

Cadence

Structural growth on track, ignore quarterly noise, Buy, \$330 PO

Reiterate Rating: BUY | PO: 330.00 USD | Price: 306.58 USD

Strong backlog, AI tailwinds, expanding margins

Reiterate Buy as we believe CDNS (and peer SNPS) offer one of the most unique ways to gain exposure to rising R&D budgets and chip complexity required for advanced AI products. These EDA industry leaders trade at premium multiples, but can also offer consistent 12-15% sales and 15-20% pf-EPS growth rates on a structural basis, largely impervious to the macro cycle as chip designers rarely cut back on R&D spending. However, there are quarterly fluctuations owing to timing of hardware revenue and expenses, whose effects tend to dissipate within a quarter or two. That's what we assume should happen with CDNS who reported a Q4 beat, guided CY24 revenues slightly above consensus, but guided Q1 well below. However, as discussed, we expect quarterly sales to consistently grow QoQ, tweak CY24/25 pf-EPS by +0%/+1%, raise PO to \$330 from \$315 on higher 48x CY25 PE vs 46x prior, still within 22x-52x historical range and within our 2.5-3x Q4 beat (sales/EPS 1%/3% above Street).

Likes: GenAI ramp, record backlog, IP growth

1) Cerebrus (flagship AI offering) sales at 3x YoY run rate exiting CY23, CDNS exposed to ramping AI infrastructure build-out via Nvidia, Broadcom, Renesas partnerships, now past initial deployment stage at customers and bringing in additional peripheral product sales (signoff, synthesis); 2) Backlog continues to grow, reaching a record \$6bn (+11% QoQ) in Q4; 3) IP sales grew healthily in Q4 +23% QoQ, with stronger growth likely expected throughout CY24E, levered to new Intel Foundry partnership and now at healthy profitability levels.

Risks: Q1 hardware, China exposure, high valuation

1) Q1 was guided to \$1.00bn in sales, below Street's \$1.11bn and our \$1.08bn. We point to hardware lumpiness as the culprit (tough YoY comps at 14% of total sales in 1Q24E vs. 20% in 1Q23), but should generally recover sequentially thereafter throughout CY24E. 2) China exposure at 15% of sales (down from 17% in Q3) remains a key concern given susceptibility to US government restrictions and emerging domestic competition; 3) Valuation remains high vs semis ecosystem, likely due to strong software exposure, at >50x NTM PE vs peer SNPS nearly 41x. However, premium valuation somewhat justified sector resiliency in semis downcycle, strong sales growth, and growing profitability.

Estimates (Dec) (US\$)	2022A	2023A	2024E	2025E	2026E
EPS	4.27	5.15	5.92	6.90	7.88
GAAP EPS	3.09	3.82	4.10	4.91	5.68
EPS Change (YoY)	29.8%	20.6%	15.0%	16.6%	14.2%
Consensus EPS (Bloomberg)			5.93	6.83	8.02
DPS	0	0	0	0	0
Valuation (Dec)					
P/E	71.8x	59.5x	51.8x	44.4x	38.9x
GAAP P/E	99.2x	80.3x	74.8x	62.4x	54.0x
EV / EBITDA*	56.1x	47.0x	41.5x	35.8x	32.9x
Free Cash Flow Yield*	1.3%	1.5%	1.5%	2.0%	2.2%

* For full definitions of *IQmethod*SM measures, see page 12.

12 February 2024

Equity

Key Changes

(US\$)	Previous	Current
Price Obj.	315.00	330.00
2024E Rev (m)	4,587.6	4,580.1
2025E Rev (m)	5,140.7	5,146.1
2026E Rev (m)	NA	5,761.9
2025E EPS	6.85	6.90
2026E EPS	NA	7.88

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Stock Data

Price	306.58 USD
Price Objective	330.00 USD
Date Established	12-Feb-2024
Investment Opinion	B-1-9
52-Week Range	183.80 USD - 315.70 USD
Mkt Val (mn) / Shares Out (mn)	85,560 USD / 279.1
Free Float	99.1%
Average Daily Value (mn)	439.69 USD
BofA Ticker / Exchange	CDNS / NAS
Bloomberg / Reuters	CDNS US / CDNS.OQ
ROE (2024E)	40.6%
Net Dbt to Eqty (Dec-2023A)	-10.5%
ESGMeter™	High

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

See Page 6 for glossary

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Timestamp: 12 February 2024 10:41PM EST

iQprofileSM Cadence

iQmethodSM – Bus Performance*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Return on Capital Employed	32.4%	33.9%	31.1%	30.6%	29.7%
Return on Equity	42.8%	45.7%	40.6%	37.5%	35.6%
Operating Margin	40.3%	42.0%	42.5%	43.7%	44.6%
Free Cash Flow	1,119	1,247	1,284	1,706	1,912

iQmethodSM – Quality of Earnings*

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash Realization Ratio	1.1x	1.0x	0.9x	1.0x	0.9x
Asset Replacement Ratio	0.9x	0.7x	0.8x	0.6x	0.6x
Tax Rate	18.8%	18.8%	23.0%	23.0%	23.0%
Net Debt-to-Equity Ratio	-8.5%	-10.5%	-29.6%	-41.5%	-51.2%
Interest Cover	NM	47.5x	NM	NM	NM

Income Statement Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Sales	3,562	4,090	4,580	5,146	5,762
% Change	19.2%	14.8%	12.0%	12.4%	12.0%
Gross Profit	3,241	3,710	4,186	4,714	5,290
% Change	18.3%	14.5%	12.8%	12.6%	12.2%
EBITDA	1,509	1,801	2,037	2,366	2,570
% Change	27.2%	19.3%	13.1%	16.1%	8.7%
Net Interest & Other Income	(14)	16	(28)	(24)	(24)
Net Income (Adjusted)	1,173	1,404	1,612	1,866	2,136
% Change	27.8%	19.7%	14.8%	15.8%	14.5%

Free Cash Flow Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Net Income from Cont Operations (GAAP)	849	1,041	1,116	1,328	1,538
Depreciation & Amortization	132	145	146	170	184
Change in Working Capital	88	(99)	(171)	(48)	(104)
Deferred Taxation Charge	(108)	(37)	(52)	(52)	(52)
Other Adjustments, Net	281	298	366	412	461
Capital Expenditure	(123)	(102)	(121)	(103)	(115)
Free Cash Flow	1,119	1,247	1,284	1,706	1,912
% Change	8.0%	11.5%	3.0%	32.9%	12.1%
Share / Issue Repurchase	(1,057)	(704)	(650)	(800)	(800)
Cost of Dividends Paid	0	0	0	0	0
Change in Debt	400	(100)	0	0	0

Balance Sheet Data (Dec)

(US\$ Millions)	2022A	2023A	2024E	2025E	2026E
Cash & Equivalents	882	1,008	1,643	2,549	3,661
Trade Receivables	487	489	636	691	845
Other Current Assets	338	479	508	509	537
Property, Plant & Equipment	371	403	432	417	399
Other Non-Current Assets	3,059	3,290	3,236	3,184	3,132
Total Assets	5,137	5,669	6,454	7,349	8,575
Short-Term Debt	0	349	0	0	0
Other Current Liabilities	1,348	1,242	1,246	1,254	1,332
Long-Term Debt	648	300	300	300	300
Other Non-Current Liabilities	396	375	375	375	375
Total Liabilities	2,392	2,265	1,920	1,928	2,006
Total Equity	2,745	3,404	4,534	5,421	6,569
Total Equity & Liabilities	5,137	5,669	6,454	7,349	8,575

* For full definitions of iQmethodSM measures, see page 12.

