# Advanced Micro Devices, Inc. (NASDAQ: AMD)

**Sector: Information Technology**
**Industry: Semiconductors**

SUSS INVESTMENT GROUP

## Executive Summary

We initiate a **BUY** coverage on **Advanced Micro Devices (NASDAQ:AMD)** with a target price of **USD 137.68**, presenting an upside of **32.81%** based on its latest closing price of 7 April 2022. Our target price was derived using the Discounted Cash Flow (DCF) approach, with Relative Valuation being conducted as a sanity check.

**Investment Thesis:**

*Riding on Tailwinds of Web 3.0:* AMD is well positioned to capitalise on the increasing demand for semiconductor chips with the introduction and normalisation of Blockchain & Cryptocurrencies (29% 5Y-CAGR), and the Metaverse (29.7% 5Y-CAGR). We expect increase in CapEx from these industries to translate into significantly larger demand for AMD's products, boosting its revenues.

*AMD – Powering Your Devices:* AMD's partnership with Samsung is a gateway to a whole new revenue driver, creating further value to the company. This partnership will allow AMD to enter the mobile chip industry, an industry that has experienced rapid growth because of the prevalence of mobile gaming. AMD also provides custom solutions for Microsoft and Sony's gaming consoles, further strengthening its position of power in the gaming industry.

*Effective Management Driving Growth in Market Share:* The effective guidance by CEO and Chairperson, Dr. Lisa Su, has proven fruitful over the past 7 years. Lisa Su's decisions has made AMD into a cash cow. Furthermore, under her direction to acquire Xilinx, go fabless, and her excellent supply management strategies, we believe her future initiatives will provide further value to the company, generating high double-digit growth in market share.

**Financial Takeaways:**

We expect AMD to net a total revenue of USD 61B in FY26, stemming from its innovative supply-chain practices, dominant product innovation, and introduction of 5nm chips. Net profit margin is expected to reach 23.4% in FY26, with ROE and ROA standing at 31.5% and 22.4% respectively. Liquidity and leverage remain healthy, with current and D/E ratio set to reach 3.67 and 0.03 in FY26 respectively.

**Investment Risks:**

*Business Risk (B1) – Over Reliance on a Few Customers:* AMD's reliance on a few key customers for a significantly large portion of its revenue may be a key business risk, especially when these customers will continue to account for a significant part of future revenue.

*Business Risk (B2) – Lack of Synergy from Xilinx's Merger*: There is large uncertainty towards a successful integration between AMD and Xilinx from the inability to profit from this acquisition, failure to scale the business effectively, and the potential impact of stakeholder relationships.

*Market Risk (M3) – Highly Cyclical Product Demand:* AMD's products have experienced fluctuating demand due to seasonality, replacement cycles, inflation, and economic downturns. These fluctuations have caused material impact on the cashflow and revenue of the company in the past.

*Financial Risk (F4) – Interest Rate, Foreign Exchange & Country Risks:* AMD operates across 20 countries in both developed and emerging markets. AMD has costs, assets and liabilities that are denominated in foreign currencies; thereby experiencing foreign exchange risks.

## Recommendation BUY

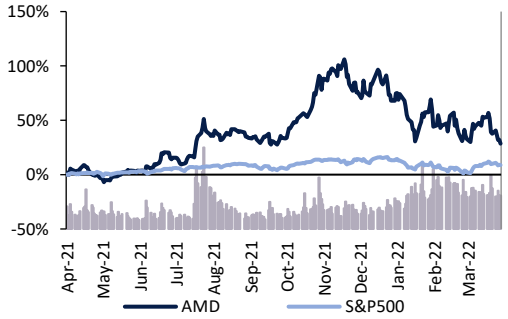

**Analysts**

| | |
|---|---|
| Ng Qi Han | Lead Analyst, Equity Research |
| Ezekiel Woo | Analyst, Equity Research |
| Sadayan Izzuddin | Analyst, Equity Research |


**Basic Information**

| | |
|---|---|
| Current Price | USD 103.67 |
| Target Price | USD 137.68 |
| +/- Potential | +32.81% |
| Ticker | NASDAQ: AMD |
| Market Cap | 163.64B |
| Shares Outstanding | 1.63B |
| 52-Week Trading | USD 72.50 to 164.46 |
| Average Volume | 105.32M |
| Fiscal Year End | 31 December 2021 |
| Short Interest | 1.71% |

**1Y Price vs S&P 500 (Rebased)**




**Company Profile**

Advanced Micro Devices, Inc (NASDAQ:AMD) operates as a semiconductor company worldwide. The company operates in two segments, Computing and Graphics; and Enterprise, Embedded and Semi-Custom. AMD operates in the Technology Sector with a headcount of 15,500 employees as of FY2021.

**Key Executives**

| | |
|---|---|
| Dr. Lisa Su | Chair and CEO |
| Victor Peng | President |
| Rick Bergman | Executive VP C&G |
| Mark Papermaster | Executive VP & CTO |

**Major Shareholders**

| | |
|---|---|
| Vanguard Group, Inc | 8.43% |
| Blackrock Inc. | 4.99% |
| SSgA Funds Management, Inc | 4.14% |
| Price (T.Rowe) Associates Inc | 2.71% |

## Business Description

Advanced Micro Devices, Inc. (the "Company") was incorporated in 1969 and is currently headquartered in Santa Clara, California. It engages in the provision of semiconductor businesses and operates through two main segments: (1) Computing & Graphics, (2) Enterprise, Embedded and Semi-Custom. Computing & Graphics include desktop and notebook processors and chipsets (CPU), discrete and integrated graphics processing units (GPU), data center and professional GPUs and development services. Enterprise, Embedded and Semi-Custom include servers and embedded processors, semi-custom System-on-Chip (SoC) products, development services and technology for gaming consoles. Its key customers include original equipment manufacturers (OEMs), public cloud service providers, original design manufacturers (ODMs), system integrators, independent distributors, and online retailers in both domestic and international markets.

### Revenue Breakdown

As of FY21, Computing & Graphics accounts for 56.8% of total revenue, with the remaining 43.2% coming from Enterprise, Embedded and Semi-Custom (Fig. 1). United States and China accounts for the highest revenue by geography at 28.3% and 24.9% respectively, with the remaining majority coming from Japan, Europe, Taiwan, and Singapore (Fig. 2). AMD's primary competitor within the CPU market is Intel, while its primary competitor within the GPU market is Nvidia. Both markets essentially act as a duopoly as AMD and Intel controls majority of the market share in the CPU market while the same goes for AMD and Nvidia in the GPU market.

### Acquisition of Xilinx

AMD announced its intention to acquire Xilinx via an all-stock transaction in 2020, with the deal officially closing in February 2022. This deal was valued at nearly USD 50 billion, making it AMD's largest acquisition since inception. This acquisition was aimed to intensify competition with peers as Xilinx can expand the type of chips AMD can offer to its customers. It also creates ground for AMD to tap into field-programmable gate arrays (FPGAs), creating external market opportunities into bleeding-edge applications in machine learning (ML), communications equipment, and a wide range of other devices.

## Industry Overview & Competitive Positioning

With the rapid development of technology, mobile computing is transitioning towards immersive ubiquitous computing (computing power available wherever you go), fuelling the need for artificial intelligence of things (AIoT) and big data. The number of connected IoT devices is set to grow from 40 billion in 2021 to 350 billion by 2030, creating opportunities for the semiconductor industry as processors are heavily needed for these devices.

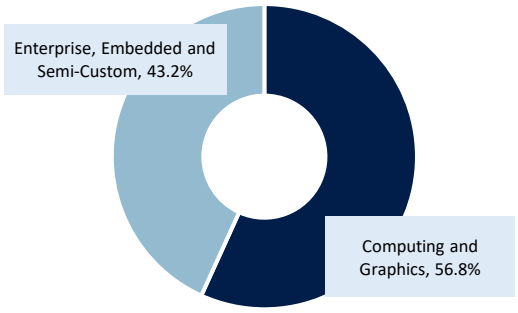
In 2020, more than 953 billion chips were manufactured around the world, feeding a USD 467 billion industry. 2021 saw a growth of 26% with 1.1 trillion chips, increasing the market size to USD 590 billion. As semiconductor technologies continue to play a crucial part in shaping the interconnected and intelligent network future, the global industry is expected to continue recording a CAGR of 7.2% till 2030, propelling total market opportunity to reach USD 940 billion by 2030 (Fig. 3).

### Key Industry Drivers

**Rising Consumer Demand:** The onset of Covid-19 has resulted in the demand for microchips to increase substantially due to early adoption of market fundamentals such as distributed computing, sensor technology, 5G, AI and digitalisation. With the convergence of wireless communications, telecom, media, and cloud via connected devices, demand for advanced semiconductors will continue to grow as microchips are at the heart of these devices.

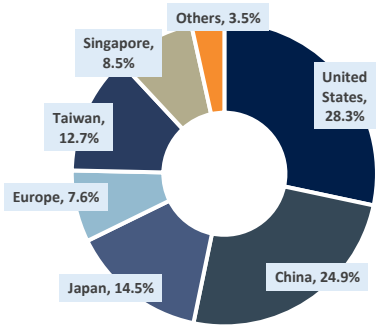
**Increasing R&D Investments and Changing Landscape:** With the semiconductor industry set to evolve rapidly over the next few years, companies have been investing heavily in its products and supply chain to remain competitive. According to Deloitte, total CapEx from the three largest players in the industry is projected to exceed USD 200 billion between 2021 to 2023. Governments have also committed hundreds of billions to increase scale and proficiencies in the industry. This

**Fig 1: AMD's Revenue by Business Segment**



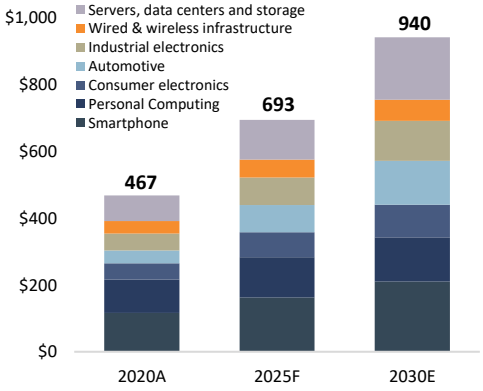

*Source: Company FIlings*

**Fig 2: AMD's Revenue by Geography**



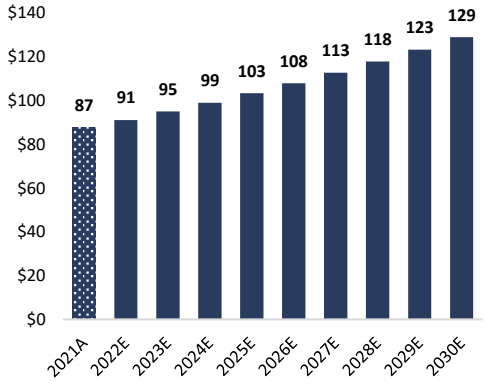

*Source: Company Filings*

**Fig 3: Semiconductor Market Size Forecast (USD bns)**




*Source: ASML Company Filings*

**Fig 4: Microprocessor Market Size Forecast (USD bns)**




*Source: Precedence Research*

investments include efforts towards localising chip production and expansion of the chip market through M&A and JVs that focuses on emerging technologies.

### Personal Computers (PC) and Gaming

AMD's primary focus within the semiconductor space is on the PC and gaming market. Both markets require the need for CPU and GPU components, as well as APUs (a mixture of both CPUs and GPUs).

The global microprocessor market (where CPU falls under) was valued at USD 84 billion in 2020. It is expected to grow at a CAGR of 4.4% over the next 10 years, reaching USD 129 billion by 2030 (Fig. 4). PC segment is noted to be the most prominent segment in this market, contributing to about 40% of total market size. With the rising adoption of data centers and servers, the server's segment is expected to be the fastest growing segment in this market over the next few years.

The global GPU market was valued at USD 25 billion in 2020 and is expected to grow at a CAGR of 33% between 2021 to 2028, reaching USD 247 billion by 2028. This is attributable to the growing need for specialised processors to manage complex mathematical calculations related to 2D and 3D graphics. The growing adoption of portable computing devices is also promoting the GPU market across globe, with the rising number of complex graphic games being another key contributing factor.

The global APU market is also gaining ground as it typically involves a system-on-a-chip (SoC) that combines multiple components together to use less power and take up lesser space. With accelerated processors (APs) helping to drive innovation in smartphones and next generation of IoT devices, the APU market is projected to grow from USD 38 billion in 2020 to USD 59 billion by 2025, registering a CAGR of 9.3% over the next 5 years (Fig. 5).

### Competitive Positioning

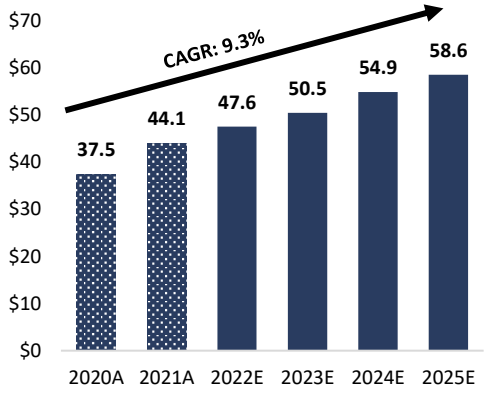
Despite Intel historically controlling majority of the market share within the CPU market, AMD has been stealing market share in recent years. According to Mercury Research, AMD has managed to achieve a 25.6% market share in the overall x86 CPU market for Q4 2021, making it the highest ever (Fig. 6). This is due to the rising demand for latest video game consoles such as PS 5 and Xbox Series X, which uses custom AMD's chip. With AMD set to release its new CPU series, it is poised to outbeat Intel's latest series yet again, potentially growing its market share further.

Given the high growth in the server market, AMD's server business also continues to grow despite supply shortages. As of Q4 2021, AMD notched its 11$^{th}$ straight quarter of server CPU growth, reaching a 10.7% market share. According to Keybanc estimates, AMD is projected to capture up to 20% market share in 2022. This is attributable to the anticipated delay of Intel's next-gen Xeon chips, as well as AMD growing its customer base within the server market. AMD has already been supplying server processors to many cloud-computing giants such as AWS, Google, and Microsoft, with sales from them soaring in Q4 2021. The recent announcement of Meta (formerly known as Facebook) to use AMD's server processors will further erode Intel's hold on this lucrative market, indicating strong outlook for AMD.

Intel is currently the market leader within the GPU market. However, its market share has been on the decline over the past few years, with Nvidia and AMD strengthening their market position in the industry. As of Q3 2021, AMD accounts for 18% of total market share, while Nvidia and Intel stands at 20% and 62% respectively (Fig. 7). Diving deeper into the discrete GPU market, Nvidia holds majority of the market share at 83% while AMD stands at 17%. However, AMD has since caught up to Nvidia in terms of performance and is able to also offer competitive pricing. As AMD continues to work towards outperforming Nvidia, it is poised to increase its market share over the next few years.

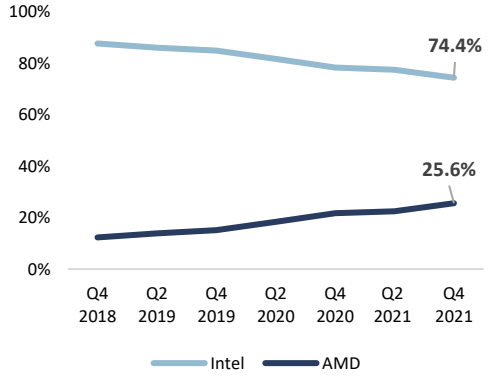
AMD's acquisition of Xilinx will also present opportunity to grow its data center GPU business, further improving its market share. With Xilinx FPGAs, AMD's data center GPUs can accelerate specific workloads such as AI and ML, while leveraging a common set of customers between both companies.

**Fig 5: APUs Market Size Forecast (USD bns)**



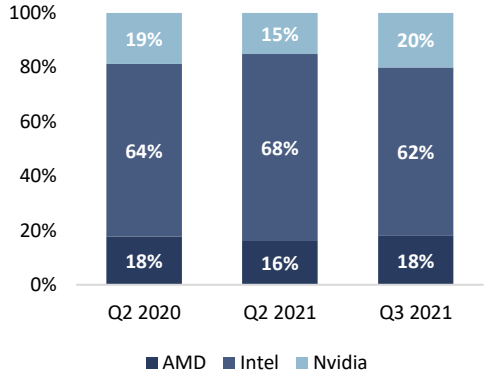

*Source: Statista*

**Fig 6: Intel vs AMD Overall x86 CPU Market Share**




*Source: Mercury Research*

**Fig 7: PC GPU Market Share Comparison**




*Source: JPR*

**Fig 8: SWOT Analysis**

| | |
|---|---|
| **Strengths:**<br>- Strong branding<br>- Innovative products<br>- High-performance engineering<br>- Vast international operations | **Threats:**<br>- Strong competition against big players<br>- Environmental regulations<br>- Rising raw material costs |
| **Opportunities:**<br>- Mobile market penetration<br>- Virtualisation space<br>- Low-cost products | **Weaknesses:**<br>- Lower presence in the mobile industry<br>- Lower market share<br>- Quality issues |

*Source: Team Analysis*

## Investment Thesis

### Thesis 1: Riding on tailwinds of Web 3.0

Web 3.0 is set to be the new breed of internet that strives for openness and transparency. It aims to be the decentralised version of virtual world where users can interact and collaborate intelligently without worrying about central, data-specific repositories. With the shift towards Web 3.0, the world is experiencing the convergence of emerging technologies, including the rising adoption of blockchain, artificial intelligence (AI), machine learning (ML), and augmented reality (AR).

