

Advanced Energy Industries

Ongoing inventory digestion limits near-term upside, Reiterate Neutral

Reiterate Rating: NEUTRAL | PO: 107.00 USD | Price: 106.60 USD

Model de-risked, Reiterate Neutral, wait for recovery signs

Q4 sales inline, Q1 outlook of \$350mn (-14% QoQ) well below Street's \$403mn. Industrial & Medical (I&M), Data Center, and Telecom & Networking all expected to decline another >10% QoQ (down 15-20%) in MarQ, with GM guide of 35.0% nearly 200bps below prior consensus. Semis Equipment fared better, but we still expect a step down into MarQ on trailing-edge weakness and inventory digestion. Overall, AEIS is now feeling the bulk of the brunt suggested by semicap/industrial semis peers this earnings season, and we essentially push out the model by a year (CY24 tracking down -10% YoY). We do see a more promising 2H outlook on leading-edge logic/memory ramps, channel normalization (volume rebound, manufacturing optimization can also drive GM back to 37.0-37.5% range exiting the year), with growth continuing into CY25/26E on key design wins (eVoS, eVerest ramps) and industrial share gains. Overall, we lower CY24/25E sales by -14%/-14% and EPS by -37%/-32% and lower PO from \$115 to \$107 (now on 20x CY25E P/E vs. 16x prior, applying median historical PE to trough ests.) from \$115 prior. Despite near term setbacks, we reiterate Neutral on semicap/industrial share gain opportunities.

Likes: New products, Necessary estimate reset, net cash

1) Potential leading edge fab ramps in '25 (TSMC, Samsung, Intel) could catalyze long-term semis equipment sales (AEIS positioned with flagship products eVerset and eVoS); 2) While difficult near-term, estimate reset should help establish trough cycle expectations, limiting downside risk to Street outlook from here, and potentially shifting investor focus to possible CY25E rebound; 3) Even with recent debt additions, net cash/shr still >\$3, positioning AEIS to support dividend/operational needs in a downturn

Risks: Inventory, Near-term Semicap, gross margin

1) AEIS susceptible to inventory digestion, with submarkets (trailing edge semicap, industrial, enterprise data center) weighing on 1H results, with visibility into 2H recovery likely limited; 2) Despite recent outperformance, our CY24 flattish semicap equipment outlook (~50% of revs) is slightly below WFE/equipment sales of dep/etch peers LRCX/AMAT (up mid-single digits in aggregate); 3) Q1 gross margin guide (35%) down another 70bp QoQ, and while higher volumes in 2H/operational efficiencies can drive a rebound, ongoing macro headwinds present risk to reaching target 40%+ GM (by '25).

| Estimates (Dec) (US\$) | 2022A | 2023A | 2024E | 2025E | 2026E |
|---------------------------|-------|--------|--------|-------|-------|
| EPS | 6.49 | 4.88 | 3.41 | 5.09 | 6.48 |
| GAAP EPS | 5.36 | 3.46 | 1.83 | 3.47 | 4.80 |
| EPS Change (YoY) | 35.8% | -24.8% | -30.1% | 49.3% | 27.3% |
| Consensus EPS (Bloomberg) | | | 5.30 | 7.40 | 9.61 |
| DPS | 0.40 | 0.40 | 0.40 | 0.39 | 0.38 |
| Valuation (Dec) | | | | | |
| P/E | 16.4x | 21.8x | 31.3x | 20.9x | 16.5x |
| GAAP P/E | 19.9x | 30.8x | 58.3x | 30.7x | 22.2x |
| Dividend Yield | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% |
| EV / EBITDA* | 11.1x | 14.6x | 19.5x | 13.4x | 10.6x |
| Free Cash Flow Yield* | -0.6% | 3.7% | 3.0% | 3.7% | 4.7% |

* For full definitions of *IQmethod*SM measures, see page 10.

06 February 2024

Equity

Key Changes

| (US\$) | Previous | Current |
|---------------|----------|---------|
| Price Obj. | 115.00 | 107.00 |
| 2024E Rev (m) | 1,725.0 | 1,489.7 |
| 2025E Rev (m) | 2,000.8 | 1,713.5 |
| 2026E Rev (m) | NA | 1,901.1 |
| 2024E EPS | 5.43 | 3.41 |
| 2025E EPS | 7.45 | 5.09 |
| 2026E EPS | NA | 6.48 |

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Stock Data

| | |
|---------------------------------|------------------------|
| Price | 106.60 USD |
| Price Objective | 107.00 USD |
| Date Established | 6-Feb-2024 |
| Investment Opinion | B-2-8 |
| 52-Week Range | 81.86 USD - 126.38 USD |
| Mrkt Val (mn) / Shares Out (mn) | 3,995 USD / 37.5 |
| Free Float | 98.9% |
| Average Daily Value (mn) | 17.52 USD |
| BofA Ticker / Exchange | AEIS / NAS |
| Bloomberg / Reuters | AEIS US / AEIS.OQ |
| ROE (2024E) | 10.7% |
| Net Dbt to Eqty (Dec-2023A) | -11.3% |

Please see Glossary on page 4.

