

Broadcom Inc

Buy for 2H acceleration, AI, VMWare strength

Reiterate Rating: BUY | PO: 1,680.00 USD | Price: 1,407.01 USD

FY24 unchanged, raise FY25, raise PO to \$1680

As expected, AVGO maintained its FY24 sales outlook of \$50bn, though with mix shifting more towards AI (now >\$10bn vs \$7.5bn prior), with traditional enterprise (server storage) and telco segments experiencing the same inventory digestion as indicated by peer MRVL and others. VMWare is also off to a strong start, with overall AVGO software bookings to nearly double QoQ to \$3bn in Q2 and with VMWare sales expected to grow 10% QoQ every quarter. Legacy segments are showing signs of increased bookings, suggesting a potential 1H trough. All-in, we keep FY24E steady, but raise FY25E (end Oct) by 3% to \$57.82, implying CY25/26E raised by 3%/4% to \$59.69/\$66.16. L-t we see earnings power in the \$70-\$75/yr range as sales grow double digits and EBIT margins get back to historical 60-65% levels. Raise PO to \$1680 from \$1500 on higher 28x CY25E PE vs 24x currently, but within historical 7x-28x range justified by improving AI mix.

Bears could push back on Q1 semis miss, legacy weakness

AVGO's 51% run in the past 3 months (vs. SOX up 38%) makes it vulnerable to short-term stock volatility. Bears could push back on higher valuation given 1) full year FY24 numbers did not get revised up, 2) Q1 semi sales of \$7.4bn were below cons at \$7.7bn with Q1 sales beat largely from one-off software sales, 3) semi GM continues to fall as mix shifts to custom chips (semi GM in Q1 declined -190 bps YoY to 67%), 4) non-AI semi segments are at a \$5bn quarterly run-rate vs the ~\$6bn trough suggested by AVGO a few qtrs ago, 5) potential for ASIC competition (refuted by AVGO), and 5) premium valuation with stock now at 28x NTM PE vs. 15x historical median (though stock still at its historical 6-7 turn discount to SOX index that now trades at 34x NTM PE).

But we focus on 2H growth reaccel., solid AI pipeline

We believe 1H could mark the trough for AVGO's non-AI semi sales (esp. broadband), with semi sales accelerating to double digit growth exiting Q4 and into FY25. Meanwhile, we think AI sales (now over 30% of semis) could secularly grow at a 20-25% CAGR with more contribution from high-speed switches. VMWare looks to exit this year close to ~\$4bn, suggesting >10% YoY growth trajectory into FY25. We see Meta as an important additional ASIC customer for AVGO, in addition to existing strong position at Google.

Estimates (Oct) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	37.60	42.25	46.70	57.82	64.39
GAAP EPS	26.86	32.94	14.97	31.29	38.66
EPS Change (YoY)	34.3%	12.4%	10.5%	23.8%	11.4%
Consensus EPS (Bloomberg)			46.88	56.50	62.68
DPS	16.40	18.40	21.00	23.10	25.41
Valuation (Oct)					
P/E	37.4x	33.3x	30.1x	24.3x	21.9x
GAAP P/E	52.4x	42.7x	94.0x	45.0x	36.4x
Dividend Yield	1.2%	1.3%	1.5%	1.6%	1.8%
EV / EBITDA*	33.1x	30.5x	23.5x	19.4x	17.3x
Free Cash Flow Yield*	2.4%	2.6%	3.1%	4.1%	4.8%

* For full definitions of *IQmethod*SM measures, see page 11.

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Timestamp: 07 March 2024 10:11PM EST

07 March 2024

Equity

Key Changes

(US\$)	Previous	Current
Price Obj.	1,500.00	1,680.00
2024E Rev (m)	50,000.3	50,210.9
2025E Rev (m)	55,251.2	56,967.6
2026E Rev (m)	59,461.4	61,310.8
2024E EPS	46.72	46.70
2025E EPS	56.37	57.82
2026E EPS	62.27	64.39

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Stock Data

Price	1,407.01 USD
Price Objective	1,680.00 USD
Date Established	7-Mar-2024
Investment Opinion	B-1-7
52-Week Range	601.29 USD - 1,438.17 USD
Mrkt Val (mn) / Shares Out (mn)	672,551 USD / 478.0
Free Float	98.0%
Average Daily Value (mn)	3775.47 USD
BofA Ticker / Exchange	AVGO / NAS
Bloomberg / Reuters	AVGO US / AVGO.OQ
ROE (2024E)	44.7%
Net Dbt to Eqty (Oct-2023A)	104.4%
ESGMeter TM	Medium

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

Glossary

See page 5

iQprofileSM Broadcom Inc

iQmethodSM – Bus Performance*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	26.8%	29.8%	22.8%	19.3%	20.3%
Return on Equity	69.3%	78.7%	44.7%	33.4%	31.7%
Operating Margin	61.1%	61.8%	57.8%	61.3%	61.8%
Free Cash Flow	16,312	17,633	20,794	27,332	32,436

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.0x	1.0x	0.9x	1.0x	1.1x
Asset Replacement Ratio	0.1x	0.1x	0.1x	0.1x	0.1x
Tax Rate	7.6%	6.7%	5.1%	5.1%	5.1%
Net Debt-to-Equity Ratio	119.3%	104.4%	73.7%	51.7%	30.7%
Interest Cover	11.7x	13.6x	8.7x	11.8x	14.5x

Income Statement Data (Oct)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	33,203	35,819	50,211	56,968	61,311
% Change	21.0%	7.9%	40.2%	13.5%	7.6%
Gross Profit	25,107	26,757	38,007	43,352	46,734
% Change	22.8%	6.6%	42.0%	14.1%	7.8%
EBITDA	20,823	22,638	29,392	35,497	39,859
% Change	26.6%	8.7%	29.8%	20.8%	12.3%
Net Interest & Other Income	(1,627)	(1,122)	(2,745)	(2,358)	(1,998)
Net Income (Adjusted)	16,526	18,378	22,806	28,236	31,149
% Change	31.4%	11.2%	24.1%	23.8%	10.3%

