AMD
Locations
Worldwide

EQUITY ANALYSIS REPORT

ADVANCED MICRO DEVICES, Inc.

(NASDAQ: AMD)

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Course: 4BC8

Module Code: EC362

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Equity Analysis Project 2021

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Advanced Micro Devices, Inc. (NASDAQ: AMD)

Date: 06/03/2021

Market Profile	
Closing Price	$78.52
52 Week Range	$36.75-$99.23
Average Daily Volume	37.137M
Shares Outstanding	1.211B
Market Cap	102.365B
Dividend Y	0
P/E	40.5221
EV/ EBITD	63.1
EPS (FWD)	1.92

Figure 1- Degiro + Trading View + Seeking Alpha

Figure 2- Shareholders

INDIVIDUAL ANALYST RATING

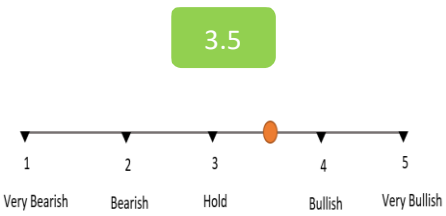
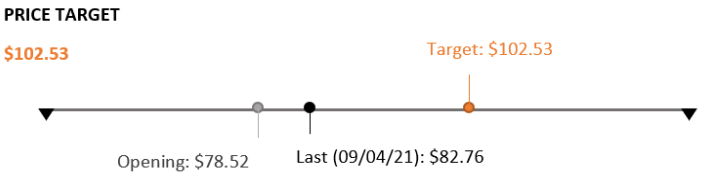


Figure 3- Personal Rating based on Fundamental/Technical and Risk Analysis



Recommendation:

BUY

Investment Summary

Investment Recommendation and Thesis:

This year AMD has the chance to become a big player in the semiconductor industry. AMD have ceded market share to Intel, Nvidia, Qcomm and other competitors in recent years, we can assume that their profitability will be hindered as a result, but with quite a new president and CEO in Lisa T.Su, AMD have accelerated their performance in recent years. AMD has benefited from recent innovations, as we can see below it outperformed the Nasdaq over the course of the last year. When looking at their Processors and Graphics the Ryzen and Radeon Software (formerly named ATI Catalyst and AMD Catalyst) Series has largely been used in the Gaming and Desktop/Laptop faction. According to AMD they developed the AMD Radeon™ RX 6900 XT which is the ultimate 4K graphics card and the fastest AMD gaming graphics card ever developed on October 28, 2020. Trailed by developing world's fastest HPC accelerator for scientific research in November 2020. High Performance computing is a major trend to take note of in the coming years. Along with that AMD hope to research into advanced memory technology, machine intelligence and low power to improve efficiency and extend battery lives for PC's and embedded systems. This research and development will be costly. They spent more than 1.98 billion U.S. dollars on R&D in 2020. AMD's Net worth as of February 26, 2021 is $99.83B. AMD will introduce the new 3rd Gen AMD EPYC™ server processors, featuring the EPYC™ 7763 the world's highest performing server processor1. AMD EPYC™ 7003 Series helps elevate your business productivity by enabling faster application performance. This analysis will assess AMD fundamentally and technically as well as the risk factors.

I would like to issue a **Buy** recommendation on AMD with a target price of $102.53 in the next 12 months. A recession may be looming and investing in the current climate may not be for the faint-hearted. As one can hope for the world to restore itself to a "Pre-Covid-19" environment, we will see companies like AMD flourish, for this reason I would recommend holding out for a couple more months or indeed, buying in while the stock market experiences bearish symptoms. AMD have shown great potential in outperforming the NASDAQ once again. Below we can see the share Price of AMD (Orange) against the NASDAQ (Yellow) for the last year and outperforming it (Yahoo.co.uk). (A larger graph can be seen at Appendix 6)

Figure 4- AMD (Orange) Outperforming the NASDAQ (Yellow)- Yahoo.co.uk

Business Description

Top Executives	
Lisa T. Su	President, CEO & Non- Independent Director
Keivan Keshvari	Senior VP- Global Operations
Devinder Kumar	CFO, Treasurer & Executive VP
Mark D. Papermaster	CTO, Executive VP- Technology & Engineering
Paul Darren Grasby	CSO & Executive VP

Figure 4- Top Executives

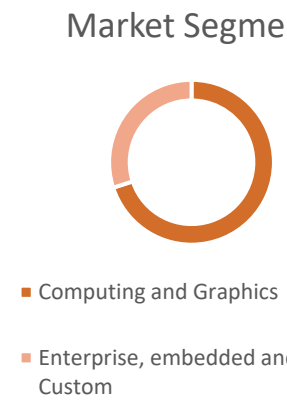


Figure 5- Market Segment

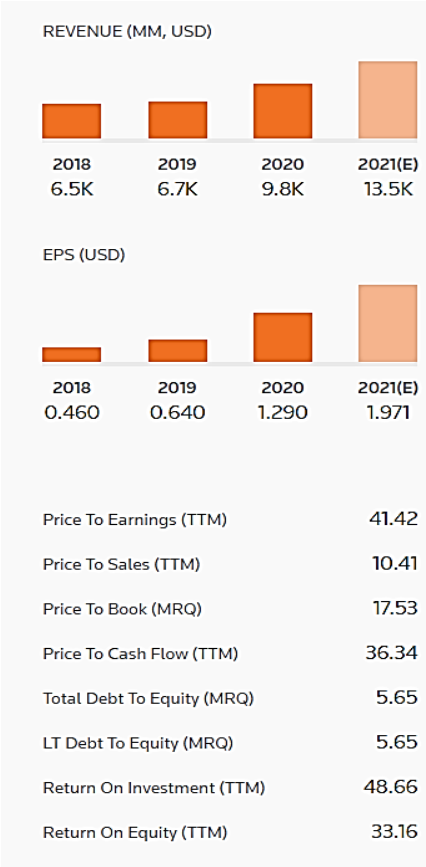


Figure 6- Reuters.com

Advanced Micro Devices (AMD) was founded in 1969 as a Silicon Valley start-up, the AMD expedition launched with dozens of employees dedicated on leading-edge semiconductor products. From those modest beginnings, AMD has developed into a global company accomplishing many important "industry firsts" along the way. AMD today develops high-performance computing and visualization products to solve some of the world's trickiest and most fascinating challenges. The Company is engaged in offering x86 microprocessors, as standalone devices or as incorporated into an accelerated processing unit (APU), chipsets, discrete graphics processing units (GPUs) and professional graphics. As well as server and embedded processors and semi-custom System-on-Chip (SoC) products and technology for game consoles. Their Headquarters is in Santa Clara, California, United States. The Company's segments include the Computing and Graphics segment, and the Enterprise, Embedded and Semi-Custom segment. The Computing and Graphics segment primarily includes desktop and notebook processors and chipsets, discrete GPUs and professional graphics. In 1982 the company began supplying second-source chips for the Intel Corporation, which made the microprocessor used in IBM personal computers (PCs). The agreement with Intel ended in 1986. In 1991 AMD released the Am386 microprocessor family, a reverse-engineered chip that was compatible with Intel's next-generation 32-bit 386 microprocessor. There ensued a long legal battle that was finally decided in a 1994 U.S. Supreme Court ruling in AMD's favour.