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iQprofileSM Advanced Energy Industries

iQmethodSM – Bus Performance*

| (US\$ Millions) | 2022A | 2023A | 2024E | 2025E | 2026E |
|----------------------------|-------|-------|-------|-------|-------|
| Return on Capital Employed | 16.0% | 9.9% | 5.0% | 7.5% | 9.0% |
| Return on Equity | 25.3% | 16.7% | 10.7% | 14.1% | 15.5% |
| Operating Margin | 16.0% | 12.3% | 9.4% | 13.0% | 15.4% |
| Free Cash Flow | (25) | 148 | 119 | 149 | 189 |

iQmethodSM – Quality of Earnings*

| (US\$ Millions) | 2022A | 2023A | 2024E | 2025E | 2026E |
|--------------------------|-------|--------|--------|--------|--------|
| Cash Realization Ratio | 0.7x | 1.1x | 1.4x | 1.1x | 1.0x |
| Asset Replacement Ratio | 3.5x | 0.9x | 1.0x | 1.0x | 1.0x |
| Tax Rate | 16.5% | NM | 26.1% | 21.8% | 20.5% |
| Net Debt-to-Equity Ratio | -8.0% | -11.3% | -18.0% | -24.2% | -29.9% |
| Interest Cover | 39.7x | NA | NA | NA | NA |

Income Statement Data (Dec)

| (US\$ Millions) | 2022A | 2023A | 2024E | 2025E | 2026E |
|------------------------------|--------------|---------------|---------------|--------------|--------------|
| Sales | 1,845 | 1,656 | 1,490 | 1,713 | 1,901 |
| % Change | 26.8% | -10.3% | -10.0% | 15.0% | 11.0% |
| Gross Profit | 677 | 594 | 538 | 648 | 741 |
| % Change | 27.0% | -12.2% | -9.4% | 20.3% | 14.3% |
| EBITDA | 355 | 271 | 202 | 294 | 372 |
| % Change | 39.6% | -23.7% | -25.4% | 45.5% | 26.7% |
| Net Interest & Other Income | (7) | 7 | 14 | 13 | 13 |
| Net Income (Adjusted) | 245 | 184 | 130 | 198 | 257 |
| % Change | 33.6% | -24.8% | -29.5% | 52.6% | 29.9% |

Free Cash Flow Data (Dec)

| (US\$ Millions) | 2022A | 2023A | 2024E | 2025E | 2026E |
|--|------------|------------|---------------|--------------|--------------|
| Net Income from Cont Operations (GAAP) | 202 | 131 | 70 | 135 | 191 |
| Depreciation & Amortization | 60 | 67 | 62 | 71 | 79 |
| Change in Working Capital | (89) | 18 | 17 | (23) | (43) |
| Deferred Taxation Charge | (6) | (34) | 0 | 0 | 0 |
| Other Adjustments, Net | 16 | 27 | 30 | 35 | 38 |
| Capital Expenditure | (208) | (61) | (60) | (69) | (76) |
| Free Cash Flow | -25 | 148 | 119 | 149 | 189 |
| % Change | NM | NM | -19.6% | 25.6% | 26.2% |
| Share / Issue Repurchase | (27) | (40) | 0 | 0 | 0 |
| Cost of Dividends Paid | (15) | (15) | (15) | (15) | (15) |
| Change in Debt | 0 | 0 | 0 | 0 | 0 |

Balance Sheet Data (Dec)

| (US\$ Millions) | 2022A | 2023A | 2024E | 2025E | 2026E |
|---------------------------------------|--------------|--------------|--------------|--------------|--------------|
| Cash & Equivalents | 459 | 1,045 | 1,128 | 1,242 | 1,396 |
| Trade Receivables | 301 | 282 | 270 | 294 | 323 |
| Other Current Assets | 429 | 385 | 383 | 394 | 418 |
| Property, Plant & Equipment | 148 | 168 | 227 | 296 | 372 |
| Other Non-Current Assets | 655 | 677 | 677 | 677 | 677 |
| Total Assets | 1,992 | 2,557 | 2,686 | 2,904 | 3,185 |
| Short-Term Debt | 20 | 20 | 20 | 20 | 20 |
| Other Current Liabilities | 373 | 316 | 319 | 331 | 340 |
| Long-Term Debt | 353 | 896 | 876 | 856 | 836 |
| Other Non-Current Liabilities | 180 | 181 | 181 | 181 | 181 |
| Total Liabilities | 926 | 1,413 | 1,395 | 1,388 | 1,377 |
| Total Equity | 1,066 | 1,144 | 1,291 | 1,516 | 1,808 |
| Total Equity & Liabilities | 1,992 | 2,557 | 2,686 | 2,904 | 3,185 |

* For full definitions of iQmethodSM measures, see page 10.

Company Sector

Semiconductors

Company Description

Advanced Energy (AEIS) designs and produces precision electrical power conversion, control, and measurement solutions used in the manufacture of semiconductors, data storage products, telecommunications equipment, medical devices, and other mission-critical technology. AEIS organizes their products into Process Power (serving most of semiconductor segment), and Embedded Power (majority industrials). AEIS was founded in 1981 and is headquartered in Denver, CO with 12,000 employees worldwide.

Investment Rationale

We rate Advanced Energy Neutral. Advanced Energy is well positioned to benefit from the growing secular spends for semiconductor capital equipment, but offset by increasing exposure to more commoditized power solutions end markets of data center and telecom. Advanced Energy's margin and free cash flow structures are below peers and are expected to remain there for the foreseeable future.

Stock Data

Average Daily Volume 164,368

Quarterly Earnings Estimates

| | 2023 | 2024 |
|----|-------|-------|
| Q1 | 1.24A | 0.70E |
| Q2 | 1.11A | 0.72E |
| Q3 | 1.28A | 0.88E |
| Q4 | 1.24A | 1.10E |

