

Advanced Micro Devices is the number-two player in x86-based microprocessors, behind Intel, and -- with the 2008 acquisition of ATI -- a top player in graphic processors. In 2021, Advanced Micro Devices acquired Xilinx, expanding its presence in embedded computing and data center.

## Analyst's Notes

Analysis by Jim Kelleher, CFA, February 1, 2023

**ARGUS RATING: BUY**

- PC weakness, data center strength, caution ahead
- Advanced Micro Devices posted 4Q22 non-GAAP results that exceeded guidance and consensus estimates. Total revenue was up 16% despite weak client (PC) demand.
- AMD posted a 16% annual decline in non-GAAP EPS for 4Q22, following 3Q22 results that included its first negative EPS comp since 2Q19.
- AMD's client (PC) segment sales in 4Q22 were half the level of 4Q21 sales. Worldwide PC unit sales declined 29% in 4Q22 on top of a 15% decline in 3Q22.
- AMD's cautious 1Q23 guidance on revenue (down 10% year-over-year) reflects the challenging environment. Demand will likely remain weak into early 2023, although we look for sequential recovery as the year progresses.

## INVESTMENT THESIS

BUY-rated Advanced Micro Devices Inc. (NGS: AMD) rose 7% in a down market on 2/1/23 after the company delivered results that exceeded 4Q22 guidance. AMD posted 4Q22 revenue growth of 16%, while non-GAAP EPS fell 25%.

AMD's client (PC) segment sales in 4Q22 were half the level of 4Q21 sales. For context, worldwide PC sales declined 29% in 4Q22 on top of a 15% decline in 3Q22. PC demand will likely remain weak into early 2023, although we look for sequential recovery as the year progresses. AMD's cautious 1Q23 revenue growth and gross margin guidance forecast reflects the challenging environment.

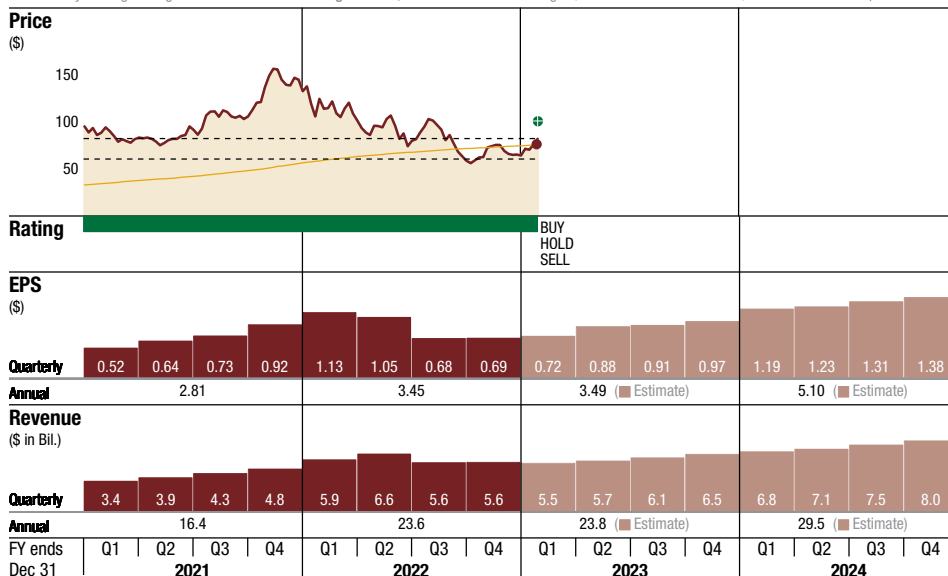
Gaming-related sales declined year over year, reflecting both inflationary pressure on discretionary purchases as well as long-in-the-tooth gaming consoles from the major OEMs. Embedded has become a \$4.5 billion annual business for AMD, compared with \$1.25 billion for 2021; that is mainly though not exclusively due to the Xilinx acquisition. Data Center grew 42% year-over-year in 4Q and 64% for the year. Now a \$6 billion annual business, data center is driven by market share gains for AMD's EPYC server CPUs.

As Intel's recent quarterly releases have made clear, AMD has gained meaningful global market share in CPUs for the data center and client space in the past several years. AMD delivered full-year 2022 revenue growth of 44%, on top of 68% growth in 2021 reflecting

## Market Data

Pricing reflects previous trading week's closing price.

