EPS of \$2.05-2.25. That said, we are watching for Abrisvo upside (RSV vaccine) on additional U.S. government stockpiling, and additional updates on COVID product guidance down, following a relatively mild COVID season. For 2023, we are slightly below consensus on total revenue for 2023 (BofA \$14.5B vs \$14.7B) and slightly above on EPS (BofA -\$0.17 vs cons -\$0.21). We've raised our 2024e sales to \$61.0B (+\$544M cons), which is at the higher end of guidance as we suspect that numbers are beatable, especially with robust commercialization of assets acquired from Seagen. Specifically, we'd look for upside to Padcev sales, driven by EV-302 data. That said, we are modestly more conservative on margins, leading to our below consensus 2024 EPS forecast of \$2.10 (-\$0.17 cons). We maintain Neutral and \$35 PO.

- We expect Pfizer will provide further guidance on their commercial reorganization on the 4Q call
- Further COVID product revenue guidance down would have a material impact on whether Pfizer can meet guidance

Exhibit 13: Pfizer Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs. consensus.

\$ in millions	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Eliquis	\$1,593	\$1,526	6.4%	7.7%	\$6,727	\$6,660	\$6,317	\$6,989
Total Specialty Care	4,014	3,772	6.8%	14.9%	14,147	14,670	15,053	14,887
Ibrance	1,277	1,255	2.7%	(0.2%)	4,912	4,891	4,699	4,715
Paxlovid	(3,461)	(3,451)	(1817.6%)	(288.7%)	953	934	2,741	3,118
Prevnar	2,320	1,854	25.2%	33.6%	7,154	6,803	7,750	7,031
Comirnaty	4,773	1,307	265.2%	(57.9%)	10,631	11,295	3,721	4,996
Xeljanz	509	503	1.3%	3.2%	1,717	1,647	1,631	1,647
RSVpreF	408	375	N/A	N/A	783	747	995	1,179
Nurtec	282	233	21.1%	33.7%	930	919	1,284	1,306
Vyndaqel	89	822	(9.0%)	12.6%	385	3,303	381	3,891
Biopharma Revenue (less COVID)	13,023	\$16,790	11.1%	17.8%	46,997	\$46,519	53,881	\$52,403
Total Revenue	\$14,490	\$14,646	9.5%	(40.3%)	\$58,736	\$58,749	\$61,060	\$60,517

\$ in millions	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	\$13,231	\$14,646	3.9%	(41.6%)	\$58,736	\$58,749	\$61,060	\$60,517
COGS	8,906	7,692	189.9%	47.5%	26,198	24,434	21,851	17,399
Gross Profit	4,325	\$6,954	(55.2%)	(73.9%)	32,538	\$34,315	39,209	\$43,117
SG&A	3,205	3,701	(6.3%)	(1.0%)	13,307	13,689	14,654	13,833
R&D	2,679	4,360	2.0%	(0.5%)	11,419	12,214	12,273	11,752
Operating Profit	(1,238)	(1,453)	(130.0%)	(111.6%)	9,566	8,251	14,182	16,483
Taxes	(277)	88	(197.5%)	(159.6%)	1,251	1,223	2,127	2,257
Non-GAAP Net Income	(969)	(1,122)	(125.2%)	(109.5%)	8,273	8,786	12,004	13,048
Non-GAAP EPS - Diluted	(\$0.17)	(\$0.21)	(125.5%)	(109.6%)	\$1.45	\$1.55	\$2.10	\$2.27
Shares Outstanding - Diluted	5,646	5,692	(1.2%)	(1.3%)	5,718	5,716	5,718	5,734

Source: BofA Global Research, Bloomberg, Visible Alpha

BofA GLOBAL RESEARCH



Regeneron

REGN US – Rating: UNDERPERFORM (B-3-9) | PO: 710.00 USD | Price: 948.87

USD

Despite reported 4Q US Eylea (\$1.34B) and Eylea HD (\$123M) below consensus estimates (see [our quick take on pre-announced US Eylea sales](#)), REGN shares have been robust (YTD: +8%; +1% NBI). We think the support for Regeneron were largely due to investor sentiment around the company's pipeline with developments in obesity and severe food allergies. That said, we continue to have a bearish view of Eylea, relative to consensus and note persistent y/y erosion over the last year, which we think are attributable to competition from Roche's Vabysmo and growing pricing pressures. Overall, our 4Q sales estimate of \$3.3B are in-line with consensus (-\$10M cons), mostly due to Dupixent offset (BofA \$3.3B, +\$197M cons). Our 4Q and 2023 EPS estimates of \$10.38 and \$42.20, respectively, are also mostly in-line (consensus 4Q: \$10.65; 2023: \$42.24). Indeed, we anticipate few surprises in the 2023 reported results and are more interested in 2024 outlook, where we forecast \$13.2B (-\$538M cons) in sales and \$41.90 EPS (-\$2.13 cons). We suspect that management will guide to a substantial step-up in OpEx spend due to pending commercial launches (e.g., linvoseltamab and odronextamab in 2H24) and increased R&D activity. While Regeneron is well-positioned financially for M&A, we don't think the company's BD strategy has changed and are unlikely to be different in 2024. While we think there are some strengths in Regeneron's portfolio, we are skeptical of the optimistic consensus outlook for US Eylea and Eylea HD. Maintain Underperform, but raise PO to \$710 (from \$700) on Dupixent growth.