Summary of Changes

Exhibit 1: Summary of model changes

We lower CY24/25E sales expectations by 13%-14%, EPS expectations by 31%-37%

| | Sales (\$mn) | | | Non-GAAP EPS | | |
|--------------|----------------|----------------|----------------|---------------|---------------|-----------------|
| | Old | NEW | delta | Old | NEW | delta |
| Mar-23 | \$425 | \$425 | \$0 | \$1.24 | \$1.24 | \$0.00 |
| Jun-23 | \$416 | \$416 | \$0 | \$1.11 | \$1.11 | \$0.00 |
| Sep-23 | \$410 | \$410 | \$0 | \$1.28 | \$1.28 | \$0.00 |
| Dec-23 | \$406 | \$405 | (\$0) | \$1.15 | \$1.24 | \$0.09 |
| FY23 | \$1,656 | \$1,656 | (\$0) | \$4.78 | \$4.88 | \$0.09 |
| YoY% | -10.3% | -10.3% | 0.0% | -26.4% | -24.9% | 1.9% |
| Mar-24E | \$407 | \$350 | (\$57) | \$1.18 | \$0.70 | (\$0.47) |
| Jun-24E | \$418 | \$359 | (\$59) | \$1.24 | \$0.72 | (\$0.52) |
| Sep-24E | \$438 | \$380 | (\$59) | \$1.39 | \$0.88 | (\$0.51) |
| Dec-24E | \$461 | \$401 | (\$60) | \$1.62 | \$1.10 | (\$0.53) |
| FY24E | \$1,725 | \$1,490 | (\$235) | \$5.43 | \$3.41 | (\$2.02) |
| YoY% | 4.2% | -10.0% | -13.6% | 13.6% | -30.1% | -37.3% |
| Mar-25E | \$477 | \$412 | (\$65) | \$1.73 | \$1.18 | (\$0.55) |
| Jun-25E | \$493 | \$424 | (\$69) | \$1.80 | \$1.24 | (\$0.56) |
| Sep-25E | \$510 | \$434 | (\$76) | \$1.92 | \$1.30 | (\$0.61) |
| Dec-25E | \$521 | \$443 | (\$77) | \$2.00 | \$1.37 | (\$0.63) |
| FY25E | \$2,001 | \$1,713 | (\$287) | \$7.45 | \$5.09 | (\$2.36) |
| YoY% | 16.0% | 15.0% | -14.4% | 37.1% | 49.5% | -31.7% |

Source: BofA Global Research estimates, company reports

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DecQ reported vs. expectations

Exhibit 2: Actual reported DecQ earnings vs. our/Street expectations

DecQ sales were generally in line with Street, EPS 8c ahead

| | Dec-22 | Sep-23 | Dec-23 | | | | | | |
|--------------------------------------|----------------|----------------|--------------------------|----------------|----------------|----------------|--------------|--------------|---------------|
| | | | Original Guidance | Consensus | BofA | Reported | Delta | QoQ | YoY |
| Sales (\$mn) | \$490.7 | \$410.0 | \$405 +/- \$15 | \$406.2 | \$405.5 | \$405.3 | -0.1% | -1.2% | -17.4% |
| QoQ% | -4.9% | -1.3% | | | -1.1% | -1.2% | | | |
| YoY% | 23.6% | -20.6% | | | -17.4% | -17.4% | | | |
| Gross Margin % (GAAP) | 36.2% | 35.9% | | | 36.1% | 35.3% | -84 | -69 | -98 |
| Gross Margin % (Non-GAAP) | 36.6% | 36.1% | | 36.4% | 36.2% | 35.7% | -58 | -48 | -90 |
| Gross Profit (GAAP) | 177.8 | 147.3 | | | 146.4 | 142.9 | -2.4% | -3.0% | -19.7% |
| Gross Profit (Non-GAAP) | 179.4 | 148.2 | | | 147.0 | 144.5 | -1.7% | -2.5% | -19.5% |
| R&D | 49.6 | 50.4 | | | 50.4 | 49.0 | -2.7% | -2.7% | -1.2% |
| SG&A | 57.4 | 55.1 | | | 55.1 | 54.9 | -0.4% | -0.4% | -4.3% |
| Opex Total (GAAP) | 119.7 | 117.3 | | | 119.1 | 129.1 | 8.4% | 10.1% | 7.8% |
| Opex Total (Non-GAAP) | 100.9 | 97.3 | | | 98.1 | 94.9 | -3.3% | -2.5% | -6.0% |
| Operating Income (GAAP) | 58.1 | 30.1 | | | 27.3 | 13.8 | -49.5% | -54.2% | -76.3% |
| Operating Income (Non-GAAP) | 78.5 | 50.9 | | 50.8 | 48.8 | 49.7 | 1.7% | -2.5% | -36.7% |
| Operating Margin % (GAAP) | 11.8% | 7.3% | | | 6.7% | 3.4% | -333 | -393 | -844 |
| Operating Margin % (Non-GAAP) | 16.0% | 12.4% | | 12.5% | 12.0% | 12.3% | 22 | -16 | -374 |
| Pretax Income (GAAP) | 55.4 | 34.5 | | | 30.5 | 16.2 | -47.0% | -53.1% | -70.8% |
| Pretax Income (Non-GAAP) | 77.4 | 52.3 | | | 52.1 | 54.8 | 5.2% | 4.9% | -29.1% |
| Tax Rate (Non-GAAP) | 17.0% | 7.2% | | | 16.0% | 14.8% | -7.2% | 106.8% | -12.7% |
| Tax expense (Non-GAAP) | -13.2 | -3.8 | | | 8.3 | 8.1 | -2.3% | -317.0% | -161.8% |
| Net Income (GAAP) | 43.7 | 32.7 | | | 21.3 | 37.5 | 76.2% | 14.6% | -14.3% |
| Net Income (Non-GAAP) | 64.2 | 48.5 | | | 43.7 | 46.7 | 6.7% | -3.8% | -27.3% |
| Diluted EPS (GAAP) | \$1.20 | \$0.89 | \$0.69 +/- \$0.20 | | \$0.58 | \$1.01 | 72.7% | 13.4% | -16.2% |
| Diluted EPS (Non-GAAP) | \$1.70 | \$1.28 | \$1.15 +/- \$0.20 | \$1.16 | \$1.15 | \$1.24 | 8.0% | -3.1% | -27.1% |
| Diluted Shares | 37.7 | 37.9 | | | 38.1 | 37.6 | -1.2% | -0.7% | -0.3% |

Source: BofA Global Research estimates, company reports

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MarQ guidance vs. expectations

