HASKAYNE FINANCE CLUB

Advanced Micro Devices

(NASDAQ: AMD)

October 21, 2021 Haskayne School of Business, U of C

Stock Rating: Buy/Hold

Industry Rating: Outperform

Recent Highlights / Key Points

Company Overview

AMD is a global semi-conductor production company that specializes in the creation of chip architecture for CPU's, GPU's, APU's and SOC. These products range in use for personal desktop computers, cloud computing, data management and super computing. AMD focuses on delivering high quality products while being in an affordable price range.

Leadership and Management Team

Current CEO and President Lisa Su joined AMD in 2014 along with current CFO, Vice President, Treasurer, Devinder Kumar. Since then, AMD has seen performance rocket with central focused on building high performance semi-conductor chips. Net income increased from -117 million in 2015 to 1.6 billion in year 2020.

Catalyst/Industry Overview/ Competitive Advantage

The semi-conductor industry being estimated at a size of $425 billion USD in the year 2020, and semi-conductors are becoming more essential in industry such as car manufacturing and data management. AMD's partnerships with Xbox, Google cloud, Samsung and Tesla allows them to branch into new or old industry that are growing because of use of semi-conductor technology.

Valuation

AMD's intrinsic value was determine using a discount cashflow module, we used a weight average cost of capital of 11.56% to ultimately find implied share price of $126.7.The company was valued on a comparable valuation, where used the EV/Revenue mean trading multiple to find an implied share price of $113.81.

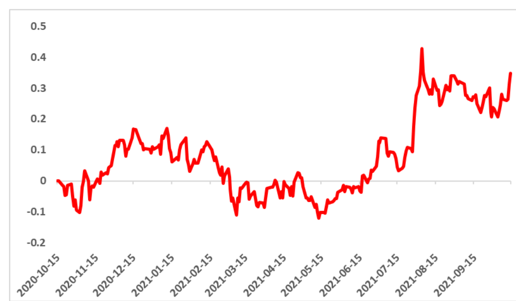
Recommendation

Our team's current recommendation is to buy. With our target price estimate being $120.26 this implies and an expected return on AMD of 6.84% if it were to reach this goal

Key Metrics

Enterprise Value (EV)	124,228.1	EBITDA (FY21)	2,929.0
Market Cap.	127,434.1	EBITDA Margin	25%
P/E	57.83	Debt / EV	0.47%
EV / EBITDA	40.0x	Total Debt	587.0
Cash	3,793.0		

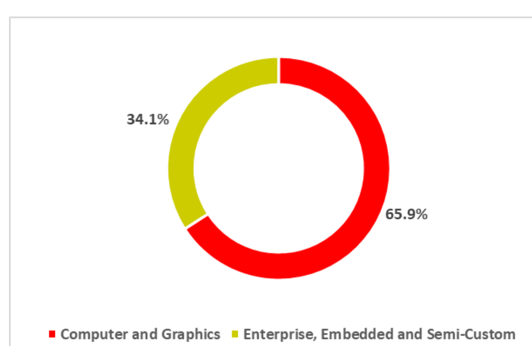
Total Retun



Return on Inventment

Current Share Price	$112.00
Target Price	$119.66
Dividend Yield	0%
Implied Return	6.84%