— 200-Day Moving Average — Target Price: \$100.00 — 52 Week High: \$81.81 — 52 Week Low: \$60.05 — Closed at \$75.40 on 2/27



## Argus Recommendations

Twelve Month Rating	SELL	HOLD	BUY
Five Year Rating	SELL	HOLD	BUY
Sector Rating	Under Weight	Market Weight	Over Weight

Argus assigns a 12-month BUY, HOLD, or SELL rating to each stock under coverage.

- BUY-rated stocks are expected to outperform the market (the benchmark S&P 500 Index) on a risk-adjusted basis over the next year.
- HOLD-rated stocks are expected to perform in line with the market.
- SELL-rated stocks are expected to underperform the market on a risk-adjusted basis.

The distribution of ratings across Argus' entire company universe is: 71% Buy, 28% Hold, 0% Sell.

## Key Statistics

Key Statistics pricing data reflects previous trading day's closing price. Other applicable data are trailing 12-months unless otherwise specified

### Market Overview

Price	\$75.15
Target Price	\$100.00
52 Week Price Range	\$54.57 to \$132.96
Shares Outstanding	1.61 Billion
Dividend	\$0.00

### Sector Overview

Sector	Technology
Sector Rating	MARKET WEIGHT
Total % of S&P 500 Market Cap.	25.00%

### Financial Strength

Financial Strength Rating	MEDIUM-HIGH
Debt/Capital Ratio	8.9%
Return on Equity	10.7%
Net Margin	5.6%
Payout Ratio	--
Current Ratio	2.02
Revenue	\$23.60 Billion
After-Tax Income	\$1.32 Billion

### Valuation

Current FY P/E	21.53
Prior FY P/E	21.78
Price/Sales	5.13
Price/Book	2.22
Book Value/Share	\$33.83
Market Capitalization	\$121.17 Billion

### Forecasted Growth

1 Year EPS Growth Forecast	1.16%
5 Year EPS Growth Forecast	15.00%
1 Year Dividend Growth Forecast	N/A

### Risk

Beta	1.55
Institutional Ownership	67.88%

## Analyst's Notes...Continued

multi-year gains in market share. The early 2023 growth outlook is uncertain. But share gains in client and in data center, market leadership in console gaming, and the much enhanced embedded business position AMD for long-term growth exceeding those of the market and the peer group.

AMD has announced that long-time finance industry professional Jean Hu is joining the company as CFO. She replaces Devinder Kumar, who is retiring, CFO. Hu has served in the CFO role (and at times as interim CEO) at QLogic, Conexant, and Marvell, along with other postings. She is well-respected in financial circles, and we believe she will benefit the already strong leadership team at AMD.

In our view, the share price does not fully reflect AMD's long-term revenue and margin growth potential, along with ongoing market share gains at Intel's expense. We are reiterating our BUY rating and 12-month target price of \$100.

### RECENT DEVELOPMENTS

AMD is up 16% year-to-date in 2023, while the peer group is up 15%. AMD declined 55% in 2022, while the Argus semiconductor peer group fell 36%. AMD advanced 57% in 2021, versus a 34% gain for peer group; rose 100% in 2020, while peers advanced 49%; was up 148% in 2019, while peers were up 54%; and rose 80% in 2018, compared with a 4% decline for peers. AMD, which has been as high as \$154 late in 2021, was a sub-\$2 stock in 2015.

For 4Q22, Advanced Micro Devices reported revenue of \$6.0 billion, which was up 16% year-over-year and 1% sequentially. Revenue included a full contribution from Xilinx. Revenue exceeded the high end of the guidance range of \$5.2-\$5.8 billion and was nearly half a billion dollars above the consensus estimate of \$5.5 billion. Non-GAAP profit totaled \$0.69 per diluted share, down 25% from \$0.92 a year earlier and up \$0.01 sequentially. AMD management does not provide explicit EPS guidance. The Street had projected non-GAAP EPS of \$0.67.

As of mid-year 2022, AMD had delivered a long string of record quarters, powering through the pandemic and the supply chain crisis while taking share in multiple end-markets. The acquisition of Xilinx appeared to position AMD to build on existing strength and growing presence in data center markets.