Free Cash Flow Data (Oct)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	11,495	14,082	7,145	14,930	18,274
Depreciation & Amortization	4,984	3,835	9,511	9,115	8,980
Change in Working Capital	(1,654)	(1,643)	(1,679)	(2,332)	(413)
Deferred Taxation Charge	NA	NA	NA	NA	NA
Other Adjustments, Net	1,911	1,811	6,329	6,200	6,220
Capital Expenditure	(424)	(452)	(512)	(581)	(625)
Free Cash Flow	16,312	17,633	20,794	27,332	32,436
% Change	22.5%	8.1%	17.9%	31.4%	18.7%
Share / Issue Repurchase	(8,341)	(7,563)	(9,426)	(6,000)	(6,000)
Cost of Dividends Paid	(7,032)	(7,645)	(9,792)	(10,794)	(11,863)
Change in Debt	(426)	(403)	23,076	(10,000)	(8,000)

Balance Sheet Data (Oct)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	12,416	14,189	12,358	12,895	19,468
Trade Receivables	2,958	3,154	5,323	6,530	6,967
Other Current Assets	3,130	3,504	11,445	12,762	12,912
Property, Plant & Equipment	2,223	2,154	2,608	2,527	2,440
Other Non-Current Assets	52,522	49,860	148,016	148,016	148,016
Total Assets	73,249	72,861	179,750	182,730	189,803
Short-Term Debt	440	1,608	2,433	2,433	2,433
Other Current Liabilities	6,612	5,797	17,980	18,173	18,346
Long-Term Debt	39,075	37,621	67,468	57,468	49,468
Other Non-Current Liabilities	4,413	3,847	13,749	13,749	13,749
Total Liabilities	50,540	48,873	101,630	91,823	83,996
Total Equity	22,709	23,988	78,119	90,908	105,807
Total Equity & Liabilities	73,249	72,861	179,750	182,730	189,803

* For full definitions of iQmethodSM measures, see page 11.

Company Sector

Semiconductors

Company Description

Broadcom has an extensive semiconductor product portfolio, which addresses applications within the wired infrastructure, wireless communications, enterprise storage, and industrial end markets. Applications for Broadcom's products in these end markets include data center networking, home connectivity, broadband access, telecommunications equipment, smartphones, base stations, servers, storage, factory automation, power generation, alternative energy systems, and displays.

Investment Rationale

We rate Broadcom Buy due to its high-quality diversified exposure to secular product cycles in the smartphone, cloud data center, telecom and enterprise storage markets. Additionally, with 45%+ EBITDA/FCF margins, Broadcom is among the most profitable semiconductor companies, which is likely to continue to drive strong cash returns.

Stock Data

Average Daily Volume 2,683,327

Quarterly Earnings Estimates

	2023	2024
Q1	10.33A	10.99A
Q2	10.32A	10.40E
Q3	10.54A	11.63E
Q4	11.06A	13.66E

Summary of model changes

Exhibit 1: Summary of sales and EPS changes

We increase sales slightly in the coming years

	Sales (\$mn, Non GAAP)			EPS (Non-GAAP)		
	Old	NEW	delta	Old	NEW	delta
1Q24	\$11,805	\$11,961	\$156	\$10.77	\$10.99	\$0.22
2Q24E	\$12,360	\$11,855	(\$505)	\$10.96	\$10.40	(\$0.56)
3Q24E	\$12,656	\$12,555	(\$101)	\$11.82	\$11.63	(\$0.19)
4Q24E	\$13,178	\$13,839	\$661	\$13.13	\$13.66	\$0.53
FY24E	\$50,000	\$50,211	\$211	\$46.72	\$46.70	(\$0.02)
YoY%	39.6%	40.2%	0.4%	10.6%	10.5%	0.0%
1Q25E	\$13,472	\$13,973	\$501	\$13.59	\$13.99	\$0.40
2Q25E	\$13,463	\$13,824	\$362	\$13.56	\$13.84	\$0.28
3Q25E	\$13,904	\$14,314	\$410	\$14.15	\$14.50	\$0.35
4Q25E	\$14,413	\$14,856	\$443	\$15.07	\$15.49	\$0.42
FY25E	\$55,251	\$56,968	\$1,716	\$56.37	\$57.82	\$1.45
YoY%	10.5%	13.5%	3.1%	20.7%	23.8%	2.6%
CY24E	\$51,667	\$52,223	\$556	\$49.50	\$49.67	\$0.17
YoY	33.5%	34.4%	1.1%	15.9%	15.7%	0.4%
CY25E	\$56,438	\$58,113	\$1,674	\$58.14	\$59.69	\$1.55
YoY	9.2%	11.3%	3.0%	17.5%	20.2%	2.7%
CY26E	\$60,521	\$62,414	\$1,893	\$63.95	\$66.16	\$2.21
YoY	7.2%	7.4%	3.1%	10.0%	10.8%	3.5%

Source: BofA Global Research estimates, Bloomberg

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Summary of Sales by Product Type

Exhibit 2: Summary of sales by general product types

AI sales remain key growth driver in the model

Summary of Estimates	FY22	FY23E	FY24E	FY25E	FY26E
Total Sales	\$33,203	\$35,819	\$50,211	\$56,968	\$61,311
YoY,%	-	8%	40%	13%	8%
Total Semis	\$25,818	\$28,182	\$30,149	\$33,326	\$35,867
YoY,%	-	9%	7%	11%	8%
AI Semis	\$2,200	\$4,200	\$10,200	\$12,375	\$14,400
YoY,%	-	91%	143%	21%	16%
GenAI (ASIC)	-	\$3,000	\$7,500	\$9,000	\$10,350
YoY,%	-	-	150%	20%	15%
AI Ethernet	-	\$1,200	\$2,700	\$3,375	\$4,050
YoY,%	-	-	125%	25%	20%
Non-AI Semis	\$23,618	\$23,982	\$19,949	\$20,951	\$21,467
YoY,%	-	2%	-17%	5%	2%
Infra Software	\$7,385	\$7,637	\$20,061	\$23,641	\$25,444
YoY,%	-	3%	163%	18%	8%
VMWare	-	-	\$11,372	\$14,772	\$16,187
YoY,%	-	-	-	30%	10%
Other Infra Software	\$7,385	\$7,637	\$8,689	\$8,869	\$9,258
YoY,%	-	-	-	2%	4%
pf-EPS	\$37.60	\$42.25	\$46.70	\$57.82	\$64.39
YoY,%	-	12%	11%	24%	11%