Revenue Segment Breakdown



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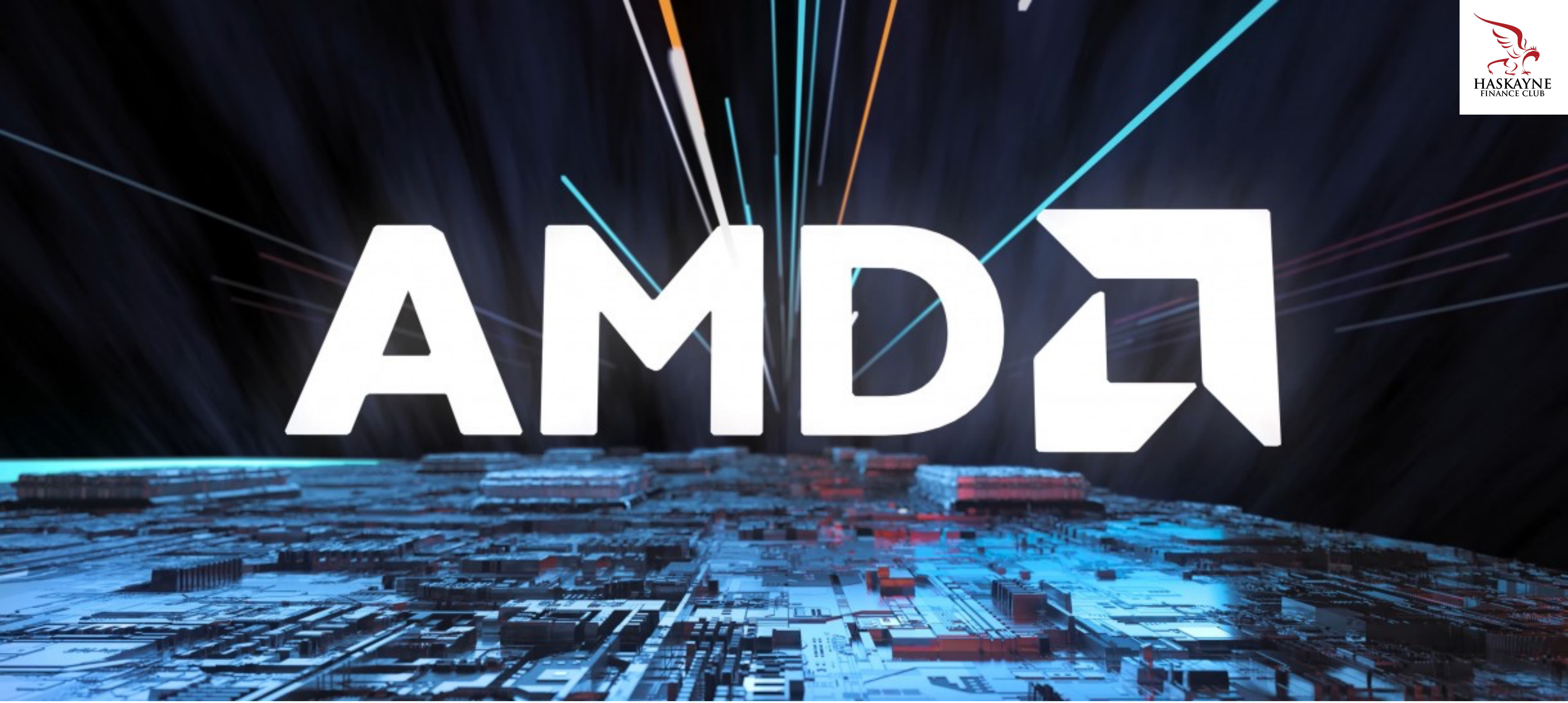

Presented by: Ryan Crisalli, Justin Giacomin, Shohaan Pandit, Julian Rodriguez, and Riley Williams

10/21/2021

Company Overview

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Company Highlights

- **History:** Founded in 1969, Advanced Micro Devices (AMD) produces semiconductor products and devices such as microprocessors, embedded microprocessors, chipsets, graphics cards
- **Stock Performance:** Stock as a YTD return of 22.11% and has outperformed many of its peers. AMD has a 5Y beta of 2.00 and a 3 month average daily trading volume of 61.15 million.
- **Strategy:** AMD focuses R & D activities on improving product performance and enhancing product design, with its main area of focus being the delivery of next generation CPU and GPU IP.
- **Recent Corporate Finance Transactions:** In late 2020, AMD and Xilinx entered into a definitive agreement for AMD to acquire Xilinx in an all-stock transaction valued at $35 billion (USD).
- **Ownership Breakdown:** Investment Advisors hold 69.53% ownership of the company. The top three holders being