**Immense Market Opportunity:** Blockchain and cryptocurrencies remain to have a strong confluence with the growth of Web 3.0 as these networks run through decentralised protocols. Cryptocurrency technologies will play a huge part in the upcoming Web 3.0 as decentralised applications (dApps) and smart contracts are heavily needed to automate processes.

The world has seen a sharp increase in cryptocurrency adoption over the past few years. The rising demand for remittances in developing nations, increase in data security and the need for transparency in financial payment systems are some major factors driving the growth in this market. As cryptocurrency and blockchain technologies require miners to maintain and secure these networks through hashing, demand for cryptocurrency mining is also on the rise, with more companies starting to invest in this lucrative market. As of 2021, the cryptocurrency mining market stands at USD 2.3 billion. It is expected to grow at a CAGR of 28.5%, reaching USD 5.3 billion by 2028 (Fig. 9).

Mining processes require intensive hardwares such as GPUs and CPUs. AMD stands to benefit from this rising adoption by being one of the key players in the hardware market. Its acquisition of Xilinx (world's largest FPGAs manufacturer) will also benefit AMD further as FPGAs are more efficient than GPUs and CPUs in mining due to faster hashing speeds and lower power consumption (Fig. 10).

**Metaverse Landscape:** As of 2022, 'Metaverse' is the hottest term in the global tech market. Many tech-giants are investing heavily into this industry. For instance, Microsoft recently acquired a gaming developer, Activision Blizzard, for USD 70 billion, as a segue into securing a major spot in the metaverse. Facebook has also explicitly gone all-in on the metaverse, changing its name to Meta, and investing more than USD 10 billion in 2021 alone into hardware and software aimed to provide VR capabilities within the metaverse.

According to PwC, the metaverse market is set to grow at a CAGR of 29.7% till 2030, accelerating to over USD 1.5 trillion as technology becomes more accessible later in the decade (Fig. 11). The rising focus on converging digital and physical worlds through internet will be the key driver for this market.

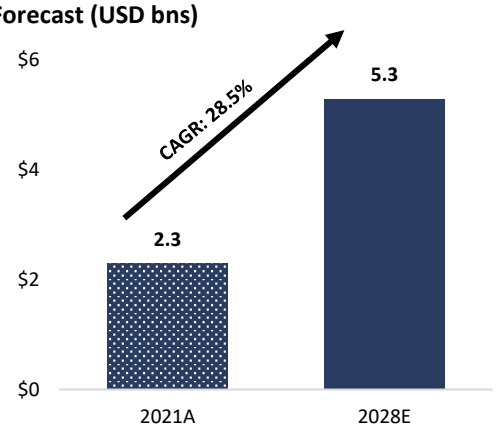
As the metaverse requires huge computing storage, data centers will be the core of this innovation. The global data center market was valued at USD 316 billion in 2021 and is projected to grow to USD 394 billion by 2026 (Fig. 12). According to Synergy Research Group, four of the biggest tech giants (Amazon, Google, Microsoft, and Meta) spent a combined total of USD 38 billion on data centers in Q1 2021.

AMD stands to benefit from tech-giants' increasing CapEx in data centers as it produces innovative high-end computing and visualisation technologies needed to power them. With existing partnerships with numerous tech-giants, as well as its latest chip deal to power Meta's data centers, AMD will capture a larger market share in the data center market, cementing its stronghold in the industry.

### Thesis 2: AMD – Powering Your Devices

**Partnering with the best:** AMD announced a partnership with Samsung back in 2019 to license its GPUs. Today, Samsung's latest in-house mobile processor for smartphones, the Exynos 2200, will include AMD's latest architecture, RDNA 2, making it the industry's first mobile chip with hardware support for ray tracing (an advanced feature to high fidelity graphics that has been gaining traction in PC graphics). This will allow Samsung to bridge the gap between console and mobile

**Fig 9: Cryptocurrency Mining Market Size Forecast (USD bns)**



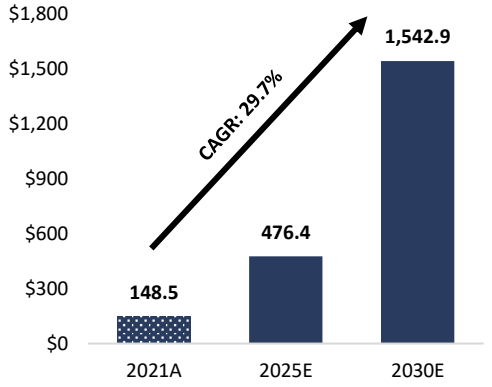

*Source: Brandessence Market Research*

**Fig 10: Comparison between GPUs and FPGAs**

| Hardware | GPUs | FPGAs |
|---|---|---|
| Efficiency | | ✓ |
| Speed | | ✓ |
| User-Friendy | ✓ | |
| Availability | ✓ | ✓ |
| Price | ✓ | |
| Adaptability | | ✓ |

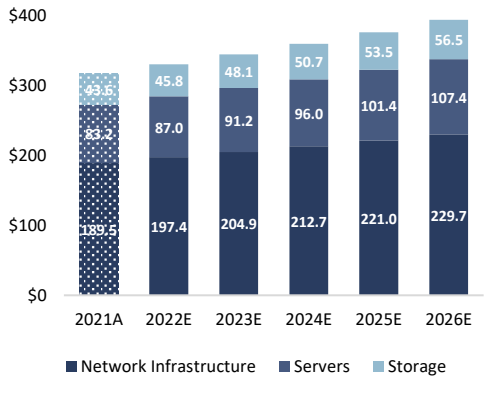
*Source: Team Analysis*

**Fig 11: Metaverse Market Size Forecast (USD bns)**




*Source: PwC*

**Fig 12: Data Center Market Size Forecast (USD bns)**




*Source: Statista*

performance, creating higher demand for its Exynos chips. Samsung's own flagship Galaxy devices and other phone makers such as Vivo already uses its Exynos chips. With its Exynos chip performance set to improve, Samsung's premium devices may be more appealing, allowing them to steal market share from Qualcomm (the world's leading mobile semiconductor chip company) and cut production costs by using its own chip instead of outsourcing it from Qualcomm. Given Samsung's position as the leader in the global smartphone industry (Fig. 13), AMD can boost its revenue further by tapping on Samsung's potential market share growth.

**Full steam ahead:** AMD's partnership with Samsung will also provide them with the momentum to open its doors to the mobile phone processor industry. Mobile gaming has become increasing popular around the world, with the industry set to grow at a CAGR of 23.6% between 2019 to 2026 (Fig. 14). Development in mobile games has created the need for technological advancements in smartphones to support these graphics intensive games, with the most popular games led by MMORPG and FPS games. This increase in demand for better performing GPUs in smartphones is something AMD excels at and is able to provide for, giving them the opportunity ride on this tailwind.

**Powered by AMD:** AMD was able to win over its biggest competitors – Intel and Nvidia in supplying its processors to power Microsoft and Sony's gaming consoles (PS5 and Xbox One). The contract award can be attributed to AMD's APU performance (combination of CPU and GPU into one component), while providing custom solutions for its respective partners. As the demand for gaming consoles increases, AMD will stand to reap benefits from this demand and boost its revenue. This successful partnership puts AMD in a strong position to power future gaming products from Sony and Microsoft, as well as other gaming companies.

### Thesis 3: Effective Management Driving Growth in Market Share

Dr. Lisa Su is the first woman to become the CEO of a major semiconductor company. When Dr. Lisa Su took over AMD in 2014, the company was bleeding money, laden with debt and on the verge of bankruptcy. In 2014, AMD posted a net loss of USD 403 million, with its market share deeply under Intel's shadow. Stock price was also trading at around USD 4 per share during that period.

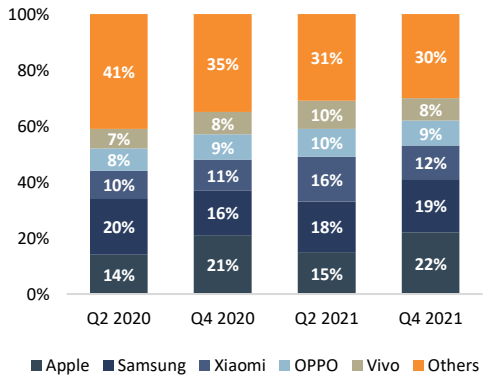
Within these 7 years, Dr. Lisa Su managed to turn AMD around, with it currently having minimal debt and strong cash flows (Fig. 15). Stock price has also risen by 2,800% (Fig. 16). Comparing it against Intel, Intel's growth rate was less than half of AMD's during the same period.

Dr. Lisa Su has a great track record in the semiconductor industry. She possesses a bachelor's, master's, and doctorate in electrical engineering from MIT. She has also spent her entire career working at multiple semiconductor firms, including Texas Instruments, IBM (where she was the Vice-President of Semiconductor R&D), and NXP Semiconductors (where she was CTO). Her diverse experience in the industry has allowed her to make smart bets on AMD's strategic direction, allowing it to become of the world's leading chip designers today.

**Golden ticket to the big game:** Under Dr. Lisa Su's direction, AMD acquired Xilinx to incorporate synergies in its operations and product offerings. Xilinx will provide AMD the ability to leverage on its expertise in cloud, edge, intelligent devices, and IPs to enhance its existing offerings and develop new products. This acquisition will allow AMD to expand its total addressable market growing from USD 79 billion to 135 billion. On top of that, the synergised operations will help to reduce AMD's cost, expanding bottom-line margins.

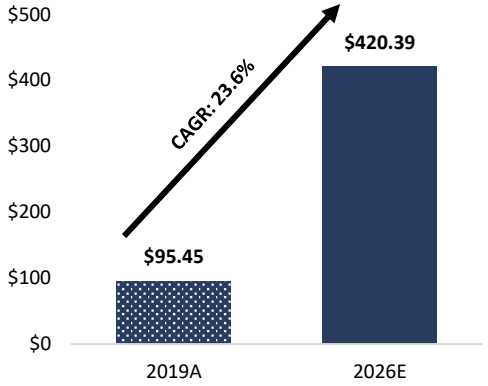
**Going fabless:** Production factory for chip manufacturing requires significant CapEx, costing north of USD 15 billion and usually becomes obsolete in five or less years as they are uniquely built for a specific type of product. Given its high initial investment that does not guarantee returns, CEO Dr. Lisa Su opted AMD to go fabless, establishing foundry arrangements with Taiwan Semiconductor Manufacturing (TSMC) and GLOBALFOUNDRIES to produce its wafers. AMD's decision to outsource its manufacturing process allows them to leverage on the expertise of its partners,

**Fig 13: Global Smartphone Market Share**



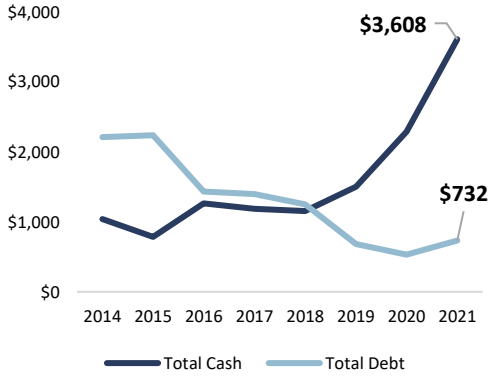

*Source: Counterpoint Research*

**Fig 14: Mobile Gaming Market Size Forecast (USD bns)**



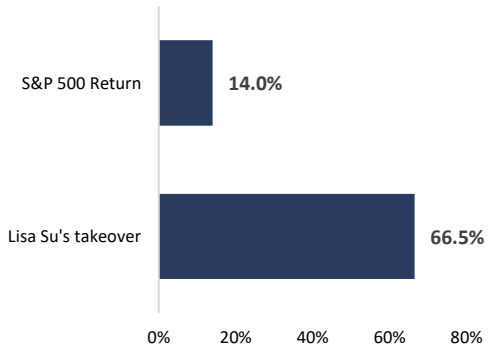

*Source: Research and Markets*

**Fig 15: AMD's Cash & Debt Balance Since 2014**




*Source: Capital IQ*

**Fig 16: Annualized Returns vs S&P 500 Since 2014**




*Source: Bloomberg*

reduce operating costs, and ramp up its capacity to meet demand. On the other hand, AMD's biggest rival, Intel, has consistently faced R&D and manufacturing issues regarding its chip production, resulting in delays and shortages. Intel is also consistently behind TSMC in chip technology, with TSMC already pushing out 5nm nodes while Intel does not expect to launch its first 7nm chips until 2023. With TSMC's leading-edge manufacturing process, AMD has managed to catapult its chip production ahead of Intel, creating a process technology advantage to expand and steal market share from its rival.

**Supply-chain constraints not an issue:** Despite the world facing chip supply shortages, AMD has been able to skirt most of this problem by forecasting demand years in advance through its management's strategic planning. As a large purchaser in this area (AMD making up 9.2% of TSMC's revenue), AMD was able to guarantee a steady supply in chips despite shortages. GLOBALFOUNDRIES has also agreed to amend its wafer supply agreement with AMD to increase its supply of chips through 2025. This agreement allows AMD to purchase approximately USD 2.1 billion of wafers between 2022 to 2025, giving AMD the ability to meet its product demand in data centers, personal computing and other growing markets.

With CEO Dr. Lisa Su and other capable key executives laying the ground for AMD's future, AMD is poised to capture larger amounts of market share in its target market, propelling total revenues to increase significantly over the next few years.

## Financial Analysis

As AMD continues to seek share buybacks, we expect it to deliver a robust EPS growth of 28.7% over the next five years, reaching USD 9.20 per share in FY26, translating to higher capital gains for shareholders (Fig. 17). This growth is attributable to AMD's expansion into key growing markets, on top of it being able to capture a higher portion of market share in both its CPU and GPU market.

### Top-line growth in revenues with expanding margins

Despite the pandemic aggravating semiconductor chip shortages, AMD was able to deliver a 68.3% YoY revenue growth in FY21 (Appendix G). This was attributable to AMD's cooperative relationships with its suppliers and customers, allowing it to minimise its chip shortage issues. Moving forward, AMD's revenue is projected to grow at a CAGR of 30%, reaching USD 61.1 billion by 2026 (Fig. 18). With the data center market set to grow exponentially, revenues from Enterprise, Embedded and Semi-Custom will be a major driver towards AMD's revenue growth, with this segment projected to register at a CAGR of 28.7% over the next five years.

AMD's margins are set to improve over the next five years. As of FY21, AMD's gross and operating margins stand at 48.2% and 22.2% respectively. With AMD set to achieve greater economies of scale by reaping operational synergies from Xilinx and cutting production costs, gross and operating margins are expected to improve to 54.7% and 31.1% respectively by FY26, creating better profitability for the company.

### Robust liquidity with strong cash flows

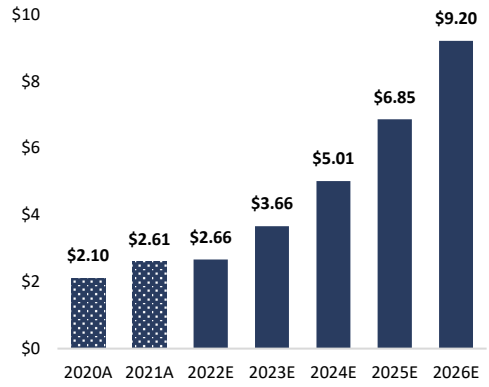
AMD's core business possesses strong fundamentals and have been generating strong cash flows over the past few years. As of FY21, its current and quick ratio stands at 2.02 and 1.56 respectively and is projected to grow to 3.67 and 3.26 by FY26. This is a direct result from AMD's strong operating cash flows, with it projected to grow at a CAGR of 36.1% over the next five years (Fig. 19).

The company's low historical CapEx as a percentage of total revenue (average of 2.5%) and its minimal debt are also key drivers that allow AMD to grow its cash balance at an exponential rate. Given AMD's huge cash reserve, the company may be in a unique position to continue pursuing aggressive expansion, such as potentially acquiring another key company to improve its range of products and quality, thereby capturing industry and economic tailwinds.