Exhibit 3: MarQ guidance vs. BofA/Street expectations

AEIS guided MarQ sales \$53mn below Street, EPS 63c below

| | Dec-23 | Mar-24E | | | |
|--------------------------------------|----------------|----------------|----------------|--------------------------|----------------|
| | Actual | Old BofA | Consensus | Guidance | New BofA |
| Sales (\$mn) | \$405.3 | \$407.4 | \$403.4 | \$350 +/- \$15 | \$350.0 |
| QoQ% | | 0.5% | | | -13.6% |
| YoY% | | -4.1% | | | -17.7% |
| Gross Margin % (GAAP) | 35.3% | 36.7% | | | 34.9% |
| Gross Margin % (Non-GAAP) | 35.7% | 36.8% | 36.9% | | 35.0% |
| Gross Profit (GAAP) | 142.9 | 149.5 | | | 122.0 |
| Gross Profit (Non-GAAP) | 144.5 | 150.1 | | | 122.5 |
| R&D | 49.0 | 52.4 | | | 49.0 |
| SG&A | 54.9 | 54.9 | | | 54.4 |
| Opex Total (GAAP) | 129.1 | 114.3 | | | 110.5 |
| Opex Total (Non-GAAP) | 94.9 | 99.9 | | | 95.3 |
| Operating Income (GAAP) | 13.8 | 35.2 | | | 11.6 |
| Operating Income (Non-GAAP) | 49.7 | 50.2 | 50 | | 27.2 |
| Operating Margin % (GAAP) | 3.4% | 8.6% | | | 3.3% |
| Operating Margin % (Non-GAAP) | 12.3% | 12.3% | 12.5% | | 7.8% |
| Pretax Income (GAAP) | 16.2 | 38.4 | | | 16.1 |
| Pretax Income (Non-GAAP) | 54.8 | 53.5 | | | 31.7 |
| Tax Rate (Non-GAAP) | 14.8% | 16.0% | | | 16.0% |
| Tax expense (Non-GAAP) | 8.1 | 0.0 | | | -5.1 |
| Net Income (GAAP) | 37.5 | 28.9 | | | 10.6 |
| Net Income (Non-GAAP) | 46.7 | 45.0 | | | 26.6 |
| Diluted EPS (GAAP) | \$1.01 | \$0.78 | | \$0.29 +/- \$0.20 | \$0.29 |
| Diluted EPS (Non-GAAP) | \$1.24 | \$1.18 | \$1.13 | \$0.70 +/- \$0.20 | \$0.70 |
| Diluted Shares | 37.6 | 38.3 | | | 37.8 |

Source: BofA Global Research estimates, company reports

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Balance sheet, cash flow snapshot

Exhibit 4: Summary of Balance Sheet and Cash Flow Statements

Net cash increased QoQ; inventory dollars decreased QoQ

| | Dec-22 | Mar-23 | Jun-23 | Sep-23 | Dec-23 | QoQ | YoY |
|---------------------------------|---------------|---------------|---------------|---------------|----------------|--------------|---------------|
| Total cash | \$459 | \$462 | \$455 | \$986 | \$1,045 | 5.9% | 127.7% |
| ST debt | \$20 | 20 | 20 | 20 | \$20 | | |
| LT debt | \$353 | 348 | 344 | 900 | \$896 | | |
| Total debt | \$373 | 368 | 364 | 920 | 916 | | |
| Net cash | \$86 | 93 | 92 | 66 | 129 | 95.0% | 50.6% |
| Net cash / share | \$2.27 | \$2.47 | \$2.43 | \$1.75 | \$3.43 | 96.4% | 51.0% |
| Days sales outstanding (DSO) | 55.8 | 62.4 | 56.7 | 60.0 | 63.4 | | |
| Days payables outstanding (DPO) | 49.6 | 62.6 | 50.6 | 48.6 | 49.2 | | |
| Inventory \$ | \$376 | \$402 | \$392 | \$364 | \$336 | -7.7% | -10.6% |
| Inventory turns | 3.3 | 2.7 | 2.7 | 2.9 | 3.1 | | |
| Inventory days | 109.6 | 135.7 | 133.4 | 126.5 | 116.9 | (9.6) | 7.2 |
| Cash conversion days | 115.8 | 135.5 | 139.4 | 137.9 | 131.1 | | |
| Cash flow from ops | \$71 | \$30 | \$23 | \$73 | \$84 | 15.8% | 18.8% |

Source: BofA Global Research, company reports

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Glossary:

AEIS (Advanced Energy)
 GM: Gross margin
 TSMC: Taiwan Semi
 LRCX: Lam Research
 AMAT: Applied Materials
 WFE: Wafer Fab Equipment