It also rivals Nvidia (NVDA) in the market for graphics processing units, or GPUs, for PCs, gaming consoles and data centers and Intel. The Current Chief Executive Lisa Su took the wheel in October 2014. She steered the Santa Clara, Calif.-based company into a new era with its Ryzen PC processors and Epyc server chips in 2017. Under her guidance, AMD leaped ahead of Intel in making CPUs at smaller node sizes, giving its products an edge in speed and performance. AMD is now developing chips at 5-nanometer scale. Circuit widths on chips are measured in nanometers, which are one-billionth of a meter.

AMD's Market Segments

The **'computing and graphics'** segment and the **'enterprise, embedded and semi-custom'** segment. The 'computing and graphics' segment mostly includes desktop and notebook processors, discrete and integrated GPUs, data centre and professional GPUs, and development services. The 'enterprise, embedded and semi-custom' segment consists of server and embedded processors, technology for game consoles, and semi-custom system-on-chips (SoCs).

Examples of the company's semi-custom SoC products can be discovered in PlayStation and Xbox games consoles, with AMD processors and graphics cards to feature in the PS5 and Xbox Series X consoles that were released in November 2020. Along with their range of mobile and desktop processors, as well as gaming and professional graphics card products, AMD has continued to expand its presence in the data centre and high-performance computing (HPC) markets.

Recent Performance

In 2016, AMD had 8,200 employees, 8,900 in 2017, 10,100 in 2018, 11,400 in 2019 and most recently they had 12,600 employees in 2020. Their company is constantly growing.

Revenue of $9.76 billion was up 45 percent over 2019 driven by significantly higher revenue in both the Computing and Graphics segment and the Enterprise, Embedded and Semi-Custom segment. As we can see in Figure 6 computing and graphics accounts for 70%. Operating income was $1.37 billion compared to $631 million in the prior year. Non-GAAP operating income was $1.66 billion compared to $840 million in the prior year. The operating income improvement was primarily driven by higher revenue and gross margin expansion. (Company Data)

AMD annual operating expenses for 2020 were $8.394B, a 37.61% increase from 2019.

Company Overview

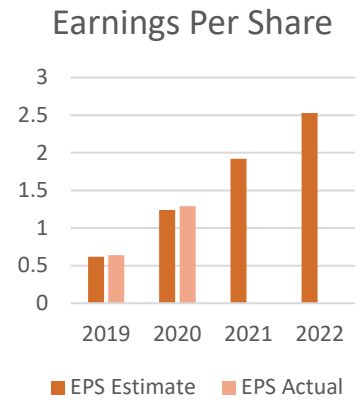


Figure 7- Seeking Alpha- EPS.

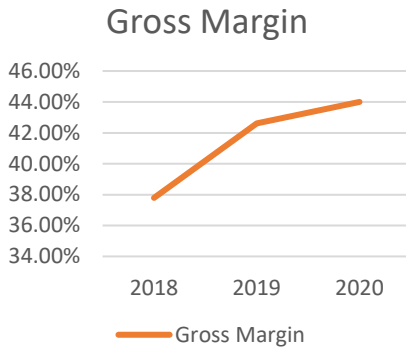


Figure 8- MacroTrends.net

AMD's Ryzen 3000 series was released back in July 2019 and marked the company's historical switch to a sub-14/16nm process (namely the 7nm node). For the first time in over three decades, Intel had lost its process lead over the x86 industry and AMD was the company to profit the most of it. AMD's 7nm processors proved not only more than capable of matching (and at times beating) Intel processors in performance but offered the same at a much lower price point.

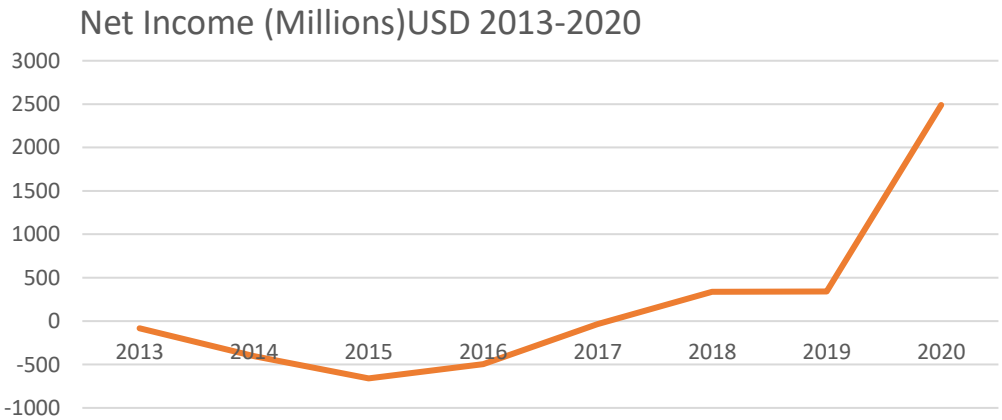
AMD's use of predatory pricing seems to quickly yield positive results as it snatches away more and more market share from Intel. While Intel remains in the lead, below we can see in the graph that AMD's Market share has hit 40% for the first time in 14 years or so.

It is also worth noting that their Net income (Millions) has increased massively in the last year. We can see this healthy graph below. Along with my Monte Carlo simulation of the price.

As well as their market share, it has quickly climbed back to par with Intel, and with contributions like the Ryzen 7 5800X and Ryzen 9 5900X less than three months old, there's little reason to think that AMD will stumble the way the company did in the past.

We can also see that the earnings Per share are projected to increase over the next two years. Strategic News and highlights from the Q4 2020 AMD Presentation state that they launched 28 new AMD EPYC processor-powered public cloud instances with Alibaba, AWS and Oracle In the enterprise, adoption of AMD-powered servers grew at Dell, HPE and Lenovo. AMD is powering the future of exascale computing with its CPU, GPU, interconnects, and software products, including the recently announced El Capitan supercomputer at Lawrence Livermore National Laboratory. Expected to come online in 2023, El Capitan is expected to deliver more than 2 exaflops of double-precision performance, making it more powerful than today's 200 fastest supercomputers combined. 3rd Gen AMD EPYC "Milan" processors are on track to publicly launch in March with very strong ecosystem support – Semi-custom SoC sales are expected to be better than typical seasonality in 1H 2021 based on current strong demand.