Company Sector

Technical & Design Software

Company Description

Cadence is the second largest provider of electronic design automation (EDA) software and tools used to design, verify, and lay out semiconductor chips and electronics system. Its core competency lies in analog/custom chip design.

Cadence is also the 3rd largest supplier of semiconductor intellectual property, and has aspirations to expand its TAM into the adjacent system analysis market.

Investment Rationale

We rate CDNS Buy. We like CDNS leading position in an EDA industry that is levered to the same secular trends as semis but with much more muted cyclicality. We think CDNS has defensiveness/scarcity value, and is a unique beneficiary of rising chip complexity.

Stock Data

Average Daily Volume

1,513,698

Quarterly Earnings Estimates

	2023	2024
Q1	1.29A	1.12E
Q2	1.22A	1.37E
Q3	1.26A	1.60E
Q4	1.38A	1.82E

Summary of model changes

Exhibit 1: Summary of model changes

We modestly tweak FY24/24E EPS up 0%/1% from prior

FY (Dec)	Sales (\$mn)			Non-GAAP EPS		
	OLD	NEW	Delta	OLD	NEW	Delta
1Q24E	\$1,071	\$1,000	(\$71)	\$1.37	\$1.12	(\$0.25)
2Q24E	\$1,126	\$1,101	(\$25)	\$1.45	\$1.37	(\$0.08)
3Q24E	\$1,175	\$1,193	\$18	\$1.52	\$1.60	\$0.08
4Q24E	\$1,215	\$1,286	\$70	\$1.58	\$1.82	\$0.25
FY24E	\$4,588	\$4,580	(\$8)	\$5.92	\$5.92	(\$0.01)
YoY%	12.4%	12.0%	0%	16.1%	14.9%	0%
1Q25E	\$1,249	\$1,233	(\$16)	\$1.69	\$1.66	(\$0.03)
2Q25E	\$1,264	\$1,275	\$11	\$1.68	\$1.71	\$0.03
3Q25E	\$1,289	\$1,301	\$12	\$1.70	\$1.74	\$0.05
4Q25E	\$1,338	\$1,337	(\$1)	\$1.78	\$1.79	\$0.01
FY25E	\$5,141	\$5,146	\$5	\$6.85	\$6.90	\$0.05
YoY%	12.1%	12.4%	0%	15.6%	16.6%	1%

Source: BofA Global Research estimates, company reports

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Q4 reported vs. expectations

Exhibit 2: Summary of DecQ results

CDNS sales/EPS results of \$1.07bn/\$1.35 beat the Street estimates by +1%/+3%

A v E	Dec-22	Sep-23	Dec-23							
			Guidance	Street	BofA	Reported	Delta (\$mn)	Delta (%)	QoQ	YoY
Revenue	\$899.9	\$1,023.1	\$1,059 (\$1,039-\$1,079)	\$1,061.1	\$1,059.0	\$1,068.6	\$7.5	0.7%	4.5%	18.8%
QoQ%				0.2%	3.5%	4.5%				
EDA	\$791.9	\$910.6		\$935.4	\$936.3	\$929.7	-\$5.7	-0.6%	2.1%	17.4%
IP	\$108.0	\$112.5		\$124.1	\$122.7	\$138.9	\$14.8	11.9%	23.4%	28.6%
Gross Margin (GAAP)	89.6%	89.3%			89.9%	90.3%			97	65
Gross Margin (Non-GAAP)	91.1%	90.6%		91.2%	91.2%	91.7%		49	104	55
Opex (GAAP)	595.2	620.6			620.2	628.0			1.2%	5.5%
Opex (Non-GAAP)	499.6	506.8		518.1	521.7	521.3	\$3.2	0.6%	2.9%	4.4%
Operating Income (GAAP)	211.1	292.9			331.9	336.5			14.9%	59.4%
Operating Margin (GAAP)	23.5%	28.6%	31.0%		31.3%	31.5%			286	803
Operating Income (Non-GAAP)	320.5	420.6		449.5	444.5	458.4	\$8.9	2.0%	9.0%	43.0%
Operating Margin (Non-GAAP)	35.6%	41.1%	42.0%	42.4%	42.0%	42.9%		53	179	729
Other income, net (GAAP)	(0.6)	7.0			(4.1)	25.5			262.3%	-4413.2%
Other income, net (Non-GAAP)	(3.2)	(4.7)			(5.1)	(2.4)			-48.3%	-23.4%
Pretax Income (GAAP)	210.5	300.0			327.8	362.1			20.7%	72.0%
Pretax Income (Non-GAAP)	317.3	415.9			439.4	456.0			9.6%	43.7%
Tax rate (GAAP)	-14.2%	15.2%			26.0%	10.5%			(467)	2473
Tax rate (Non-GAAP)	17.5%	17.5%			17.5%	17.5%			(0)	(0)
Net Income (GAAP)	240.4	254.3			242.6	323.9			27.4%	34.7%
Net Income (Non-GAAP)	261.8	343.1			362.5	376.2			9.6%	43.7%
Diluted EPS (GAAP)	\$0.88	\$0.93	\$0.88 (\$0.85-\$0.91)		\$0.89	\$1.19			27.4%	35.0%
Diluted EPS (Non-GAAP)	\$0.96	\$1.26	\$1.33 (\$1.30-\$1.36)	\$1.34	\$1.33	\$1.38	\$0.04	2.8%	9.7%	44.0%
Diluted Shares (Non-GAAP)	273.0	272.4			272.2	272.4			0.0%	-0.2%
Operating Cash Flow	263.6	395.9			285.4	272.1			-31.3%	3.2%
Free Cash Flow	226.7	373.9			248.3	238.4			-36.2%	5.1%
Free Cash Flow margin	25.2%	36.5%			23.5%	22.3%			(1424)	(289)

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

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Q1 guidance vs. expectations