**Exhibit 5: AEIS - Income Statement (\$mn)**

AEIS delivered \$405mn in sales and \$1.24 in EPS in DecQ

| | Q1 | Q2 | Q3 | Q4 | Q1E | Q2E | Q3E | Q4E | Q1E | Q2E | Q3E | Q4E | FY23 | FY24E | FY25E | FY26E |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| FY (December) | 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-23 | Dec-24 | Dec-25 | Dec-26 |
| Revenues | \$425 | \$416 | \$410 | \$405 | \$350 | \$359 | \$380 | \$401 | \$412 | \$424 | \$434 | \$443 | \$1,656 | \$1,490 | \$1,713 | \$1,901 |
| QoQ | -13% | -2% | -1% | -1% | -14% | 3% | 6% | 6% | 3% | 3% | 2% | 2% | | | | |
| YoY | 7% | -6% | -21% | -17% | -18% | -13% | -7% | -1% | 18% | 18% | 14% | 11% | -10% | -10% | 15% | 11% |
| Cost of Sales | 270 | 268 | 263 | 262 | 228 | 231 | 242 | 252 | 258 | 265 | 270 | 274 | 1063 | 953 | 1068 | 1162 |
| Gross Profit (GAAP) | 155 | 147 | 147 | 143 | 122 | 128 | 138 | 149 | 154 | 159 | 165 | 169 | 592 | 537 | 646 | 739 |
| Gross Profit (Non-GAAP) | 157 | 148 | 148 | 145 | 123 | 129 | 138 | 149 | 154 | 159 | 165 | 169 | 594 | 538 | 648 | 741 |
| R&D Expense | 52 | 51 | 50 | 49 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 55 | 202 | 202 | 217 | 230 |
| SG&A Expense | 55 | 56 | 55 | 55 | 54 | 56 | 58 | 58 | 58 | 60 | 62 | 62 | 221 | 226 | 241 | 254 |
| Total Opex (GAAP) | 115 | 117 | 117 | 129 | 110 | 113 | 116 | 117 | 118 | 120 | 123 | 124 | 479 | 456 | 486 | 512 |
| Total Opex (Non-GAAP) | 100 | 99 | 97 | 95 | 95 | 99 | 102 | 102 | 103 | 105 | 108 | 109 | 390 | 398 | 425 | 447 |
| Operating Income (GAAP) | 40 | 30 | 30 | 14 | 12 | 15 | 22 | 32 | 35 | 39 | 41 | 45 | 114 | 80 | 160 | 227 |
| Operating Income (Non-GAAP) | 57 | 49 | 51 | 50 | 27 | 29 | 37 | 47 | 51 | 54 | 57 | 61 | 204 | 140 | 223 | 293 |
| Financing/Other Income (GAAP) | (1) | 2 | 4 | 2 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 9 | 14 | 13 | 13 |
| Financing/Other Income (Non-GAAP) | 1 | 0 | 1 | 5 | 5 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 7 | 14 | 13 | 13 |
| Pretax Income (GAAP) | 39 | 32 | 35 | 16 | 16 | 18 | 25 | 35 | 39 | 42 | 45 | 48 | 122 | 95 | 173 | 240 |
| Pretax Income (Non-GAAP) | 57 | 49 | 52 | 55 | 32 | 33 | 40 | 50 | 54 | 57 | 60 | 64 | 211 | 154 | 236 | 306 |
| Net Income (GAAP) | 31 | 27 | 33 | 38 | 11 | 13 | 18 | 27 | 30 | 32 | 34 | 37 | 128 | 68 | 134 | 189 |
| Net Income (Non-GAAP) | 47 | 42 | 49 | 47 | 27 | 27 | 34 | 42 | 45 | 48 | 51 | 54 | 184 | 130 | 198 | 257 |
| Diluted EPS (GAAP) | \$0.84 | \$0.73 | \$0.89 | \$1.01 | \$0.29 | \$0.35 | \$0.49 | \$0.70 | \$0.78 | \$0.84 | \$0.89 | \$0.96 | \$3.46 | \$1.83 | \$3.47 | \$4.80 |
| Diluted EPS (Non-GAAP) | \$1.24 | \$1.11 | \$1.28 | \$1.24 | \$0.70 | \$0.72 | \$0.88 | \$1.10 | \$1.18 | \$1.24 | \$1.30 | \$1.37 | \$4.88 | \$3.41 | \$5.09 | \$6.48 |
| YoY | 1% | -23% | -39% | -27% | -43% | -35% | -31% | -12% | 67% | 72% | 48% | 25% | -25% | -30% | 49% | 27% |
| Diluted Shares (Non-GAAP) | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 38 | 39 | 39 | 39 | 39 | 38 | 38 | 39 | 40 |
| Margin Analysis (Non-GAAP) | | | | | | | | | | | | | | | | |
| Gross Margin | 36.8% | 35.6% | 36.1% | 35.7% | 35.0% | 35.8% | 36.4% | 37.2% | 37.4% | 37.6% | 38.0% | 38.2% | 35.9% | 36.1% | 37.8% | 39.0% |
| R&D (GAAP) | 12.1% | 12.4% | 12.3% | 12.1% | 14.0% | 13.9% | 13.4% | 12.9% | 12.9% | 12.6% | 12.6% | 12.5% | 12.2% | 13.5% | 12.6% | 12.1% |
| SG&A (GAAP) | 13.0% | 13.4% | 13.4% | 13.6% | 15.5% | 15.6% | 15.2% | 14.5% | 14.1% | 14.1% | 14.2% | 14.0% | 13.3% | 15.2% | 14.1% | 13.4% |
| Opex | 23.5% | 23.7% | 23.7% | 23.4% | 27.2% | 27.6% | 26.7% | 25.5% | 25.1% | 24.8% | 24.8% | 24.5% | 23.6% | 26.7% | 24.8% | 23.5% |
| Operating Margin | 13.4% | 11.9% | 12.4% | 12.3% | 7.8% | 8.2% | 9.7% | 11.7% | 12.3% | 12.8% | 13.2% | 13.7% | 12.3% | 9.4% | 13.0% | 15.4% |
| Tax rate | 18.1% | 15.3% | 7.2% | 14.8% | 16.0% | 16.0% | 16.0% | 16.0% | 16.0% | 16.0% | 16.0% | 16.0% | 14.1% | 16.0% | 16.0% | 16.0% |
| Net Income | 11.1% | 10.1% | 11.8% | 11.5% | 7.6% | 7.6% | 8.8% | 10.5% | 11.0% | 11.4% | 11.7% | 12.1% | 11.1% | 8.7% | 11.6% | 13.5% |

Source: BofA Global Research estimates, Company reports

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Exhibit 6: AEIS - Segment Model (\$mn)