Figure 9- Net Income (Millions) 2013-2020



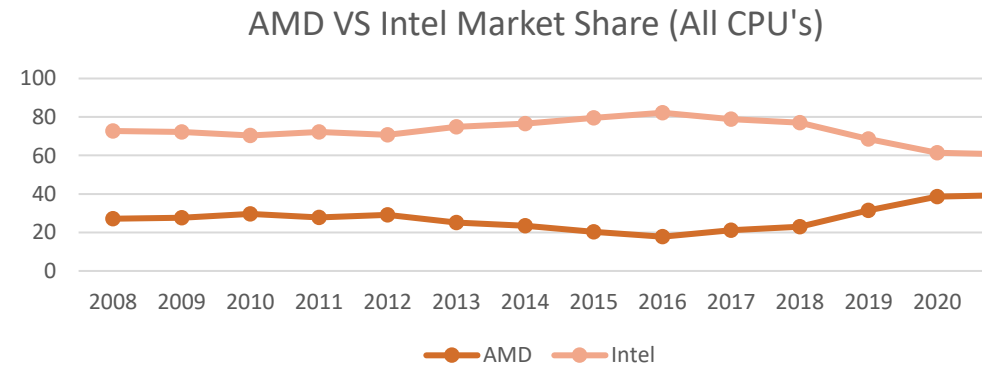


Figure 10- AMD Performance against Intel, Back up past 40% market share

Company Overview

ESG Factors

Environmental

Environmental risk is somewhat more appropriate for hardware and semiconductor companies because they carry significant risk exposure to water and waste management. Manufacturing semiconductors requires large volumes of ultra-pure water. Since water is becoming an even scarcer resource around the globe, robust management of water usage is key to avoiding higher supply costs and the potential loss of access to water-scarce areas, which could cause production disruptions and affect revenues. Hardware and semiconductor companies are exposed to environmental risks related to sourcing minerals such as tin, tantalum, tungsten, gold, and cobalt, which are key materials used in electronic equipment.

Below is AMD's Water usage we can see each year from 2013 to 2019 it has improved.

Water

Water Use (million liters)	337	195	141	160	200	192	175
Atlanta	12	23	27	29	32	29	30
Austin	118	11	8	9	9	10	11
Bengaluru	8	7	7	8	7	5	5
Cyberjaya	11	14	14	11	9	9	7
Hyderabad	n/a	n/a	n/a	7	7	8	7
Markham	53	41	26	33	53	83	80
Santa Clara	n/a	n/a	n/a	n/a	n/a	27	14
Singapore	57	17	8	9	8	7	8
Sunnyvale	65	72	40	42	62	n/a	n/a
Other sites combined	<1	<1	<1	<1	<1	<1	<1
Contract Manufacturing (million liters)[15]	5,098	3,311	3,800	*3,844*	3,622	4,960	5,873
Water Use/Revenue (ML/$)	63.6	35.3	35.3	37.5	37.5	29.7	23.9

Social

Electronic manufacturers have been facing growing scrutiny and criticism over its labour management. Issues related to long working hours, poor working conditions, and lax occupational safety standards are major areas of concern, particularly in Asia. Improving working conditions and labour relations can help address lower productivity and avoid production disruptions and work stoppages, which could affect sales volumes and revenues. It can also prevent reputational damage and fines linked to labour-related scandals. The other source of social risk exposure lies in the supply chain.

Governance

Overall, governance is company-specific because it usually reflects corporate culture, strategy, and ownership structure. At the sector level, certain companies have a dual-class ownership structure that favours founders with super voting power and antitrust disputes.

Conclusion:

AMD are committed to operations to reduce greenhouse gas emissions and electricity use as well as ensuring working conditions throughout the supply chain are safe. They believe their computing transforms lives and will improve the world. They claim to focus on the 3 Ps in their CSR approach and it's the Purpose, People and Planet.

Figure 11- Sustainalytics.com- Their ESG Rating of AMD (Low Rating)

Figure 12- Sustainalytics.com Exposure Rating Given Environmental Factors

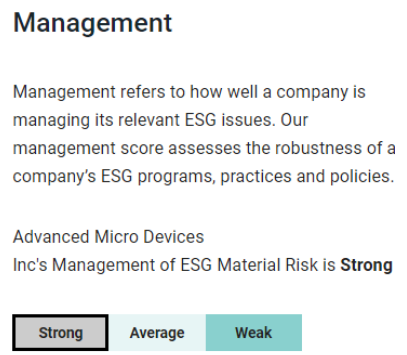


Figure 13- Sustainalytics.com- Management Rating given their Governance Factors etc.

Top- Down Analysis

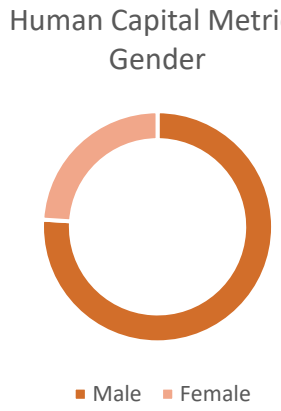


Figure 14- Data taken from Craft.co

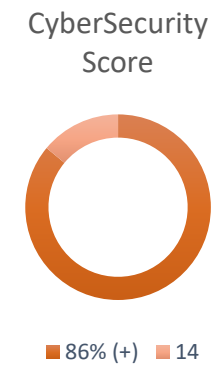
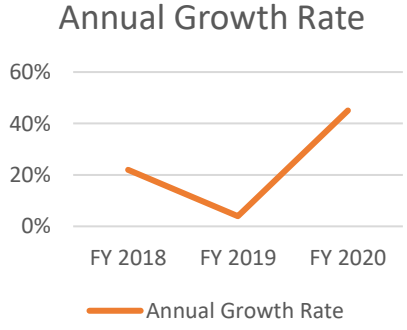


Figure 15-Data taken from Craft.co

Figure 16- Craft.co

Figure 17- Annual Growth Rate



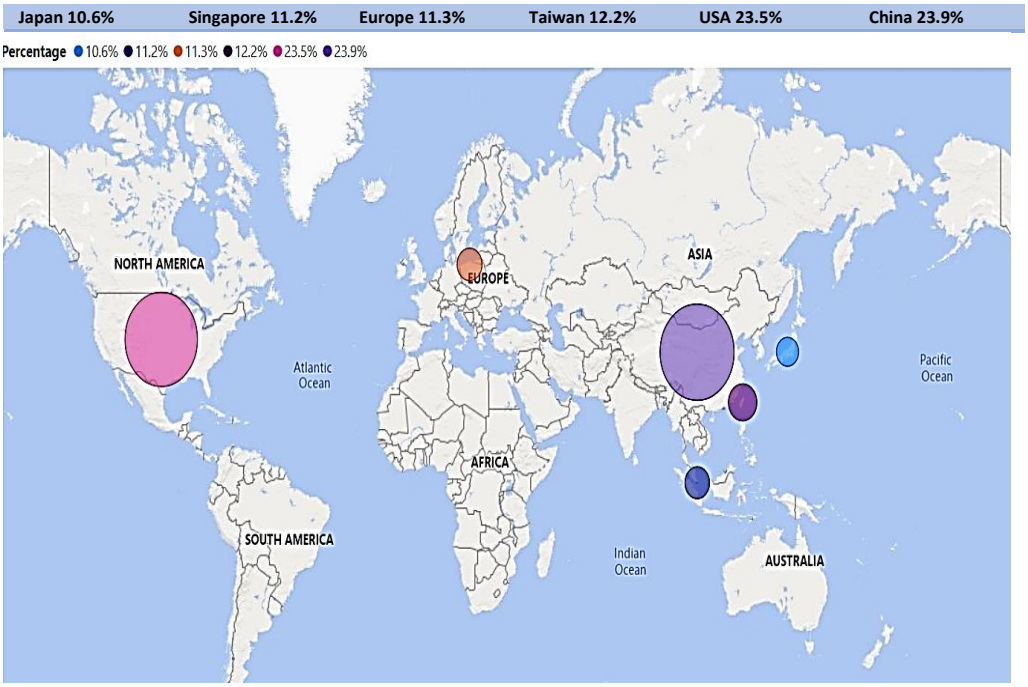


Figure 18- Power BI Revenue Breakdown by location- Data taken From Craft.co- Individual Analysis

Above we can see AMD Office Locations around the World and Revenue per region.