The emergence of inflation at 40-year highs has changed global consumer spending patterns and has had a particularly intense impact in the consumer electronics space. For many companies, consumer weakness has spilled into the enterprise, carrier, and cloud data-center end markets. Fueled by the Xilinx acquisition and its own competitive share gains, AMD was able to offset some of the most intense weakness in the client space with strong product sales in data center and embedded processing.

CEO Lisa Su began by thanking former CFO Devinder Kumar for a remarkable 39 years at AMD, and welcoming incoming CFO Jean Hu. Over the past 14 years, she has served in the CFO role (and at times as interim CEO) at QLogic, Conexant, and Marvell.

## Growth & Valuation Analysis

### GROWTH ANALYSIS

(\$ in Millions, except per share data)

	2017	2018	2019	2020	2021
Revenue	5,253	6,475	6,731	9,763	16,434
COGS	3,466	4,028	3,863	5,416	8,505
Gross Profit	1,787	2,447	2,868	4,347	7,929
SG&A	516	562	750	995	1,448
R&D	1,196	1,434	1,547	1,983	2,845
Operating Income	127	451	631	1,369	3,648
Interest Expense	120	103	79	39	26
Pretax Income	-8	330	372	1,275	3,669
Income Taxes	18	-9	31	-1,210	513
Tax Rate (%)	28	—	8	—	14
Net Income	-33	337	341	2,490	3,162
Diluted Shares Outstanding	952	1,064	1,120	1,207	1,229
EPS	-0.03	0.32	0.30	2.06	2.57
Dividend	—	—	—	—	—

### GROWTH RATES (%)

Revenue	21.6	23.3	4.0	45.0	68.3
Operating Income	—	255.1	39.9	117.0	166.5
Net Income	—	683.7	1.2	630.2	27.0
EPS	—	700.0	-6.2	586.7	24.8
Dividend	—	—	—	—	—
Sustainable Growth Rate	-15.2	43.3	12.7	29.1	72.1

### VALUATION ANALYSIS

Price: High	—	\$34.14	\$47.31	\$97.98	\$164.46
Price: Low	—	\$9.04	\$16.94	\$36.75	\$72.50
Price/Sales: High-Low	— - —	5.6 - 1.5	7.9 - 2.8	12.1 - 4.5	12.3 - 5.4
P/E: High-Low	— - —	106.7 - 28.3	157.7 - 56.5	47.6 - 17.8	64.0 - 28.2
Price/Cash Flow: High-Low	— - —	111.4 - 29.5	304.6 - 109.1	122.2 - 45.8	61.9 - 27.3

## Financial & Risk Analysis

### FINANCIAL STRENGTH

	2019	2020	2021
Cash (\$ in Millions)	1,466	1,595	2,535
Working Capital (\$ in Millions)	2,238	3,726	4,343
Current Ratio	1.95	2.54	2.02
LT Debt/Equity Ratio (%)	24.2	9.1	4.7
Total Debt/Equity Ratio (%)	24.2	9.1	8.8

### RATIOS (%)

Gross Profit Margin	42.6	44.5	48.2
Operating Margin	9.4	14.0	22.2
Net Margin	5.1	25.5	19.2
Return On Assets	6.4	33.2	29.6
Return On Equity	16.7	57.5	47.4

### RISK ANALYSIS

Cash Cycle (days)	84.1	104.5	86.6
Cash Flow/Cap Ex	2.3	3.6	11.7
Oper. Income/Int. Exp. (ratio)	5.0	28.1	108.9
Payout Ratio			

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## Analyst's Notes...Continued

She is well respected in financial circles, and we believe she will benefit the already strong leadership team at AMD.

Overall, and despite challenges that were growing as the fourth quarter progressed, the CEO called 2022 a strong year for AMD. The company transformed the company and accelerated the data center business with new products and the acquisitions of Xilinx and Pensando. Data Center and Embedded product sales reached a combined \$10.6 billion in 2022, up from \$3.9 billion in 2021.

For 4Q22, Data Center revenue of \$1.66 billion (30% of total) was up 42% year-over-year and was up 3% sequentially. Data Center operating profit of \$444 million rose 20% from a year earlier, although segment margin tightened to 26.8% in 4Q22 from 31.7% for 4Q21, on mix and higher costs.