Source: BofA Global Research estimates, company reports

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FQ1 reported vs expectations

Exhibit 3: Summary of FQ1 results

AVGO reported roughly better sales and EPS ahead of consensus

FY (Oct)	Jan-23	Oct-23	Jan-24							
			Guidance	Street	BofAe	Reported	Delta vs. Street (%)	Delta vs. Street (\$)	QoQ	YoY
Sales (\$mn) Non GAAP	\$8,915	\$9,295		\$11,576	\$11,805	\$11,961	3.3%	\$385	28.7%	34.2%
QoQ%	-0.2%	4.7%		24.5%	27.0%	28.7%				
Semiconductor Solutions	7107	7326		7404	7426	7390	-0.2%	(\$14)	0.9%	4.0%
Wireless Communications	2090	2016		2019	2050	2000			-0.8%	-4.3%
Wired Infrastructure	3454	4050		4175	4172	4265			5.3%	23.5%
Industrial	229	236		239	229	215			-8.9%	-6.1%
Enterprise Storage	1260	1010		991	975	887			-12.2%	-29.6%
Infrastructure Software	1808	1969		4575	4379	4571	-0.1%	(\$4)	132.1%	152.8%
CA	1028	1123		1138	1140	1200			6.8%	
Fiber Channel (Brocade)	338	373		387	380	756			102.7%	123.5%
Symantec	442	473		479	482	490				
VMW	0	0		2629	2376	2125				
Gross Margin (Non GAAP) %	73.8%	74.3%		75.8%	75.3%	75.4%	-44 bps		104 bps	158 bps
Gross Profit (Non GAAP)	6,578	6,908			8,883	9,014			30.5%	37.0%
R&D (Non GAAP)	929	940			1,927	1,444			53.6%	55.4%
SG&A (Non GAAP)	219	221			442	739			234.4%	237.4%
Opex Total (Non GAAP)	1,148	1,161			2,369	2,183			88.0%	90.2%
Operating Income (Non GAAP)	5,430	5,747		\$6,450	6,514	6,831	5.9%	\$381.0	18.9%	25.8%
Op Margin %	60.9%	61.8%		55.7%	55.2%	57.1%	139 bps		-472 bps	-380 bps
Adj. EBITDA	5,678	6,048		6,621	6,794	7,156			18.3%	26.0%
Adj. EBITDA margin %	63.7%	65.1%			57.5%	59.8%			-524 bps	-386 bps
		6.0%								
Net Financial income (Non-GAAP)	(307)	(250)			(669)	(774)				
Tax expense (Non GAAP)	640	687			775	803			16.9%	25.5%
Net Income (GAAP)	3,774	3,524			3,694	1,274			-63.8%	-66.2%
Diluted EPS (GAAP)	\$8.80	\$8.25			\$7.99	\$2.73			-66.9%	-69.0%
Net Income (Non GAAP)	4,483	4,810			5,071	5,254			9.2%	17.2%
Diluted EPS (Non GAAP)	\$10.33	\$11.06		\$10.42	\$10.77	\$10.99	5.5%	\$0.57	-0.6%	6.4%
Diluted Shares (Non GAAP)	434	435			471	478			9.9%	10.1%

Source: BofA Global Research estimates, Bloomberg, Visible Alpha, company reports

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FQ2 guidance vs. expectations

Exhibit 4: Summary of FQ2 Guidance

AVGO did not provide guidance for Q2 (though includes VMWare)

FY (Oct)	Jan-24	Apr-24E			
	Reported	BofA	Street	Guidance	BofA
Sales (\$mn) Non GAAP	\$11,961	\$12,360	\$11,971		\$11,855
QoQ%	28.7%	4.7%	3.4%		-0.9%
Semiconductor Solutions	7390	7219	7230		7117
Wireless Communications	2000	1664	1648		1638
Wired Infrastructure	4265	4385	4403		4414
Industrial & Other	215	224	238		213
Enterprise Storage	887	946	934		852
Infrastructure Software	4571	5141	5019		4739
CA	1200	1116	1213		1176
Fiber Channel (Brocade)	756	384	411		405
Symantec	490	480	445		480
VMW	2125	3161	3041		2678
Gross Margin (Non GAAP) %	75.4%	77.0%	76.5%		75.8%
Gross Profit (Non GAAP)	9,014	9,517			8,986
R&D (Non GAAP)	1,444	2,120			1,588
SG&A (Non GAAP)	739	486			813

Exhibit 4: Summary of FQ2 Guidance

AVGO did not provide guidance for Q2 (though includes VMware)

FY (Oct)	Jan-24		Apr-24E	
Opex Total (Non GAAP)	2,183	2,606		2,401
Operating Income (Non GAAP)	6,831	6,912	\$6,892	6,585
Op Margin %	57.1%	55.9%	57.6%	55.5%
Adj. EBITDA	7,156	7,199	7,322	6,909
Adj. EBITDA margin %	59.8%	58.2%		58.3%
Net Financial income (Non-GAAP)	(774)	(669)		(679)
Tax expense (Non GAAP)	803	827		783
Net Income (GAAP)	1,274	3,847		1,173
Diluted EPS (GAAP)	\$2.73	\$7.93		\$2.44
Net Income (Non GAAP)	5,254	5,416		5,123
Diluted EPS (Non GAAP)	\$10.99	\$10.96	\$11.22	\$10.40
Diluted Shares (Non GAAP)	478	472		492