AMD is headquartered in Santa Clara, CA and has 38 office locations across 23 countries.

From the graph we can see a large chunk of AMD's revenue is from the United States and China in 2020 at $9.8 billion.

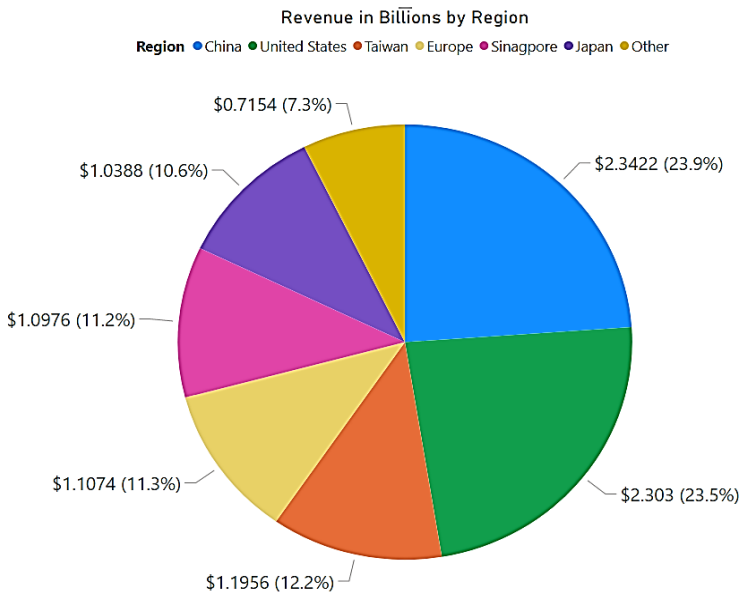


Figure 19-Power BI Revenue by Region- Data taken From Craft.co.- Individual analysis

As we can see from the graph the Asia- Pacific region takes quite a bit of the revenue followed by North America and then lastly Europe. However, this is not to say Europe is a weaker link I believe the size of the regions place a huge factor on this and the company is doing their best to maximise their revenue in each continent. On the left we can also see the Fiscal Year annual growth rate take a big leap last year from 2018.

Environment

Exchange Rates:

AMD has 38 office locations across 23 countries. Since they are a Multi-National organisation, they operate in 23 different countries, covering many parts of the world as we see in Figure 11 of the world map. Thus, exchange rates can affect the company's performance.

However, when we look at Figure 16 of the Chinese Yen compared to the US dollar, we can see it decreased by -4.71% which can be seen as a positive for the companies' profits as 23.9% of their Revenue comes from China and likewise in Japan 10.6% comes from there and as we see in Figure 17 it has decreased by -3.93% and again that is a positive compared to an increase on AMD's performance and profits. It is important to look at these exchange rates because 76.5% of AMD's revenue comes from outside their HQ country (USA).

Exchange Rates:

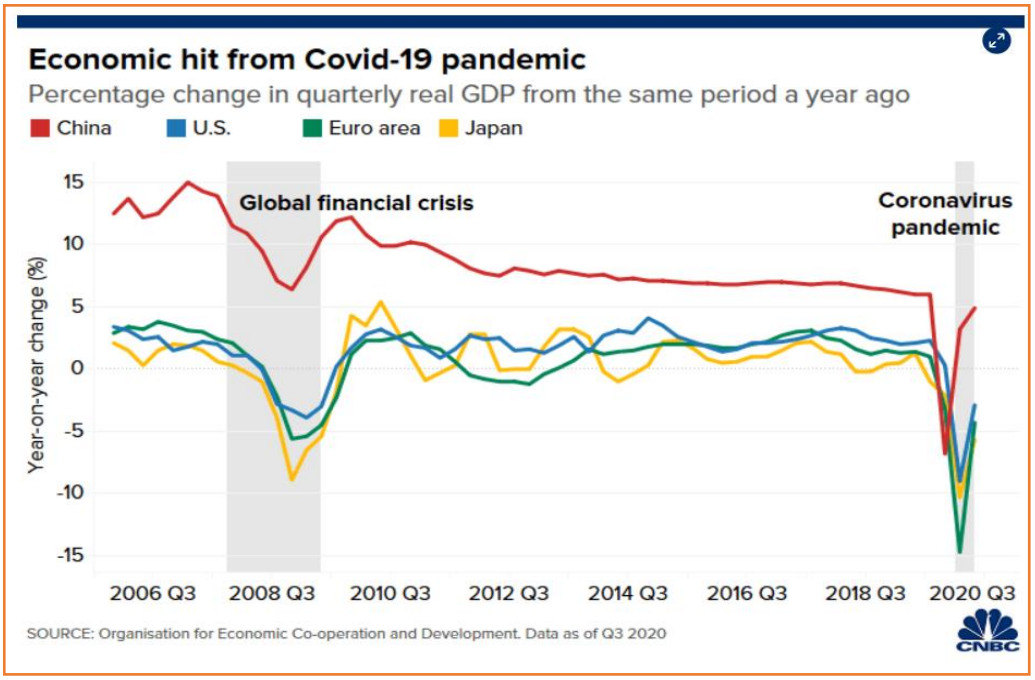
Figure 20- Yahoo, USD/CNY (CNY=X) 6.4960 (-4.71 %)

Figure 21- Yahoo, USD/JPY (JPY = X) (108.245) (-3.93%)

GDP

The Economies around the World took a Major hit, especially from the COVID-19 Pandemic. We can see the GDP take a sharp decrease over the last year as a result.

However, we can hope to see this GDP gradually increase to an upward trend as economies start to prosper again and the vaccine rolls out. Once we see the GDP increase, we can see this as a huge positive for AMD's revenue. China have already made a huge recovery and they account for a large proportion of the company's profits.



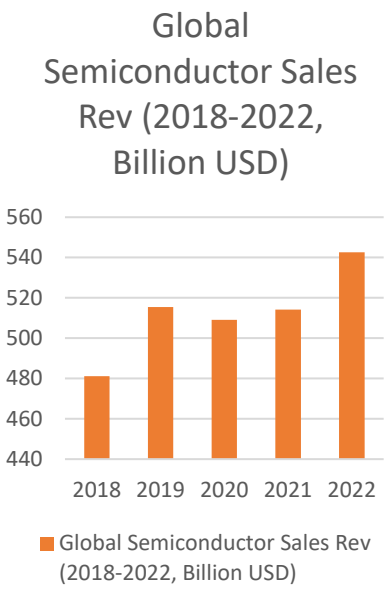


Figure 22- Deloitte/Gartner

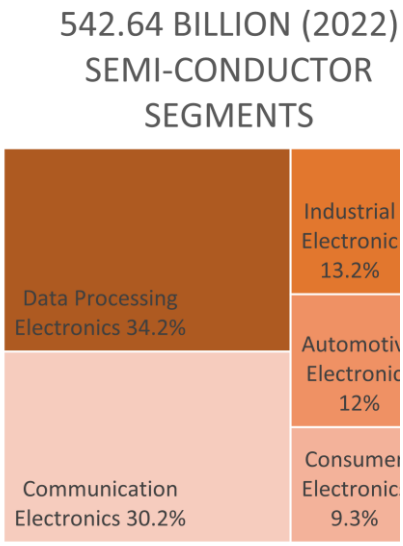


Figure 23- Deloitte/Gartner

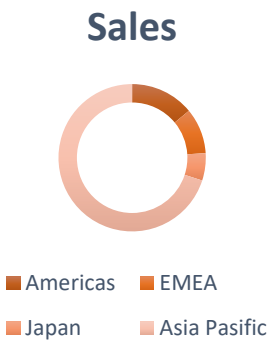


Figure 24- Deloitte/Gartner

Industry Analysis + Competitive Positioning

Industry Analysis

Sector: IT / Electronic Technology

The information technology (IT) or Electronic Technology sector is covered of companies that create software, hardware, or semiconductor equipment, the three main industry groups within the IT sector are software and services, technology hardware and equipment and semiconductors and semiconductor equipment.