Under the new re-organization following the Xilinx acquisition, Data Center primarily includes EPYC server CPUs, GPUs, data processing units (DPUs) and FPGAs and SoCs that largely came from Xilinx. Data Center growth in 4Q22 was led by EPYC microprocessor sales, with significant demand growth across cloud customers. Cloud sales to North American customers more than doubled year over year as hyperscale customers continuing moving their internal workload and external instances to EPYC processors.

Also in Data Center, enterprise revenue declined year-over-year as demand slowed in a worsening macro-environment. Despite these challenges, AMD continued expending its pipeline by closing several new wins in 4Q22 with Fortune 500 companies in financial services, technology, energy, aerospace, and other verticals. EPYC

is also winning sockets in high-performance computing (HPC). AMD now powers more than 100 of the world's fastest supercomputers, according to the CEO, including 15 of the 20 most energy-efficient supercomputers.

In November, AMD introduced its fourth-generation EPYC processor family, delivering twice the performance with an 80% energy-efficiency boost compared to prior iterations. Customer response has been positive, though likely tempered by the current environment.

Also for 4Q22, Client revenue of \$903 million (16% of total) declined 51% annually and 12% sequentially. Client posted an operating loss of \$152 million for 4Q22, down from a profit of \$530 million a year earlier; the Client business was also unprofitable in sequentially adjacent 3Q22.

Client includes CPUs, accelerated processing units (APUs) that integrate microprocessors with graphics processors, and chipsets for desktop and notebook PCs. While demand weakness was most intense in consumer channels, the entire PC space has slowed dramatically.

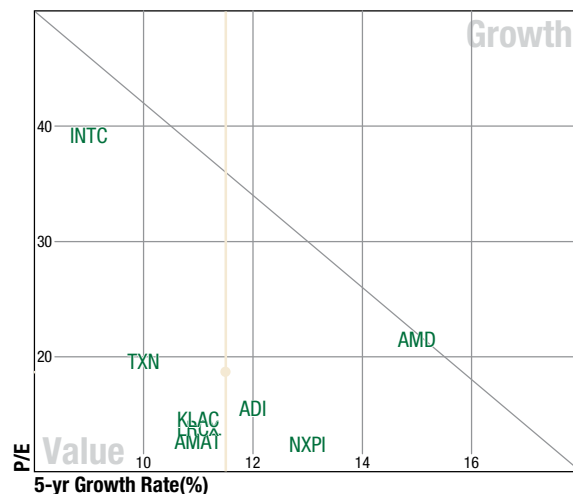
According to IDC, worldwide PC unit sales declined 29% in 4Q22 on top of a 15% decline in 3Q22. The consumer and notebook distribution channel remains cautious, and the CEO noted that AMD continued to ship units below actual PC consumption in the fourth quarter. In this way, AMD is helping channel partners further reduce inventory.

At the same time, AMD has delivered multiple new products

## Peer & Industry Analysis

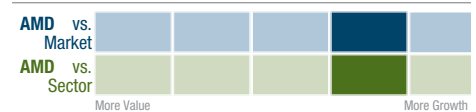
The graphics in this section are designed to allow investors to compare AMD versus its industry peers, the broader sector, and the market as a whole, as defined by the Argus Universe of Coverage.

- The scatterplot shows how AMD stacks up versus its peers on two key characteristics: long-term growth and value. In general, companies in the lower left-hand corner are more value-oriented, while those in the upper right-hand corner are more growth-oriented.
- The table builds on the scatterplot by displaying more financial information.
- The bar charts on the right take the analysis two steps further, by broadening the comparison groups into the sector level and the market as a whole. This tool is designed to help investors understand how AMD might fit into or modify a diversified portfolio.

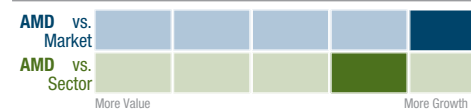


Ticker	Company	Market Cap (\$ in Millions)	5-yr Growth Rate (%)	Current FY P/E	Net Margin (%)	1-yr EPS Growth (%)	Argus Rating
TXN	Texas Instruments Inc.	160,552	10.0	19.6	43.7	12.0	BUY
AMD	Advanced Micro Devices Inc.	121,169	15.0	21.5	5.6	46.1	BUY
INTX	Intel Corp.	116,912	9.0	39.3	12.7	168.1	BUY
AMAT	Applied Materials Inc.	93,995	11.0	12.7	25.3	6.4	BUY
ADI	Analog Devices Inc.	87,329	12.0	15.5	22.9	13.2	BUY
LRCX	Lam Research Corp.	67,482	11.0	13.8	26.9	5.3	BUY
KLAC	KLA Corp.	54,351	11.0	14.6	33.8	5.8	BUY
NXPI	NXP Semiconductors NV	47,761	13.0	12.4	21.1	14.1	BUY
Peer Average		93,694	11.5	18.7	24.0	33.9	