Exhibit 3: Summary of MarQ guidance

Sales/EPS guide of \$1.00bn/\$1.12 at midpoint -10%/-21% below consensus

	Dec-23	Mar-24E						
	Reported	BofA	Street	Guidance	New BofA	Delta (%)	QoQ	YoY
Revenue	\$1,068.6	\$1,070.8	\$1,106.3	\$1,000 (\$990 - \$1,010)	\$1,000.0	-9.6%	-6.4%	-2.1%
QoQ%	4.5%	1.1%	4.3%		-6.4%			
EDA	\$929.7	\$945.7	\$955.2		\$869.4	-9.0%	-6.5%	-4.4%
IP	\$138.9	\$125.1	\$125.9		\$130.6	3.7%	-6.0%	16.2%
Gross Margin (GAAP)	90.3%	90.1%			90.4%		18	262
Gross Margin (Non-GAAP)	91.7%	91.3%	90.7%		91.8%	106	9	268
Opex (GAAP)	628.0	606.7			654.3		4.2%	13.8%
Opex (Non-GAAP)	521.3	520.0	525.4		547.8	4.3%	5.1%	14.1%
Operating Income (GAAP)	336.5	358.4			250.0		-25.7%	-22.5%
Operating Margin (GAAP)	31.5%	33.5%			25.0%		(649)	(656)
Operating Income (Non-GAAP)	458.4	458.1	478.3		369.9	-22.7%	-19.3%	-14.0%
Operating Margin (Non-GAAP)	42.9%	42.8%	43.2%	37% (36.5% - 37.5%)	37.0%	(624)	(591)	(512)
Other income, net (GAAP)	25.5	(4.0)			20.0		-21.8%	-2145.7%
Other income, net (Non-GAAP)	(2.4)	(5.0)			(4.0)		64.5%	-5.9%
Pretax Income (GAAP)	362.1	354.4			270.0		-25.4%	-16.0%
Pretax Income (Non-GAAP)	456.0	453.1			365.9		-19.8%	-14.1%
Tax rate (GAAP)	10.5%	26.0%			23.0%		1246	(179)
Tax rate (Non-GAAP)	17.5%	17.5%			16.5%		(100)	(100)
Net Income (GAAP)	323.9	262.3			207.9		-35.8%	-14.0%
Net Income (Non-GAAP)	376.2	373.8			305.5		-18.8%	-13.1%
Diluted EPS (GAAP)	\$1.19	\$0.96			\$0.76		-35.9%	-13.8%
Diluted EPS (Non-GAAP)	\$1.38	\$1.37	\$1.42	\$1.12 (\$1.10 - \$1.14)	\$1.12	-20.9%	-18.8%	-12.9%
Diluted Shares (Non-GAAP)	272.4	271.9			272.6		0.1%	-0.2%
Operating Cash Flow	272.1	255.4			214.5		-21.2%	-19.8%
Free Cash Flow	238.4	233.9			188.0		-21.2%	-21.9%
Free Cash Flow margin	22.3%	21.8%			18.8%		(351)	(476)

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

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Balance sheet, cash flow snapshot

Exhibit 4: Summary of cash and inventory positions

Net cash per share increased +15% QoQ

	4Q22	1Q23	2Q23	3Q23	4Q23	QoQ%
Total Cash	882.3	917.0	873.9	962.0	1008.2	4.8%
ST Debt	100.0	30.0	0.0	0.0	349.3	
LT Debt	648.1	648.3	648.6	648.8	299.8	-53.8%
Total Debt	748.1	678.3	648.6	648.8	649.1	0.0%
Net Cash	134.2	238.7	225.4	313.2	359.1	14.7%
Net Cash/Share	\$0.49	\$0.87	\$0.83	\$1.15	\$1.32	14.7%
DSO	49.2	43.5	41.1	37.9	41.7	9.8%
DPO	542.2	314.5	479.2	496.8	503.9	1.4%
Inventory \$	128.0	127.6	139.6	163.7	181.7	11.0%
Inventory Turns	5.5	4.1	5.8	6.0	7.0	16.8%
Inventory Days	66.7	89.0	63.3	61.1	52.3	-14.4%
Cash Flow from Ops	263.6	267.4	413.8	395.9	272.1	-31.3%
Capex	36.9	26.7	19.9	22.0	33.7	53.3%
Free cash flow	226.7	240.7	393.8	373.9	238.4	-36.2%
Buybacks	300.0	125.0	325.1	125.0	125.0	0.0%

Source: BofA Global Research estimates, company report

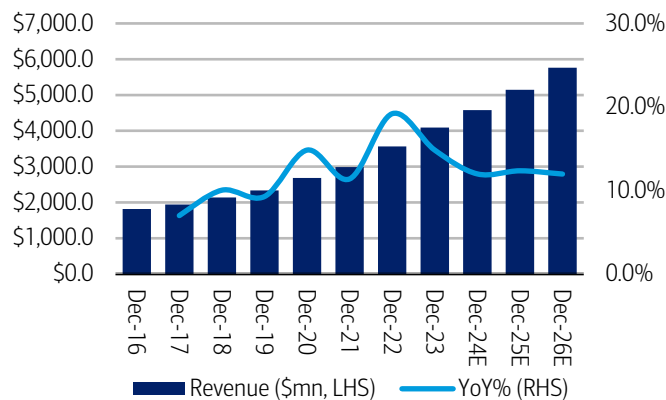
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Key charts

Exhibit 5: CDNS annual revenue and YoY growth

We model about 12%+ adjusted growth annually through FY26E

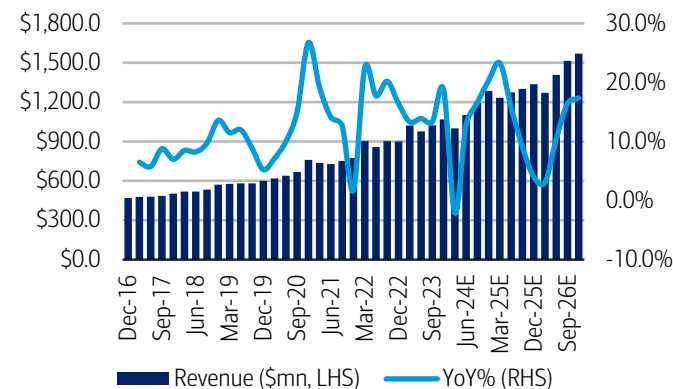


Source: BofA Global Research estimates, company report

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Exhibit 6: CDNS quarterly revenue and YoY growth