Industry:

Semi- Conductor Industry or otherwise known as the "Brain of Modern Electronics".

Semiconductors are substances that can conduct electricity under some environments, but not others, making them ideal for controlling electrical currents. Silicon is a material that is frequently used as a semiconductor. This industry group includes both companies that make semiconductors and companies that make peripheral equipment for semiconductors. AMD today develops high-performance computing and visualization products to solve some of the world's trickiest and most fascinating challenges. The Company is engaged in offering x86 microprocessors, as standalone devices or as incorporated into an accelerated processing unit (APU), chipsets, discrete graphics processing units (GPUs) and professional graphics, and server and embedded processors and semi-custom System-on-Chip (SoC) products and technology for game consoles.

While 2019 global semiconductor sales of US $412 billion were down slightly from their all-time peak in 2018, the overall industry remains strong and US companies account for nearly 50% of global market share. The term "semiconductor" describes a critical component of millions of electronic devices used in education, research, communications, healthcare, transportation, energy, and other industries. Today's personal computers, smartphones, cars, data centre servers and gaming consoles rely on semiconductors for both core operations and advanced capabilities.

The market for artificial intelligence (AI)-related semiconductors is expected to grow from a current US $6 billion in revenues to more than US $30 billion by 2022 — a predicted compound annual growth rate (CAGR) of almost 50%.

AMD have a Fabless Business Model: A leading business model in the semiconductor industry allowing companies to direct more profits toward research and development and growth strategies.

Much of AMD's revenue as we can see comes from Asia Pacific like Figure 21, most semi-conductor companies' sales take place in the Asia Pacific region. Over the past few years, the semiconductor industry has done extremely well, and it is expected to remain at that level however there may need to be a move by companies to continue to innovate and offer more and more especially towards digitization. The revenue generated (Figure 19) we can see this a s a strong positive for investors with certain potential in the coming years. At Figure 20 we can see Data Processing is a huge segment in the semi- conductor Industry, potentially AMD can dominate this segment and elevate their market share.

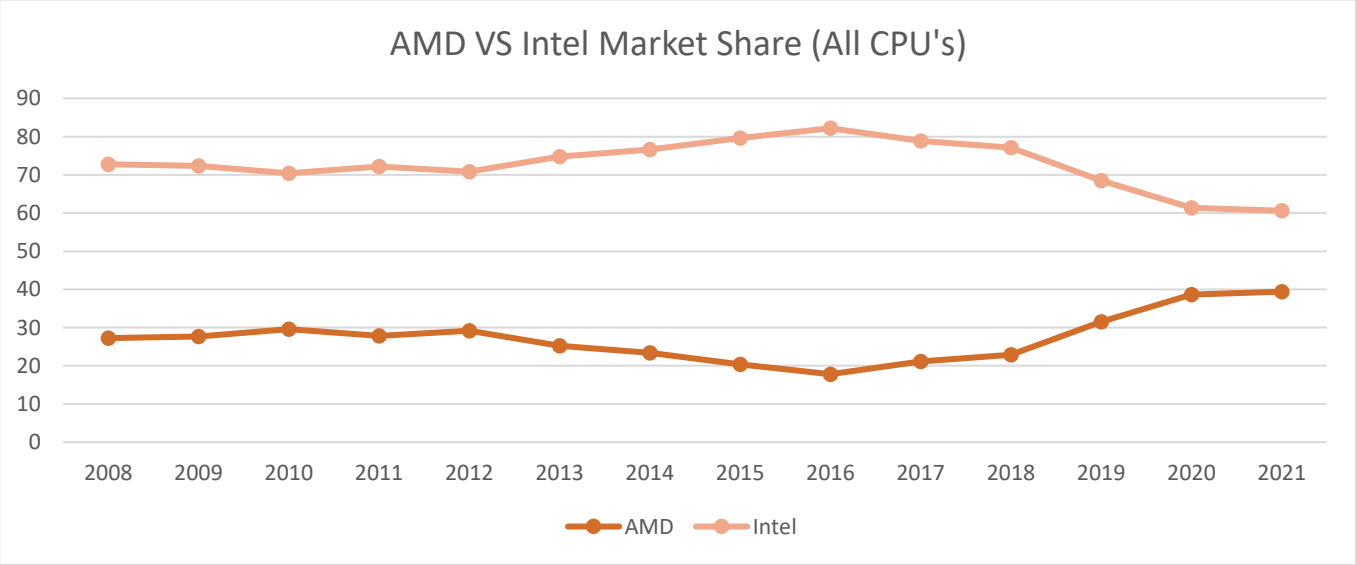
Industry Analysis + Competitive Positioning