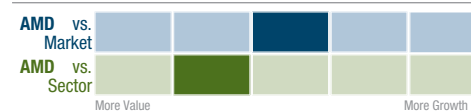
### P/E



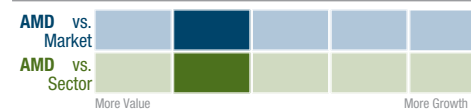
### Price/Sales



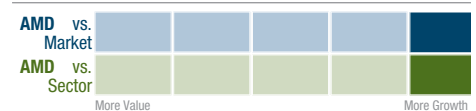
### Price/Book



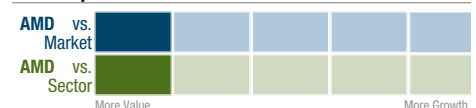
### PEG



### 5 Year Growth



### Debt/Capital



## Analyst's Notes...Continued

that the company believes is helping mitigate some of the worst of the downdraft. Although overall PC demand remains soft, the CEO noted that 'desktop channel sell-through increased sequentially during the holiday season.' AMD launched its latest-generation Ryzen series notebook processors in January, including the first Ryzen processors to feature AI capabilities. This includes the on-chip AI inference engine built into an x86 processor, in the first integration of AMD and Xilinx intellectual property.

Gaming revenue of \$1.64 billion (29% of total) was down 7% year-over-year and up 1% sequentially. Gaming operating profit of \$269 million was down 35% from the year-earlier holiday quarter, while segment margin of 16.2% in 4Q22 declined from 23.1% for 4Q21.

The Gaming segment primarily includes discreet graphics processing units (GPUs) under the Radeon name along with semi-custom SoC products and development services. In 4Q22, lower gaming graphics sales more than offset higher semi-custom revenue. Despite the maturity of the major gaming consoles including Microsoft Xbox and Sony PS5, semi-custom SoC revenue 'remained strong' in the holiday quarter. Although both console families are relatively late in life, console scarcity beginning in the pandemic and stretching through the supply chain crisis appears to have resulted in significant pent-up demand that carried into holiday sales.

Embedded revenue of \$1.40 billion (25% of total) rose from \$71 million a year earlier. Embedded sales were also up 7% sequentially representing organic growth, given that Xilinx fully has contributed since 2Q22. Embedded operating profit was \$699 million compared to \$18 million a year earlier; segment margin was 50.0% in 4Q22 vs. 25.4% for 4Q21.

The Embedded segment includes a variety of CPUs, GPUs, FPGAs, adaptive SoCs, and Adaptive Compute Acceleration Platform (ACAP) products. Sales of acquired Xilinx product families are growing because AMD has brought additional manufacturing scales and marketing resources to these products. Key categories served, including aerospace-defense, industrial, medical, and semiconductor test & measurement, all grew in the quarter; several categories achieved record sales. AMD recently announced multiple new wins in automotive in areas including ADAS and LiDAR for semi-autonomous driving.

In the year since closing Xilinx, according to the CEO, integration has gone extremely well. The company believes AMD overall is positioned to grow revenue and gain share in 2023 based on the strength of its competitive positioning and leadership high-performance and adaptive-computing product portfolios.

As 2023 gets underway, AMD looks for a strong year despite the weak PC market. The company looks for a stronger second half than first half, with diversified strength across data center, gaming, and embedded to counter PC weakness until the client bus

## EARNINGS & GROWTH ANALYSIS

For 4Q22, Advanced Micro Devices reported revenue of \$6.0 billion, which was up 16% year-over-year and 1% sequentially. Revenue included a full contribution from Xilinx. Revenue exceeded the high end of the guidance range of \$5.2-\$5.8 billion and was nearly half a billion dollars above the consensus estimate of \$5.5 billion.