### Underleveraged position to create growth opportunities

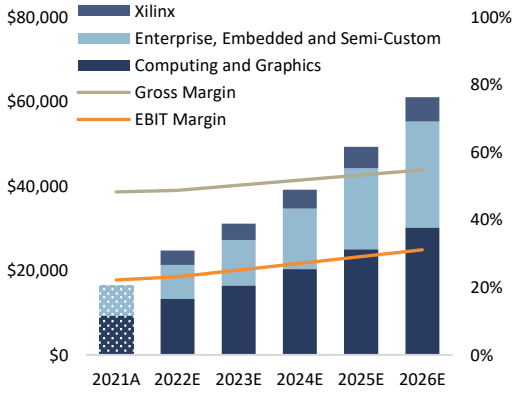
Over the past few years, AMD has managed to improve its leverage significantly. The company's book debt-to-equity has improved from 2.34 in FY17 to 0.09 in FY21,

**Fig 17: AMD's Earnings Per Share Growth**



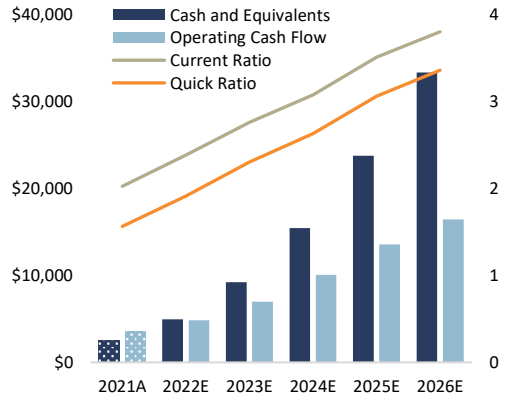

*Source: Company Filings, Team Analysis*

**Fig 18: AMD's Revenue and Margins Forecast (USDm)**



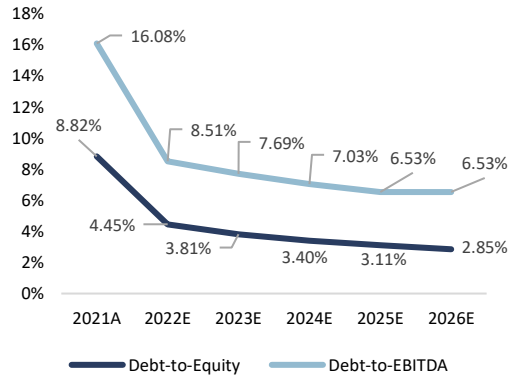

*Source: Company Filings, Team Analysis*

**Fig 19: AMD's Liquidity Positioning (USDm)**




*Source: Company Filings, Team Analysis*

**Fig 20: AMD's Leverage Positioning**

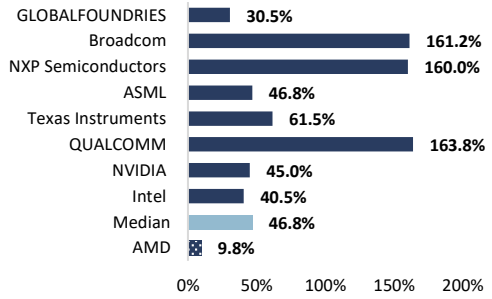



*Source: Company Filings, Team Analysis*

making debt almost non-existent under its balance sheet (Fig. 20). Comparing it against its peers, the peer's median book D/E in FY21 stands at 0.47, showcasing that AMD is significantly underleveraged in the semiconductor industry (Fig. 21).

Moving forward, AMD is expected to reduce its book D/E further, with majority of its debt expiring in 2022. We expect its book D/E to taper to 0.04 in FY22, with its balance sheet being almost debt-free thereafter. AMD's underleveraged capital structure signifies its ability to possibly take on additional debt to fuel its expansion plans. Based on S&P Capital IQ's Credit Health Panel, AMD is currently ranked "Above Average" in the industry through a vigorous comparison of historical financial ratios against its peers (Appendix H). This leads us to believe that AMD may be able to raise debt at a lower cost to pursue growth, enhancing its valuation.

**Fig 21: Book D/E Comparison Against Peers (FY21)**




*Source: Capital IQ*

| DuPont Analysis | 2017A | 2018A | 2019A | 2020A | 2021A | 2022E | 2023E | 2024E | 2025E | 2026E |
|---|---|---|---|---|---|---|---|---|---|---|
| ***ROE%*** | ***-5.5%*** | ***0.6%*** | ***12.1%*** | ***42.7%*** | ***42.2%*** | ***36.5%*** | ***34.0%*** | ***32.7%*** | ***32.1%*** | ***31.5%*** |
| Net Income Margin % | -0.6% | 0.1% | 5.1% | 25.5% | 19.2% | 17.4% | 18.9% | 20.4% | 21.9% | 23.4% |
| Asset Turnover Ratio | 1.48 | 1.42 | 1.12 | 1.09 | 1.32 | 1.30 | 1.16 | 1.07 | 1.02 | 0.96 |
| Equity Multiplier | 5.96 | 3.60 | 2.13 | 1.54 | 1.66 | 1.62 | 1.55 | 1.50 | 1.44 | 1.40 |

## Valuation

We reiterate our **BUY** recommendation on AMD, with a target price of **USD 137.68**, representing an upside of **32.81%** based on its latest closing price of **USD 103.67**. We adopted the DCF analysis with Free Cash Flow to Firm methodology to incorporate revenue growth from its business segments and expanding margins.

**Revenue Build:** A top-down approach using the total addressable market and AMD's market share was utilised to compute its revenue. AMD's addressable market was broken down into GPU and CPU market, with a 5Y CAGR of 33% and 10% respectively. We forecast AMD's market share to grow from 15.3% to 20.3% by FY26. We also adopted the same approach for Xilinx's revenue in the FPGA market.

**WACC:** Cost of Equity was computed using the Capital Asset Pricing Model ($R_f$ + β(ERP) + Size Premium). The 2.61% risk-free rate was derived using the 10-Year US Treasury Yield as of 07/04/2022. Damodaran's ERP data was used as a proxy to compute our 4.74% blended ERP, with a bottom-up beta of 1.17 (Appendix I). Given's AMD market capitalisation, we incorporated a size premium of -0.22% based on Kroll's CRSP Deciles Size Study. With the respective values, we arrived at a Cost of Equity of 7.92%. Pre-tax cost of debt of 7.48% was computed using a weighted-average interest rate of its interest-bearing debts. Using a blended tax rate and a country risk premium of 25.03% and 0.50% respectively, we arrived at an after-tax cost of debt of 5.98%. WACC of 7.91% was then computed using AMD's long-term target D/E ratio of 0.42% (Fig. 22).

**Perpetual Growth and Exit Multiple Approach:** Terminal growth rate of 2.1% was derived using the US long-term GDP growth rate as we expect AMD's growth to stabilise after the 5-year period. As a sanity check, the forward median FY+1 EV/EBITDA exit multiple of 12.4x was used. Both approaches gave us a terminal value of USD 246,894 and USD 246,371 respectively (Appendix I).

**Scenario Analysis & Monte Carlo:** We modelled a bull and bear case to simulate future scenarios by varying our assumptions for pace of market growth, ability to expand its market share, and margins expansion from synergised operations between AMD and Xilinx (Appendix O). Our bull case presented an upside of 44.43% while bear case yielded a 3.52% upside. We further tested the spread of our valuation by varying the WACC, and respective market share and industry growth using Monte Carlo simulation with 10k iterations. 95% of the results was above the current share price, further confirming our **BUY** recommendation (Fig. 23).

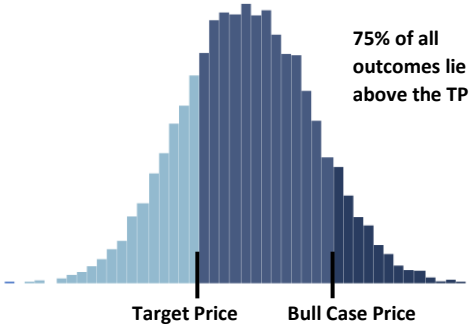
**Sensitivity Analysis:** We performed an indirect sensitivity analysis on various inputs to assess impact on its share price. From there, we determined computing and graphics revenue to affect the share price the most, followed by cost of sales (Fig. 24). The exit multiple and terminal growth rate was also sensitised against WACC, with a **BUY** recommendation being maintained across our range of inputs tested.

**Fig 22: WACC Inputs**

| Cost of Equity | |
|---|---|
| Risk-free Rate | 2.61% |
| Blended Equity Risk Premium | 4.74% |
| Unlevered Beta | 1.16 |
| Re-levered Beta | 1.17 |
| Size Premium | -0.22% |
| Cost of Equity | 7.92% |
| **Cost of Debt** | |
| Pre-tax Cost of Debt | 7.48% |
| Blended Country Risk Premium | 0.50% |
| Blended Corporate Tax Rate | 25.03% |
| After-tax Cost of Debt | 5.98% |
| **WACC** | **7.91%** |

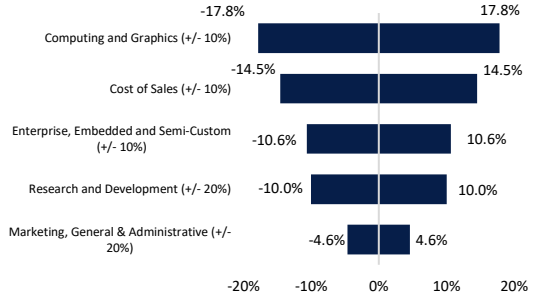
*Source: Team Analysis*

**Fig 23: Monte Carlo Simulation**




*Source: Team Analysis*

**Fig 24: Indirect Sensitivity Analysis**




*Source: Team Analysis*

### Relative Valuation as a Sanity Check

**Screening Process:** We first screened our comparable companies using S&P Capital IQ based on the screening criteria: (1) Company Type: Public Companies, (2) Company Status: Operating and Operating Subs, (3) Industry Classification: Semiconductors and Semiconductor Equipment (Primary), (4) Market Capitalisation: greater than USD 30 billion. Based on these criteria, 17 companies were generated. From the list, we further filtered the comparable companies based on their business model and products that were most similar to AMD. Overall, 8 companies were selected as comparable companies (Appendix K).

**Multiple Selection:** We selected the forward EV/Revenue multiples as the most appropriate given that the bottom-line margins have not stabilised. The EBITDA margin and net income margin is expected to expand significantly over the next five years, making the use of multiples with bottom-line denominators unsuitable (EV/EBITDA, EV/EBIT). As different companies may have different growth rate within the semiconductor industry, we have decided to utilise the PEG ratio to factor in its effect. AMD EPS is expected to grow at a 29% 5Y CAGR, hence the PEG ratio would represent its value more accurately (Appendix K).

### Broker Consensus

We also relied on broker estimates to further sanitise our valuation. The price targets from 15 brokers lied between **USD 115 to 200**, in line with our target price.

**Fig 25: Sensitivity Analysis (Perpetual Growth)**

| WACC \ Perpetual Growth Rate | 1.60% | 1.85% | 2.10% | 2.35% | 2.60% |
|---|---|---|---|---|---|
| 6.91% | $152.82 | $159.41 | $166.69 | $174.77 | $183.79 |
| 7.41% | $139.49 | $144.90 | $150.82 | $157.32 | $164.50 |
| 7.91% | $128.28 | $132.79 | **$137.68** | $143.02 | $148.86 |
| 8.41% | $118.72 | $122.53 | $126.64 | $131.08 | $135.91 |
| 8.91% | $110.48 | $113.73 | $117.22 | $120.97 | $125.02 |

*Source: Team Analysis*

**Fig 26: Sensitivity Analysis (Exit Multiple)**

| WACC \ Exit Multiple | 10.4x | 11.4x | 12.4x | 13.4x | 14.4x |
|---|---|---|---|---|---|
| 6.91% | $123.52 | $132.87 | $142.22 | $151.57 | $160.92 |
| 7.41% | $121.45 | $130.63 | $139.80 | $148.98 | $158.15 |
| 7.91% | $119.43 | $128.44 | **$137.44** | $146.45 | $155.46 |
| 8.41% | $117.46 | $126.30 | $135.14 | $143.98 | $152.82 |
| 8.91% | $115.52 | $124.20 | $132.88 | $141.56 | $150.24 |

*Source: Team Analysis*

## Investment Risks

### Business Risk (B1) – Over reliance on a few customers

AMD's top 5 customers accounted for 54% of its net revenue. HPE accounted for more than 10% of consolidated net revenues from the sale of Computing Solutions. Sony and Microsoft accounted for 70% of net revenue attributable to the Graphics & Visual segment. The dependence on a small number of customers for a substantial portion of AMD's revenue pose a key business risk (Fig. 29), especially when these customers will continue to account for a significant part of future revenue. Losing of these key customers will pose a large reduction in operations or demand for AMD's products, adversely affecting revenue.

**Mitigation:** Due to excellent R&D and product quality, all of AMD's customers claim that its products provide the most optimal and refined solution for product integration. AMD also has significantly more experience with putting high powered GPUs along with its CPUs, providing a "best-fit solution" for all its customers. Furthermore, CEO Lisa Su's focus on "deepening customer relationships" also provide a long-term effect of customer loyalty towards AMD.

### Business Risk (B2) – Lack of Synergy from Xilinx's Merger

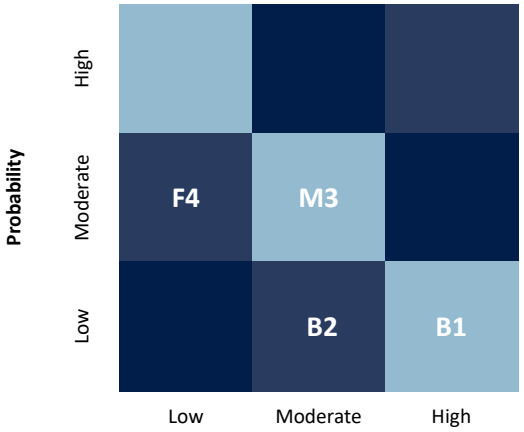
Acquisition of Xilinx for USD 50B was under management's assumption of operational synergies, cost efficiencies, and innovation. However, there is large uncertainty towards a successful integration between AMD and Xilinx for reasons such as: (1) Inability to profit from this acquisition, (2) Failure to leverage nor scale the combined business effectively, and (3) Potential impact of relationships with the loss of Xilinx's employees, vendors, suppliers, or customers amid the merger.

**Mitigation:** AMD has kept every single employee of Xilinx. Additionally, the former Xilinx CEO Victor Peng will join AMD as the president of the AECG segment. This newly formed segment gives sufficient freedom to Xilinx's original management. There will also be no changes to the current product offerings or long-term roadmaps made by AMD for Xilinx before ensuring that both companies are fully integrated and synergised. Customers can expect to purchase Xilinx products as usual with the same levels of service and support, without any change in support contacts. Original supplier and partner relationships will also remain the same hence, we believe that this merger will be successful because of these factors.

### Market Risk (M3) – Highly Cyclical Product Demand

Fluctuations in demand, especially in the computer marketplace, have materially adversely affected AMD in the past. A significant percentage of revenue is from AMD's Computer and Graphics segment which is reliant on consumer desktop PC

**Fig 27: Risk Matrix for AMD**




*Source: Team Analysis*

**Fig 28: Summary of Risk and Mitigations**

| Risks | Mitigations |
|---|---|
| **Market Risks** | |
| Highly Cyclical Product Demand | Diversification of pricing using SKUs, inelastic demand |
| **Business Risks** | |
| Over-reliance on a few customers | Strong customer relationship and "best-of-fit" product |
| Lack of Synergy from Xilinx's merger | Kept every single Xilinx employee, CEO of Xilinx to continue leading |
| **Financial Risks** | |
| Interest Rates & FX Risks | Hedging via derivatives Interest coverage ratio >5x |

*Source: Team Analysis*

and laptops. This segment has experienced a decline due to: (1) Changes in replacement cycles, (2) Inflation leading to a decline in discretionary income, and (3) Economic downturns. The semi-customs segment is also highly reliant on the sale of consoles from Sony and Microsoft, which also share the same risks as AMD's C&G segment. The success of AMD's semi-customs segment is reliant on customer demand for these products hence, an unsuccessful product launch could adversely affect AMD's revenue in this segment. The unsuccessful launch could also potentially cause Microsoft or Sony to switch to a different competitor.

**Mitigation:** AMD has ensured sufficient product diversification in terms of pricing levels using SKU numbers, to ensure a decline in discretionary income or economic downturns will not significantly affect the demand for its products. AMD's strong R&D to develop new and better products ahead of the replacement cycle ensures that it is always ahead of its competitors, especially when it comes to computer, notebooks, or console gaming. These products will utilise AMD's chips over other competitors due to its "best-fit solution". Hence, we believe product demand will still be present despite a highly cyclical industry.

### Financial Risk (F4) – Interest Rate, Foreign Exchange & Country Risks

AMD operates across 20 countries in both developed and emerging markets. AMD have costs, assets and liabilities that are denominated in foreign currencies; hence it experiences foreign exchange risks. An increase in foreign exchange currency expenses as a percentage of revenue can substantially affect profitability and cashflows. Furthermore, interest rate hikes, currency inflation in different respective countries, or an increase in country default spreads will pose significant risk for AMD. These uncertain economic conditions may make AMD face difficulty in raising new funds through borrowings or the sale of equity securities.