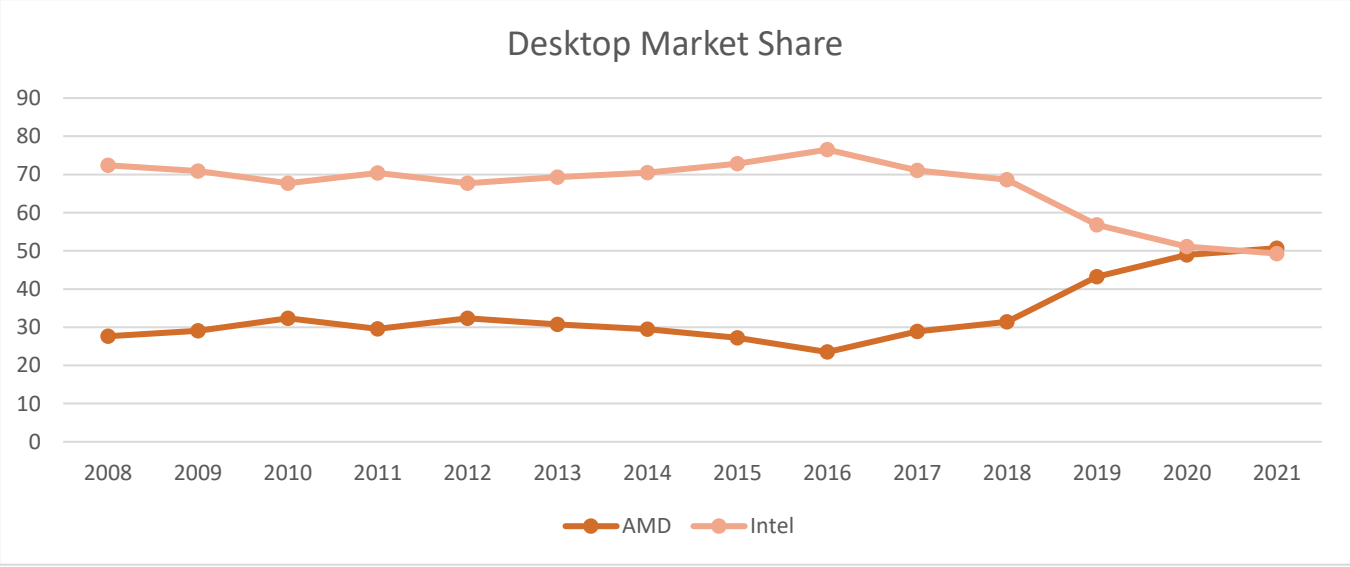
Competitive Positioning

Semiconductor is a Developing market composed of many competitors. Intel market share was 15.7% of the Semiconductor market in 2019. Intel reclaimed its position as the No. 1 global semiconductor vendor by revenue in 2019, recovering the position from Samsung Electronics, which held it for the past two years. Intel's semiconductor revenue declined 0.7% in 2019, driven by a slowdown in the server market, an ongoing constrained CPU supply and the 4Q19 sale of its cellular modem business to Apple. Samsung market share was 12.5% of the Semiconductor market in 2019. It is now more critical than ever for semiconductor companies to consider how best to leverage digitisation, and which of the possibilities make the most sense for their organisations. Ultimately the buyers want Speed and Performance. Power efficiency and price relative to it.

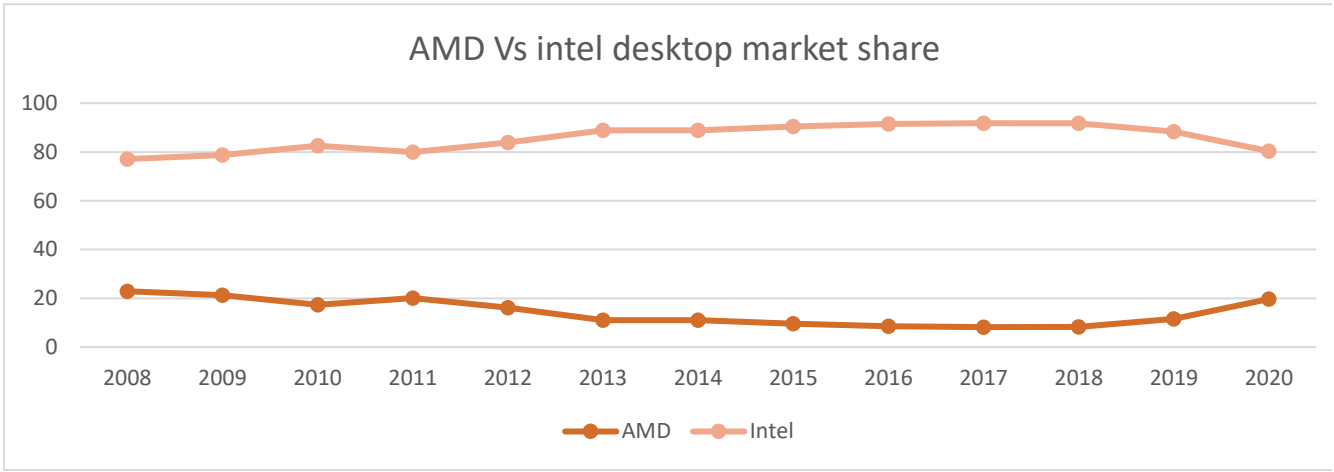
Intel is a huge competitor to AMD, and it is best to assess their performance over 4 charts from *PassMark Software.*

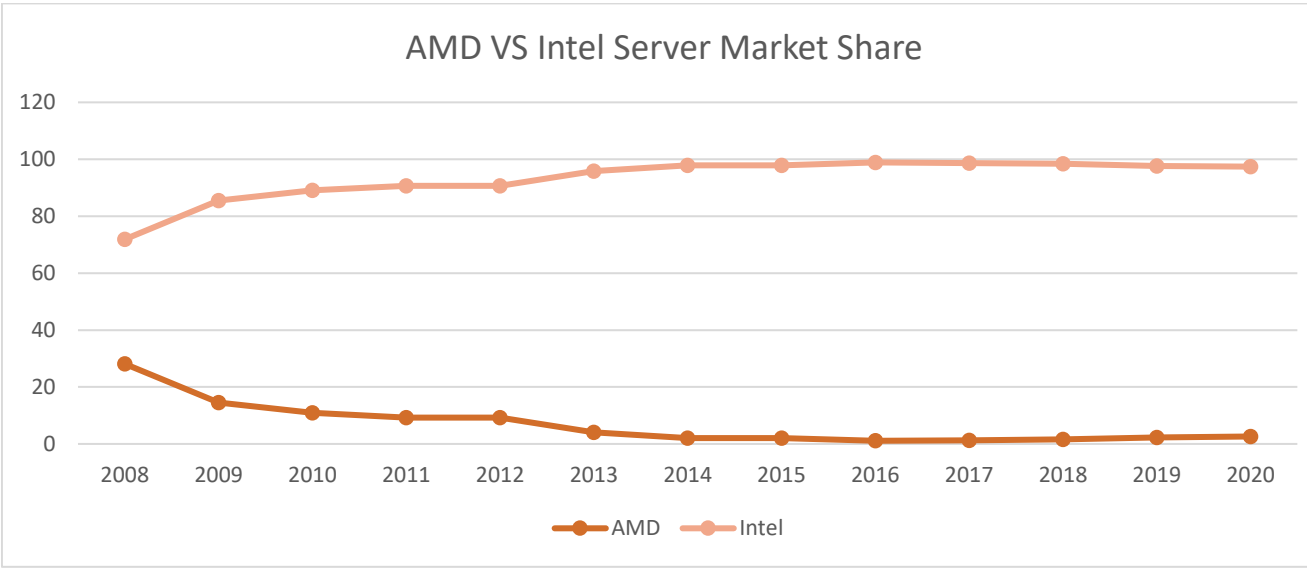
- AMD vs Intel Market Share (All CPUs)
- Desktop Market Share
- Laptop Market Share
- Server Market Share





Industry Analysis + Competitive Positioning





Figures 25-28- PassMark Software Graph

After ceding market share to AMD in PCs for several quarters, Intel recovered some ground in the fourth quarter last year thanks to improving CPU capacity, even as its x86 rival continued to expand.

Intel's market share growth was largely due to the chipmaker increasing manufacturing capacity for lower-end processors such as Celeron and Pentium, though growing sales of Core i5 and Core i7 processors also played a role on the desktop side, according to Dean McCarron of Mercury Research, a Prescott, Ariz.-based firm that produces a quarterly x86 CPU market share report based on shipments.

This allowed Intel's share in laptops to grow 1.2 points to 81 percent against AMD while its desktop share grew 0.8 points to 80.7 percent, according to Mercury Research's report for the fourth quarter of 2020. The result is that Intel grew market share for x86 CPUs overall by 0.7 points, bringing it to 78.3 percent.