- Sanofi will report 4Q23 results on February 1st, prior to Regeneron. Dupixent sales likely to beat consensus, according to TRx data.
- May 2024 LOE for Eylea currently remains uncertain given Regeneron's recent legal triumph over Mylan/Viatris

Exhibit 14: Regeneron Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs consensus.

	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
\$ in millions								
Commercial products								
US Eylea	1,340	1,495	(7.5%)	(10.5%)	5,722	5,939	5,191	4,529
US Eylea HD	123	117	NA	NA	166	159	609	1,634
Libtayo	217	233	(6.8%)	42.5%	845	831	1,178	1,087
US Praluent	39	40	(2.4%)	11.1%	161	161	160	153
Dupixent (Booked by Sanofi)	3,303	3,106	6.6%	34.9%	11,675	11,410	14,133	13,425
Net product sales	1,743	1,788	(2.4%)	2.6%	6,970	7,017	7,224	7,623
Joint ventures								
Sanofi collaboration	1,031	968	(3.1%)	(6.1%)	3,840	3,729	3,947	3,729
Bayer collaboration	376	364	(0.4%)	(3.1%)	1,486	1,472	1,436	1,472
Other collab + Other revenue	112	113	89.2%	0.5%	436	469	523	420
Total Revenue	3,262	3,272	(3.0%)	(4.5%)	12,945	12,937	13,215	13,753
	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
\$ in millions except per share								
Revenue	3,262	3,272	(3.0%)	(4.5%)	12,945	12,937	13,215	13,753
COGS (adjusted)	426	377	8.5%	16.9%	1,610	1,561	1,667	1,561
Gross Profit	2,836	2,895	(4.5%)	(7.0%)	11,335	11,375	11,549	12,191
SG&A (adjusted)	600	622	12.4%	3.7%	2,210	2,236	2,423	2,236
R&D (adjusted)	973	996	2.0%	6.9%	3,862	3,197	3,889	3,894
EBT (adjusted)	1,353	1,173	(10.3%)	(17.2%)	5,501	5,510	5,402	5,955
Net Income	1,191	1,207	(10.4%)	(17.8%)	4,869	4,879	4,835	5,199
Net income (adjusted)	1,191	1,207	(10.4%)	(17.8%)	4,869	4,879	4,835	5,199
Diluted EPS	\$7.56	\$8.51	(20.3%)	(32.4%)	\$33.72	\$33.07	\$31.03	\$40.58
Diluted EPS (adjusted)	\$10.38	\$10.65	(10.4%)	(17.3%)	\$42.30	\$42.24	\$41.90	\$44.03
Shares Outstanding - Diluted	115	115	0.0%	(0.6%)	114	115	115	115

Source: BofA Global Research, Bloomberg, Visible Alpha

BofA GLOBAL RESEARCH



Royalty Pharma

RPRX US – Rating: BUY (B-1-7) | PO: 40.00 USD | Price: 27.00 USD

We think RPRX shares are approaching a floor after a challenging 2023 run. We are optimistic that RPRX could see renewed interest in 2024 (YTD: +4%; +4% DRG) as value stocks regain favor and Royalty's two major risks are partially cleared: 1) Vertex's CF triple combo data in early 2024 and 2) interest rates. We anticipate '23 cash receipts of at least \$3.05B (cons \$3.0B), which includes a \$50M milestone payment from Pfizer for Zavzpret, as per management comments at the January healthcare conference (see [our Royalty Pharma conference takeaways](#)). Looking ahead, we forecast 24' cash receipts of \$2.85B (2024e cons \$2.8B), though view estimates as conservative as they do not fully contemplate label expansion or late-stage pipeline asset launches (e.g., KarXT). Furthermore, as Royalty expects to add \$1.2B portfolio receipts by 2025 (+20% compared to 2023 guidance), we think a step-up in deal activity is implied. That said, management has commented that they expect a ~15% decline in the "Other Royalty Receipts" line. Our adjusted cash flow per share is \$4.25 in 2023e (cons \$4.14) and \$3.95 (cons \$3.71) in 2024e. We maintain that at current price levels, Royalty offers an attractive risk-reward profile with solid cashflows. Maintain Buy, \$40 PO.