**Mitigation:** AMD's product sales are largely denominated in USD, reducing risk. Furthermore, the company manages foreign exchange risk by hedging a portion of its short-term foreign currency exposure to protect against fluctuations in currency exchange rates. AMD's total foreign currency exposure is determined using projections of long-term expenditures for items such as payroll hence, these activities will be effective in foreign exchange rate exposure. AMD will also be able to service higher interest expense with an interest coverage ratio of 122x (Fig. 31).

## Environmental, Social & Governance

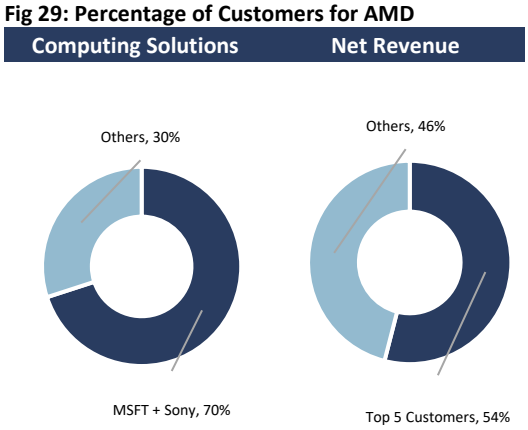
As a leading semiconductor firm, AMD is committed on creating the next generation of products that will positively benefit society and the planet. Its effort towards embedding environmental stewardship across its business while ensuring safe and responsible workplaces in its supply chain will better differentiate itself from peers in the future. AMD uses materiality analysis to prioritise ESG-related issues and guide its engagement with key stakeholders (Appendix B). It is also committed to 11 out of 17 UNSDGs through 4 key themes: (1) Digital Impact, (2) Environmental Stewardship, (3) Supply Chain Responsibility, (4) Diversity, Belonging & Inclusion.

According to studies by NYU Stern and more than 1000 other meta-analyses, 58% of studies found positive correlation between ESG and corporate financial performance (Fig. 32). It was also noted that companies with aggressive carbon reduction strategies tend to perform better. However, it is important to note that ESG disclosure itself does not drive financial performance, as what matters is measuring ESG metrics with a strategy. This is held true as only 26% of studies found a positive correlation between disclosure and financial performance.

### Environmental

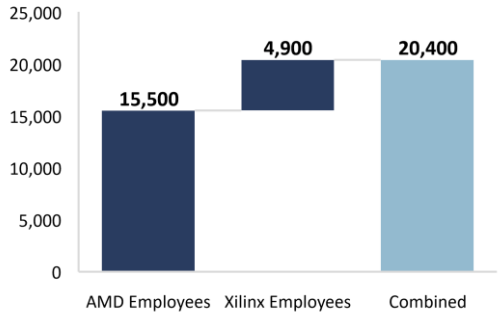
AMD has ambitious environmental goals in place, with aims to achieve a 50% reduction in carbon emissions between 2020 to 2030. It is also looking to achieve a 30x increase in energy efficiency for its processors by 2025, while aiming to have 80% of its manufacturing suppliers' source for renewable energy. With these goals, AMD will be able to advance energy efficiencies for accelerated computing applications while providing greater value to the society and environment. AMD was able to achieve 5 out of 7 of its 2020 environmental goals in its value chain (Appendix C). The two shortfalls were due to higher manufacturing index (MI) over

**Fig 29: Percentage of Customers for AMD**



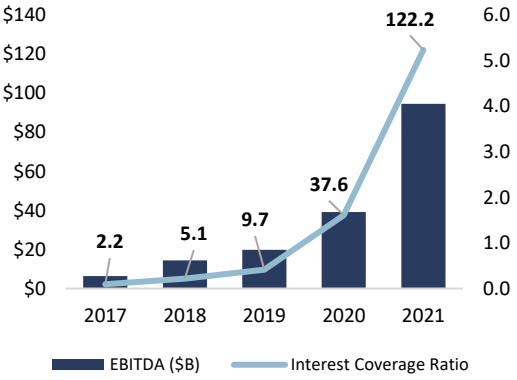

*Source: Company Filings*

**Fig 30: Employee Headcount as of Merger**



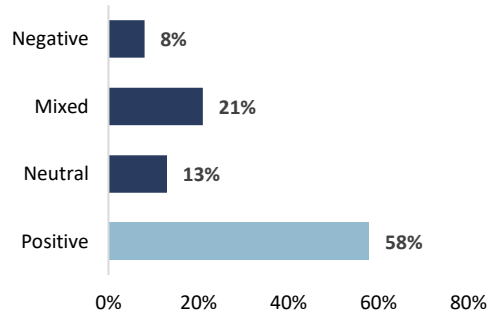

*Source: Company Filings*

**Fig 31: AMD's Interest Coverage Ratio**




*Source: Company Filings*

**Fig 32: Relationship between ESG and Corporate Financial Performance**




*Source: NYU Stern*

the goal period for manufacturing its wafers compared to the industry average. Despite that, it has achieved remarkable feats such as 38% reduction in carbon emissions and 58% reduction in waste generated between 2014 to 2020 (Fig. 33).

## Social

AMD has strong foundational social goals in place. According to HBR, research has shown that businesses with diverse teams are more innovative, make better decisions and achieve higher performance. AMD believes that diversity and inclusion are key to build great products and accelerate next generation computing. As black, hispanic and women remain underrepresented in the tech workforce, AMD is committed to increasing the percentage of underrepresented group hires. By 2025, AMD aims to have 70% of its employees participate in inclusion initiatives. This goal can be achieved by listening to its employees through satisfaction surveys and curated groups, as well as deepening its relationships with historically Black colleges and Hispanic-serving institutions.

For nearly four decades, AMD has been consistently investing money, time, and technology in organisations to strengthen communities worldwide (Fig. 34). Its employees have also donated their time, talent, and money to charitable causes. In 2020, AMD increased its philanthropic efforts to support communities affected by Covid-19 (Fig. 35). These efforts include donations of more than USD 2.5 million as well as more than 3000 employees volunteering in AMD-sponsored events such as science fairs and raising money for local food banks.

## Governance

AMD possesses an exemplary corporate governance that promotes accountability through transparent disclosure and external stakeholder engagement. AMD has established a Corporate Responsibility (CR) and ESG Executive Steering Committee (ESC) to work with its executive management to oversee progress on its ESG policies and disclosures. It has also established multiple governance guidelines, including an anti-corruption policy, climate policy, and human rights policy, etc.

**Board of Directors (BoD):** AMD's BoD consist of 10 individuals and is currently led by the CEO of AMD, Dr. Lisa Su. As of 2022, 9 out of 10 directors are independent, showcasing limited biasness in its decision-making process. The board is also highly competent with a good mix of expertise and industry experience. For instance, Ms. Nora Denzel, has more than 25 years of experience in tech and software from her experience at Intuit, HP, and IBM. Gender diversity within the board currently stands at 30%, which we believe is sufficient but can be improved further (Fig. 36).

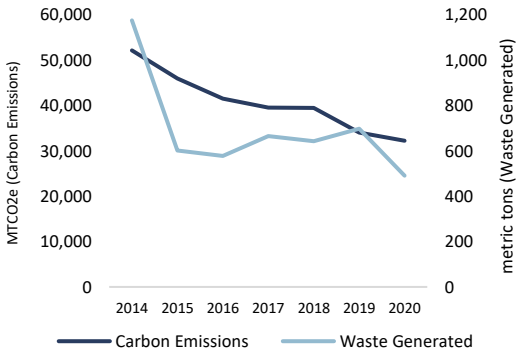
**Executive Management:** AMD's executive management consist of 15 individuals responsible for different operations across the globe. Everyone has in-depth industry experience and the relevant qualifications for their respective roles.

**Remuneration:** Compensation is regulated through a mixture of fixed and variable components. This includes a base salary, performance bonuses and long-term incentives through cash and equity. Performance bonuses and long-term incentives are subjected to the financial performance and strategic milestones of AMD. With performance-based remuneration, the board and executives will be incentivised to make strategic decisions that supports long-term profitability for the company.

**Shareholders:** AMD's free float accounts for 99.6% of total shares outstanding, indicating a diversified shareholder base (Fig. 37). Vanguard is currently the majority stakeholder with a 8.4% stake in AMD. BlackRock comes in at second with a 5% equity stake. Many other well-established institutions such as Fidelity and T. Rowe Price also owns a stake in AMD, showcasing that it is a reputable company that is recognised by some of the world's largest financial institutions.

With AMD being transparent on its ESG policies, as well as having ambitious ESG goals with a great track record of achieving it, we believe AMD's ESG proposition will very likely impact its valuation positively. Better financial performance may be generated over the next few years, with the possibility of it even achieving a lower cost of capital based on research reported by MSCI.

**Fig 33: AMD's Carbon and Waste Reduction**



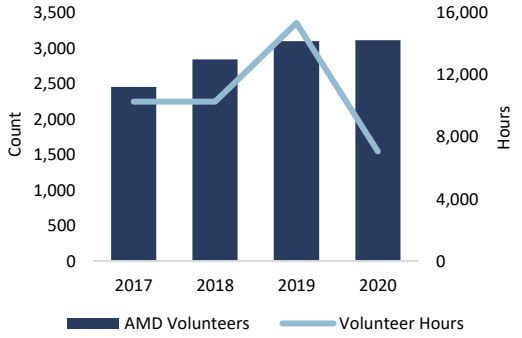

*Source: Company Filings*

**Fig 34: AMD's Social Investment (USD)**

| | AMD Foundation | Cash & In-Kind Giving |
|---|---|---|
| 2016 | *$12,000* | *$159,474* |
| 2017 | *$49,400* | *$158,716* |
| 2018 | *$117,200* | *$149,050* |
| 2019 | *$153,000* | *$297,218* |
| 2020 | *$91,814* | *$8,724,090* |

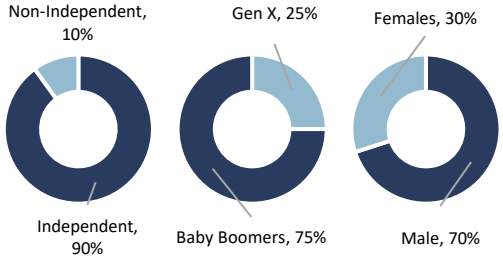
*Source: Company Filings*

**Fig 35: No. of AMD Volunteers & Volunteer Hours**




*Source: Company Filings*

**Fig 36: Board Diversity**




*Source: Company Filings*

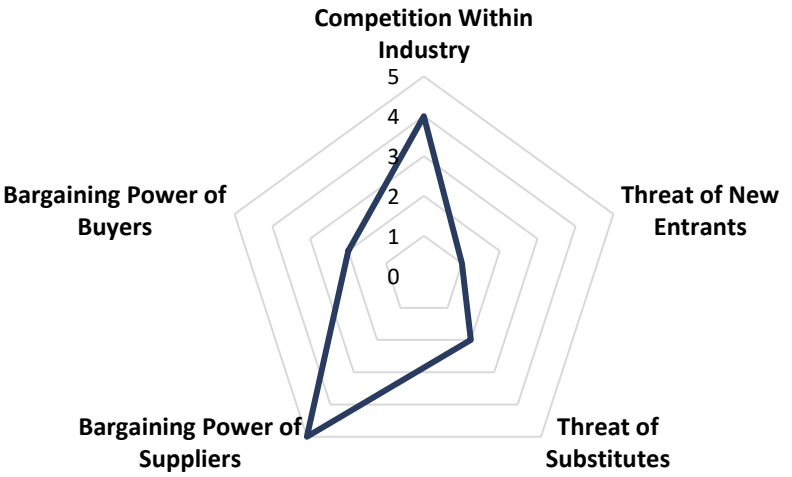
**Fig 37: AMD's Top 10 Institutional Shareholders**

| Shareholders | Stake % |
|---|---|
| **Vanguard Group** | 8.43% |
| **BlackRock Fund Advisors** | 4.99% |
| **SsgA Funds Management, Inc.** | 4.14% |
| **T. Rowe Price Associates, Inc.** | 2.71% |
| **Fidelity Management Co.** | 2.64% |
| **J.P. Morgan Investment** | 1.96% |
| **Capital Research & Management Co.** | 1.88% |
| **Geode Capital Management** | 1.76% |
| **Wellington Management Co.** | 1.41% |
| **Fisher Asset Management** | 1.23% |

*Source: CNN*

## List of Appendices

## Appendix A – Porter's Five Forces




**Competition Within Industry – High (4):**
Number of competitors within the semi-conductor space is minimal, with just a few firms controlling the entire market. This means that firms operating in this space will not be able to make moves without being unnoticed, making competition among existing firms slightly weaker. The semi-conductor space is also growing at an immense rate, resulting in competitors less likely to engage in completive actions as they do not necessarily need to steal market share from each other. However, AMD's products are not highly differentiated from its biggest competitors such as Nvidia and Intel, making competition amongst these firms higher as they aim to outperform each other's product every release. AMD can tackle this by focusing on producing higher quality differentiated products. With the industry set to grow tremendously, AMD can also focus targeting new customers instead of trying to win existing loyal customers from its competitors.

**Threats of New Entrants – Very Low (1):**
Economies of scale is very difficult to achieve in the semi-conductor space as heavy R&D expenses are required. Furthermore, AMD, Intel and Nvidia currently controls the entire CPU and GPU market share, making it hard for new players to steal market share due to their well-established branding. New entrants will also not be able to compete with key existing players in terms of production cost, making the threat of new entrants very weak.

**Threat of Substitute Products or Services – Low (2):**
Threat of substitute products is relatively low as products produced by AMD are unique to its own, with every product having different performance capabilities. This indicates that there is essentially no ceiling on the maximum profit AMD can earn from its buyers, other than its direct competition against Nvidia and Intel. AMD can tackle this threat by creating higher quality product at lower prices, allowing them to achieve a competitive advantage against its peers as customers look for the best bang for their bucks.

**Bargaining Power of Suppliers – Very High (5):**
In terms of chip production, AMD key suppliers stems from 2 key firms: (1) Taiwan Semiconductors Manufacturing (TSMC) and (2) GLOBALFOUNDRIES, Inc. As AMD is over-reliant on these two companies to supply them with semiconductor chips, bargaining power of suppliers are high, resulting in AMD having less control over prices. AMD may face higher cost of sales if its supplier increase prices, potentially impacting profitability. AMD can tackle this threat by having a diversified base of supplier for its chip production through partnership with more chip manufacturing companies.

**Bargaining Power of Buyers – Low (2):**
Number of buyers within the CPU and GPU market is very high, with very little firms to choose from. As a result, these buyers do not have much control over prices, making bargaining powers of buyers relatively weak within the industry. Product differentiation is also high due to its brand value and individual product performance, making buyers unlikely to find alternative firms producing the same exact product. This makes the bargaining power of buyers even lower, as they have to succumb to AMD's prices regardless of supply or demand shock.

*Source: Team Analysis*

## Appendix B – ESG – Materiality Assessment


**Assessment Results:**

- Social equity and workforce issues, including employee diversity and tech equity are important to AMD's stakeholders and business.
- Product energy efficiency, operational energy use, risks to supply chain and computing's roles are both a driver of GHG emissions and a lever for reducing them across the wider economy.

**Through key assessments, AMD came up with 4 strategic focus areas to target in the future:**

*1. Digital Impact*

*2. Environmental Stewardship*

*3. Supply Chain Responsibility*

*4. Diversity, Belonging & Inclusion*

*Source: Company Filings*

## Appendix C – ESG – Goals and Progress

| Value Chain Stage | 2020 Goal | | 2020 Performance | Result |
|---|---|---|---|---|
| **AMD Operations** | Reduce absolute GHG emissions by 20% from 2014 baseline (scope 1&2) | | 38% below 2014 baseline | Achieved |
| **Wafer Suppliers** | GHG emissions (scope 1) | 75% below SIA average per MI | 73% below SIA average per MI | Partly Achieved |
| | Electricity use | 40% below SIA average per MI | 28% below SIA average per MI | Not Achieved |
| | Water use | 40% below Sia average per MI | 54% below SIA average per MI | Achieved |
| | Hazardous waste recycling rate | 65% higher | 80% recycling rate | Achieved |
| | Injury and illness rate | Reduce year over year | 20% below 2019 rate | Achieved |
| **Product Use** | Deliver at least 25x more energy efficiency in our processors for mobile products, from a 2014 baseline | | 31.7x | Achieved |

*Source: Company Filings*

## Appendix D – ESG – Comparison of ESG Scores

| | Refinitiv | Sustainalytics | S&P Global |
|---|---|---|---|
| Intel Corporation | 88 | 16.7 | 67 |
| NVIDIA Corporation | 80 | 12.8 | 74 |
| QUALCOMM Incorporated | 67 | 18.1 | 57 |
| Texas Instruments Incorporated | 84 | 20.3 | 53 |
| ASML Holding N.V. | 73 | 11.8 | 80 |
| NXP Semiconductors N.V. | 77 | 21.6 | 34 |
| Broadcom Inc. | 73 | 22.4 | 21 |
| ***Average*** | ***75.6*** | ***18.0*** | ***52.6*** |
| **Advanced Micro Devices, Inc.** | 63 | 20 | 35 |

***Refinitiv**: the higher the score the better the ESG rating.*

***Sustainalytics:** the lower the score the better the ESG rating.*

***S&P Global:** the higher the score the better the ESG rating.*

Despite AMD not outperforming majority of its peers in ESG rating at the moment, AMD has shown ambitious goals towards improving its ESG efforts over the next few years. We believe this will translate to better future ESG rating, impacting its share price in a positive manner as ESG-focused investors realises AMD's effort towards achieving better corporate responsibility and sustainability.