While Intel might have lost this round on the desktop CPU front, its laptop and server CPU market shares are dominant. AMD has a long way to go before they can catch up with Intel. Its even more one-sided on the server side where Intel enjoys a 98.6% market share, with AMD powering just over 1% of servers tested. From an investors point of view, it's not the most attractive graph if you are looking to invest in AMD however as mentioned already, most of their revenue comes from their computing and graphics or desktop market.

While these numbers are heavily disproportionate, it only took AMD four years to recover from a similar position before getting nearly shut out of the desktop CPU front, so if they can do it once they can do it again.

Industry Analysis + Competitive Positioning

AMD's relentless onslaught with its Zen-based processors has redefined our expectations for both the mainstream desktop and the HEDT markets, catching Intel flatfooted as it remains mired on the 14nm process and Skylake architectures. The past several years has seen AMD CPUs go from value-focused and power-hungry solutions to leading-end designs that deliver more cores, more performance, and lower power requirements.

Intel has fought back by slowly adding features and cores across its product stack, but that has also resulted in negative side effects, like more power consumption and heat generation. These only serve to highlight the company's struggles on the design and fabrication side of its operation.

The AMD vs Intel CPU conversation is changing as Intel lowers pricing on its mainstream line-up. However, Intel still has not eased its segmentation policies that limit features, like overclock ability, to pricey chips and motherboards. Intel's tactic of squeezing every penny out of every feature has allowed AMD to offer a more compelling value story across the full breadth of the consumer desktop CPU market.

The computing market makes up most of the AMD's revenue however it is a tight race with Intel and must be considered when considering buying this stock. It is true to say that AMD's processors are popular in the gaming industry but again they need to innovate more to keep up with Intel and other competitors as it is only a small segment of the overall market. AMD's processors on average are priced lower than the competitions and their server processors are energy efficient.

We can see on the left that AMD's Ryzen 5000 ultimately performed better regarding rendering performance according to (My broadband). But again, this is just one small area of benefit to AMD, and we can also see the difference between AMD's revenue and the Giants Intel which has increased to 77 billion U.S. Dollars last year.

From the graphs we can see a much healthier performance across all sectors for Intel dominating the server market share and of course the laptop market share. But in terms of desktop market share we can see AMD have put up a better fight and this is a huge positive to take from looking at the competitive landscape of the two giants, landing at around 40% of market share of all CPU's.

We can also see when we compare the two giants EPS over the years and Future that although Intel are ahead again AMD are showing a (somewhat) promising rise in their EPS and I believe they are one to watch.

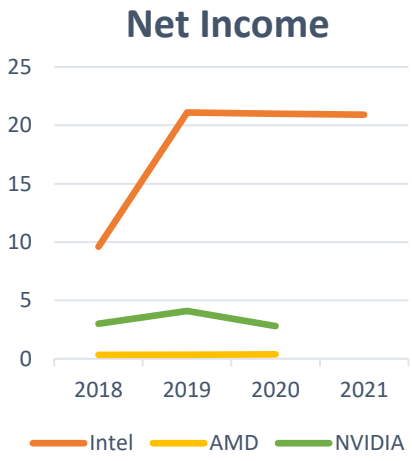


Figure 29- Data taken from Craft.co

Figure 30- My Broadband.com

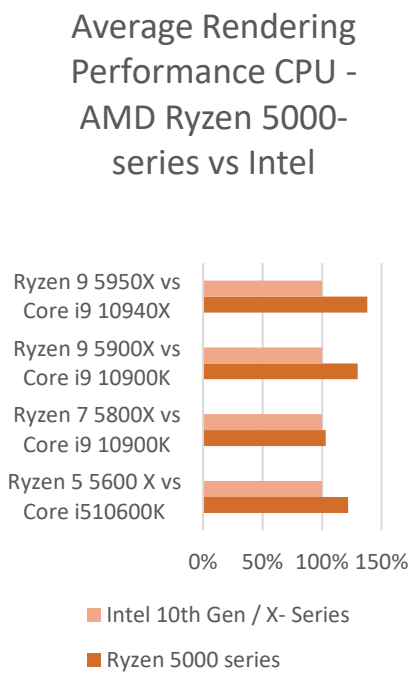


Figure31- Intel Revenue

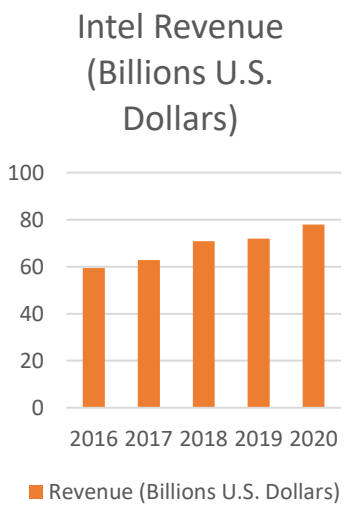
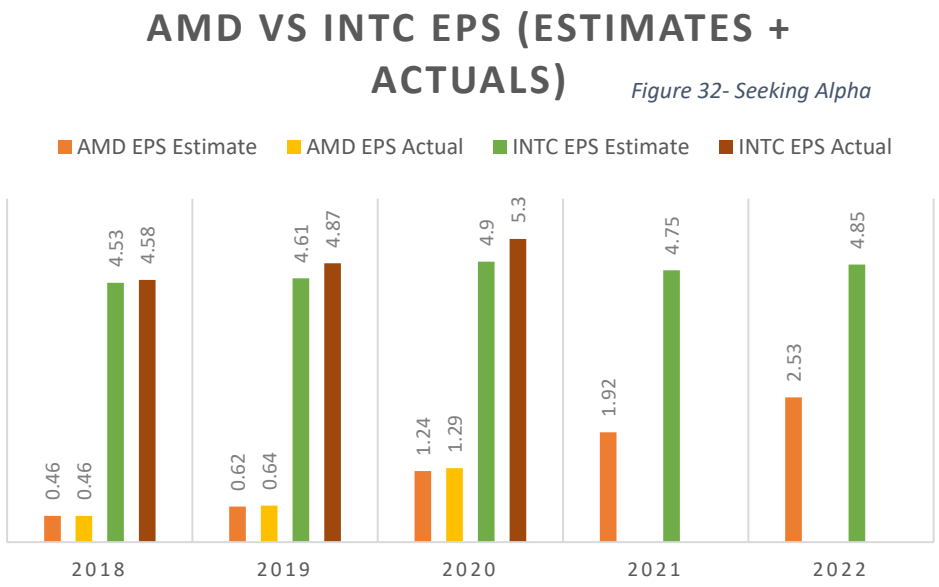