Source: BofA Global Research estimates, Bloomberg, Visible Alpha, company reports

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Balance sheet, cash flow snapshot

Exhibit 5: Summary of cash positioning and inventory balance

AVGO net cash position decreased in 1Q24

	1Q23	2Q23	3Q23	4Q23	1Q24		
	Jan-23	Apr-23	Jul-23	Oct-23	Jan-24	QoQ	YoY
Total Cash	\$12,647	\$11,553	\$12,055	\$14,189	11,864	-16.4%	-6.2%
ST Debt	\$1,115	\$1,117	\$1,119	\$1,608	2,433		
LT Debt	\$38,167	\$38,194	\$38,222	\$37,621	73,468		
Total Debt	\$39,282	\$39,311	\$39,341	\$39,229	75,901		
Net Cash	(\$26,635)	(\$27,758)	(\$27,286)	(\$25,040)	(\$64,037)		
Net Cash/Share	(\$61.37)	(\$63.81)	(\$62.58)	(\$57.56)	(\$133.97)		
DSO	33.1	31.7	30.0	31.0	37.91		
DPO	28.9	29.0	33.4	38.2	29.77		
Inventory \$	1,899	1,886	1,842	1,898	1,920	1.2%	1.1%
Inventory Turns	6.1	5.6	5.9	6.1	9.55		
Inventory Days	59.5	65.7	62.0	60.0	38.2	-36.3%	-35.8%
Cash Conversion days	63.7	68.4	58.6	52.7	46.3		
Cash Flow from Ops	\$4,036	\$4,502	\$4,719	\$4,828	4,815	-0.3%	19.3%
Capex	(\$103)	(\$122)	(\$122)	(\$105)	(122)	16.2%	18.4%
Free cash flow	\$3,933	\$4,380	\$4,597	\$4,723	4,693	-0.6%	19.3%
EBITDA	\$4,103	\$4,008	\$3,856	\$4,240	2,083	-50.9%	-49.2%

Source: BofA Global Research, company reports

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Glossary

AVGO: Broadcom

MRVL: Marvell Technology

ASIC: Application specific integrated circuit

AI: Artificial intelligence

genAI: generative AI

TPU: Tensor processing unit

VMW: VMware



Exhibit 6: AVGO – Income Statement (\$mn)

We model FY24 sales of ~\$50bn post VMW acquisition

FY (Oct)	1Q23	2Q23	3Q23	4Q23	1Q24	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	FY23	FY24E	FY25E	CY23	CY24E
(\$mn)	Jan-23	Apr-23	Jul-23	Oct-23	Jan-24	Apr-24E	Jul-24E	Oct-24E	Jan-25E	Apr-25E	Jul-25E	Oct-25E	Oct-23	Oct-24E	Oct-25E	Jan-24	Jan-25E
Net revenue (Non-GAAP)	\$8,915.	\$8,733.	\$8,876.	\$9,295.	\$11,961.	\$11,855.	\$12,555.	\$13,839.	\$13,972.	\$13,824.	\$14,314.	\$14,856.	\$35,819.	\$50,210.	\$56,967.	\$38,86	\$52,222.6
	0	0	0	0	0	5	2	2	8	3	1	4	0	9	6	5.0	\$52,222.6
QoQ %	-0.2%	-2.0%	1.6%	4.7%	28.7%	-0.9%	5.9%	10.2%	1.0%	-1.1%	3.5%	3.8%					
YoY %	15.7%	7.8%	4.9%	4.1%	34.2%	35.8%	41.5%	48.9%	16.8%	16.6%	14.0%	7.4%	7.9%	40.2%	13.5%	12.9%	34.4%
Total cost of product sold (GAAP)	2911	2618	2712	2888	4586	4539	4683	4974	4980	4978	5116	5246	11129	18782	20320	12804	19177
Gross Profit (Non-GAAP)	6578	6606	6665	6908	9014	8986	9517	10490	10612	10541	10893	11306	26757	38007	43352	29193	39606
R&D (Non-GAAP)	929	958	913	940	1444	1588	1493	1404	1389	1431	1445	1431	3740	5929	5697	6366	10358
SG&A (Non-GAAP)	219	236	216	221	739	813	772	718	704	697	683	662	892	3042	2746	1412	3007
Opex (Non-GAAP)	1148	1194	1129	1161	2183	2401	2265	2122	2093	2128	2128	2093	4632	8971	8443	5667	8882
Operating Income (Non-GAAP)	5430	5412	5536	5747	6831	6585	7252	8368	8519	8413	8765	9212	22125	29036	34909	23526	30724
EBITDA	5557	5412	5746	5923	6947	6666	7331	8448	8597	8515	8944	9441	22638	29392	35497	24028	31042
Net financial income (Non-GAAP)	-307	-281	-284	-250	-774	-679	-657	-634	-612	-612	-612	-522	-1122	-2745	-2358	-1589	-2583
Pretax Income (Non-GAAP)	5123	5131	5252	5497	6057	5906	6595	7734	7907	7801	8153	8690	21003	26291	32552	21937	28142
Tax expense (Non-GAAP)	640	642	656	687	803	783	874	1025	1048	1034	1081	1152	2625	3486	4315	2788	3731
Net Income Cont Ops (Non-GAAP)	4483	4489	4596	4810	5254	5123	5720	6709	6859	6767	7072	7538	18378	22806	28236	19149	24411
Dil. EPS (incl. options) (Non-GAAP)	\$9.54	\$9.29	\$9.28	\$9.77	\$8.14	\$7.50	\$8.81	\$10.83	\$11.25	\$11.09	\$11.74	\$12.73	\$37.88	\$35.29	\$46.80	\$36.37	\$38.38
YoY	25.1%	11.9%	3.4%	1.1%	-14.7%	-19.3%	-5.1%	10.8%	38.2%	47.9%	33.3%	17.5%	9.7%	-6.8%	32.6%	-0.3%	5.5%
Total stock comp expense	391	513	629	638	1572	1650	1600	1600	1550	1550	1550	1550	2171	6422	6200	3352	6400
Dil EPS (ex options) (Non-GAAP)	\$10.3	\$10.32	\$10.54	\$11.06	\$10.99	\$10.40	\$11.63	\$13.66	\$13.99	\$13.84	\$14.50	\$15.49	\$42.25	\$46.70	\$57.82	\$42.93	\$49.6
	3	\$10.32	\$10.54	\$11.06	\$10.99	\$10.40	\$11.63	\$13.66	\$13.99	\$13.84	\$14.50	\$15.49	\$42.25	\$46.70	\$57.82	\$42.93	7
GAAP Net Income	3774	3481	3303	3524	1274	1173	1865	2833	3567	3395	3729	4239	14082	7145	14930	11582	9438
GAAP Diluted EPS	\$8.80	\$8.15	\$7.74	\$8.25	\$2.73	\$2.44	\$3.88	\$5.90	\$7.45	\$7.11	\$7.82	\$8.92	\$32.94	\$14.97	\$31.29	\$26.50	\$19.66
Diluted Shares	429	427	427	427	467	481	481	480	479	478	477	475	428	477	477	437	480
Diluted Shares (Non-GAAP)	434	435	436	435	478	492	492	491	490	489	488	487	435	488	488	446	491
Dividends	\$4.60	\$4.60	\$4.60	\$4.60	\$5.25	\$5.25	\$5.25	\$5.25	\$5.78	\$5.78	\$5.78	\$5.78	\$18.40	\$21.00	\$23.10	\$19.05	\$21.53
Non-GAAP Margins (ex SBC)																	
Gross Margin	73.8%	75.6%	75.1%	74.3%	75.4%	75.8%	75.8%	75.8%	76.0%	76.3%	76.1%	76.1%	74.7%	75.7%	76.1%	75.1%	75.8%
R&D Expense	10.4%	11.0%	10.3%	10.1%	12.1%	13.4%	11.9%	10.1%	9.9%	10.4%	10.1%	9.6%	10.4%	11.8%	10.0%	10.9%	11.2%
SG&A Expense	2.5%	2.7%	2.4%	2.4%	6.2%	6.9%	6.2%	5.2%	5.0%	5.0%	4.8%	4.5%	2.5%	6.1%	4.8%	3.6%	5.8%
Total Opex	12.9%	13.7%	12.7%	12.5%	18.3%	20.3%	18.0%	15.3%	15.0%	15.4%	14.9%	14.1%	12.9%	17.9%	14.8%	14.6%	17.0%
Operating Margin	60.9%	62.0%	62.4%	61.8%	57.1%	55.5%	57.8%	60.5%	61.0%	60.9%	61.2%	62.0%	61.8%	57.8%	61.3%	60.5%	58.8%
EBITDA margin	62.3%	62.0%	64.7%	63.7%	58.1%	56.2%	58.4%	61.0%	61.5%	61.6%	62.5%	63.6%	63.2%	58.5%	62.3%	61.8%	59.4%