*Source: Refinitiv, S&P Global, Sustainalytics, Team Analysis*

## Appendix E – List of Executives and Board Members

**Board of Directors:**

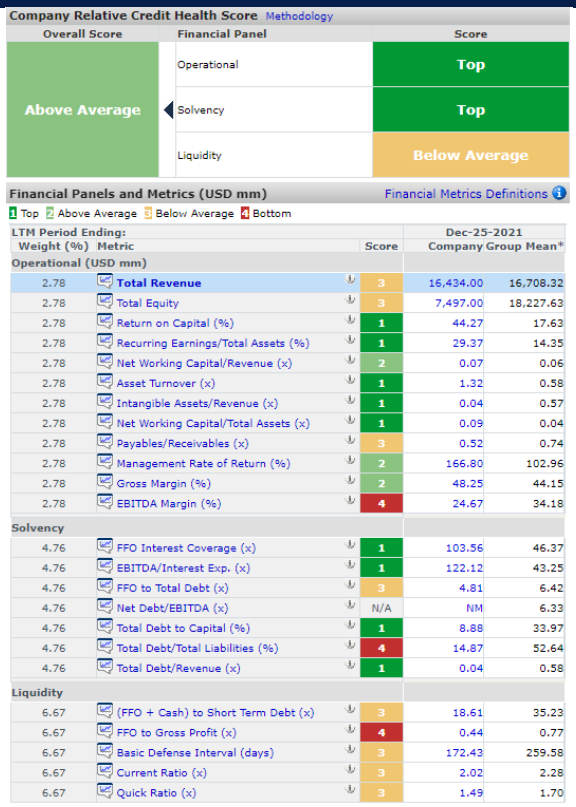
| Board of Directors | |
|---|---|
| **Name** | **Directorship** |
| Dr. Lisa T. Su | Non-independent Director |
| Mr. John E. Caldwell | Non-Executive and Independent Director |
| Ms. Nora M. Denzel | Non-Executive and Independent Director |
| Mr. Mark Dunan | Non-Executive and Independent Director |
| Mr. Mike P. Gregoire | Non-Executive and Independent Director |
| Mr. Joseph A. Householder | Non-Executive and Independent Director |
| Mr. John Marren | Non-Executive and Independent Director |
| Mr. Jon A. Olson | Non-Executive and Independent Director |
| Mr. Abhi Talwalkar | Non-Executive and Independent Director |
| Ms. Elizabeth Vanderslice | Non-Executive and Independent Director |

**Executive Management:**

| Executive Management | |
|---|---|
| **Name** | **Position** |
| Dr. Lisa Su | Chairman & CEO |
| Mr. Victor Peng | President, Adaptive and Embedded Computing Group |
| Mr. Rick Bergman | Executive Vice President, Computing & Graphics Group |
| Mr. Daren Grasby | Executive Vice President, CSO, President EMEA |
| Mr. Devinder Kumar | Executive Vice President CFO, Treasurer |
| Mr. Mark Papermaster | Executive Vice President, CTO, Technology & Engineering |
| Ms. Ruth Cotter | Senior Vice President, Marketing, HR, Strategy |
| Mr. Robert Gama | Senior Vice President, Chief HR Officer |
| Mr. Keivan Kshvari | Senior Vice President, Global Operations |
| Mr. Dan McNamara | Senior Vice President, GM, Server |
| Mr. Saeid Moshkelani | Senior Vice President, GM, Client |
| Mr. Forrest Norrod | Senior Vice President, GM, Data Centre Solutions Group |
| Ms. Jane Roney | Senior Vice President, Operations |
| Mr. David Wang | Senior Vice President, Engineering, Radeon Tech Group |
| Mr. Harry Wolin | Senior Vice President, GC, Corporate Secretary |

*Source: Company Filings*

## Appendix F – AMD's Relative Credit Health Score



Company Relative Credit Health Score Methodology

| Overall Score | Financial Panel | Score |
|---|---|---|
| Above Average | Operational | Top |
| | Solvency | Top |
| | Liquidity | Below Average |

Financial Panels and Metrics (USD mm) Financial Metrics Definitions

1 Top 2 Above Average 3 Below Average 4 Bottom

| LTM Period Ending: Weight (%) | Metric | Score | Dec-25-2021 Company | Group Mean* |
|---|---|---|---|---|
| **Operational (USD mm)** | | | | |
| 2.78 | **Total Revenue** | 3 | 16,434.00 | 16,708.32 |
| 2.78 | Total Equity | 3 | 7,497.00 | 18,227.63 |
| 2.78 | Return on Capital (%) | 1 | 44.27 | 17.63 |
| 2.78 | Recurring Earnings/Total Assets (%) | 1 | 29.37 | 14.35 |
| 2.78 | Net Working Capital/Revenue (x) | 2 | 0.07 | 0.06 |
| 2.78 | Asset Turnover (x) | 1 | 1.32 | 0.58 |
| 2.78 | Intangible Assets/Revenue (x) | 1 | 0.04 | 0.57 |
| 2.78 | Net Working Capital/Total Assets (x) | 1 | 0.09 | 0.04 |
| 2.78 | Payables/Receivables (x) | 3 | 0.52 | 0.74 |
| 2.78 | Management Rate of Return (%) | 2 | 166.80 | 102.96 |
| 2.78 | Gross Margin (%) | 2 | 48.25 | 44.15 |
| 2.78 | EBITDA Margin (%) | 4 | 24.67 | 34.18 |
| **Solvency** | | | | |
| 4.76 | FFO Interest Coverage (x) | 1 | 103.56 | 46.37 |
| 4.76 | EBITDA/Interest Exp. (x) | 1 | 122.12 | 43.25 |
| 4.76 | FFO to Total Debt (x) | 3 | 4.81 | 6.42 |
| 4.76 | Net Debt/EBITDA (x) | N/A | NM | 6.33 |
| 4.76 | Total Debt to Capital (%) | 1 | 8.88 | 33.97 |
| 4.76 | Total Debt/Total Liabilities (%) | 4 | 14.87 | 52.64 |
| 4.76 | Total Debt/Revenue (x) | 1 | 0.04 | 0.58 |
| **Liquidity** | | | | |
| 6.67 | (FFO + Cash) to Short Term Debt (x) | 3 | 18.61 | 35.23 |
| 6.67 | FFO to Gross Profit (x) | 4 | 0.44 | 0.77 |
| 6.67 | Basic Defense Interval (days) | 3 | 172.43 | 259.58 |
| 6.67 | Current Ratio (x) | 3 | 2.02 | 2.28 |
| 6.67 | Quick Ratio (x) | 3 | 1.49 | 1.70 |

*Source: Capital IQ*

## Appendix G – Financial Analysis

| For Year Ended 31 December | Historical | | | | | Forecasted | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *All figures expressed in (USDm) unless stated otherwise* | 2017A | 2018A | 2019A | 2020A | 2021A | 2022E | 2023E | 2024E | 2025E | 2026E |
| **YoY Revenue Growth by Segments** | | | | | | | | | | |
| Computing and Graphics | - | 38.6% | 14.2% | 36.6% | 45.1% | 48.3% | 24.5% | 24.2% | 24.3% | 22.0% |
| Enterprise, Embedded and Semi-Custom | - | 3.3% | -14.0% | 64.7% | 113.2% | 16.4% | 35.5% | 34.9% | 35.0% | 32.3% |
| Total Revenue | | 23.26% | 3.95% | 45.05% | 68.33% | 55.71% | 26.82% | 26.75% | 27.16% | 25.23% |
| **Profitability** | | | | | | | | | | |
| Gross Margin % | 34.0% | 37.8% | 42.6% | 44.5% | 48.2% | 49.2% | 50.7% | 52.2% | 53.7% | 55.2% |
| EBITDA Margin % | 5.2% | 9.6% | 13.2% | 17.6% | 25.0% | 25.6% | 28.2% | 30.8% | 33.1% | 33.1% |
| EBIT Margin % | 2.4% | 7.0% | 9.4% | 14.0% | 22.2% | 23.8% | 25.8% | 27.8% | 29.8% | 31.8% |
| Net Income Margin % | -0.6% | 0.1% | 5.1% | 25.5% | 19.2% | 17.9% | 19.4% | 20.9% | 22.4% | 23.9% |
| Return on Assets | -0.9% | 0.2% | 5.7% | 27.8% | 25.5% | 23.4% | 22.6% | 22.4% | 22.8% | 23.0% |
| Return on Equity | -5.5% | 0.6% | 12.1% | 42.7% | 42.2% | 38.1% | 35.1% | 33.6% | 33.0% | 32.3% |
| **Liquidity** | | | | | | | | | | |
| Current Ratio | 1.74 | 1.78 | 1.95 | 2.54 | 2.02 | 2.40 | 2.76 | 3.03 | 3.43 | 3.68 |
| Quick Ratio | 1.28 | 1.36 | 1.53 | 1.96 | 1.56 | 1.93 | 2.31 | 2.61 | 3.00 | 3.27 |
| Cash Ratio | 0.78 | 0.58 | 0.64 | 0.95 | 0.85 | 1.07 | 1.40 | 1.72 | 2.13 | 2.40 |
| **Leverage** | | | | | | | | | | |
| Debt to Equity Ratio | 2.34 | 0.99 | 0.24 | 0.09 | 0.09 | 0.05 | 0.04 | 0.03 | 0.03 | 0.03 |
| Debt to EBITDA Ratio | 5.15 | 2.01 | 0.77 | 0.31 | 0.16 | 0.08 | 0.08 | 0.07 | 0.06 | 0.06 |
| **Efficiency** | | | | | | | | | | |
| Asset Turnover Ratio | 1.48 | 1.42 | 1.12 | 1.09 | 1.32 | 1.31 | 1.17 | 1.07 | 1.02 | 0.96 |
| Receivables Turnover Ratio | 11.57 | 5.24 | 3.62 | 4.73 | 6.07 | 5.38 | 4.86 | 4.80 | 5.11 | 5.20 |
| Payables Turnover Ratio | 9.03 | 7.63 | 3.91 | 11.57 | 6.44 | 6.76 | 6.44 | 6.26 | 7.09 | 6.58 |

# Appendix H – Peer Comparison

| Net Income Margin % | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| **Advanced Micro Devices, Inc.** | **-0.6%** | **5.2%** | **5.1%** | **25.5%** | **19.2%** |
| Intel Corporation | 15.3% | 29.7% | 29.3% | 26.8% | 25.1% |
| NVIDIA Corporation | 24.1% | 31.4% | 35.3% | 25.6% | 26.0% |
| QUALCOMM Incorporated | 11.0% | -22.0% | 18.1% | 22.1% | 26.9% |
| Texas Instruments Incorporated | 24.6% | 35.4% | 34.9% | 38.7% | 42.4% |
| ASML Holding N.V. | 23.1% | 23.7% | 21.9% | 25.4% | 31.6% |
| NXP Semiconductors N.V. | 23.9% | 23.5% | 2.7% | 0.6% | 16.9% |
| Broadcom Inc. | 9.6% | 58.8% | 12.1% | 12.4% | 24.5% |
| GLOBALFOUNDRIES Inc. | - | -43.6% | -23.6% | -27.8% | -3.8% |
| ***Mean*** | ***16.4%*** | ***15.8%*** | ***15.1%*** | ***16.6%*** | ***23.2%*** |
| ***Median*** | ***19.2%*** | ***23.7%*** | ***18.1%*** | ***25.4%*** | ***25.1%*** |

| Return on Equity % | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| **Advanced Micro Devices, Inc.** | **-6.5%** | **36.2%** | **16.7%** | **57.5%** | **47.4%** |
| Intel Corporation | 14.2% | 29.3% | 27.7% | 26.4% | 22.5% |
| NVIDIA Corporation | 32.6% | 46.1% | 49.3% | 26.0% | 29.8% |
| QUALCOMM Incorporated | 7.8% | -31.5% | 153.5% | 94.6% | 112.8% |
| Texas Instruments Incorporated | 35.4% | 57.7% | 56.1% | 61.8% | 69.0% |
| ASML Holding N.V. | 19.0% | 23.1% | 21.4% | 26.9% | 49.0% |
| NXP Semiconductors N.V. | 18.3% | 18.5% | 2.7% | 0.9% | 23.9% |
| Broadcom Inc. | 7.9% | 50.7% | 10.6% | 12.1% | 27.6% |
| GLOBALFOUNDRIES Inc. | - | - | - | -16.6% | -3.3% |
| ***Mean*** | ***16.1%*** | ***28.8%*** | ***42.3%*** | ***32.2%*** | ***42.1%*** |
| ***Median*** | ***16.3%*** | ***32.8%*** | ***24.6%*** | ***26.4%*** | ***29.8%*** |

| Quick Ratio | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| **Advanced Micro Devices, Inc.** | **1.1x** | **1.2x** | **1.4x** | **1.8x** | **1.5x** |
| Intel Corporation | 1.1x | 1.1x | 0.9x | 1.2x | 1.4x |
| NVIDIA Corporation | 4.3x | 7.3x | 6.7x | 7.0x | 3.6x |
| QUALCOMM Incorporated | 3.8x | 1.3x | 1.6x | 1.8x | 1.3x |
| Texas Instruments Incorporated | 2.5x | 2.2x | 3.0x | 3.3x | 4.5x |
| ASML Holding N.V. | 1.7x | 1.7x | 1.6x | 1.6x | 1.0x |
| NXP Semiconductors N.V. | 1.6x | 1.1x | 1.0x | 1.5x | 1.5x |
| Broadcom Inc. | 5.5x | 3.3x | 1.2x | 1.6x | 2.3x |
| GLOBALFOUNDRIES Inc. | - | - | 1.3x | 1.1x | 1.3x |
| ***Mean*** | ***2.7x*** | ***2.4x*** | ***2.1x*** | ***2.3x*** | ***2.0x*** |
| ***Median*** | ***2.1x*** | ***1.5x*** | ***1.4x*** | ***1.6x*** | ***1.5x*** |

| Book Debt-to-Equity % | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| **Advanced Micro Devices, Inc.** | **234.1%** | **98.7%** | **24.2%** | **9.1%** | **9.8%** |
| Intel Corporation | 38.8% | 35.4% | 37.5% | 45.1% | 40.5% |
| NVIDIA Corporation | 48.3% | 26.8% | 21.3% | 21.7% | 45.0% |
| QUALCOMM Incorporated | 71.2% | 2028.5% | 324.6% | 267.1% | 163.8% |
| Texas Instruments Incorporated | 39.4% | 56.3% | 68.9% | 77.5% | 61.5% |
| ASML Holding N.V. | 29.7% | 27.5% | 26.3% | 35.0% | 46.8% |
| NXP Semiconductors N.V. | 47.9% | 68.8% | 79.0% | 86.0% | 160.0% |
| Broadcom Inc. | 75.7% | 65.6% | 131.3% | 174.4% | 161.2% |
| GLOBALFOUNDRIES Inc. | - | - | 36.0% | 39.2% | 30.5% |
| ***Mean*** | ***73.1%*** | ***301.0%*** | ***83.2%*** | ***83.9%*** | ***79.9%*** |
| ***Median*** | ***48.1%*** | ***61.0%*** | ***37.5%*** | ***45.1%*** | ***46.8%*** |

Intel designs, manufactures, and sells computer components. Major products include microprocessors, chipsets, embedded processors, and microcontrollers.

Nvidia designs, develops, and markets 3D graphics processors and related software. It offers products that provides interactive 3D graphics to the mainstream PC market.

Qualcomm operates as a multinational semiconductor and telecommunications equipment company. It develops and delivers digital wireless communications products and services.

Texas Instruments operates as a semiconductor design and manufacturing company. It develops analog Ics and embedded processors.

ASML Holdings develops, produces, and markets semiconductor manufacturing equipment, specifically machines for production of chips.

NXP Semiconductors designs semiconductors and software for mobile communications, consumer electronics, security applications, in-car entertainment, and networking. It offers its products to automotive, identification, wireless infrastructure, lighting, mobile and computing applications.