- We look for updates on late-stage pipeline assets (e.g., Bristol / Karuna's KarXT, Cytokinetics' aficamtem)

Exhibit 15: Royalty Pharma Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q23e, 2023e, and 2024e vs consensus.

\$ in millions	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Royalty revenues								
Cystic Fibrosis Franchise	223	229	(6.1%)	2.0%	884	890	881	915
Tysabri	80	84	(8.1%)	(9.6%)	336	340	291	312
Imbruvica	58	56	(6.1%)	(18.6%)	253	250	205	195
Xtandi	46	47	(1.6%)	1.4%	177	178	190	189
Promacta	52	54	(3.4%)	7.5%	195	197	197	191
Distributions to non-controlling interests	(119)	(105)	19.2%	(0.6%)	(403)	(393)	(379)	(388)
Adjusted Cash Receipts (non-GAAP)	752	653	18.0%	(29.2%)	3,066	2,968	2,848	2,779
\$ in millions except per share	4Q23		Change		2023E		2024E	
	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue (adjusted cash receipts)	752	653	18.0%	(29.2%)	3,066	2,968	2,848	2,779
Payments for Operating and Professional Services	(71)	(60)	29.3%	(3.6%)	(260)	(250)	(234)	(237)
Adjusted EBITDA	681	593	17.0%	(31.1%)	2,806	2,719	2,615	2,436
Development-Stage Funding Payments	(2)	(1)	(95.7%)	(95.6%)	(55)	(53)	(63)	(32)
Interest Paid, net	(70)	(35)	NM	NM	(173)	(175)	(188)	(193)
Adjusted Net Income	610	563	28.9%	(35.1%)	2,569	2,499	2,355	2,227
Adjusted Diluted EPS	\$1.02	\$0.94	28.9%	(34.4%)	\$4.25	\$4.14	\$3.95	\$3.71
Shares Outstanding - Diluted	601	607	0.0%	(1.0%)	604	607	597	607

Source: BofA Global Research, Bloomberg, Visible Alpha

NM: not material

BofA GLOBAL RESEARCH

Vertex

VRTX US – Rating: BUY (B-1-9) | PO: 540.00 USD | Price: 440.11 USD

VRTX shares have outperformed peers (YTD: +8%; +1% NBI) in large part we suspect due to excitement for Vertex's two upcoming pivotal readouts for next-generation Cystic fibrosis (CF) triple, vanzacaftor, and VX-548 in acute pain, both expected in early 2024. Indeed, while the "what's Vertex's encore to CF" has weighed on shares, following approval for Casgevy in partnership with CRISPR for SCD + TDT (see [our thoughts on Casgevy's approval here](#)) and promising phase 2 results for VX-548 in Diabetic Peripheral Neuropathy (DPN) late last year (see [our thoughts on the DPN results here](#)), we'd say the story has become much more than just a CF play. That said, CF does remain the anchor for revenue for the foreseeable future, but the cash flow adds investment optionality, in our view, allowing Vertex to pursue transformation science (e.g., Casgevy was the first CRISPR/ Cas9 therapy approved). On that note, Vertex, through differentiated MoA's, is targeting 1) Type 1 diabetes (VX-880 +VX-264), 2) Myotonic Dystrophy Type 1 (DM1; VX-670), and 3) Autosomal Dominant Polycystic Kidney Disease (ADPKD; VX-407) though it largely doesn't get credit for its early-stage pipeline, in our view. Looking to 2023, we forecast revenue of \$9.9B (+\$52M) and non-GAAP EPS of \$15.05 (+\$0.07) as we expect Trikafta to continue its outperformance (\$8.97B vs. \$8.93B). Turning to 2024, we remain modestly higher than the Street on both revenue/ non-GAAP EPS at \$10.7B/ \$16.90 vs. \$10.6B/ \$16.44 as we expect Trikafta growth (\$9.8B vs \$9.6B) will more than offset revenue erosion from the other CF products (\$744M vs. \$773M). And, ahead of vanzacaftor's confirmatory results, we've included it in our NPV analysis which together with the potentially lower royalty burden, has increased our PO to \$540 (from \$450). Given the optionality we see Vertex and the potential for more room to run based on 1) revenue growth acceleration in 2025+ and 2) margin expansion, we're maintaining our Buy rating.