Source: BofA Global Research estimates, company report

BofA GLOBAL RESEARCH





Exhibit 7: AVGO – Segment model (\$mn)

We model modest semis growth in FY24 as AI demand offset by cyclical headwinds

FY (Oct) (\$mn)	1Q23 Jan-23	2Q23 Apr-23	3Q23 Jul-23	4Q23 Oct-23	1Q24 Jan-24	2Q24E Apr-24E	3Q24E Jul-24E	4Q24E Oct-24E	1Q25E Jan-25E	2Q25E Apr-25E	3Q25E Jul-25E	4Q25E Oct-25E	FY23 Oct-23	FY24E Oct-24E	FY25E Oct-25E	CV23 Jan-24	CV24E Jan-25E
Semiconductor Solutions	7107	6808	6941	7326	7390	7117	7406	8237	8150	8010	8326	8840	28182	30149	33326	28465	30909
Infrastructure Software	1808	1925	1935	1969	4571	4739	5150	5602	5823	5814	5988	6016	7637	20061	23641	10400	21314
IP and other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (Non GAAP)	\$8,915	\$8,733	\$8,876	\$9,295	\$11,961	\$11,855	\$12,555	\$13,839	\$13,973	\$13,824	\$14,314	\$14,856	\$35,819	\$50,211	\$56,968	\$38,865	\$52,223
QoQ %																	
Semiconductor Solutions	0.2%	-4.2%	2.0%	5.5%	0.9%	-3.7%	4.1%	11.2%	-1.1%	-1.7%	3.9%	6.2%					
Infrastructure Software	1.5%	-24.2%	3.8%	22.6%	-0.8%	-18.1%	1.4%	25.1%	0.5%	-18.8%	-1.0%	18.3%					
IP and other	NA	NA	NA	NA	NA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
Total (Non GAAP)	-0.2%	-2.0%	1.6%	4.7%	28.7%	-0.9%	5.9%	10.2%	1.0%	-1.1%	3.5%	3.8%					
YoY %																	
Semiconductor Solutions	21.0%	9.3%	4.8%	3.3%	4.0%	4.5%	6.7%	12.4%	10.3%	12.6%	12.4%	7.3%	9.2%	7.0%	10.5%	5.2%	8.6%
Infrastructure Software	3.2%	-8.6%	-0.4%	-2.1%	-4.3%	3.4%	0.9%	3.1%	4.4%	3.4%	1.0%	-4.5%	3.4%	162.7%	17.8%	41.3%	104.9%
IP and other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total (Non GAAP)	15.7%	7.8%	4.9%	4.1%	34.2%	35.8%	41.5%	48.9%	16.8%	16.6%	14.0%	7.4%	7.9%	40.2%	13.5%	12.9%	34.4%
% of revenues																	
Semiconductor Solutions	79.7%	78.0%	78.2%	78.8%	61.8%	60.0%	59.0%	59.5%	58.3%	57.9%	58.2%	59.5%	78.7%	60.0%	58.5%	73.2%	59.2%
Infrastructure Software	20.3%	22.0%	21.8%	21.2%	38.2%	40.0%	41.0%	40.5%	41.7%	42.1%	41.8%	40.5%	21.3%	40.0%	41.5%	26.8%	40.8%
IP and other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total (Non GAAP)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: BofA Global Research estimates, company reports