We see sales growth remaining resilient in a downturn

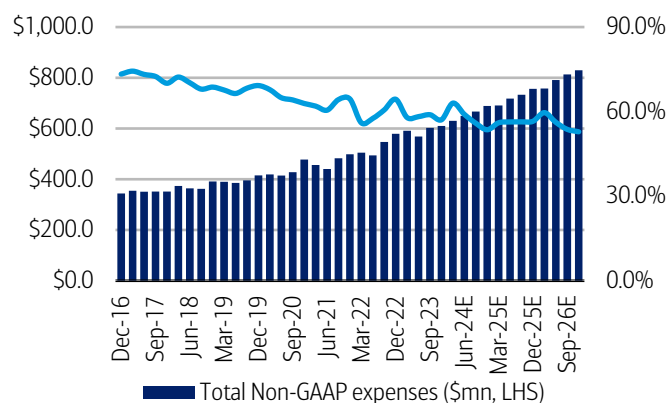


Source: BofA Global Research estimates, company report

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Exhibit 7: CDNS qtrly Non-GAAP expenses and opex to sales ratio

CDNS total expenses are ~60% of sales

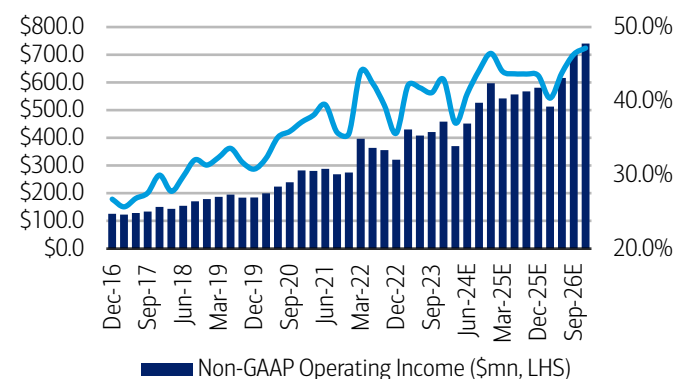


Source: BofA Global Research estimates, company report

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Exhibit 8: CDNS quarterly operating income and operating margin

We expect operating margins to expand above 40% over time

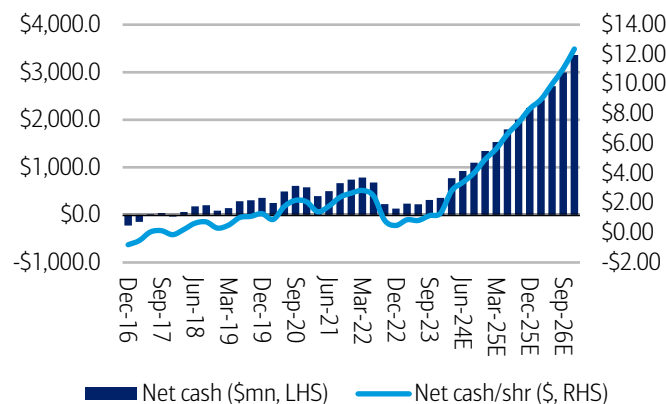


Source: BofA Global Research estimates, company report

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Exhibit 9: CDNS net cash and net cash per share

We believe CDNS can grow its net cash balance over time

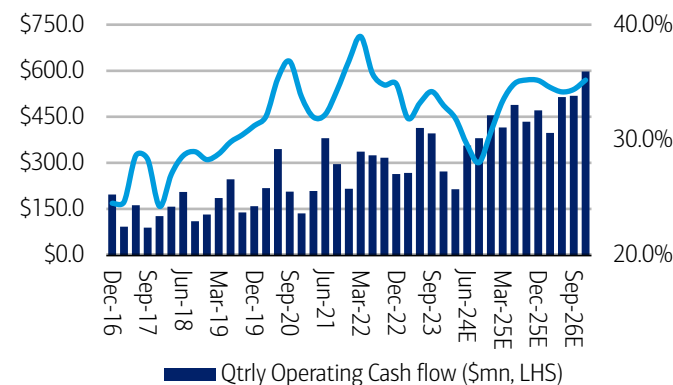


Source: BofA Global Research estimates, company report

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Exhibit 10: CDNS operating cash flow and CFO margin

CDNS CFO margin should reach 30%+

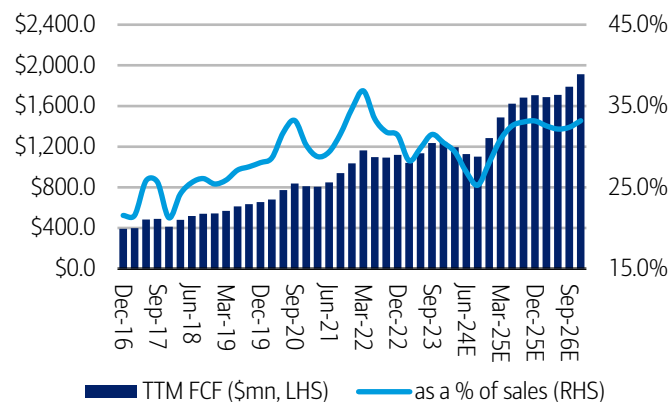


Source: BofA Global Research estimates, company report

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Exhibit 11: CDNS TTM FCF and FCF margin

CDNS could grow FCF at a steady pace over time



Source: BofA Global Research estimates, company report

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Glossary:

CDNS: Cadence

SNPS: Synopsys

EDA: Electronic Design Automation

IP: Intellectual Property

AI: Artificial Intelligence

genAI: Generative Artificial Intelligence

OEM: Original Equipment Manufacturing

SOX: Semiconductor Index



Exhibit 12: CDNS Income Statement

CDNS now consistently growing topline at a low double-digit CAGR

FY ends Dec	1Q23	2Q23	3Q23	4Q23	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	FY22	FY23	FY24E	FY25E	FY26E
P&L model (\$mn)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-22	Dec-23	Dec-24E	Dec-25E	Dec-26E
Product and maintenance	\$963.7	\$922.8	\$965.8	\$982.0	\$918.9	\$1,012.0	\$1,096.4	\$1,181.5	\$1,132.9	\$1,171.6	\$1,195.7	\$1,228.8	\$3,340.2	\$3,834.4	\$4,208.8	\$4,728.9	\$5,294.8
Services	\$57.9	\$53.8	\$57.3	\$86.6	\$81.1	\$89.3	\$96.7	\$104.2	\$99.9	\$103.4	\$105.5	\$108.4	\$221.5	\$255.6	\$371.3	\$417.2	\$467.1
Total Revenue	\$1,021.7	\$976.6	\$1,023.1	\$1,068.6	\$1,000.0	\$1,101.3	\$1,193.1	\$1,285.8	\$1,232.8	\$1,274.9	\$1,301.1	\$1,337.2	\$3,561.7	\$4,090.0	\$4,580.1	\$5,146.1	\$5,761.9
QoQ%	13.5%	-4.4%	4.8%	4.5%	-6.4%	10.1%	8.3%	7.8%	-4.1%	3.4%	2.1%	2.8%					
YoY%	13.3%	13.9%	13.4%	18.8%	-2.1%	12.8%	16.6%	20.3%	23.3%	15.8%	9.1%	4.0%	19.2%	14.8%	12.0%	12.4%	12.0%
Total cost of goods sold (GAAP)	124.5	96.9	109.6	104.1	95.6	115.4	115.2	123.3	112.8	129.2	121.9	125.0	371.6	435.0	449.5	489.0	530.4
Total cost of goods sold (Non-GAAP)	111.4	83.5	95.7	88.8	82.2	101.7	101.3	109.1	98.8	115.0	107.7	110.7	320.9	379.5	394.3	432.2	471.9
Gross Profit (GAAP)	897.2	879.7	913.5	964.5	904.3	985.9	1,077.9	1,162.5	1,120.0	1,145.7	1,179.2	1,212.2	3,190.1	3,654.9	4,130.6	4,657.1	5,231.6
Gross Profit (Non-GAAP)	910.3	893.0	927.4	979.8	917.7	999.6	1,091.9	1,176.6	1,134.0	1,159.9	1,193.5	1,226.5	3,240.8	3,710.5	4,185.8	4,713.9	5,290.1
Marketing and sales (GAAP)	166.7	167.1	176.2	180.4	190.1	191.9	200.3	205.5	206.4	210.8	220.6	229.0	604.2	690.3	787.9	866.8	954.2
Marketing and sales (Non-GAAP)	149.0	149.4	157.3	160.8	170.4	170.4	177.2	180.8	182.6	186.2	195.6	203.4	547.7	616.5	698.9	767.8	844.4
Research and development (GAAP)	350.3	354.4	369.6	367.4	377.4	377.3	389.0	398.3	405.7	414.5	426.2	438.6	1,251.5	1,441.8	1,542.1	1,685.1	1,870.7
Research and development (Non-GAAP)	294.5	299.8	309.6	303.4	318.0	318.0	325.3	330.2	340.1	346.9	357.3	368.0	1,075.8	1,207.2	1,291.4	1,412.2	1,568.2
General and administrative (GAAP)	53.5	54.6	58.6	75.7	75.7	75.5	79.6	86.3	86.4	87.6	90.7	92.6	242.1	242.4	317.2	357.2	384.8
General and administrative (Non-GAAP)	36.6	35.9	40.0	57.2	59.4	60.0	63.0	68.7	69.4	70.1	72.9	74.4	181.0	169.6	251.2	286.7	307.1
Total Opex (GAAP)	574.8	580.4	620.6	628.0	654.3	647.7	671.9	693.2	701.5	715.9	740.4	763.2	2,116.4	2,403.7	2,667.1	2,921.0	3,221.6
Total Opex (Non-GAAP)	480.0	485.1	506.8	521.3	547.8	548.4	565.6	579.7	592.1	603.2	625.7	645.7	1,804.5	1,993.3	2,241.5	2,466.7	2,719.7
Operating Income (GAAP)	322.5	299.3	292.9	336.5	250.0	338.2	406.0	469.3	418.5	429.8	438.8	449.0	1,073.7	1,251.2	1,463.5	1,736.1	2,010.0
Operating Income (Non-GAAP)	430.2	408.0	420.6	458.4	369.9	451.1	526.3	597.0	542.0	556.7	567.7	580.8	1,436.4	1,717.2	1,944.3	2,247.2	2,570.4
GAAP Other income & Expense	(1.0)	(0.9)	7.0	25.5	20.0	(12.0)	(11.0)	(11.0)	(3.0)	(3.0)	(3.0)	(3.0)	(28.3)	30.7	(14.0)	(12.0)	(12.0)
Non-GAAP Other income & Expense	(4.2)	(3.4)	(4.7)	(2.4)	(4.0)	(4.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(3.0)	(14.2)	(14.8)	(14.0)	(12.0)	(12.0)
Pretax income (GAAP)	321.5	298.4	300.0	362.1	270.0	326.2	395.0	458.3	415.5	426.8	435.8	446.0	1,045.4	1,281.9	1,449.5	1,724.1	1,998.0
Pretax income (Non-GAAP)	426.0	404.5	415.9	456.0	365.9	447.1	523.3	594.0	539.0	553.7	564.7	577.8	1,422.2	1,702.4	1,930.3	2,235.2	2,558.4
Net Income (GAAP)	241.8	221.1	254.3	323.9	207.9	251.2	304.1	352.9	319.9	328.7	335.6	343.4	849.0	1,041.1	1,116.1	1,327.5	1,538.5
Net Income (Non-GAAP, ex. SBC)	351.4	333.8	343.1	376.2	305.5	373.4	437.0	496.0	450.1	462.3	471.6	482.5	1,173.3	1,404.5	1,611.8	1,866.4	2,136.2
GAAP Basic EPS	\$0.90	\$0.82	\$0.94	\$1.20	\$0.77	\$0.93	\$1.13	\$1.31	\$1.19	\$1.23	\$1.26	\$1.29	\$3.13	\$3.86	\$4.15	\$4.97	\$5.75
GAAP Diluted EPS	\$0.89	\$0.81	\$0.93	\$1.19	\$0.76	\$0.92	\$1.12	\$1.30	\$1.18	\$1.21	\$1.24	\$1.27	\$3.09	\$3.82	\$4.10	\$4.91	\$5.68
Non-GAAP Diluted EPS, ex. SBC	\$1.29	\$1.22	\$1.26	\$1.38	\$1.12	\$1.37	\$1.60	\$1.82	\$1.66	\$1.71	\$1.74	\$1.79	\$4.27	\$5.15	\$5.92	\$6.90	\$7.88
Basic shares (GAAP)	269.5	269.7	269.2	269.1	269.3	269.2	269.2	268.8	268.2	267.6	267.0	266.4	271.2	269.4	269.1	267.3	267.7
Diluted shares (GAAP)	273.2	273.0	272.4	272.4	272.6	272.6	272.6	272.1	271.5	270.9	270.3	269.7	275.0	272.8	272.5	270.6	271.0
Diluted shares (Non-GAAP)	273.2	273.0	272.4	272.4	272.6	272.6	272.6	272.1	271.5	270.9	270.3	269.7	275.0	272.8	272.5	270.6	271.0

Source: BofA Global Research estimates, company reports

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Exhibit 13: CDNS Segment Model