Non-GAAP gross margin was 51.1% for 4Q22, vs. 49.9% for 3Q22 and 50.3% a year earlier; gross margins gains reflected better mix (fewer consumer PCs). Non-GAAP operating margin was

22.5% for 3Q22, vs. 22.7% for 3Q22 and 27.5% a year earlier.

Non-GAAP profit totaled \$0.69 per diluted share, down 25% from \$0.92 a year earlier and up \$0.01 sequentially. AMD management does not provide explicit EPS guidance. The Street had projected non-GAAP EPS of \$0.67.

For 2022, revenue of \$23.6 billion rose 44% from \$16.4 billion for 2021; and non-GAAP EPS of \$3.54 was up 26% from \$2.81 a year earlier.

For 1Q23, AMD guided for revenue of \$5.0-\$5.6 billion, which at the \$5.3 billion midpoint would be down 10% annually and 5% from 4Q22. The adjusted gross margin is forecast at 50% for 1Q23, compared with 52.7% a year earlier. Along with other elements of line-item guidance, AMD's 1Q23 guidance is consistent with EPS in the \$0.60-\$0.80 range, compared to \$1.13 a year earlier.

We are lowering our 2023 non-GAAP estimate to \$3.49 per diluted share from \$4.57. We are implementing a non-GAAP EPS forecast for 2024 of \$5.10 per diluted share.

We regard our estimates as fluid and subject to revision, particularly given the uncertain global economic and demand outlook. Our five-year non-GAAP annualized EPS growth rate forecast remains 15%, among the highest in Argus Technology coverage.

## FINANCIAL STRENGTH & DIVIDEND

Our financial strength rating on AMD is Medium-High. AMD has successfully restructured its debt, which is helping the company to reduce interest costs. The company has swung to a net cash position from a net debt position, and has stepped up shareholder returns. We note that the acquisition of Xilinx should add net cash of about \$2.2 billion (gross cash of \$3.7 billion minus all-in debt of \$1.5 billion), based on Xilinx's balance sheet as of 12/31/21).

AMD's cash was \$5.91 billion at the end of 2022, reflecting the addition of Xilinx gross cash. Cash was \$3.61 billion at the end of 2021, \$2.29 billion at the end of 2020, \$1.50 billion at the end of 2019, and \$1.08 billion at year-end 2018.

Total debt was \$2.47 billion as of the end of 2022, reflecting the addition of Xilinx gross debt. Debt was \$313 million as of the end of 2021, \$330 million as of the end of 2020, \$685 million at the end of 2019, and \$1.25 billion at year-end 2018.

Net cash was \$3.45 billion at the end of 2022. Net cash was \$3.29 billion at the end of 2021, \$1.96 billion at the end of 2020, and \$818 million at the end of 2019. Prior to mid-2019, AMD was in a net debt position for multiple years. Net debt was \$172 million at year-end 2018 and \$210 million at year-end 2017.

Cash flow from operations was \$3.57 billion in 2022. Cash flow from operations was \$3.52 billion in 2021, \$1.07 billion in 2020, \$493 million in 2019, and \$34 million in 2018.

In May 2022, AMD announced an \$8 billion share-repurchase authorization; that is in addition to the \$4 billion authorization announced in 2021. Previously, share repurchases were used primarily to offset dilution from stock-based compensation.

We do not expect AMD to pay a dividend in 2023 or 2024.

## MANAGEMENT & RISKS

Lisa Su became CEO in October 2014; she was recently elevated to chairman of the board. In January 2023, AMD announced that long-time finance industry professional Jean Hu is joining the company as CFO. She replaces Devinder Kumar, who is retiring. CFO. Hu has served in the CFO role (and at times as interim CEO)



## Analyst's Notes...Continued

at QLogic, Conexant, and Marvell, along with other postings. She is well-respected in financial circles, and we believe she will benefit the already strong leadership team at AMD. Saeied Moshkelani is SVP and GM of Client Compute Group.

We believe that the company's IP monetization strategy, as well as success in EE&SC, could give CEO Su a longer leash than was given to prior CEOs. The pandemic has turned around what had been structural decline in PCs, and AMD appears positioned for market share gains at the expense of Intel, which is wrestling with production issues.

The acquisition of Xilinx for \$35 billion carries multiple risks, including potential issues with cultural integration, a misreading of end-market outlooks, and potential end-market cannibalization. We believe these risks are worth the TAM opportunities afforded by XLNX. The all-stock nature of the deal also eliminates the potential for a cumbersome debt burden. The deal has diluted the share base, but AMD is acquiring growing and higher-margin assets that should not be dilutive to EPS.