Holder	% of Total Shares	Market Value (USD in mm)
The Vanguard Group, Inc.	8.04%	$ 9,988.9
BlackRock, Inc.	7.05%	$ 8,762.5
Capital Research and Management Company	4.36%	$ 5,413.8

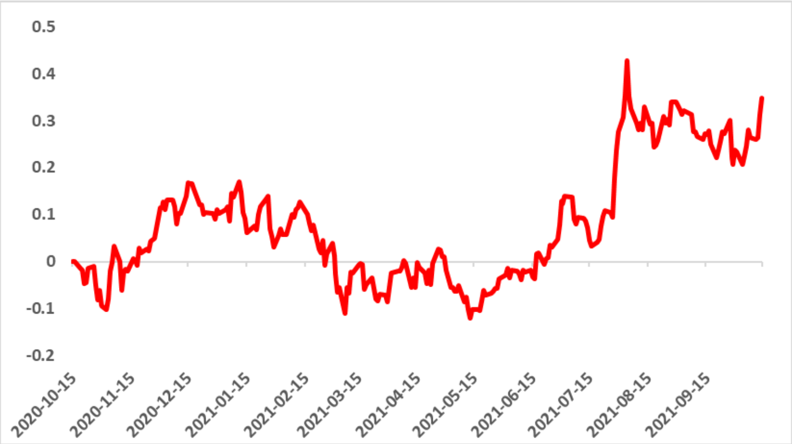
Valuation & Share Performance

Key Valuation Statistics *($mm)*

Enterprise Value (EV) 132,760.00

Market Cap.	136,000.00	EBITDA (FY21)	2,981.30
P/E	57.83	EBITDA Margin	25%
EV / EBITDA	46.42	Debt / EV	0.047
Cash	3,790.00	Total Debt	657.00

Share Price | Current: **$116.33** [1]



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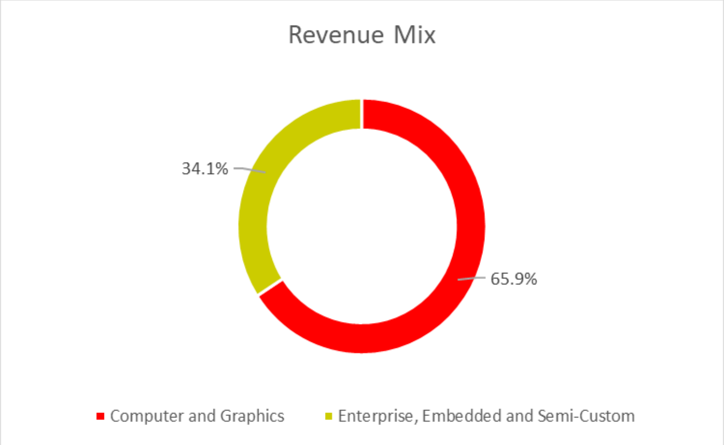
Source(s): Bloomberg, Company Filings, Seeking Alpha

Business Model

Revenue by Business and Geographic Segment (USD, mm)



Country	% of Revenue
United States	**23.50%**
China	23.86%
Japan	10.58%
Europe	11.35%
Taiwan	12.16%
Singapore	11.23%
Other Countries	7.33%

Overarching Competitive Advantage: AMD is one of the only two CPU manufacturers used in Windows based personal computers and laptops. Also, a leading manufacturing in both CPU's and GPUs in desktop computers while being the only company to be leading in both categories. Partnerships with companies such as Xbox, Samsung, and Tesla which implement AMD's chipset architecture into their products. TSMC the chipset producer for AMD is the world's largest foundry and implements leading technology to produce AMD's semi-conductors.

Revenue Segments

1. Computing & Graphics: which includes revenue from sales of microprocessors and graphics processors for desktops and notebooks, and workstations.

2. Enterprise, Embedded & Semi-Custom: which includes revenue from the sale of embedded processors, semi-custom system-on-chip (SoC) products, development services and technology for game consoles, and server microprocessors.