EDA should grow 11% YoY in FY24E

FY ends Dec	1Q23	2Q23	3Q23	4Q23	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	FY22	FY23	FY24E	FY25E	FY26E
Segment Model (\$mn)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-22	Dec-23	Dec-24E	Dec-25E	Dec-26E
EDA	\$909.3	\$869.2	\$910.6	\$929.7	\$869.4	\$956.3	\$1,042.4	\$1,132.0	\$1,086.7	\$1,117.2	\$1,133.9	\$1,156.6	\$3,108.1	\$3,618.7	\$4,000.0	\$4,494.4	\$5,040.7
Functional Verification	\$326.9	\$263.7	\$266.0	\$256.5									\$917.9	\$1,113.1			
Digital IC Design and Signoff	\$255.4	\$263.7	\$286.5	\$309.9									\$988.7	\$1,115.5			
Custom IC Design and Simulation	\$204.3	\$214.8	\$225.1	\$235.1									\$792.2	\$879.4			
System Design and Analysis	\$122.6	\$127.0	\$133.0	\$128.2									\$409.4	\$510.8			
IP	\$112.4	\$107.4	\$112.5	\$138.9	\$130.6	\$145.0	\$150.7	\$153.8	\$146.1	\$157.8	\$167.2	\$180.6	\$453.6	\$471.3	\$580.0	\$651.7	\$721.3
Total	\$1,021.7	\$976.6	\$1,023.1	\$1,068.6	\$1,000.0	\$1,101.3	\$1,193.1	\$1,285.8	\$1,232.8	\$1,274.9	\$1,301.1	\$1,337.2	\$3,561.7	\$4,090.0	\$4,580.1	\$5,146.1	\$5,761.9
% of sales																	
EDA	89%	89%	89%	87%	87%	87%	87%	88%	88%	88%	87%	86%	87%	88%	87%	87%	87%
Functional Verification	32%	27%	26%	24%									26%				
Digital IC Design and Signoff	25%	27%	28%	29%									28%				
Custom IC Design and Simulation	20%	22%	22%	22%									22%				
System Design and Analysis	12%	13%	13%	12%									11%				
IP	11%	11%	11%	13%	13%	13%	13%	12%	12%	12%	13%	14%	13%	12%	13%	13%	13%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
QoQ%																	
EDA	15%	-4%	5%	2%	-6%	10%	9%	9%	-4%	3%	2%	2%					
Functional Verification	40%	-19%	1%	-4%													
Digital IC Design and Signoff	1%	3%	9%	8%													
Custom IC Design and Simulation	3%	5%	5%	4%													
System Design and Analysis	14%	4%	5%	-4%													
IP	4%	-4%	5%	23%	-6%	11%	4%	2%	-5%	8%	6%	8%					
Total	14%	-4%	5%	4%	-6%	10%	8%	8%	-4%	3%	2%	3%					
YoY%																	
EDA	16%	18%	15%	17%	-4%	10%	14%	22%	25%	17%	9%	2%	21%	16%	11%	12%	12%
Functional Verification	29%	28%	18%	10%									30%				
Digital IC Design and Signoff	5%	14%	9%	23%									17%				
Custom IC Design and Simulation	3%	9%	13%	19%									14%				
System Design and Analysis	36%	23%	23%	19%									24%				
IP	-4%	-11%	4%	29%	16%	35%	34%	11%	12%	9%	11%	17%	10%	4%	23%	12%	11%
Total	13%	14%	13%	19%	-2%	13%	17%	20%	23%	16%	9%	4%	19%	15%	12%	12%	12%

Source: BofA Global Research estimates, company reports

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Exhibit 14: CDNS Balance Sheet

We believe CDNS cash balance could sustain above \$1bn most quarters

FY ends Dec	1Q23	2Q23	3Q23	4Q23	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	FY22	FY23	FY24E	FY25E	FY26E
Balance Sheet (\$mn)	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-22	Dec-23	Dec-24E	Dec-25E	Dec-26E
Cash and cash equivalents	917.0	873.9	962.0	1,008.2	1,071.1	1,223.3	1,396.8	1,642.6	1,833.4	2,096.9	2,304.8	2,549.0	882.3	1,008.2	1,642.6	2,549.0	3,661.4
Short-term investments	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
Receivables, net	488.2	440.9	426.5	489.2	494.5	544.6	590.0	635.8	636.7	658.5	672.0	690.6	486.7	489.2	635.8	690.6	845.2
Inventories	127.6	139.6	163.7	181.7	166.8	193.8	191.1	210.4	191.4	217.8	205.7	211.8	128.0	181.7	210.4	211.8	239.4
Prepaid expenses and other	165.8	188.6	272.3	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	297.2	209.7	297.2	297.2	297.2	297.2
Total current assets	1,698.5	1,643.1	1,824.5	1,976.2	2,029.6	2,258.9	2,475.1	2,786.0	2,958.8	3,270.4	3,479.7	3,748.5	1,706.8	1,976.2	2,786.0	3,748.5	5,043.2
Property, plant and equipment, net	373.0	370.2	379.8	403.2	409.5	416.4	424.0	432.1	428.4	424.5	420.6	416.6	371.5	403.2	432.1	416.6	399.3
Goodwill	1,377.6	1,428.8	1,500.4	1,535.8	1,535.8	1,535.8	1,535.8	1,535.8	1,535.8	1,535.8	1,535.8	1,535.8	1,374.3	1,535.8	1,535.8	1,535.8	1,535.8
Acquired intangibles, net	341.7	340.7	347.6	336.8	321.9	308.9	295.9	282.9	269.9	257.0	244.0	231.0	354.6	336.8	282.9	231.0	179.1
Long-term receivables	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
Other assets	1,380.8	1,372.4	1,379.1	1,417.4	1,417.4	1,417.4	1,417.4	1,417.4	1,417.4	1,417.4	1,417.4	1,417.4	1,330.0	1,417.4	1,417.4	1,417.4	1,417.4
Total assets	5,171.6	5,155.1	5,431.4	5,669.5	5,714.2	5,937.4	6,148.2	6,454.2	6,610.3	6,905.1	7,097.5	7,349.4	5,137.1	5,669.5	6,454.2	7,349.4	8,574.8
Revolving credit facility	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Current portion of long-term debt	0.0	0.0	0.0	349.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	349.3	0.0	0.0	0.0
Accounts payable and accrued liabilities	430.1	510.0	598.3	576.6	471.3	543.3	542.5	580.8	531.3	608.5	574.2	588.8	557.2	576.6	580.8	588.8	666.9
Current portion of deferred revenue	721.2	686.3	665.9	665.0	665.0	665.0	665.0	665.0	665.0	665.0	665.0	665.0	690.5	665.0	665.0	665.0	665.0
Total current liabilities	1,181.4	1,196.3	1,264.2	1,590.9	1,136.4	1,208.3	1,207.6	1,245.8	1,196.3	1,273.5	1,239.3	1,253.8	1,347.7	1,590.9	1,245.8	1,253.8	1,331.9
Long-term portion of deferred revenue	102.5	96.7	100.6	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	98.9	91.5	98.9	98.9	98.9	98.9
Convertible notes	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
Long-term debt	648.3	648.6	648.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	648.1	299.8	299.8	299.8	299.8
Other long-term liabilities	298.5	305.2	303.9	275.7	275.7	275.7	275.7	275.7	275.7	275.7	275.7	275.7	304.7	275.7	275.7	275.7	275.7
Total liabilities	2,230.7	2,246.7	2,317.5	2,265.2	1,810.7	1,882.7	1,881.9	1,920.2	1,870.7	1,947.8	1,913.6	1,928.1	2,392.0	2,265.2	1,920.2	1,928.1	2,006.2
Total stockholders' equity	2,940.9	2,908.5	3,113.9	3,404.3	3,903.5	4,054.7	4,266.3	4,534.0	4,739.6	4,957.2	5,183.9	5,421.2	2,745.1	3,404.3	4,534.0	5,421.2	6,568.6
Total liabilities and stockholders' equity	5,171.6	5,155.1	5,431.4	5,669.5	5,714.2	5,937.4	6,148.2	6,454.2	6,610.3	6,905.1	7,097.5	7,349.4	5,137.1	5,669.5	6,454.2	7,349.4	8,574.8
Cash and liquidity ratios																	
Total cash (incl. restricted cash)	917.0	873.9	962.0	1,008.2	1,071.1	1,223.3	1,396.8	1,642.6	1,833.4	2,096.9	2,304.8	2,549.0	882.3	1,008.2	1,642.6	2,549.0	3,661.4
Short-term debt	30.0	0.0	0.0	349.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	349.3	0.0	0.0	0.0
Long-term debt	648.3	648.6	648.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	648.1	299.8	299.8	299.8	299.8
Total debt	678.3	648.6	648.8	649.1	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	748.1	649.1	299.8	299.8	299.8
Net cash	238.7	225.4	313.2	359.1	771.3	923.5	1,097.1	1,342.8	1,533.6	1,797.2	2,005.0	2,249.2	134.2	359.1	1,342.8	2,249.2	3,361.6
Net cash per share	\$0.87	\$0.83	\$1.15	\$1.32	\$2.83	\$3.39	\$4.02	\$4.93	\$5.65	\$6.63	\$7.42	\$8.34	\$0.49	\$1.32	\$4.93	\$8.31	\$12.40