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Exhibit 8: AVGO – Balance Sheet (\$mn)

AVGO has a significant net debt position

FY (Oct) (\$mn)	1Q23 Jan-23	2Q23 Apr-23	3Q23 Jul-23	4Q23 Oct-23	1Q24 Jan-24	2Q24E Apr-24E	3Q24E Jul-24E	4Q24E Oct-24E	1Q25E Jan-25E	2Q25E Apr-25E	3Q25E Jul-25E	4Q25E Oct-25E	FY23 Oct-23	FY24E Oct-24E	FY25E Oct-25E	CY23 Jan-24	CY24E Jan-25E
ASSETS																	
Current assets:																	
Cash and cash equivalents	12647	11553	12055	14189	11864	10937	11362	12358	12196	14139	17327	12895	14189	12358	12895	11864	12196
Trade accounts receivable, net	3234	3031	2914	3154	4969	4560	4829	5323	6142	6077	6292	6530	3154	5323	6530	4969	6142
Inventory	1899	1886	1842	1898	1920	2743	2831	3006	3557	4103	4217	4323	1898	3006	4323	1920	3557
Assets of Discontinued Operation																	
Other current assets	1056	1401	1522	1606	8439	8439	8439	8439	8439	8439	8439	8439	1606	8439	8439	8439	8439
Total current assets	18836	17871	18333	20847	27192	26679	27461	29126	30335	32758	36274	32188	20847	29126	32188	27192	30335
Property, plant and equipment, net	2201	2209	2180	2154	2662	2645	2627	2608	2588	2568	2548	2527	2154	2608	2527	2662	2588
Goodwill	43614	43614	43619	43653	97586	97586	97586	97586	97586	97586	97586	97586	43653	97586	97586	97586	97586
Intangible assets, net	6225	5434	4654	3867	47185	47185	47185	47185	47185	47185	47185	47185	3867	47185	47185	47185	47185
Other long-term assets	2100	2539	2809	2340	3245	3245	3245	3245	3245	3245	3245	3245	2340	3245	3245	3245	3245
Total assets	72976	71667	71595	72861	177870	177340	178104	179750	180938	183342	186838	182730	72861	179750	182730	177870	180938
LIABILITY AND SE																	
Current liabilities:																	
Accounts payable	923	831	992	1210	1496	1496	1544	1640	1642	1641	1687	1729	1210	1640	1729	1496	1642
Employee compensation and benefits	536	634	831	935	1128	697	914	1029	1241	767	1006	1131	935	1029	1131	1128	1241
Capital lease obligations - current																	
Other current liabilities	4909	4929	4403	3652	15312	15312	15312	15312	15312	15312	15312	15312	3652	15312	15312	15312	15312
Current portion of long-term debt	1115	1117	1119	1608	2433	2433	2433	2433	2433	2433	2433	2433	1608	2433	2433	2433	2433
Total current liabilities	7483	7511	7345	7405	20369	19939	20203	20413	20628	20153	20437	20606	7405	20413	20606	20369	20628
Long-term liabilities:																	
Long-term debt	38167	38194	38222	37621	73468	71468	69468	67468	65468	65468	65468	57468	37621	67468	57468	73468	65468
Capital lease obligations - non-current																	
Other long-term liabilities	4016	3955	3949	3847	13749	13749	13749	13749	13749	13749	13749	13749	3847	13749	13749	13749	13749
Total liabilities	49666	49660	49516	48873	107586	105156	103420	101630	99845	99370	99654	91823	48873	101630	91823	107586	99845
Total shareholders' equity	23310	22007	22079	23988	70284	72184	74684	78119	81094	83972	87184	90908	23988	78119	90908	70284	81094
Liabilities and SE	72976	71667	71595	72861	177870	177340	178104	179750	180938	183342	186838	182730	72861	179750	182730	177870	180938
Total cash incl. equivalents	12647	11553	12055	14189	11864	10937	11362	12358	12196	14139	17327	12895	14189	12358	12895	11864	12196
Short-term debt	1115	1117	1119	1608	2433	2433	2433	2433	2433	2433	2433	2433	1608	2433	2433	2433	2433
Long-term debt	38167	38194	38222	37621	73468	71468	69468	67468	65468	65468	65468	57468	37621	67468	57468	73468	65468
Total debt	39282	39311	39341	39229	75901	73901	71901	69901	67901	67901	67901	59901	39229	69901	59901	75901	67901
	(\$26,635)	(\$27,758)	(\$27,286)	(\$25,040)								(\$47,006)	(\$25,040)		(\$47,006)		
Net Cash	)	)	)	)	(\$64,037)	(\$62,964)	(\$60,539)	(\$57,543)	(\$55,705)	(\$53,762)	(\$50,574)	)	)	(\$57,543)	)	(\$64,037)	(\$55,705)
					(\$133.97)	(\$127.87)	(\$123.08)	(\$117.13)	(\$113.66)	(\$109.95)	(\$103.68)			(\$117.13)		(\$133.97)	(\$113.66)
Net Cash/dil. share	(\$61.37)	(\$63.81)	(\$62.58)	(\$57.56)	)	)	)	)	)	)	)	(\$96.59)	(\$57.56)	)	(\$96.59)))

Source: BofA Global Research estimates, company reports

BofA GLOBAL RESEARCH





Exhibit 9: AVGO – Statement of Cash Flows (\$mn)