Sales and Marketing Strategy

AMD markets its products through a direct sales force, as well as through a network of independent distributors and sales representatives. AMD's produces multiple product lines each tailored for different operations and multiple options within each line offering a right product for any consumer. AMD is able to push products through sponsorships such as Esports teams or giving away products to fans and promotors where their products can be on full display.

Diverse Product Portfolio

AMD competes with Intel (INTC) in making CPUs, as well as Nvidia (NVDA) in the market for GPUs. The Company has strategically positioned itself between the two target markets allowing for clients to use AMD as a ‘one-stop shop’ when making purchases.

Source(s): Bloomberg, Company Filings

Corporate Finance Activity

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2009
- AMD Offers its own microprocessor (Am386)
- Legal battle over intellectual property with Intel
- Confrontation with Intel leads to $1.45 Billion for antitrust law violation

2013
- Withdrew from Coreboot open-source project (LinuxBIOS)
- Privatization of intellectual property

2014
- Restructured into 2 segments, one focused on Processors for PC, and one focused on specialized equipment for enterprise

2016
- Announced joint venture for the production of x86 server chips for the Chinese Market

2019
- AMD's Ryzen series processors outsell Intel consumer desktop and PC processors.

2020
- Acquisition of Xilinx announced in all-stock transactions (valued at $35 Billion)

2021
- Acquisition of Xilinx to finish on 2021.
- Frontier Exascale Supercomputer (joint with ORNL, Cray Inc.)

2022
- Expected release of Ryzen 6000 CPUs – Zen 4 Chips

Source(s): Company Filings

Operating Forecast

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Revenue Drivers

Refreshed Servers: .

- AMD's CPU sales growth in 2021 is a key driver for the future
- The continual performance gains can help expand its unit share and prices.
- Increased cloud-server spending and corporate-IT backdrop may amplify sales in this sector as well

Industry Adoption:

- Increase in industries such as auto manufacturing are now using semi-conductor chips in products
- New and fast-growing industries such as data management are dependent on semi-conductors

Revenue & EBITDA Forecast

(in $USD millions)	2017	2018	2019	2020	2021E	2022E	2023E	2024E	2025E	2026E
Computer and Graphics	2,977.00	4,125.00	4,709.00	6,432.00	9,035.50	10,050.00	12,880.11	15,692.66	18,435.04	21,656.67
Enterprise, Embedded and Semi-Custom	2,276.00	2,350.00	2,022.00	3,331.00	6,472.00	7,691.90	7,942.89	9,677.34	11,368.51	13,355.22
Total Revenues	5,253.00	6,475.00	6,731.00	9,763.00	15,507.50	17,741.90	20,823.00	25,370.00	29,803.55	35,011.88
Computer and Graphics Growth, %		38.6%	14.2%	36.6%	40.5%	11.2%	107.2%	21.8%	17.5%	17.5%
Enterprise, Embedded and Semi-Custom Growth, %		3.3%	-14.0%	64.7%	94.3%	18.8%	3.3%	21.8%	17.5%	17.5%
Total Revenue Growth., %		23.3%	4.0%	45.0%	58.8%	14.4%	17.4%	21.8%	17.5%	17.5%
EBITDA	445.00	803.00	1,062.00	1,969.00	3,918.30	4,655.40	5,634.00	7,423.00	9,194.28	11,388.22
EBITDA Margin, %	8.5%	12.4%	15.8%	20.2%	25.3%	26.2%	27.1%	29.3%	30.8%	32.5%

Pending Xilinx Acquisition: On October 26, 2020, AMD entered a merger agreement with Xilinx through an all-stock transaction, valuing at $35 billion

- Broadens AMD's product portfolio and customer set across diverse growth markets where Xilinx is an established leader
- Expands AMD's data center business and increases TAM to $110 billion
- Immediately accretive to AMD's margins, cash flows, and EPS

Supply Arrangement: New supply agreement with GlobalFoundries gives AMD flexibility

- Intel's wide variety of chipsets has always been an advantage over AMD, and now AMD has the ability to compete with more strength against Intel.
- AMD could expand its foundry and assemble a wider array of chips and approach new clients