Source: BofA Global Research estimates, company reports

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Exhibit 15: CDNS Statement of Cash Flows

CDNS FCF margins in 20-30s%

FY ends Dec	1Q23	2Q23	3Q23	4Q23	1Q24E	2Q24E	3Q24E	4Q24E	1Q25E	2Q25E	3Q25E	4Q25E	FY22	FY23	FY24E	FY25E	FY26E
	Mar-23	Jun-23	Sep-23	Dec-23	Mar-24E	Jun-24E	Sep-24E	Dec-24E	Mar-25E	Jun-25E	Sep-25E	Dec-25E	Dec-22	Dec-23	Dec-24E	Dec-25E	Dec-26E
Cash flow statement (\$mn)																	
Net income	241.8	221.1	254.3	323.9	207.9	251.2	304.1	352.9	319.9	328.7	335.6	343.4	849.0	1,041.1	1,116.1	1,327.5	1,538.5
Depreciation and amortization	34.4	36.0	36.4	38.5	35.2	35.2	37.1	39.0	41.3	42.3	42.9	43.7	132.1	145.3	146.5	170.3	184.4
Amortization of debt discount and fees	0.3	0.3	0.3	0.3									1.1	1.3			
Stock-based compensation	74.3	76.6	88.0	86.7	80.0	88.1	95.4	102.9	98.6	102.0	104.1	107.0	270.4	325.6	366.4	411.7	461.0
(Gain) loss on investments, net	(0.1)	0.7	(13.3)	(21.9)									5.4	(34.6)			
Deferred income taxes	(11.6)	(8.5)	(3.3)	(13.0)	(13.0)	(13.0)	(13.0)	(13.0)	(13.0)	(13.0)	(13.0)	(13.0)	(107.6)	(36.5)	(52.0)	(52.0)	(52.0)
Provisions (recoveries) for losses (gains) on receivables, net	0.2	0.5	1.0	1.6									0.2	3.3			
Other non-cash items	(1.3)	(0.4)	1.0	3.2									3.7	2.4			
Receivables	(8.7)	49.9	8.8	(61.8)	(5.3)	(50.1)	(45.4)	(45.8)	(0.9)	(21.8)	(13.5)	(18.6)	(138.5)	(11.7)	(146.6)	(54.8)	(154.6)
Inventories	0.4	(17.4)	(30.3)	(18.6)	14.9	(27.0)	2.7	(19.3)	19.0	(26.3)	12.1	(6.1)	(23.1)	(65.9)	(28.8)	(1.3)	(27.7)
Prepaid expenses and other	56.2	(5.4)	(17.5)	5.7									(38.9)	39.0			
Other assets	(42.1)	10.2	5.3	(19.2)									(0.9)	(45.8)			
Accounts payable and accrued liabilities	(117.9)	80.9	80.2	(37.7)	(105.2)	72.0	(0.8)	38.3	(49.5)	77.1	(34.2)	14.5	113.9	5.4	4.3	8.0	78.1
Deferred revenue	40.7	(39.4)	(15.9)	(7.0)									131.5	(21.6)			
Other long-term liabilities	0.9	8.6	1.0	(8.7)									43.5	1.8			
Net cash provided by operating activities	267.4	413.8	395.9	272.1	214.5	356.3	380.2	454.8	415.5	489.0	433.9	470.9	1,241.9	1,349.2	1,405.8	1,809.3	2,027.7
Purchases of non-marketable investments	(9.1)	(20.2)	(115.9)	(31.2)									(1.0)	(176.3)			
Proceeds from the sale of non-marketable investments																	
Purchases of property, plant and equipment	(26.7)	(19.9)	(22.0)	(33.7)	(26.5)	(29.2)	(31.6)	(34.1)	(24.7)	(25.5)	(26.0)	(26.7)	(123.2)	(102.3)	(121.4)	(102.9)	(115.2)
Cash paid in business comb. and asset acq., net of cash acq.		(55.4)	(108.6)	(34.4)									(614.8)	(198.4)			
Net cash used for investing activities	(35.7)	(94.1)	(183.8)	(98.7)	(26.5)	(29.2)	(31.6)	(34.1)	(24.7)	(25.5)	(26.0)	(26.7)	(738.6)	(412.2)	(121.4)	(102.9)	(115.2)
Proceeds from revolving credit facility	50.0												585.0	50.0			
Payment on revolving credit facility	(120.0)	(30.0)											(485.0)	(150.0)			
Principal payments on term loan													300.0				
Proceeds from issuance of common stock	65.4	12.1	53.8	1.6									(111.9)	133.0			
Stock received for payment of employee taxes on vesting of restricted stock	(67.7)	(11.3)	(43.2)	(14.2)									105.3	(136.4)			
													(1,050.1)				
Payments for repurchases of common stock	(125.0)	(325.1)	(125.0)	(125.0)	(125.0)	(175.0)	(175.0)	(175.0)	(200.0)	(200.0)	(200.0)	(200.0)	1)	(700.1)	(650.0)	(800.0)	(800.0)
Change in book overdraft																	
Net cash provided by (used for) financing activities	(197.4)	(354.3)	(114.4)	(137.6)	(125.0)	(175.0)	(175.0)	(175.0)	(200.0)	(200.0)	(200.0)	(200.0)	(657.0)	(803.6)	(650.0)	(800.0)	(800.0)
Effect of exchange rate changes on cash and cash equivalents	0.3	(8.5)	(9.7)	10.4									(52.8)	(7.5)			
Increase (decrease) in cash and cash equivalents	34.6	(43.0)	88.1	46.2	63.0	152.2	173.6	245.8	190.8	263.5	207.8	244.2	(206.6)	125.8	634.4	906.4	1,112.4