Broadcom designs, develops, and markets digital and analog semiconductors. It offers wireless RF components, storage adapters, controllers, networking processors, switches, fiber optic modules, motion control encoders, and optical sensors.

| Total Asset Turnover | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|---|---|---|---|---|
| **Advanced Micro Devices, Inc.** | **1.5x** | **1.6x** | **1.3x** | **1.3x** | **1.5x** |
| Intel Corporation | 0.5x | 0.6x | 0.5x | 0.5x | 0.5x |
| NVIDIA Corporation | 0.8x | 0.9x | 1.0x | 0.7x | 0.7x |
| QUALCOMM Incorporated | 0.4x | 0.5x | 0.7x | 0.7x | 0.9x |
| Texas Instruments Incorporated | 0.9x | 0.9x | 0.8x | 0.8x | 0.8x |
| ASML Holding N.V. | 0.5x | 0.6x | 0.6x | 0.6x | 0.7x |
| NXP Semiconductors N.V. | 0.4x | 0.4x | 0.4x | 0.4x | 0.5x |
| Broadcom Inc. | 0.3x | 0.4x | 0.4x | 0.3x | 0.4x |
| GLOBALFOUNDRIES Inc. | - | - | - | 0.4x | 0.5x |
| ***Mean*** | ***0.7x*** | ***0.7x*** | ***0.7x*** | ***0.6x*** | ***0.7x*** |
| ***Median*** | ***0.5x*** | ***0.6x*** | ***0.6x*** | ***0.6x*** | ***0.7x*** |

GLOBALFOUNDRIES operates as a semiconductor contract manufacturing and design company. It offers chip designed for markets such as mobility, automotive, computing, wire connectivity, and consumer internet of things.

*Source: Capital IQ, Company Filings*

## Appendix I – Valuation – Discounted Cash Flow

| Blended | | | | |
|---|---|---|---|---|
| **Countries** | **Default Spread** | **Country Risk Premium** | **Equity Risk Premium** | **Corporate Tax Rate** |
| United States | 0.00% | 0.00% | 1.20% | 7.65% |
| China | 0.15% | 0.17% | 1.23% | 6.23% |
| Japan | 0.09% | 0.10% | 0.72% | 4.44% |
| Europe | 0.10% | 0.11% | 0.43% | 1.82% |
| Taiwan | 0.06% | 0.08% | 0.62% | 2.54% |
| Singapore | 0.00% | 0.00% | 0.36% | 1.44% |
| Others | 0.03% | 0.04% | 0.18% | 0.91% |
| **Total** | **0.43%** | **0.50%** | **4.74%** | **25.03%** |

| Loans | | | |
|---|---|---|---|
| **Debt** | **Interest Rate** | **Value** | **% of Total Debt** |
| Senior Notes | 7.50% | 312 | 99.68% |
| Convertible Senior Notes | 2.13% | 1 | 0.32% |
| **Total** | | **313** | **100.00%** |
| **Pre-tax Cost of Debt** | **7.48%** | | |

| Capital Asset Pricing Model (CAPM) | |
|---|---|
| Risk-free Rate | 2.61% |
| Equity Risk Premium | 4.74% |
| Unlevered Beta | 1.16 |
| Re-levered Beta | 1.17 |
| Size Premium | -0.22% |
| Company Specific Risk Premium | 0.00% |
| **Cost of Equity** | **7.92%** |
| **Cost of Debt** | |
| Pre-tax Cost of Debt | 7.48% |
| Country Risk Premium | 0.50% |
| Corporate Tax Rate | 25.03% |
| **After-tax Cost of Debt** | **5.98%** |
| **Capital Structure** | |
| Market D/E | 0.004 |
| Proportion of Equity | 99.58% |
| Proportion of Debt | 0.42% |
| **WACC** | **7.91%** |

| Bottom-Up Beta Computation | | | | |
|---|---|---|---|---|
| **Company Name** | **Country** | **Debt/Equity** | **Tax Rate** | **Levered Beta 2 Year** |
| Intel Corporation | United States | 19.88% | 27.0% | 0.79 |
| NVIDIA Corporation | United States | 1.93% | 27.0% | 1.43 |
| Qualcomm Incorporated | United States | 10.03% | 27.0% | 1.27 |
| Texas Instruments Incorporated | United States | 5.02% | 27.0% | 0.98 |
| ASML Holdings N.V | Netherlands | 1.89% | 25.0% | 1.24 |
| NXP Semiconductors N.V | Netherlands | 23.71% | 25.0% | 1.58 |
| Broadcom Inc. | United States | 16.07% | 27.0% | 1.06 |
| GLOBALFOUNDRIES Inc. | United States | 8.08% | 27.0% | - |
| Median | | 9.06% | 27.00% | 1.24 |

*Source: Capital IQ, Damodaran, Team Analysis, Company Filings*

| Unlevered Free Cash Flow | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| EBITDA | $271 | $621 | $889 | $1,723 | $4,111 | $6,163 | $8,579 | $11,791 | $16,007 | $19,792 |
| Operating Profit (EBIT) | $127 | $451 | $631 | $1,369 | $3,648 | $5,714 | $7,819 | $10,612 | $14,355 | $19,006 |
| Less: Unlevered Taxes | ($18) | $9 | ($31) | $1,210 | ($513) | ($1,430) | ($1,957) | ($2,656) | ($3,592) | ($4,756) |
| **Net Operating Profit After Tax (NOPAT)** | **$109** | **$460** | **$600** | **$2,579** | **$3,135** | **$4,284** | **$5,862** | **$7,956** | **$10,763** | **$14,250** |
| Add: Depreciation & Amortization | $144 | $170 | $258 | $354 | $463 | $449 | $761 | $1,179 | $1,652 | $786 |
| Add: Stock-based Compensation | $97 | $137 | $197 | $274 | $379 | $524 | $675 | $838 | $1,028 | $1,228 |
| Add: Other non-cash expenses | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Less: Capital Expenditure | ($113) | ($163) | ($217) | ($294) | ($301) | ($971) | ($1,247) | ($1,576) | ($1,929) | ($2,332) |
| Add/(Less): Changes in Net Working Capital | ($250) | ($732) | ($546) | ($931) | ($774) | ($422) | ($356) | $63 | $68 | $125 |
| **Free Cash Flow to Firm** | **($13)** | **($128)** | **$292** | **$1,982** | **$2,902** | **$3,864** | **$5,695** | **$8,460** | **$11,581** | **$14,057** |

| DCF Valuation | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | **Terminal Value** |
| | | | | 31/12/2022 | 31/12/2023 | 31/12/2024 | 31/12/2025 | 31/12/2026 | 31/12/2026 |
| | | | *Year Frac* | *0.73* | *1.00* | *1.00* | *1.00* | *1.00* | |
| **Free Cash Flow to Firm** | | | | **$2,834** | **$5,695** | **$8,460** | **$11,581** | **$14,057** | $246,894 |
| **Rolling Enterprise Value** | | | | **$216,973** | **$231,084** | **$243,276** | **$253,397** | **$260,951** | **$246,894** |
| Plus: Cash and Marketable Securities | | | | $6,624 | $11,313 | $18,081 | $27,059 | $37,451 | |
| Less: Debt and Leases | | | | ($524) | ($660) | ($829) | ($1,045) | ($1,293) | |
| Less: Minority Interest | | | | -- | -- | -- | -- | -- | |
| **Equity Value** | | | | **$223,073** | **$241,737** | **$260,527** | **$279,411** | **$297,108** | |
| *Number of Shares Outstanding (millions)* | | | | *1,620.2* | *1,620.2* | *1,620.2* | *1,620.2* | *1,620.2* | |
| **Rolling value per share** | | | | **$137.68** | **$149.20** | **$160.80** | **$172.45** | **$183.38** | |

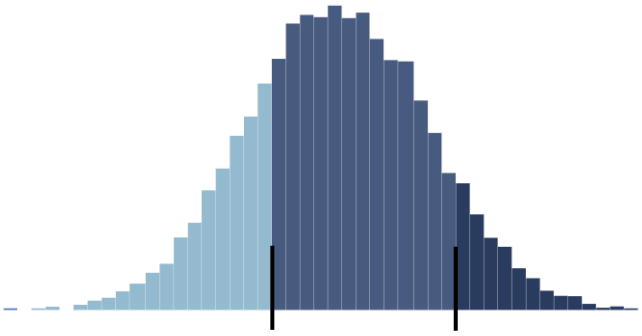
| | Model | Exit Multiple | Perp. Growth |
|---|---|---|---|
| Terminal Value Toggle | Perp. Growth | 12.4x | 2.10% |
| Terminal Value in Model | $246,894 | $246,371 | $246,894 |
| Discount Rate (WACC) | 7.91% | | |
| Valuation Date | 7/4/2022 | | |
| No. of Shares Outstanding (millions) | 1,620.2 | | |

*Source Team Estimates, Company Filings*

# Appendix J – Monte Carlo Simulation

| For Year Ended 31 December<br>*All figures expressed in (USDm) unless stated otherwise* | Historical | | | | | Forecasted | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2017A | 2018A | 2019A | 2020A | 2021A | 2022E | 2023E | 2024E | 2025E | 2026E |
| *YoY Growth Rate % (GPU)* | | | | | | *33.4%* | *33.2%* | *32.9%* | *32.7%* | *32.4%* |
| *STD* | | | | | | *1.6%* | *1.8%* | *2.1%* | *2.3%* | *2.6%* |
| *Max* | | | | | | *35.0%* | *35.0%* | *35.0%* | *35.0%* | *35.0%* |
| *Min* | | | | | | *31.8%* | *31.3%* | *30.8%* | *30.3%* | *29.8%* |
| *YoY Growth Rate % (CPU)* | | | | | | *11.2%* | *11.2%* | *12.6%* | *14.8%* | *12.2%* |
| *STD* | | | | | | *0.5%* | *0.5%* | *0.5%* | *0.5%* | *0.5%* |
| *Max* | | | | | | *11.7%* | *11.7%* | *13.1%* | *15.3%* | *12.7%* |
| *Min* | | | | | | *10.7%* | *10.7%* | *12.1%* | *14.3%* | *11.7%* |
| AMD's Market Share % | | | | | | *17.0%* | *18.3%* | *19.3%* | *20.0%* | *20.5%* |
| *STD* | | | | | | *0.3%* | *0.3%* | *0.3%* | *0.3%* | *0.3%* |
| *Max* | | | | | | *17.3%* | *18.5%* | *19.5%* | *20.3%* | *20.8%* |
| *Min* | | | | | | *16.8%* | *18.0%* | *19.0%* | *19.8%* | *20.3%* |
| *YoY Growth Rate % (FPGA)* | | | | | | *8.3%* | *8.3%* | *8.3%* | *8.3%* | *8.3%* |
| *STD* | | | | | | *0.5%* | *0.5%* | *0.5%* | *0.5%* | *0.5%* |
| *Max* | | | | | | *8.8%* | *8.8%* | *8.8%* | *8.8%* | *8.8%* |
| *Min* | | | | | | *7.8%* | *7.8%* | *7.8%* | *7.8%* | *7.8%* |
| Xilinx's Market Share | | | | | | *33.6%* | *35.6%* | *37.6%* | *39.6%* | *41.6%* |
| *STD* | | | | | | *0.3%* | *0.3%* | *0.3%* | *0.3%* | *0.3%* |
| *Max* | | | | | | *33.8%* | *35.8%* | *37.8%* | *39.8%* | *41.8%* |
| *Min* | | | | | | *33.3%* | *35.3%* | *37.3%* | *39.3%* | *41.3%* |
| *Cost of sales % of revenue* | | | | | | *51.3%* | *49.8%* | *48.3%* | *46.8%* | *45.3%* |
| *STD* | | | | | | *0.5%* | *0.5%* | *0.5%* | *0.5%* | *0.5%* |
| *Max* | | | | | | *50.8%* | *49.3%* | *47.8%* | *46.3%* | *44.8%* |
| *Min* | | | | | | *51.8%* | *50.3%* | *48.8%* | *47.3%* | *45.8%* |

| | |
|---|---|
| **Bull Case** | **11.3%** |
| **Base Case** | **75.9%** |
| **Bear Case** | **100%** |
| **Mean** | **USD 142.02** |
| **Min** | **USD 118.37** |
| **Max** | **USD 168.30** |
| **Std Dev** | **6.45** |



**Target Price: USD 137.68**

**75.9%** of outcomes yield a share price above the base case

**Bull Case Price: USD 149.89**

**11.3%** of outcomes yield a share price above the bull case

# Appendix K – Relative Valuation

| Ticker | Company Name | Multiples | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EV/Revenue | | | EV/EBITDA | | | EV/EBIT | | | P/E | | |
| | | LTM | FY+1 | FY+2 | LTM | FY+1 | FY+2 | LTM | FY+1 | FY+2 | LTM | FY+1 | FY+2 |
| **Target Company** | | | | | | | | | | | | | |
| NASDAQ:AMD | Advanced Micro Devices, Inc. | 10.0x | 6.5x | 5.7x | 40.7x | 19.9x | 19.9x | 45.3x | 21.6x | 21.6x | 53.1x | 29.7x | 24.2x |
| **Comparable Companies** | | | | | | | | | | | | | |
| NASDAQ:INTC | Intel Corporation | 2.6x | 2.7x | 2.6x | 6.0x | 6.9x | 6.9x | 9.2x | 12.1x | 12.1x | 9.8x | 15.7x | 14.9x |
| NASDAQ:NVDA | NVIDIA Corporation | 22.4x | 17.3x | 14.7x | 53.7x | 39.4x | 39.4x | 60.0x | 36.1x | 36.1x | 62.7x | 55.0x | 41.0x |
| NASDAQ:QCOM | QUALCOMM Incorporated | 4.5x | 3.8x | 3.6x | 12.7x | 9.1x | 9.1x | 14.5x | 9.9x | 9.9x | 15.7x | 13.2x | 12.5x |
| NASDAQ:TXN | Texas Instruments Incorporated | 8.8x | 8.1x | 7.8x | 16.3x | 14.6x | 14.6x | 18.0x | 16.3x | 16.3x | 21.1x | 19.1x | 18.7x |
| ENXTAM:ASML | ASML Holding N.V. | 11.7x | 10.2x | 9.1x | 31.2x | 27.0x | 27.0x | 33.4x | 28.9x | 28.9x | 37.5x | 34.2x | 29.4x |
| NASDAQ:NXPI | NXP Semiconductors N.V. | 4.9x | 4.2x | 4.0x | 14.1x | 10.7x | 10.7x | 20.7x | 12.1x | 12.1x | 24.4x | 18.3x | 16.8x |
| NASDAQ:AVGO | Broadcom Inc. | 9.7x | 8.6x | 8.1x | 17.5x | 13.8x | 13.8x | 27.8x | 14.2x | 14.2x | 31.4x | 23.7x | 21.0x |
| NASDAQ:GFS | GLOBALFOUNDRIES Inc. | 4.5x | 3.8x | 3.5x | 19.3x | 11.1x | 11.1x | -498.7x | 32.1x | 32.1x | -120.9x | 35.4x | 9.4x |
| **Low** | | **2.6x** | **2.7x** | **2.6x** | **6.0x** | **6.9x** | **6.9x** | **-498.7x** | **9.9x** | **9.9x** | **-120.9x** | **13.2x** | **9.4x** |
| **25th Percentile** | | **4.5x** | **3.8x** | **3.5x** | **13.7x** | **10.3x** | **10.3x** | **13.2x** | **12.1x** | **12.1x** | **14.2x** | **17.7x** | **14.3x** |
| **Mean** | | **8.6x** | **7.3x** | **6.7x** | **21.3x** | **16.6x** | **16.6x** | **-39.4x** | **20.2x** | **20.2x** | **10.2x** | **26.8x** | **20.5x** |
| **Median** | | **6.9x** | **6.2x** | **5.9x** | **16.9x** | **12.4x** | **12.4x** | **19.3x** | **15.2x** | **15.2x** | **22.7x** | **21.4x** | **17.8x** |
| **75th Percentile** | | **10.2x** | **9.0x** | **8.4x** | **22.3x** | **17.7x** | **17.7x** | **29.2x** | **29.7x** | **29.7x** | **32.9x** | **34.5x** | **23.1x** |
| **90th Percentile** | | **14.9x** | **12.3x** | **10.8x** | **37.9x** | **30.7x** | **30.7x** | **41.3x** | **33.3x** | **33.3x** | **45.1x** | **41.3x** | **32.9x** |
| **High** | | **22.4x** | **17.3x** | **14.7x** | **53.7x** | **39.4x** | **39.4x** | **60.0x** | **36.1x** | **36.1x** | **62.7x** | **55.0x** | **41.0x** |