AVGO generates leading FCF margins

FY (Oct) (\$mn)	1Q23 Jan-23	2Q23 Apr-23	3Q23 Jul-23	4Q23 Oct-23	1Q24 Jan-24	2Q24E Apr-24E	3Q24E Jul-24E	4Q24E Oct-24E	1Q25E Jan-25E	2Q25E Apr-25E	3Q25E Jul-25E	4Q25E Oct-25E	FY23 Oct-23	FY24E Oct-24E	FY25E Oct-25E	CY23 Jan-24	CY24E Jan-25E
Net income	3774	3481	3303	3524	1274	1173	1865	2833	3567	3395	3729	4239	14082	7145	14930	11582	9438
Reconciliations to net income																	
Depreciation and amortization	1032	939	932	932	2345	2415	2383	2368	2219	2293	2298	2305	3835	9511	9115	5148	9385
Loss on extinguishment of debt																	
Loss on disposal of PP&E																	
Share-based compensation	391	513	629	638	1582	1650	1600	1600	1550	1550	1550	1550	2171	6432	6200	3362	6400
Tax benefits of share-based comp.																	
Excess tax benefits from share comp																	
Trade accounts receivable	-276	185	135	-231	1756	409	-269	-494	-819	65	-215	-238	-187	1402	-1208	1845	-1173
Inventory	26	13	44	-56	-14	-823	-87	-176	-551	-546	-114	-107	27	-1100	-1317	-13	-1637
Accounts payable	-80	-114	188	215	-74	0	48	96	2	-1	45	43	209	70	90	215	146
Employee compensation/benefits	-657	91	184	103	-660	-431	217	114	212	-474	238	126	-279	-760	103	-282	113
Other current assets & liabilities	570	-165	-339	-694	-2182								-628	-2182		-3380	
Other LT assets and liabilities	-164	-179	-139	-303	891								-785	891		270	
Net cash from operating activities	\$4,036.0	\$4,502.0	\$4,719.0	\$4,828.0	\$4,815.0	\$4,393.5	\$5,755.9	\$6,341.3	\$6,180.3	\$6,283.0	\$7,532.1	\$7,917.2	\$18,085.0	\$21,305.8	\$27,912.6	\$18,864.0	\$22,671.0
Purchases of PP&E	-103	-122	-122	-105	-122	-121	-128	-141	-143	-141	-146	-152	-452	-512	-581	-471	-533
Acquisitions and investments (net)		-197	-17	-36	-25416								-250	-25416		-25666	
Proceeds from disposal of PP&E					74									74		74	
Net cash used in investing activities	-\$103.0	-\$318.0	-\$144.0	-\$124.0	\$25,477.0	-\$120.9	-\$128.1	-\$141.2	-\$142.5	-\$141.0	-\$146.0	-\$151.5	-\$689.0	\$25,867.1	-\$581.1	\$26,063.0	-\$532.7
Debt repayments	-260			-143	-934	-2000	-2000	-2000	-2000			-8000	-403	-6934	-10000	-1077	-8000
Issuance of ordinary shares (net)		63		59									122			122	
Repurchase of ordinary shares	-1521	-3420	-2167	-577	-7176	-750	-750	-750	-1500	-1500	-1500	-1500	-7685	-9426	-6000	-13340	-3750
Dividend payments to shareholders	-1926	-1914	-1901	-1904	-2435	-2450	-2452	-2455	-2699	-2699	-2698	-2698	-7645	-9792	-10794	-8154	-10056
Payment on capital lease obligation																	
Excess tax benefits from stock comp	5	-7	-5	-5	-1128								-12	-1128		-1145	
Net cash from financing activities	\$3,702.0	\$5,278.0	\$4,073.0	\$2,570.0	\$18,337.0	\$5,199.9	\$5,202.2	\$5,204.6	\$6,199.5	\$4,198.9	\$4,198.3	\$12,197.7	\$15,623.0	\$2,730.3	\$26,794.5	\$6,416.0	\$21,806.2
Increase in cash and equivalents	231	-1094	502	2134	-2325	-927	426	996	-162	1943	3188	-4432	1773	-1831	537	-783	332
Free Cash Flow, quarterly	3933	4380	4597	4723	4693	4273	5628	6200	6038	6142	7386	7766	17633	20794	27332	18393	22138
Free Cash Flow / Share	\$9.06	\$10.07	\$10.54	\$10.86	\$9.82	\$8.68	\$11.44	\$12.62	\$12.32	\$12.56	\$15.14	\$15.96	\$40.54	\$42.58	\$55.96	\$41.24	\$45.05
Free Cash Flow as % of Sales (ttm)	49%	49%	49%	49%	47%	44%	42%	41%	42%	44%	46%	48%					

Source: BofA Global Research estimates, company reports

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Price objective basis & risk

Broadcom Inc (AVGO)

Our \$1680 price objective for Broadcom is based on 28x CY25E P/E, the upper end of its 7x-28x historical range, though justified given double-digit EPS growth and best-in-semis profitability, FCF generation, and returns.

Downside risks to our price objective are: 1) semiconductor cycle risks, including sensitivity to US/China trade relations, 2) high exposure to Apple and Google with potential design out risks, 3) competitive risks in networking, smartphone, storage, enterprise software markets, 4) frequent acquirer of assets, which increases financial and integration risks, and 5) recent strategy towards moving into non-core software businesses creates execution risks.