Source: BofA Global Research estimates, company reports

BofA GLOBAL RESEARCH



Price objective basis & risk

Cadence (CDNS)

Our \$330 PO is based on 48x FY25E P/E, at upper end historical 22x-52x trading range and justified in our view given the strategic importance of EDA in an increasingly fragmented global electronics supply chain.

Downside risks are: (1) Share loss in existing markets to primary competitors, (2) a broader economic downturn dampens semis R&D spending and corresponding spend on EDA tools and services, (3) escalation of US-China trade war limits CDNS' ability to sell to key customers, (4) semiconductor industry consolidation accelerates which could diminish customer spending power, (5) venture into adjacent system analysis market fails to meaningfully accelerate revenue growth and incremental investments suppress margin expansion.

Synopsys (SNPS, B-1-9, \$568.93)

Our \$650 PO is based on 40x 2025E P/E, at upper end of company's historical trading range (19x-49x), justified in our view as EDA investment accelerates as chip complexity rises.

Downside risks are (1) variability in IP/hardware sales creates issues in timing of revenue recognition, (2) competitors develop unique software capabilities displacing SNPS at core customers, (3) heightened geopolitical tensions lead to further restrictions on supplying firms in China with EDA technology.

Upside risks are (1) share gains in existing markets versus primary competitors, (2) increased government investment in semiconductor R&D and development as nations develop internal ecosystems, (3) material M&A that enables consistent margin expansion or further accelerates sales CAGR, (4) faster-than-expected cost improvements driving higher operating margin.

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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



US - Semiconductors and Semiconductor Capital Equipment Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
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

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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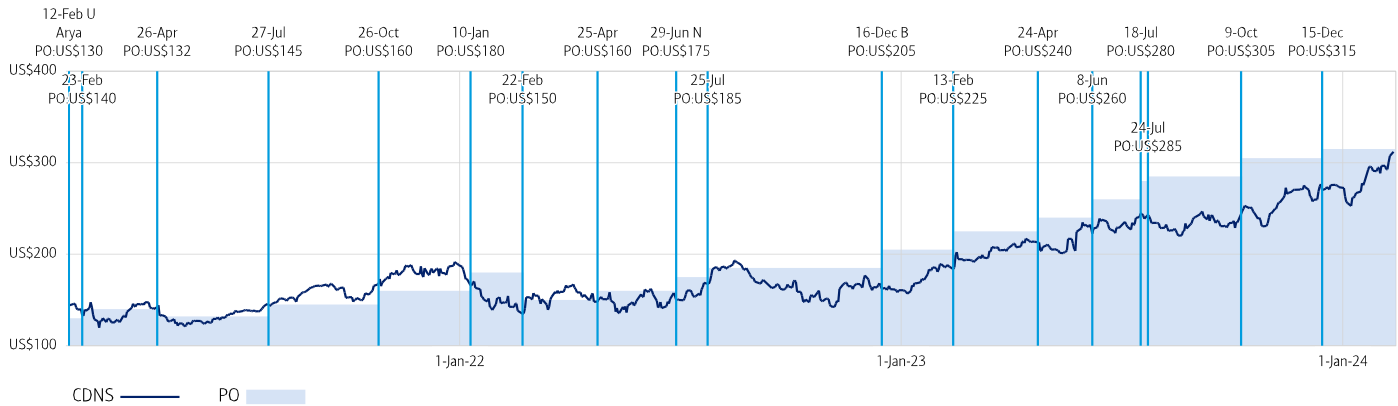
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Important Disclosures

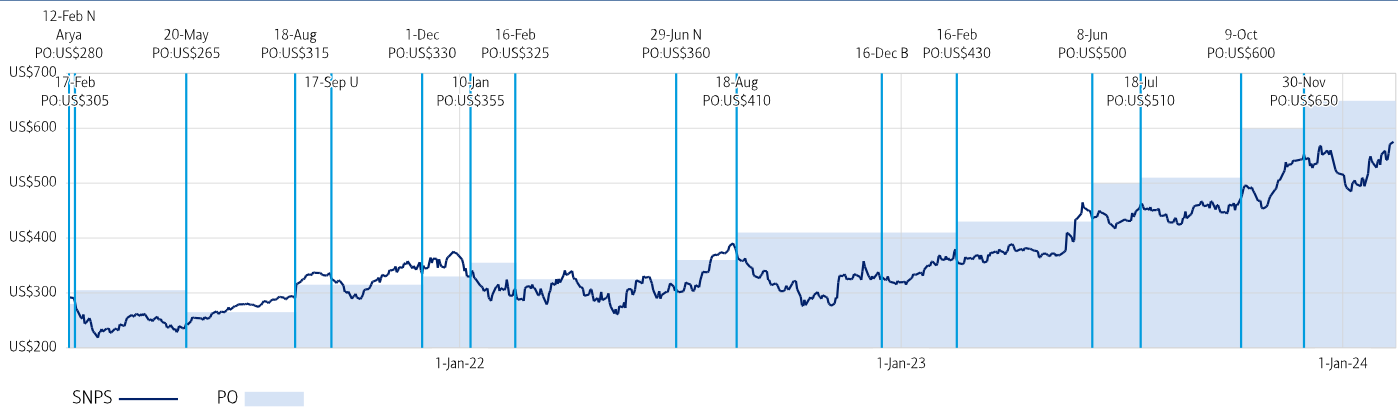
Cadence (CDNS) Price Chart



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

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

Synopsys (SNPS) Price Chart



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

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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}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

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