## Relative Valuation FY+1

| FY+1 EV/Revenue | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 2.7x | 3.8x | 7.3x | 6.2x | 9.0x | 17.3x |
| **Implied EV** | $66,081 | $94,112 | $181,480 | $152,823 | $222,352 | $427,043 |
| Plus: Cash and Marketable Securities | $6,624 | $6,624 | $6,624 | $6,624 | $6,624 | $6,624 |
| Less: Debt and Leases | ($524) | ($524) | ($524) | ($524) | ($524) | ($524) |
| Less: Minority Interest | -- | -- | -- | -- | -- | -- |
| **Implied Equity Value** | **$72,181** | **$100,213** | **$187,580** | **$158,923** | **$228,453** | **$433,143** |
| Diluted Shares Outstanding | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 |
| ***Implied Equity Value per share*** | ***$44.55*** | ***$61.85*** | ***$115.78*** | ***$98.09*** | ***$141.00*** | ***$267.34*** |

| FY+1 EV/EBITDA | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 6.9x | 10.3x | 16.6x | 12.4x | 17.7x | 39.4x |
| **Implied EV** | $42,316 | $63,451 | $102,167 | $76,712 | $109,364 | $242,501 |
| Plus: Cash and Marketable Securities | $6,624 | $6,624 | $6,624 | $6,624 | $6,624 | $6,624 |
| Less: Debt and Leases | ($524) | ($524) | ($524) | ($524) | ($524) | ($524) |
| Less: Minority Interest | -- | -- | -- | -- | -- | -- |
| **Implied Equity Value** | **$48,416** | **$69,551** | **$108,267** | **$82,812** | **$115,464** | **$248,601** |
| Diluted Shares Outstanding | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 |
| ***Implied Equity Value per share*** | ***$29.88*** | ***$42.93*** | ***$66.82*** | ***$51.11*** | ***$71.27*** | ***$153.44*** |

| FY+1 EV/EBIT | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 9.9x | 12.1x | 20.2x | 15.2x | 29.7x | 36.1x |
| **Implied EV** | $56,844 | $69,277 | $115,508 | $86,921 | $169,712 | $206,306 |
| Plus: Cash and Marketable Securities | $6,624 | $6,624 | $6,624 | $6,624 | $6,624 | $6,624 |
| Less: Debt and Leases | ($524) | ($524) | ($524) | ($524) | ($524) | ($524) |
| Less: Minority Interest | -- | -- | -- | -- | -- | -- |
| **Implied Equity Value** | **$62,944** | **$75,377** | **$121,608** | **$93,021** | **$175,812** | **$212,406** |
| Diluted Shares Outstanding | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 |
| ***Implied Equity Value per share*** | ***$38.85*** | ***$46.52*** | ***$75.06*** | ***$57.41*** | ***$108.51*** | ***$131.10*** |

| FY+1 P/E | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 13.2x | 17.7x | 26.8x | 21.4x | 34.5x | 55.0x |
| ***Implied Equity Value per share*** | ***$35.11*** | ***$46.98*** | ***$71.37*** | ***$56.90*** | ***$91.83*** | ***$146.25*** |

| FY+1 PEG | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 0.7x | 0.9x | 1.6x | 1.6x | 2.0x | 3.17 |
| ***Implied Equity Value per share*** | ***$50.86*** | ***$66.65*** | ***$123.18*** | ***$125.60*** | ***$154.11*** | ***$244.26*** |

## Relative Valuation FY+2

| FY+2 EV/Revenue | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 2.6x | 3.5x | 6.7x | 5.9x | 8.4x | 14.7x |
| **Implied EV** | $80,002 | $109,828 | $207,422 | $184,101 | $259,894 | $457,900 |
| Plus: Cash and Marketable Securities | $11,313 | $11,313 | $11,313 | $11,313 | $11,313 | $11,313 |
| Less: Debt and Leases | ($660) | ($660) | ($660) | ($660) | ($660) | ($660) |
| Less: Minority Interest | -- | -- | -- | -- | -- | -- |
| **Implied Equity Value** | **$90,655** | **$120,480** | **$218,074** | **$194,753** | **$270,547** | **$468,552** |
| Diluted Shares Outstanding | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 |
| ***Implied Equity Value per share*** | ***$55.95*** | ***$74.36*** | ***$134.60*** | ***$120.20*** | ***$166.98*** | ***$289.19*** |

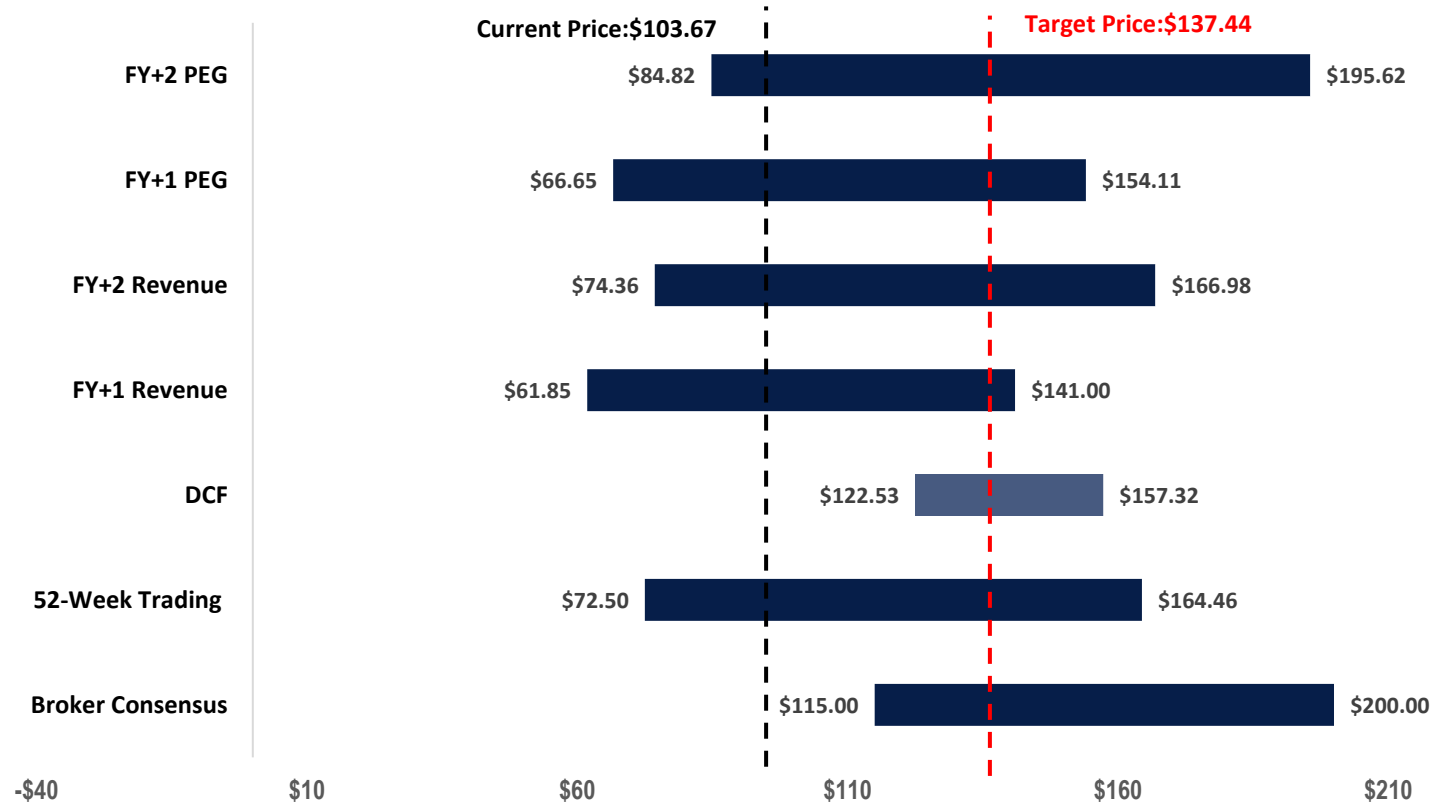
| FY+2 EV/EBITDA | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 6.9x | 10.3x | 16.6x | 12.4x | 17.7x | 39.4x |
| **Implied EV** | $58,911 | $88,335 | $142,235 | $106,797 | $152,254 | $337,605 |
| Plus: Cash and Marketable Securities | $11,313 | $11,313 | $11,313 | $11,313 | $11,313 | $11,313 |
| Less: Debt and Leases | ($660) | ($660) | ($660) | ($660) | ($660) | ($660) |
| Less: Minority Interest | -- | -- | -- | -- | -- | -- |
| **Implied Equity Value** | **$69,563** | **$98,987** | **$152,888** | **$117,449** | **$162,907** | **$348,257** |
| Diluted Shares Outstanding | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 |
| ***Implied Equity Value per share*** | ***$42.94*** | ***$61.10*** | ***$94.36*** | ***$72.49*** | ***$100.55*** | ***$214.95*** |

| FY+2 EV/EBIT | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 9.9x | 12.1x | 20.2x | 15.2x | 29.7x | 36.1x |
| **Implied EV** | $77,788 | $94,801 | $158,066 | $118,945 | $232,240 | $282,317 |
| Plus: Cash and Marketable Securities | $11,313 | $11,313 | $11,313 | $11,313 | $11,313 | $11,313 |
| Less: Debt and Leases | ($660) | ($660) | ($660) | ($660) | ($660) | ($660) |
| Less: Minority Interest | -- | -- | -- | -- | -- | -- |
| **Implied Equity Value** | **$88,440** | **$105,454** | **$168,718** | **$129,598** | **$242,893** | **$292,969** |
| Diluted Shares Outstanding | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 | 1620.2 |
| ***Implied Equity Value per share*** | ***$54.59*** | ***$65.09*** | ***$104.13*** | ***$79.99*** | ***$149.92*** | ***$180.82*** |

| FY+1 P/E | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 9.4x | 14.3x | 20.5x | 17.8x | 23.1x | 41.0x |
| ***Implied Equity Value per share*** | ***$34.32*** | ***$52.46*** | ***$74.92*** | ***$65.01*** | ***$84.43*** | ***$150.26*** |

| FY+2 PEG | Min | 25th Percentile | Mean | Median | 75th Percentile | Max |
|---|---|---|---|---|---|---|
| **Multiples** | 0.6x | 0.8x | 1.5x | 1.4x | 1.8x | 2.95 |
| ***Implied Equity Value per share*** | ***$65.74*** | ***$84.82*** | ***$154.65*** | ***$143.14*** | ***$195.62*** | ***$312.78*** |

## Appendix L – Valuation – Football Field Analysis




*Source: Team Analysis*

## Appendix M – Broker Consensus

| Broker Consensus | | |
|---|---|---|
| **Date** | **Brokerage** | **Price Target** |
| 5/4/2022 | Deutsche Bank | $125 |
| 31/3/2022 | Barclays | $115 |
| 27/3/2022 | Goldman Sachs | $127 |
| 22/2/2022 | Sanford C. Bernstein | $150 |
| 15/2/2022 | Cowen | $145 |
| 2/2/2022 | Jefferies Financial Group | $155 |
| 2/2/2022 | Susquehanna Bancshares | $180 |
| 2/2/2022 | Craig Hallum | $160 |
| 2/2/2022 | J.P. Morgan | $140 |
| 2/2/2022 | KeyCorp | $165 |
| 2/2/2022 | Bank of America | $190 |
| 2/2/2022 | Mizuho | $160 |
| 2/2/2022 | Raymond James | $160 |
| 2/2/2022 | Rosenblatt Securities | $200 |
| 20/1/2022 | Piper Sandler | $130 |
| ***Low*** | | ***$115*** |
| ***Median*** | | ***$155*** |
| ***High*** | | ***$200*** |

*Source: https://www.marketbeat.com/stocks/NASDAQ/AMD/price-target/*

## Appendix N – Scenario Analysis

| Base Case | Bull Case | Bear Case |
|---|---|---|
| **Total revenues grow at 28.7% CAGR** over the next five years, as AMD and Xilinx introduces better products, allowing them to expand their market share over their competitors.<br><br>AMD and Xilinx successfully integrate their operations and achieves better economies of scale, improving the **EBIT margins by 8.92% to 31.1% in FY2026** | **Total revenues grow at 31.9% CAGR** over the next five years, supplemented by the strong demand in the industry as AMD continue to expand their market share over their competitors<br><br>AMD and Xilinx successfully integrate their operations and achieves better economies of scale beyond their expectations, improving the **EBIT margins further by 9.63% to 31.8% in FY2026** | AMD and Xilinx are unable to expand their market share for the next five years due to strong competition. However, the semiconductor demand and industry continues to grow, allowing their total revenue to grow at a **23.9% 5Y-CAGR**<br><br>AMD and Xilinx operation remains siloed, preventing them from achieving economies of scale. **EBIT margin sees a smaller improvement of 7.53% to 29.72% in FY 2026** |

# Appendix O –Revenue Build

| For Year Ended 31 December | Historical | | | | | Forecasted | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *All figures expressed in (USDm) unless stated otherwise* | 2017A | 2018A | 2019A | 2020A | 2021A | 2022E | 2023E | 2024E | 2025E | 2026E |
| **Revenue Forecast** | | | | | | | | | | |
| Computing and Graphics | $2,977 | $4,125 | $4,709 | $6,432 | $9,332 | $13,843 | $17,238 | $21,407 | $26,620 | $32,472 |
| Enterprise, Embedded and Semi-Custom | $2,276 | $2,350 | $2,022 | $3,331 | $7,102 | $8,270 | $11,207 | $15,123 | $20,411 | $27,000 |
| Xilinx's revenue | | | | | | $3,477 | $4,007 | $4,604 | $5,274 | $6,028 |
| **Total Revenue** | **$5,253** | **$6,475** | **$6,731** | **$9,763** | **$16,434** | **$25,589** | **$32,452** | **$41,134** | **$52,305** | **$65,500** |
| Total Addressable Market (Graphics Processing Units) | $11,132 | $15,512 | $19,750 | $25,410 | $33,541 | $45,281 | $61,129 | $82,524 | $111,407 | $150,400 |
| *YoY Growth Rate %* | | | | | | | | | | |
| Live Case | | | | | | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% |
| Base Case | | 39.3% | 27.3% | 28.7% | 32.0% | 33.0% | 33.0% | 33.0% | 33.0% | 33.0% |
| Bull Case | | | | | | 35.0% | 35.0% | 35.0% | 35.0% | 35.0% |
| Bear Case | | | | | | 31.8% | 31.3% | 30.8% | 30.3% | 29.8% |
| Total Addressable Market (Central Processing Units) | $49,124 | $51,148 | $52,156 | $66,600 | $74,000 | $82,676 | $92,369 | $104,510 | $120,479 | $135,776 |
| *YoY Growth Rate %* | | | | | | | | | | |
| Live Case | | | | | | 11.7% | 11.7% | 13.1% | 15.3% | 12.7% |
| Base Case | | 4.1% | 2.0% | 27.7% | 11.1% | 11.2% | 11.2% | 12.6% | 14.8% | 12.2% |
| Bull Case | | | | | | 11.7% | 11.7% | 13.1% | 15.3% | 12.7% |
| Bear Case | | | | | | 10.7% | 10.7% | 12.1% | 14.3% | 11.7% |
| AMD's Market Share % | | | | | | | | | | |
| Live Case | | | | | | 17.3% | 18.5% | 19.5% | 20.3% | 20.8% |
| Base Case | 8.7% | 9.7% | 9.4% | 10.6% | 15.3% | 16.8% | 18.0% | 19.0% | 19.8% | 20.3% |
| Bull Case | | | | | | 17.3% | 18.5% | 19.5% | 20.3% | 20.8% |
| Bear Case | | | | | | 16.8% | 16.8% | 16.8% | 16.8% | 16.8% |
| Revenue from Xilinx | $2,357 | $2,467 | $3,059 | $3,163 | $3,148 | $3,477 | $4,007 | $4,604 | $5,274 | $6,028 |
| Total Addressable Market (FPGA) | $6,940 | $7,495 | $8,095 | $8,742 | $9,442 | $10,275 | $11,181 | $12,167 | $13,240 | $14,408 |
| *YoY Growth Rate %* | | | | | | | | | | |
| Live Case | | | | | | 8.8% | 8.8% | 8.8% | 8.8% | 8.8% |
| Base Case | | | | | | 8.3% | 8.3% | 8.3% | 8.3% | 8.3% |
| Bull Case | | | | | | 8.8% | 8.8% | 8.8% | 8.8% | 8.8% |
| Bear Case | | | | | | 7.8% | 7.8% | 7.8% | 7.8% | 7.8% |
| Xilinx's Market Share | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Live Case | | | | | | 33.8% | 35.8% | 37.8% | 39.8% | 41.8% |
| Base Case | 34.0% | 32.9% | 37.8% | 36.2% | 33.3% | 33.3% | 35.3% | 37.3% | 39.3% | 41.3% |
| Bull Case | | | | | | 33.8% | 35.8% | 37.8% | 39.8% | 41.8% |
| Bear Case | | | | | | 33.3% | 33.3% | 33.3% | 33.3% | 33.3% |
| | | | | | | | | | | |
| **Expenses Forecast** | | | | | | | | | | |
| | | | | | | | | | | |
| Cost of Sales | ($3,466) | ($4,028) | ($3,863) | ($5,416) | ($8,505) | ($12,987) | ($15,984) | ($19,643) | ($24,192) | ($29,313) |
| *% of Total Revenue* | | | | | | | | | | |
| Live Case | | | | | | 50.8% | 49.3% | 47.8% | 46.3% | 44.8% |
| Base Case | 66.0% | 62.2% | 57.4% | 55.5% | 51.8% | 51.3% | 49.8% | 48.3% | 46.8% | 45.3% |
| Bull Case | | | | | | 50.8% | 49.3% | 47.8% | 46.3% | 44.8% |
| Bear Case | | | | | | 51.8% | 50.3% | 48.8% | 47.3% | 45.8% |
| | | | | | | | | | | |
| Research and Development | ($1,196) | ($1,434) | ($1,547) | ($1,983) | ($2,845) | ($4,353) | ($5,423) | ($6,751) | ($8,427) | ($10,357) |
| *% of Total Revenue* | | | | | | | | | | |
| Live Case | | | | | | 17.0% | 16.7% | 16.4% | 16.1% | 15.8% |
| Base Case | 22.8% | 22.1% | 23.0% | 20.3% | 17.3% | 17.0% | 16.7% | 16.4% | 16.1% | 15.8% |
| Bull Case | | | | | | 17.0% | 16.7% | 16.4% | 16.1% | 15.8% |
| Bear Case | | | | | | 17.5% | 17.2% | 16.9% | 16.6% | 16.3% |
| | | | | | | | | | | |
| Marketing, General & Administrative | ($516) | ($562) | ($750) | ($995) | ($1,448) | ($2,152) | ($2,665) | ($3,295) | ($4,086) | ($4,985) |
| *% of Total Revenue* | | | | | | | | | | |
| Live Case | | | | | | 8.4% | 8.2% | 8.0% | 7.8% | 7.6% |
| Base Case | 9.8% | 8.7% | 11.1% | 10.2% | 8.8% | 8.6% | 8.4% | 8.2% | 8.0% | 7.8% |
| Bull Case | | | | | | 8.4% | 8.2% | 8.0% | 7.8% | 7.6% |
| Bear Case | | | | | | 9.0% | 8.8% | 8.6% | 8.4% | 8.2% |
| | | | | | | | | | | |
| Interest Income | | | $15 | $8 | $8 | $30 | $27 | $34 | $49 | $57 |
| *% of Total Revenue* | | | *0.22%* | *0.08%* | *0.05%* | *0.12%* | *0.08%* | *0.08%* | *0.09%* | *0.09%* |