We expect AEIS Semis sales to decline -10% in CY24E

| | Q1 | Q2 | Q3 | Q4 | Q1E | Q2E | Q3E | Q4E | Q1E | Q2E | Q3E | Q4E | FY23 | FY24E | FY25E | FY26E |
|-------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|
| FY (December) | 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-23 | Dec-24 | Dec-25 | Dec-26 |
| Semiconductor Equipment | 194 | 173 | 185 | 191 | 176 | 183 | 190 | 199 | 207 | 213 | 220 | 226 | 744 | 748 | 866 | 974 |
| Industrial & Medical | 123 | 128 | 115 | 109 | 93 | 96 | 104 | 110 | 113 | 116 | 117 | 117 | 474 | 402 | 463 | 498 |
| Data Center Computing | 60 | 59 | 68 | 63 | 47 | 49 | 53 | 56 | 58 | 60 | 62 | 64 | 250 | 206 | 244 | 276 |
| Telecom & Networking | 48 | 56 | 41 | 42 | 34 | 31 | 33 | 36 | 34 | 35 | 36 | 36 | 188 | 134 | 141 | 152 |
| Total | 425 | 416 | 410 | 405 | 350 | 359 | 380 | 401 | 412 | 424 | 434 | 443 | 1,656 | 1,490 | 1,713 | 1,901 |
| QoQ Change % | | | | | | | | | | | | | | | | |
| Semiconductor Equipment | -16% | -11% | 7% | 3% | -8% | 4% | 4% | 5% | 4% | 3% | 3% | 3% | 0% | 0% | 0% | 0% |
| Industrial & Medical | 3% | 4% | -10% | -6% | -15% | 3% | 9% | 6% | 3% | 2% | 1% | 1% | 0% | 0% | 0% | 0% |
| Data Center Computing | -37% | -1% | 16% | -8% | -25% | 5% | 8% | 5% | 3% | 4% | 4% | 3% | 0% | 0% | 0% | 0% |
| Telecom & Networking | 8% | 16% | -26% | 2% | -20% | -8% | 5% | 9% | -5% | 4% | 2% | 1% | 0% | 0% | 0% | 0% |
| Total | -13% | -2% | -1% | -1% | -14% | 3% | 6% | 6% | 3% | 3% | 2% | 2% | 0% | 0% | 0% | 0% |
| YoY Change % | | | | | | | | | | | | | | | | |
| Semiconductor Equipment | -4% | -24% | -31% | -18% | -9% | 6% | 2% | 4% | 18% | 16% | 16% | 14% | -20% | 1% | 16% | 13% |
| Industrial & Medical | 48% | 22% | -4% | -9% | -25% | -25% | -10% | 1% | 22% | 21% | 12% | 7% | 11% | -15% | 15% | 8% |
| Data Center Computing | -22% | -15% | -22% | -34% | -21% | -16% | -22% | -11% | 23% | 21% | 16% | 14% | -24% | -17% | 18% | 13% |
| Telecom & Networking | 36% | 46% | -3% | -4% | -29% | -44% | -21% | -16% | 0% | 13% | 9% | 1% | 17% | -29% | 5% | 8% |
| Total | 7% | -6% | -21% | -17% | -18% | -13% | -7% | -1% | 18% | 18% | 14% | 11% | -10% | -10% | 15% | 11% |
| % of Sales | | | | | | | | | | | | | | | | |
| Semiconductor Equipment | 46% | 42% | 45% | 47% | 50% | 51% | 50% | 50% | 50% | 50% | 51% | 51% | 45% | 50% | 51% | 51% |
| Industrial & Medical | 29% | 31% | 28% | 27% | 27% | 27% | 27% | 27% | 28% | 27% | 27% | 26% | 29% | 27% | 27% | 26% |
| Data Center Computing | 14% | 14% | 17% | 16% | 13% | 14% | 14% | 14% | 14% | 14% | 14% | 14% | 15% | 14% | 14% | 15% |
| Telecom & Networking | 11% | 13% | 10% | 10% | 10% | 9% | 9% | 9% | 8% | 8% | 8% | 8% | 11% | 9% | 8% | 8% |
| Total | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

Source: BofA Global Research estimates, Company reports

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**Exhibit 7: AEIS - Balance Sheet (\$mn)**