Source(s): Bloomberg, Company Filings

Valuation (Comps)

10/12/2021
($USD millions)

	Market Data			Trading Multiples					
Company Name	Price ($/Share)	Market Capitalization ($)	Total Enterprise Value ($)	TEV/Total Revenues	TEV/Forward Total Revenue	TEV/EBITDA	TEV/Forward EBITDA	P/E	Forward P/E
Intel Corporation (NasdaqGS:INTC)	52.17	211,653.7	220,590.7	2.8x	3.07x	6.3x	7.70x	11.6x	12.56x
NVIDIA Corporation (NasdaqGS:NVDA)	206.71	515,948.2	509,085.2	23.2x	18.71x	58.9x	45.51x	74.0x	48.98x
QUALCOMM Incorporated (NasdaqGS:QCOM)	122.95	138,687.6	141,596.6	4.3x	3.94x	12.0x	9.57x	15.4x	13.65x
Texas Instruments Incorporated (NasdaqGS:TXN)	188.48	174,006.6	172,867.6	10.3x	9.54x	20.6x	18.48x	26.3x	23.82x
Micron Technology, Inc. (NasdaqGS:MU)	66.72	74,634.6	71,571.6	2.6x	2.21x	5.4x	4.00x	13.0x	7.26x
Broadcom Inc. (NasdaqGS:AVGO)	485.28	199,749.2	229,128.2	8.6x	7.90x	16.3x	13.16x	36.0x	15.91x
Advanced Micro Devices, Inc. (NasdaqGS:AMD)	105.04	127,409.9	124,273.9	9.3x	7.41x	41.5x	29.30x	37.0x	39.17x
Summary Statistics									
Mean	187.05	219,113.3	224,140.0	8.7x	7.56x	19.9x	16.40x	29.4x	20.36x
Median	155.72	186,877.9	196,729.2	6.5x	5.92x	14.1x	11.37x	20.8x	14.78x

Comparable Company Rationale

- The comparable table above shows a list of semiconductor and cloud computing companies. The peer companies were selected because of their relative size and business type.
  - When compared to NVIDA, AMD is seen as far cheaper when taking an overall view, and although NVIDIA is seen as the goliath of the GPU market, AMD has shown tremendous growth in its business segment that directly competes with NVIDIA, and that combined with its lower multiple is seen as attractive to us

Source(s): Bloomberg, Company Filings, Yahoo Finance

Valuation (Intrinsic)

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Stock Price Performance

- YTD AMD is performing above the market (S&P 500) with a YTD return of 22.11%
- 52 week High/low: $122.49 / $72.50
- AMD is rallying back after a lower month of September with excellent momentum in Q4
- AMD earned $0.63 per share which beat analyst predictions of $0.54

Current: **$112.00**	High Estimate: **$151.09**	Low Estimate: **$102.33**

EV/Revenue - Trading Mutiple

Revenue 2021E	($USD,mm)	15,507.50
EV/Revenue	(x)	8.70
Implied TEV	($USD,mm)	134,915.25
Less: Total Debt	($USD,mm)	657.00
Less: Preferred Equity	($USD,mm)	
Less: Minority Interest	($USD,mm)	
Add: Cash	($USD,mm)	3,793.00
Implied Market Cap	($USD,mm)	138,051.25
Total Shares Outstanding	(mm)	1,213.00
Implied Share Price		**113.81**

Summary of DCF Valuation

(In Millions)

Enterprise Value	$150,560.06
Add: Cash	3,793.00
Less: Debt	657.00
S/O	1,213
Implied Share Price	**$ 126.71**

DCF Assumptions & Commentary

- The discount WACC that was used: 11.56%
- AMD trades at a discount when compared to a) its intrinsic value and b) relative peer group
- Product split is assumes to remain constant for the duration of the analysis
- Growth rates were determined by taking averages of historical data and combining them with growth available growth estimates found through third party sources, we then added a premium to these growth rates for certain sections if we felt fit
- The DCF arrives at a target price of $126.71 and a 8.7x EV/Revenue multiple arrives at a target price of $113.81. This combines for a overall price target of $120.26