# Appendix P – 3FS – Proforma Income Statement

| For Year Ended 31 December | Historical | | | | | Forecasted | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *All figures expressed in (USDm) unless stated otherwise* | 2017A | 2018A | 2019A | 2020A | 2021A | 2022E | 2023E | 2024E | 2025E | 2026E |
| **Income Statement (USDm)** | | | | | | | | | | |
| **Revenue:** | | | | | | | | | | |
| Computing and Graphics | $2,977 | $4,125 | $4,709 | $6,432 | $9,332 | $13,333 | $16,487 | $20,301 | $25,003 | $30,163 |
| Enterprise, Embedded and Semi-Custom | $2,276 | $2,350 | $2,022 | $3,331 | $7,102 | $7,965 | $10,719 | $14,342 | $19,171 | $25,080 |
| Xilinx's revenue | | | | | | $3,409 | $3,915 | $4,480 | $5,113 | $5,820 |
| **Total Revenue** | **$5,253** | **$6,475** | **$6,731** | **$9,763** | **$16,434** | **$24,708** | **$31,120** | **$39,124** | **$49,287** | **$61,063** |
| Cost of sales | ($3,466) | ($4,028) | ($3,863) | ($5,416) | ($8,505) | ($12,663) | ($15,483) | ($18,878) | ($23,043) | ($27,633) |
| **Gross Profit** | **$1,787** | **$2,447** | **$2,868** | **$4,347** | **$7,929** | **$12,045** | **$15,637** | **$20,245** | **$26,244** | **$33,431** |
| Research and Development | ($1,196) | ($1,434) | ($1,547) | ($1,983) | ($2,845) | ($4,203) | ($5,201) | ($6,421) | ($7,941) | ($9,655) |
| Marketing, General & Administrative | ($516) | ($562) | ($750) | ($995) | ($1,448) | ($2,128) | ($2,617) | ($3,212) | ($3,948) | ($4,770) |
| Licensing Gain | $52 | -- | $60 | -- | $12 | -- | -- | -- | -- | -- |
| **Operating Income** | **$127** | **$451** | **$631** | **$1,369** | **$3,648** | **$5,714** | **$7,819** | **$10,612** | **$14,355** | **$19,006** |
| Interest Expense | ($126) | ($121) | ($94) | ($47) | ($34) | ($12) | ($0) | ($0) | ($0) | ($0) |
| Other income (expense), net | ($9) | -- | ($165) | ($47) | $55 | $29 | $26 | $33 | $47 | $53 |
| **Income before income taxes and equity income** | **($8)** | -- | **$372** | **$1,275** | **$3,669** | **$5,731** | **$7,845** | **$10,645** | **$14,402** | **$19,059** |
| Income tax provision (benefit) | ($18) | $9 | ($31) | $1,210 | ($513) | ($1,434) | ($1,963) | ($2,664) | ($3,604) | ($4,770) |
| Equity Income in Investee (loss) | ($7) | ($2) | -- | $5 | $6 | -- | -- | -- | -- | -- |
| **Net Income** | **($33)** | **$7** | **$341** | **$2,490** | **$3,162** | **$4,297** | **$5,881** | **$7,981** | **$10,797** | **$14,289** |
| Earnings (loss) per share: | | | | | | | | | | |
| *Basic* | *($0.03)* | *$0.01* | *$0.31* | *$2.10* | *$2.61* | *$2.66* | *$3.66* | *$5.01* | *$6.85* | *$9.20* |
| *Diluted* | *($0.03)* | *$0.01* | *$0.30* | *$2.06* | *$2.57* | *$2.65* | *$3.65* | *$4.99* | *$6.83* | *$9.18* |
| Shares Outstanding: | | | | | | | | | | |
| *Basic* | *952.0* | *982.0* | *1091.0* | *1184.0* | *1213.0* | *1615.2* | *1606.7* | *1593.8* | *1575.8* | *1552.8* |
| *Diluted* | *952.0* | *1064.0* | *1120.0* | *1207.0* | *1229.0* | *1619.2* | *1610.7* | *1597.8* | *1579.8* | *1556.8* |

## Appendix Q – 3FS – Proforma Balance Sheet

| For Year Ended 31 December | Historical | | | | | Forecasted | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *All figures expressed in (USDm) unless stated otherwise* | 2017A | 2018A | 2019A | 2020A | 2021A | 2022E | 2023E | 2024E | 2025E | 2026E |
| **Balance Sheet (USDm)** | | | | | | | | | | |
| **Current Assets:** | | | | | | | | | | |
| Cash and cash equivalents | $1,185 | $1,078 | $1,466 | $1,595 | $2,535 | $4,938 | $9,235 | $15,441 | $23,750 | $33,340 |
| Short-term investments | -- | $78 | $37 | $695 | $1,073 | $1,686 | $2,078 | $2,641 | $3,309 | $4,111 |
| Accounts receivable, net | $454 | $1,235 | $1,859 | $2,066 | $2,706 | $4,597 | $6,410 | $8,155 | $9,639 | $11,739 |
| Inventories | $694 | $845 | $982 | $1,399 | $1,955 | $2,920 | $3,665 | $4,558 | $5,522 | $6,515 |
| Receivables from related parties | $33 | $52 | $20 | $10 | $2 | $2 | $2 | $2 | $2 | $2 |
| Prepaid expenses and other current assets | $268 | $252 | $233 | $378 | $312 | $741 | $934 | $1,174 | $1,479 | $1,832 |
| **Total current assets** | **$2,634** | **$3,540** | **$4,597** | **$6,143** | **$8,583** | **$14,885** | **$22,322** | **$31,969** | **$43,701** | **$57,539** |
| Property, plant & equipment, net | $261 | $348 | $500 | $641 | $702 | $998 | $1,279 | $1,518 | $1,659 | $3,147 |
| Operating lease right-of-use assets | -- | -- | $205 | $208 | $367 | $592 | $799 | $956 | $1,093 | $1,151 |
| Goodwill | $289 | $289 | $289 | $289 | $289 | $289 | $289 | $289 | $289 | $289 |
| Investment: Equity method | $58 | $58 | $58 | $63 | $69 | $69 | $69 | $69 | $69 | $69 |
| Deferred tax assets | - | -- | -- | $1,245 | $931 | $931 | $931 | $931 | $931 | $931 |
| Other non-current assets | $310 | $321 | $379 | $373 | $1,478 | $1,295 | $1,112 | $928 | $745 | $562 |
| **Total Assets** | **$3,552** | **$4,556** | **$6,028** | **$8,962** | **$12,419** | **$19,059** | **$26,800** | **$36,661** | **$48,488** | **$63,688** |
| **Current Liabilities:** | | | | | | | | | | |
| Accounts payable | $384 | $528 | $988 | $468 | $1,321 | $1,873 | $2,405 | $3,016 | $3,251 | $4,199 |
| Payables to related parties | $412 | $533 | $213 | $78 | $85 | $85 | $85 | $85 | $85 | $85 |
| Accrued liabilities | $555 | $763 | $1,084 | $1,796 | $2,424 | $4,018 | $5,406 | $7,165 | $9,097 | $10,912 |
| Current portion of long-term debt, net | $70 | $136 | -- | -- | $312 | -- | -- | -- | -- | -- |
| Other current liabilities | $92 | $24 | $74 | $75 | $98 | $227 | $234 | $323 | $380 | $472 |
| **Total current liabilities** | **$1,513** | **$1,984** | **$2,359** | **$2,417** | **$4,240** | **$6,203** | **$8,130** | **$10,589** | **$12,814** | **$15,668** |
| **Long-term Liabilities:** | | | | | | | | | | |
| Long-term debt, net of current portion | $1,325 | $1,114 | $486 | $330 | $1 | $1 | $1 | $1 | $1 | -- |
| Long-term operating lease liabilities | -- | -- | $199 | $201 | $348 | $523 | $659 | $828 | $1,044 | $1,293 |
| Other long-term liabilities | $118 | $192 | $157 | $177 | $333 | $563 | $710 | $840 | $1,039 | $1,324 |
| **Total non-current liabilities** | **$1,443** | **$1,306** | **$842** | **$708** | **$682** | **$1,087** | **$1,370** | **$1,669** | **$2,084** | **$2,617** |
| **Shareholders' Equity:** | | | | | | | | | | |
| Capital stock: | | | | | | | | | | |
| Common stock | $9 | $10 | $12 | $12 | $12 | $12 | $12 | $12 | $12 | $12 |
| Additional paid-in capital | $8,464 | $8,750 | $9,963 | $10,544 | $11,069 | $11,593 | $12,268 | $13,106 | $14,134 | $15,362 |
| Treasury stock, at cost | ($108) | ($50) | ($53) | ($131) | ($2,130) | ($2,679) | ($3,705) | ($5,420) | ($8,059) | ($11,764) |
| Accumulated income (deficit) | ($7,775) | ($7,436) | ($7,095) | ($4,605) | ($1,451) | $2,846 | $8,727 | $16,708 | $27,506 | $41,795 |
| Accumulated other comprehensive income (loss) | $6 | ($8) | -- | $17 | ($3) | ($3) | ($3) | ($3) | ($3) | ($3) |
| **Total shareholders' equity** | **$596** | **$1,266** | **$2,827** | **$5,837** | **$7,497** | **$11,769** | **$17,300** | **$24,403** | **$33,590** | **$45,403** |
| **Total liabilities and shareholders' equity** | **$3,552** | **$4,556** | **$6,028** | **$8,962** | **$12,419** | **$19,059** | **$26,800** | **$36,661** | **$48,488** | **$63,688** |

# Appendix R – 3FS – Proforma Cash Flow Statement

| For Year Ended 31 December | Historical | | | | | Forecasted | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *All figures expressed in (USDm) unless stated otherwise* | 2017A | 2018A | 2019A | 2020A | 2021A | 2022E | 2023E | 2024E | 2025E | 2026E |
| **Cash Flow Statement (millions)** | | | | | | | | | | |
| **Cash flows from operating activities:** | | | | | | | | | | |
| Net income | ($33) | $337 | $341 | $2,490 | $3,162 | $4,297 | $5,881 | $7,981 | $10,797 | $14,289 |
| Depreciation and amortization | $144 | $170 | $222 | $312 | $407 | $333 | $537 | $796 | $1,108 | -- |
| Stock-based compensation | $97 | $137 | $197 | $274 | $379 | $524 | $675 | $838 | $1,028 | $1,228 |
| Amortization of debt discount and issuance costs | $36 | $38 | $30 | $14 | $5 | -- | -- | -- | -- | -- |
| Amortization of operating lease right-of-use assets | -- | -- | $36 | $42 | $56 | $116 | $223 | $383 | $543 | $786 |
| Loss on debt redemption, repurchase and conversion | $12 | $12 | $176 | $54 | $7 | -- | -- | -- | -- | -- |
| Loss of sale or disposal of property and equipment | -- | $27 | $42 | $33 | $34 | -- | -- | -- | -- | -- |
| Impairment of technology licenses | -- | $45 | -- | -- | -- | -- | -- | -- | -- | -- |
| Deferred income taxes | -- | ($4) | ($4) | ($1,223) | $308 | -- | -- | -- | -- | -- |
| Gain on equity investments, net | ($3) | -- | -- | ($2) | ($56) | -- | -- | -- | -- | -- |
| Other | $3 | ($1) | ($5) | $8 | ($7) | -- | -- | -- | -- | -- |
| **Changes in operating assets and liabilities:** | | | | | | | | | | |
| Accounts receivable, net | ($103) | ($806) | ($623) | ($219) | ($640) | ($1,891) | ($1,813) | ($1,745) | ($1,485) | ($2,100) |
| Inventories | ($3) | ($151) | ($137) | ($417) | ($556) | ($965) | ($744) | ($893) | ($965) | ($993) |
| Receivables from related parties | ($1) | ($19) | $14 | $10 | $8 | -- | -- | -- | -- | -- |
| Prepaid expenses and other assets | ($178) | ($84) | ($180) | ($231) | ($920) | ($246) | ($9) | ($57) | ($122) | ($170) |
| Payables to related parties | $29 | $121 | $7 | ($135) | $7 | -- | -- | -- | -- | -- |
| Accounts payable | $6 | $207 | $373 | ($513) | $801 | $552 | $532 | $611 | $235 | $948 |
| Accrued liabilities and other | -- | -- | -- | $574 | $526 | $2,128 | $1,678 | $2,147 | $2,404 | $2,440 |
| **Net cash provided by operating activities** | **$6** | **$29** | **$489** | **$1,071** | **$3,521** | **$4,848** | **$6,962** | **$10,061** | **$13,546** | **$16,429** |
| **Cash flows from investing activities:** | | | | | | | | | | |
| Purchases of property and equipment | ($113) | ($163) | ($217) | ($294) | ($301) | ($971) | ($1,247) | ($1,576) | ($1,929) | ($2,332) |
| Purchases of short-term investments, net | -- | ($78) | $41 | ($658) | ($378) | ($613) | ($392) | ($563) | ($668) | ($802) |
| Collection of deferred proceeds on sale of receivables | $60 | $71 | $25 | -- | -- | -- | -- | -- | -- | -- |
| Other | ($1) | -- | $2 | -- | ($7) | -- | -- | -- | -- | -- |
| **Net cash used in investing activities** | **($54)** | **($170)** | **($149)** | **($952)** | **($686)** | **($1,584)** | **($1,639)** | **($2,140)** | **($2,597)** | **($3,133)** |
| **Cash flows from financing activities:** | | | | | | | | | | |
| Proceeds from short-term borrowings | $70 | -- | -- | $200 | -- | -- | -- | -- | -- | -- |
| Repayments and extinguishment of debt | ($110) | ($41) | ($473) | ($200) | -- | ($312) | -- | -- | -- | ($1) |
| Proceeds from warrant exercise | -- | -- | $449 | -- | -- | -- | -- | -- | -- | -- |
| Proceeds from sales of common stock through employee equity plans | $20 | $70 | $74 | $85 | $104 | -- | -- | -- | -- | -- |
| Repurchase of common stock | -- | -- | -- | -- | ($1,762) | ($549) | ($1,026) | ($1,716) | ($2,639) | ($3,704) |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Common stock repurchases for tax withholding on employee equity plans | -- | -- | ($6) | ($78) | ($237) | -- | -- | -- | -- | -- |
| Other | ($13) | ($1) | ($1) | ($1) | -- | -- | -- | -- | -- | -- |
| **Net cash (used in) provided by financing activities** | **($33)** | **$28** | **$43** | **$6** | **($1,895)** | **($861)** | **($1,026)** | **($1,716)** | **($2,639)** | **($3,705)** |
| Net increase in cash and cash equivalents, and restricted cash | ($81) | ($113) | $383 | $125 | $940 | $2,403 | $4,297 | $6,206 | $8,310 | $9,590 |
| Cash, cash equivalents and restricted cash at beginning of year | $1,266 | $1,185 | $1,078 | $1,466 | $1,595 | $2,535 | $4,938 | $9,235 | $15,441 | $23,750 |
| **Cash, cash equivalents and restricted cash at end of year** | **$1,185** | **$1,078** | **$1,466** | **$1,595** | **$2,535** | **$4,938** | **$9,235** | **$15,441** | **$23,750** | **$33,340** |

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