AEIS net cash per share looks to increase in 2024

| FY (December) | Q1 Mar-23 | Q2 Jun-23 | Q3 Sep-23 | Q4 Dec-23 | Q1E Mar-24E | Q2E Jun-24E | Q3E Sep-24E | Q4E Dec-24E | Q1E Mar-25E | Q2E Jun-25E | Q3E Sep-25E | Q4E Dec-25E | FY23 Dec-23 | FY24E Dec-24 | FY25E Dec-25 | FY26E Dec-26 |
|---------------------------------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| Assets | | | | | | | | | | | | | | | | |
| Cash and cash equivalents | 462 | 455 | 986 | 1,045 | 1,105 | 1,114 | 1,123 | 1,128 | 1,160 | 1,188 | 1,214 | 1,242 | 1,045 | 1,128 | 1,242 | 1,396 |
| Marketable Securities/other cash | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Accounts and other receivables, net | 292 | 259 | 270 | 282 | 240 | 243 | 256 | 270 | 278 | 282 | 288 | 294 | 282 | 270 | 294 | 323 |
| Inventories | 402 | 392 | 364 | 336 | 317 | 319 | 320 | 334 | 328 | 334 | 340 | 346 | 336 | 334 | 346 | 369 |
| Other current assets | 55 | 47 | 53 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| Total current assets | 1,210 | 1,153 | 1,673 | 1,712 | 1,711 | 1,725 | 1,749 | 1,781 | 1,815 | 1,852 | 1,890 | 1,931 | 1,712 | 1,781 | 1,931 | 2,136 |
| Operating lease right-of-use assets | 96 | 94 | 99 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Other assets, net | 85 | 86 | 110 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 | 136 |
| Property and equipment, net | 153 | 159 | 162 | 168 | 182 | 196 | 211 | 227 | 244 | 261 | 278 | 296 | 168 | 227 | 296 | 372 |
| Goodwill and intangible assets, net | 465 | 458 | 450 | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 | 445 |
| Total Assets | 2,009 | 1,950 | 2,494 | 2,557 | 2,569 | 2,598 | 2,637 | 2,686 | 2,736 | 2,790 | 2,845 | 2,904 | 2,557 | 2,686 | 2,904 | 3,185 |
| Liabilities & Equity | | | | | | | | | | | | | | | | |
| Accounts payable | 186 | 149 | 140 | 142 | 131 | 133 | 139 | 145 | 148 | 152 | 155 | 157 | 142 | 145 | 157 | 166 |
| Other current liabilities | 198 | 154 | 174 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 | 194 |
| Total current liabilities | 384 | 303 | 315 | 336 | 325 | 327 | 333 | 339 | 342 | 346 | 349 | 351 | 336 | 339 | 351 | 360 |
| Long-term debt | 348 | 344 | 900 | 896 | 891 | 886 | 881 | 876 | 871 | 866 | 861 | 856 | 896 | 876 | 856 | 836 |
| Other long-term liabilities | 180 | 178 | 178 | 181 | 181 | 181 | 181 | 181 | 181 | 181 | 181 | 181 | 181 | 181 | 181 | 181 |
| Total Liabilities | 913 | 825 | 1,393 | 1,413 | 1,396 | 1,393 | 1,394 | 1,395 | 1,394 | 1,393 | 1,390 | 1,388 | 1,413 | 1,395 | 1,388 | 1,377 |
| Total shareholders' equity | 1,096 | 1,125 | 1,101 | 1,144 | 1,173 | 1,204 | 1,243 | 1,291 | 1,342 | 1,397 | 1,455 | 1,516 | 1,144 | 1,291 | 1,516 | 1,808 |
| Total Liab. & Stock Equity | 2,009 | 1,950 | 2,494 | 2,557 | 2,569 | 2,598 | 2,637 | 2,686 | 2,736 | 2,790 | 2,845 | 2,904 | 2,557 | 2,686 | 2,904 | 3,185 |
| Cash and Liquidity Ratios | | | | | | | | | | | | | | | | |
| Total Cash | 462 | 455 | 986 | 1,045 | 1,105 | 1,114 | 1,123 | 1,128 | 1,160 | 1,188 | 1,214 | 1,242 | 1,045 | 1,128 | 1,242 | 1,396 |
| Short-term debt | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Long-term debt | 348 | 344 | 900 | 896 | 891 | 886 | 881 | 876 | 871 | 866 | 861 | 856 | 896 | 876 | 856 | 836 |
| Total debt | 368 | 364 | 920 | 916 | 911 | 906 | 901 | 896 | 891 | 886 | 881 | 876 | 916 | 896 | 876 | 856 |
| Net Cash | 93 | 92 | 66 | 129 | 194 | 208 | 223 | 233 | 270 | 302 | 333 | 367 | 129 | 233 | 367 | 540 |
| Net Cash/dil. share | \$2.47 | \$2.43 | \$1.75 | \$3.43 | \$5.13 | \$5.49 | \$5.83 | \$6.06 | \$6.99 | \$7.80 | \$8.54 | \$9.36 | \$3.41 | \$6.11 | \$9.43 | \$13.61 |
| Cash conversion ratios | | | | | | | | | | | | | | | | |
| Days Sales Outstanding (DSO) | 62.4 | 56.7 | 60.0 | 63.4 | 62.4 | 61.4 | 61.4 | 61.4 | 61.4 | 60.4 | 60.4 | 60.4 | | | | |
| Payable Days (DPO) | 62.6 | 50.6 | 48.6 | 49.2 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 | 52.2 | | | | |
| Inventory Days (DIO) | 135.7 | 133.4 | 126.5 | 116.9 | 126.9 | 125.9 | 120.9 | 120.9 | 115.9 | 114.9 | 114.9 | 114.9 | | | | |
| Cash Conversion Days | 135.5 | 139.4 | 137.9 | 131.1 | 137.1 | 135.1 | 130.1 | 130.1 | 125.1 | 123.1 | 123.1 | 123.1 | | | | |

Source: BofA Global Research estimates, Company reports

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Exhibit 8: AEIS - Cash Flow Statement (\$mn)