Broker Estimates	Target Prices ($)
BMO Capital Markets Equity Research	$110.00
Morningstar Inc	$109.00
Well Fargo Securites	$120.00
Cowen and Company	$120.00

Source(s): Personal Estimates, Networking Research

Investment Thesis

Growth Prospects

- Proven ability to capture market share in established growth industries
- Company expects revenue growth of 60% over 2021
- AMD is also set to complete a $35 Billion merger acquisition with Xilinx later this year, which can lead to drastic growths within the company

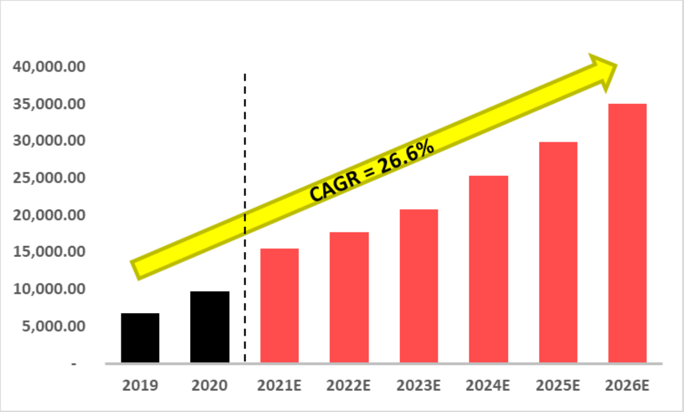
Management Team

- Strong executive team that has increased company operations and profit margins
- Experienced and knowledgeable team with proven track record of developing growth and accretive value
- Dr. Lisa Su, President and CEO and Devinder Kumar, Executive Vice President, CFO, and Treasurer

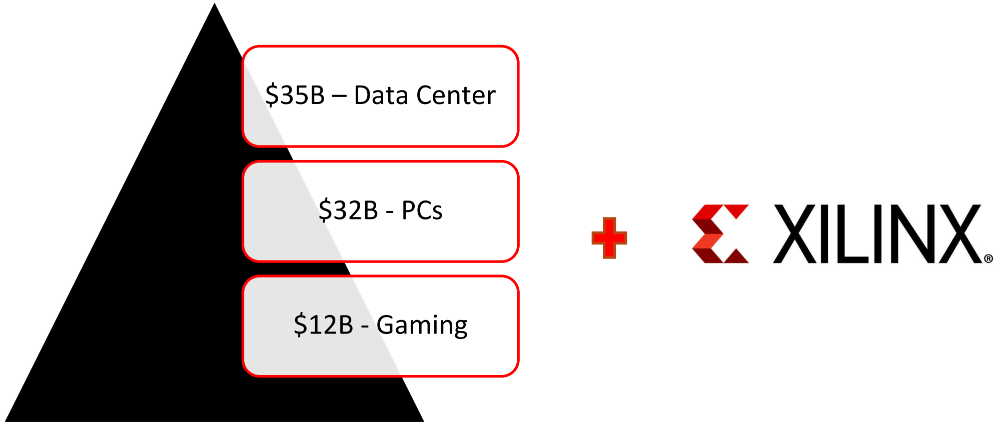
Strong Earnings Trend

- During 2021 Q2 revenue was $3.85 Billion, a YOY increase of 99% and up 12% from Q1 2021
- Higher revenues resulted in operating income of $831 Million in 2021 compared to $173 Million in 2020
- AMD has continued to beat analyst ratings in recent years. The market cap has increased from $2 Billion in 2014 to $141 Billion in 2021.

Revenue Growth ($mm)



Large Growing Markets – $110B TAM



Source(s): Company Website, Bloomberg

Recommendation

Thesis Fit

- Strong Earnings Trend ✓
- Growth Prospects ✓
- Management Team ✓

Investment Decision

Action	**Buy**
Current Price	$116.33
Target Price	$120.26
Implied Return	2.86%