A main risk for AMD, as for other semiconductor companies, is the possibility of a general economic downturn and a corresponding dip in technology hardware sales due to inflation and rising interest rates. We believe that AMD has the financial strength, market leadership, and growth characteristics to weather this storm and emerge a stronger player. We also believe the percentage of hours worked away from the office will continue to increase. That should drive long-term demand for personal PCs served by AMD CPUs, for data center CPUs to manage fast-growing data traffic, and for GPUs for gaming applications.

AMD has been betting heavily on nontraditional businesses, including embedded, micro-server, and semi-custom (gaming console). Simultaneously, AMD is supporting both stand-alone CPU and GPU lines as well as its APU line that combines compute and graphics processing on a single die.

### COMPANY DESCRIPTION

Advanced Micro Devices is the number-two player in x86-based microprocessors, behind Intel, and -- with the 2008 acquisition of ATI -- a top player in graphic processors. In 2021, Advanced Micro Devices acquired Xilinx, expanding its presence in embedded computing and data center.

### VALUATION

AMD shares are trading at 21.5-times our 2023 non-GAAP EPS estimate and at 14.7-times our 2024 projection. AMD trades at a two-year forward P/E of 18.1, compared to a multiple of 42.6 for the 2018-2021 period. The two-year-forward relative P/E of 1.05 is just above the market P/E and remains well below the historical average for 2018-2021 of 2.19. Historical comparable valuation for AMD indicates value in the low \$200s, in a stable trend and well above current prices.

Peer group analysis suggests that AMD deserves to trade at a premium to peers on absolute and relative P/E; our peer-indicated value is in the \$90s, down from a late 2021 peak in the \$160s due to the 2022 peer-group selloff. Our discounted free cash flow model renders a fair value in the \$150s, down from past peaks on slowing PC momentum. Blending these approaches, we arrive at a value above \$150, below past peaks but well above current prices.

While the client market is likely to remain volatile in the near term, we are encouraged by the progress of EPYC in cloud and enterprise data center, the success of Ryzen CPUs for desktop and

notebook PCs, and the outlook for AMD's Radeon GPUs in the PC gaming. We regard the XLNX deal as a logical next step in AMD's journey, one that adds high-growth complementary assets that will accelerate AMD's growth in the cloud data center and high-value-added nontechnology markets.

Like many Technology stocks, AMD has slipped from its highs on consumer demand softness. Current prices in our view do not fully reflect AMD's revenue and margin growth potential, and ongoing market share gains at Intel's expense. We are reiterating our BUY rating to a 12-month target price of \$100.

On February 1 at midday, BUY-rated AMD traded at \$80.48, up \$5.33.

## About Argus

Argus Research, founded by Economist Harold Dorsey in 1934, has built a top-down, fundamental system that is used by Argus analysts. This six-point system includes Industry Analysis, Growth Analysis, Financial Strength Analysis, Management Assessment, Risk Analysis and Valuation Analysis.

Utilizing forecasts from Argus' Economist, the Industry Analysis identifies industries expected to perform well over the next one-to-two years.

The Growth Analysis generates proprietary estimates for companies under coverage.

In the Financial Strength Analysis, analysts study ratios to understand profitability, liquidity and capital structure.

During the Management Assessment, analysts meet with and familiarize themselves with the processes of corporate management teams.

Quantitative trends and qualitative threats are assessed under the Risk Analysis.

And finally, Argus' Valuation Analysis model integrates a historical ratio matrix, discounted cash flow modeling, and peer comparison.

### THE ARGUS RESEARCH RATING SYSTEM

Argus uses three ratings for stocks: BUY, HOLD, and SELL. Stocks are rated relative to a benchmark, the S&P 500.

- A BUY-rated stock is expected to outperform the S&P 500 on a risk-adjusted basis over a 12-month period. To make this determination, Argus Analysts set target prices, use beta as the measure of risk, and compare expected risk-adjusted stock returns to the S&P 500 forecasts set by the Argus Market Strategist.
- A HOLD-rated stock is expected to perform in line with the S&P 500.
- A SELL-rated stock is expected to underperform the S&P 500.

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