AEIS had nearly \$4 in FCF per share in CY23

| FY (December) | Q1 Mar-23 | Q2 Jun-23 | Q3 Sep-23 | Q4 Dec-23 | Q1E Mar-24E | Q2E Jun-24E | Q3E Sep-24E | Q4E Dec-24E | Q1E Mar-25E | Q2E Jun-25E | Q3E Sep-25E | Q4E Dec-25E | FY23 Dec-23 | FY24E Dec-24 | FY25E Dec-25 | FY26E Dec-26 |
|---|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| Operating Activities | | | | | | | | | | | | | | | | |
| Net income | 31 | 27 | 33 | 38 | 11 | 13 | 18 | 27 | 30 | 32 | 34 | 37 | 128 | 68 | 134 | 189 |
| Depreciation and Amortization | 17 | 16 | 17 | 17 | 14 | 15 | 16 | 17 | 17 | 18 | 18 | 18 | 67 | 62 | 71 | 79 |
| Stock-based compensation | 7 | 8 | 8 | 8 | 7 | 7 | 8 | 8 | 8 | 9 | 9 | 9 | 31 | 30 | 35 | 38 |
| Changes in operating assets and liabilities | | | | | | | | | | | | | | | | |
| Trade accounts receivable | 9 | 33 | (12) | (12) | 42 | (3) | (14) | (14) | (8) | (4) | (7) | (6) | 18 | 12 | (24) | (28) |
| Inventories | (26) | 9 | 28 | 28 | 19 | (2) | (1) | (14) | 6 | (6) | (6) | (6) | 40 | 2 | (12) | (23) |
| Trade accounts payable | 15 | (37) | (9) | 2 | (11) | 2 | 6 | 6 | 4 | 4 | 3 | 3 | (29) | 3 | 13 | 9 |
| Cash From Operations | 30 | 23 | 73 | 84 | 83 | 33 | 33 | 30 | 57 | 53 | 52 | 55 | 209 | 178 | 218 | 265 |
| Investing Activities | | | | | | | | | | | | | | | | |
| Other | 0 | (3) | (0) | (0) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (4) | 0 | 0 | 0 |
| Purchase of property and equipment | (16) | (17) | (13) | (14) | (14) | (14) | (15) | (16) | (16) | (17) | (17) | (18) | (61) | (60) | (69) | (76) |
| Cash From Investing | (16) | (21) | (13) | (15) | (14) | (14) | (15) | (16) | (16) | (17) | (17) | (18) | (65) | (60) | (69) | (76) |
| Financing Activities | | | | | | | | | | | | | | | | |
| Purchase and retirement of common stock | 0 | 0 | (40) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | (40) | 0 | 0 | 0 |
| Proceeds from exercise of share options | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dividend payments | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (4) | (15) | (15) | (15) | (15) |
| Cash From Financing | (11) | (8) | 473 | (9) | (9) | (9) | (9) | (9) | (9) | (9) | (9) | (9) | 446 | (35) | (35) | (35) |
| Net Change in Cash/Eqv. | 3 | (6) | 531 | 59 | 60 | 9 | 9 | 5 | 32 | 28 | 26 | 29 | 586 | 84 | 114 | 153 |
| Cash/Eqv. at beginning of period | 459 | 462 | 455 | 986 | 1,045 | 1,105 | 1,114 | 1,123 | 1,128 | 1,160 | 1,188 | 1,214 | 459 | 1,045 | 1,128 | 1,242 |
| Cash/Eqv. at end of period | 462 | 455 | 986 | 1,045 | 1,105 | 1,114 | 1,123 | 1,128 | 1,160 | 1,188 | 1,214 | 1,242 | 1,045 | 1,128 | 1,242 | 1,396 |
| Free Cash Flow | 14 | 5 | 59 | 70 | 69 | 18 | 18 | 14 | 41 | 36 | 34 | 38 | 148 | 119 | 149 | 189 |
| FCF/share | \$0.36 | \$0.14 | \$1.57 | \$1.86 | \$1.82 | \$0.48 | \$0.48 | \$0.35 | \$1.06 | \$0.94 | \$0.88 | \$0.96 | \$3.92 | \$3.12 | \$3.84 | \$4.75 |
| TTM FCF | 142 | 121 | 129 | 148 | 203 | 216 | 175 | 119 | 91 | 109 | 125 | 149 | | | | |
| TTM FCF Margin | 7.6% | 6.6% | 7.4% | 8.9% | 12.9% | 14.2% | 11.7% | 8.0% | 5.9% | 6.8% | 7.5% | 8.7% | 8.9% | 8.0% | 8.7% | 9.9% |

Source: BofA Global Research estimates, Company reports

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Price objective basis & risk

Advanced Energy Industries (AEIS)

We assign a \$107 PO, which is based on 20x our CY25E non-GAAP EPS. This is at the lower end of peers trading at 14x-60x and is justified, in our view, given Advanced Energy's lower margin and cash flow profiles.

Upside risks: 1) faster than anticipated industrials market share gains, 2) faster than anticipated gross margin expansion from cyclical recovery.

Downside risks: 1) increasing exposure to more commoditized (less proprietary) end markets, 2) potential broadening of China export restrictions impacting semicap equipment customers, 3) historically cyclical nature of semiconductor capital spending.

Analyst Certification

I, Duksan Jang, 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 |
|-------------------|---------|-------------|------------------|---------|
|-------------------|---------|-------------|------------------|---------|

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

iQmethodSM is the set of BofA Global Research standard measures that serve to maintain global consistency under three broad headings: Business Performance, Quality of Earnings, and validations. The key features of iQmethod are: A consistently structured, detailed, and transparent methodology. Guidelines to maximize the effectiveness of the comparative valuation process, and to identify some common pitfalls.

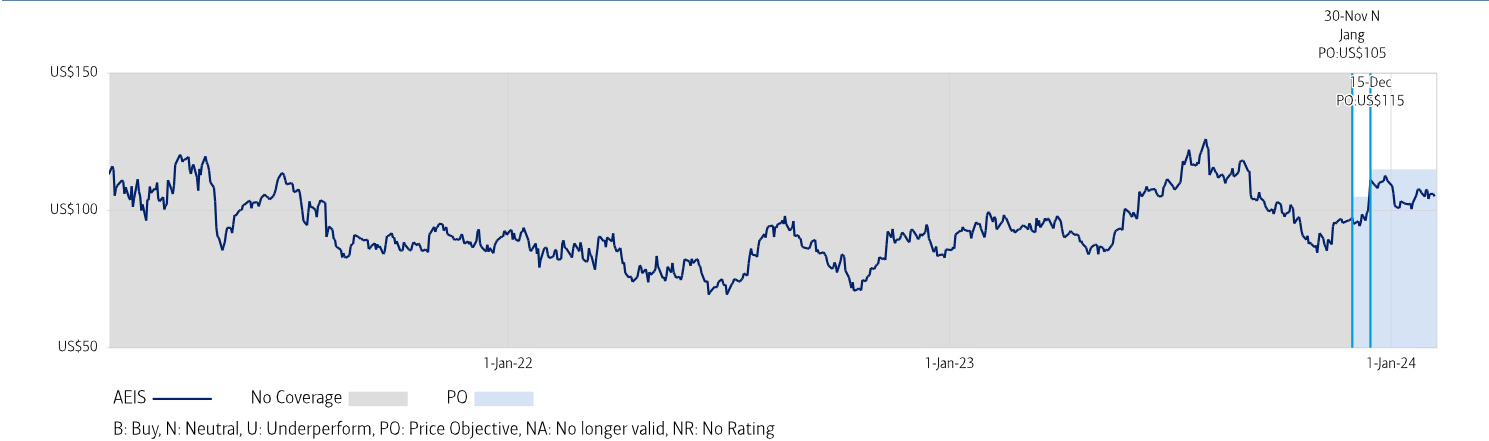
iQdatabase[®] is our real-time global research database that is sourced directly from our equity analysts' earnings models and includes forecasted as well as historical data for income statements, balance sheets, and cash flow statements for companies covered by BofA Global Research.

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Disclosures

Important Disclosures

Advanced Energy (AEIS) Price Chart



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

Equity Investment Rating Distribution: 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.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

| 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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