Analyst Certification

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

US - Semiconductors and Semiconductor Capital Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	Advanced Micro Devices, Inc	AMD	AMD US	Vivek Arya
	Analog Devices Inc.	ADI	ADI US	Vivek Arya
	Applied Materials, Inc.	AMAT	AMAT US	Vivek Arya
	Arm Holdings	ARM	ARM US	Vivek Arya
	Broadcom Inc	AVGO	AVGO US	Vivek Arya
	Cadence	CDNS	CDNS US	Vivek Arya
	Camtek	CAMT	CAMT US	Vivek Arya
	KLA Corporation	KLAC	KLAC US	Vivek Arya
	Lam Research Corp.	LRCX	LRCX US	Vivek Arya
	M/A-Com	MTSI	MTSI US	Vivek Arya
	Marvell Technology Group Ltd.	MRVL	MRVL US	Vivek Arya
	Microchip	MCHP	MCHP US	Vivek Arya
	Micron Technology, Inc	MU	MU US	Vivek Arya
	Nova	NVMI	NVMI US	Vivek Arya
	NVIDIA Corporation	NVDA	NVDA US	Vivek Arya
	NXP Semiconductors NV	NXPI	NXPI US	Vivek Arya
	onsemi	ON	ON US	Vivek Arya
	Synopsys	SNPS	SNPS US	Vivek Arya
NEUTRAL				
	Advanced Energy Industries	AEIS	AEIS US	Duksan Jang
	Allegro MicroSystems	ALGM	ALGM US	Blake Friedman
	Axcelis Technologies	ACLS	ACLS US	Duksan Jang
	Coherent Corp	COHR	COHR US	Vivek Arya
	GlobalFoundries	GFS	GFS US	Vivek Arya
	Intel	INTC	INTC US	Vivek Arya
	Lattice Semiconductor	LSCC	LSCC US	Blake Friedman
	Texas Instruments Inc.	TXN	TXN US	Vivek Arya
UNDERPERFORM				
	Ambarella	AMBA	AMBA US	Vivek Arya
	Credo Technology	CRDO	CRDO US	Vivek Arya
	Lumentum Holdings	LITE	LITE US	Vivek Arya
	Qorvo Inc.	QRVO	QRVO US	Vivek Arya
	Skyworks Solutions, Inc.	SWKS	SWKS US	Vivek Arya
	Teradyne	TER	TER US	Vivek Arya
	Wolfspeed Inc	WOLF	WOLF US	Vivek Arya

US - Semiconductors and Semiconductor Capital Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
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iQmethodSM Measures Definitions**Business Performance**

Return On Capital Employed

Return On Equity

Operating Margin

Earnings Growth

Free Cash Flow

Numerator

NOPAT = (EBIT + Interest Income) × (1 – Tax Rate) + Goodwill Amortization

Net Income

Operating Profit

Expected 5 Year CAGR From Latest Actual

Cash Flow From Operations – Total Capex

Denominator

Total Assets – Current Liabilities + ST Debt + Accumulated Goodwill

Amortization

Shareholders' Equity

Sales

N/A

N/A

Quality of Earnings

Cash Realization Ratio

Asset Replacement Ratio

Tax Rate

Net Debt-To-Equity Ratio

Interest Cover

Numerator

Cash Flow From Operations

Capex

Tax Charge

Net Debt = Total Debt – Cash & Equivalents

EBIT

Denominator

Net Income

Depreciation

Pre-Tax Income

Total Equity

Interest Expense

Valuation Toolkit

Price / Earnings Ratio

Price / Book Value

Dividend Yield

Free Cash Flow Yield

Enterprise Value / Sales

Numerator

Current Share Price

Current Share Price

Annualised Declared Cash Dividend

Cash Flow From Operations – Total Capex

EV = Current Share Price × Current Shares + Minority Equity + Net Debt +

Other LT Liabilities

Enterprise Value

Denominator

Diluted Earnings Per Share (Basis As Specified)

Shareholders' Equity / Current Basic Shares

Current Share Price

Market Cap = Current Share Price × Current Basic Shares

Sales

Basic EBIT + Depreciation + Amortization

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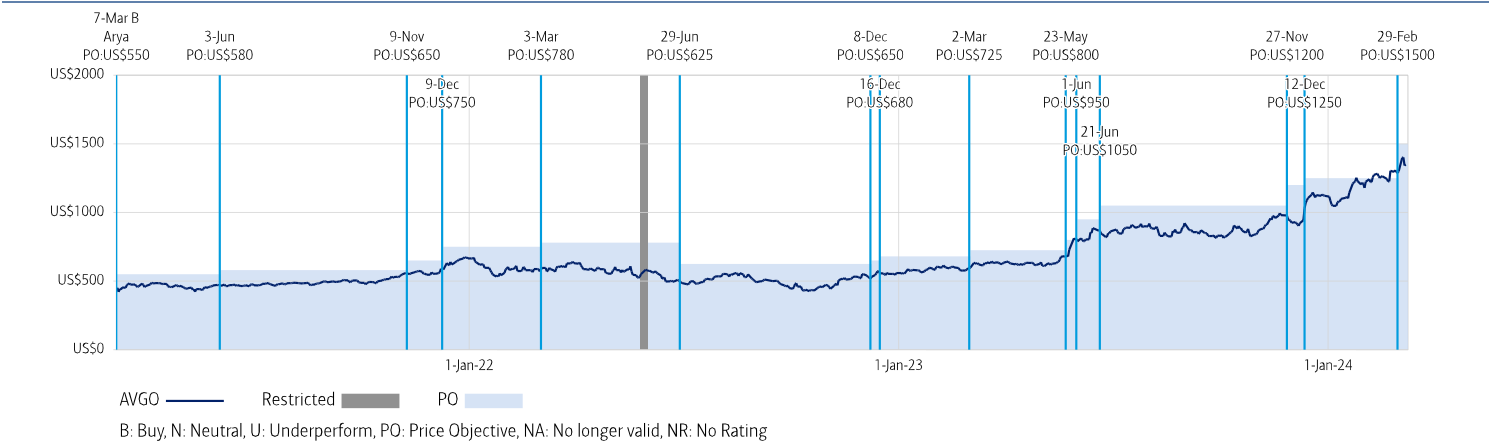
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Broadcom (AVGO) Price Chart



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

Coverage Universe	Count	Percent	Inv. Banking Relationships ^{R1}	Count	Percent
Buy	215	53.09%	Buy	111	51.63%
Hold	97	23.95%	Hold	45	46.39%
Sell	93	22.96%	Sell	24	25.81%

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}
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Underperform	N/A	≥ 20%

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