- On the call, we are looking for additional insight into 1) timing for the upcoming readouts for vanzacaftor in CF and VX-548 in acute pain, 2) Vertex's strategy for VX-548 in DPN as we wait for its end of phase 2 meeting with FDA, and 3) progress on Casgevy's launch in SCD/ TDT following the challenges of other curative intent therapies (2024 BofAe \$104M; cons \$187M).

Exhibit 16: Vertex Variance Table

We've provided an overview of our product revenue and P&L estimates for 4Q, 2023, and 2024 vs consensus.

	4Q23		Change		2023E		2024E	
\$ in millions	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Other CF products	212	204	1.3%	(24.6%)	952	941	744	773
Trikafta	2,355	2,315	3.6%	16.6%	8,967	8,927	9,815	9,631
Total Revenue	\$2,567	\$ 2,519	3.4%	11.6%	\$ 9,919	\$9,867	\$10,668	\$10,589

	4Q23		Change		2023E		2024E	
\$ in millions except per share	BofA	Consensus	Q/Q	Y/Y	BofA	Consensus	BofA	Consensus
Revenue	\$2,567	\$2,519	3.4%	11.5%	\$9,919	\$9,867	\$10,668	\$10,589
COGS	301	303	(4.9%)	7.3%	1,190	1,193	1,236	1,298
Gross Profit	2,266	2,216	4.6%	12.1%	8,729	8,674	9,431	9,291
SG&A	219	232	1.7%	(2.7%)	851	865	971	992
R&D	728	729	0.3%	16.8%	2,826	2,854	3,018	3,103
EBIT	1,252	1,232	6.8%	8.9%	4,476	4,456	5,155	5,056
Interest & Other	92	102	(41.3%)	23.9%	494	491	395	359
EBT	1,351	1,337	2.3%	12.6%	4,964	4,948	5,544	5,414
Taxes	302	288	17.5%	36.2%	1,042	1,022	1,136	1,148
Non-GAAP Net Income	1,049	1,062	(1.3%)	7.3%	3,921	3,929	4,407	4,326
Non-GAAP EPS - Diluted	\$4.03	\$4.08	(1.3%)	7.2%	\$15.05	\$14.98	\$16.90	\$16.44
Shares Outstanding - Diluted	261	261	0.0%	0.1%	260	261	261	261

Source: BofA Global Research, Bloomberg, Visible Alpha

BofA GLOBAL RESEARCH



Exhibit 17: BofA EPS Estimate Changes

We summarize our updated EPS numbers with this preview

Company	Ticker	Rating	Updated earnings		Previous earnings		Changes to our model
			2024e	2025e	2024e	2025e	
AbbVie	ABBV	Neutral	\$11.00	\$11.85	\$10.95	\$11.95	Increased US Humira sales in 2024
Amgen	AMGN	Neutral	\$19.75	\$21.15	\$19.65	\$21.10	Updated sales outlook for royalty assets
Biogen	BIIB	Neutral	15.75	18.05	17.30	19.60	Reduced sales of core franchise
BioMarin	BMRN	Buy	\$3.40	\$5.05	\$4.50	\$6.95	Reduced revenue forecasts for Roctavian
Bristol Myers	BMJ	Neutral	\$6.90	\$7.50	\$6.70	\$7.60	Updated sales outlook and margins
Eli Lilly	LLY	Buy	\$13.30	\$18.05	\$13.55	\$18.35	Increased OpEx
Gilead	GILD	Buy	\$8.05	\$8.45	No Change	No Change	Modestly adjusted revenue and cost
Merck	MRK	Buy	\$8.60	\$9.70	\$9.30	\$10.35	Updated sales outlook and margins
Moderna	MRNA	Neutral	(\$7.35)	(\$8.05)	(\$7.15)	(\$7.10)	Reduced revenue forecasts
Johnson & Johnson	JNJ	Neutral	\$10.70	\$10.85	No change	No change	Updated sales outlook and margins
Pfizer	PFE	Neutral	\$2.10	\$2.50	\$2.20	\$2.60	Updated sales outlook and margins
Regeneron	REGN	Underperform	\$41.90	\$43.75	\$42.45	\$43.60	Updated sales outlook and OpEx spend estimates
Royalty Pharma	RPRX	Buy	\$3.95	\$4.05	\$4.20	\$4.10	Updated sales outlook for royalty assets
Vertex	VRTX	Buy	\$16.90	\$18.30	\$16.30	\$16.70	Increased CF forecasts

Source: BofA Global Research

BofA GLOBAL RESEARCH

Abbreviations:

HC: healthcare
 LOE: loss of exclusivity
 HIV: human immunodeficiency virus
 T2D: type 2 diabetes
 IBD: inflammatory bowel disease
 NSCLC: non small cell lung cancer
 PDUFA: Prescription Drug User Fee Act
 RS-: non ring sideroblasts
 ROS1: ROS Proto-Oncogene 1
 RCC: Renal Cell Carcinoma
 2L+: second line-plus
 MM: multiple myeloma
 MDS: myelodysplastic syndromes
 UC: ulcerative colitis
 TRx: total prescriptions as measured by IQVIA
 LA: long acting
 Heme/onc: hematology / oncology
 CAR-T: chimeric antigen receptor T-cell
 PD-L1: programmed cell death ligand-1
 1L: first line
 mUC: metastatic urothelial carcinoma
 mTNBC: metastatic triple negative breast cancer
 BCMA: B-cell maturation antigen
 Q6M: every 6-month
 La/mUC: locally advanced or metastatic urothelial cancer
 KOL: key opinion leader
 ACC: American College of Cardiology
 ADC: antibody drug conjugate
 TROP2: tumor-associated calcium signal transducer 2
 ASCO: American Society of Clinical Oncology
 BD: business development
 RSV: Respiratory Syncytial Virus
 CF: cystic fibrosis
 IPF: Idiopathic pulmonary fibrosis
 IgG4: Immunoglobulin G4
 GLP-1: glucagon-like peptide 1
 YTD: year-to-date
 NBI: Nasdaq Biotechnology Index
 DRG: NYSE Pharmaceutical Index

Stocks mentioned

Prices and ratings for stocks mentioned in this report

BofA Ticker	Bloomberg ticker	Company name	Price	Rating
ABBV	ABBV US	AbbVie	US\$ 165.13	B-2-7
AMGN	AMGN US	Amgen Inc.	US\$ 310.26	B-2-7
BIIB	BIIB US	Biogen Inc.	US\$ 246.21	B-2-9
BMRN	BMRN US	BioMarin	US\$ 91.25	B-1-9
BMJ	BMJ US	Bristol-Myers Squibb	US\$ 49.61	B-2-7
LLY	LLY US	Eli Lilly	US\$ 627.62	B-1-7
GILD	GILD US	Gilead Sciences Inc.	US\$ 80.23	B-1-7
MRK	MRK US	Merck & Co.	US\$ 120.13	A-1-7
MRNA	MRNA US	Moderna	US\$ 102.81	C-2-9
PFE	PFE US	Pfizer	US\$ 27.47	B-2-7
REGN	REGN US	Regeneron Pharmaceut	US\$ 948.87	B-3-9
RPRX	RPRX US	Royalty Pharma	US\$ 29.11	B-1-7
VRTX	VRTX US	Vertex Pharmaceutica	US\$ 429.96	B-1-9

Source: BofA Global Research

Price objective basis & risk

AbbVie (ABBV)

Our \$165 price objective (PO) is based on a 50/50 blended valuation of our DCF and 2025 non-GAAP EPS estimate P/E multiple of 12x (giving a value of \$145). Our 12x 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 \$185 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 \$67/share, Spinraza at \$30/share, Roche collaboration/royalty at \$60/share, biosimilars at \$7/share, Alzheimer's at \$98/share, Zuruvae at \$3/share, Skyclarys at \$46/share, the pipeline at \$4/share, and net cash at -\$34/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 \$150 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 6% and terminal growth rate of -5.5%. Under our assumptions, our NPV analysis suggests a legacy product value of \$70/share, Roctavian and Voxzogo of \$60/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 \$750 price objective is based on a probability-adjusted net present value (NPV) analysis of franchise verticals including Endocrinology (\$531/share), Oncology (\$123/share), Cardiovascular (\$4/share), Neuroscience (\$11/share), Immunology (\$42/share), other pharmaceutical products and early pipeline assets (\$57/share), as well as approximately -\$15/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.

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 (\$91/share), systemic secreted cell surface therapeutics (\$1/share), cancer vaccines (\$4/share), intratumoral immune-oncology (\$2/share), cardiovascular diseases (\$0/share) and systemic intracellular therapeutics (\$1 share), and net cash (\$22/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 10% and terminal growth rate of -30%.

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 (\$161/share), Sanofi collaboration revenue including Dupixent and other product revenues (\$334/share), Libtayo (\$59/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 \$540/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, \$399/share for Trikafta, \$18/share for Casgevy, \$8/share for VX-548, \$57/sh for vanzacaftor, \$46/share in net cash, and \$8/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.

Special Disclosures

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
	Insmmed 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
	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.	RXRJ	RXRJ 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



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
	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

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%

^{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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