Figure 32- Seeking Alpha



Strategic Analysis

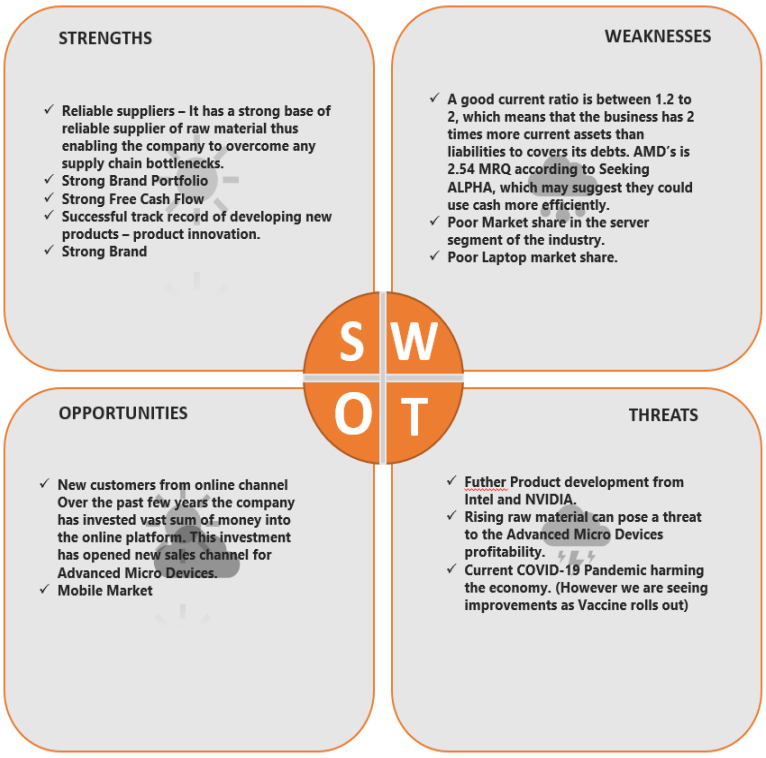


Figure 33- SWOT Analysis

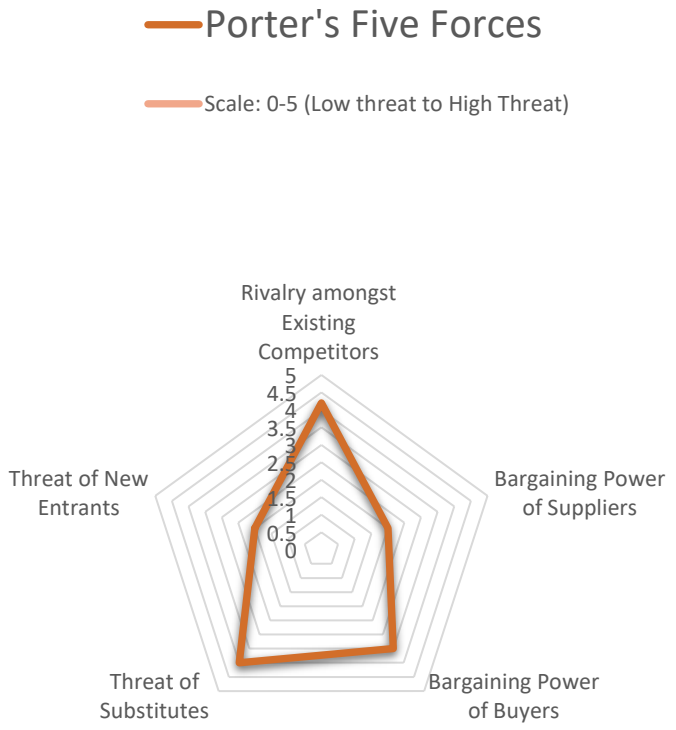


Figure 34- Individual Analysis - Information Fern fort University

SWOT Analysis:

On the left we can see a SWOT analysis of AMD showing their main strengths and areas for improvement. Overall, they are a strong business but need to be aware of their threats and weaknesses.

Porter's Five Forces Analysis:

Threat of New Entrants

New entrants in the semiconductor- there could be pressure from innovation and lower pricing strategies and AMD must manage that. AMD must regularly innovate and build an economy of scale to lower fixed cost per unit. However, AMD can certainly innovate given their Current Ratio and the industry already has many competitors.

Threat of Substitutes

When a new product or service meets a customer's needs the profitability of AMD may suffer. AMD need to know the customer better and be service orientated not just product orientated. This force is certainly a threat given the industry's competition.

Bargaining Power of Buyers

Buyers are needing more and more products; this is certainly putting pressure on AMD to meet consumers needs at an attractive price for the consumer. They have a strong customer base, so they have power over AMD.

Bargaining Power of Suppliers

All most all the businesses in the Semiconductor - Extensive Line industry buy their raw material from several suppliers. Suppliers in dominant position can reduce the margins Advanced Micro Devices, Inc. can earn in the market. Powerful suppliers in Technology sector use their negotiating power to obtain higher prices from the firms in Semiconductor - Broad Line field. The overall impact of higher supplier bargaining power is that it lowers the overall profitability of Semiconductor - Extensive Line. They should build an efficient supply chain with many suppliers and experiment.

Rivalry amongst existing competitors

If the rivalry among the existing players in an industry is intense then it will drive down prices and decrease the overall profitability of the industry. Advanced Micro Devices, Inc. operates in a very competitive Semiconductor industry. This competition can take a toll on them.

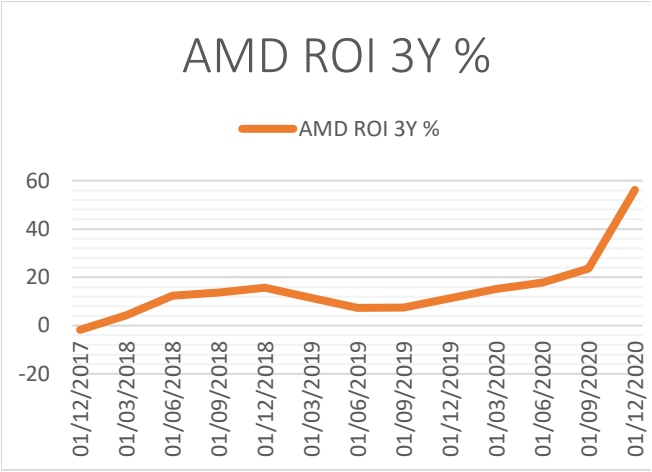


Figure 35- Macrotrends ROI 3 Years as a %

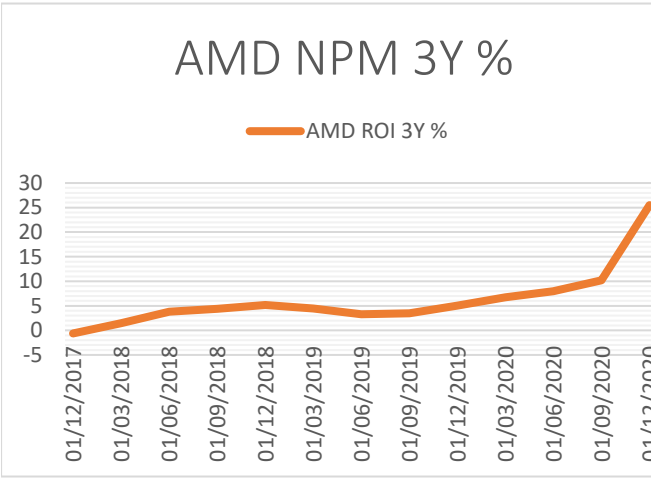


Figure 26- Macrotrends Net Profit Margin 3 Years as a %

P/B Ratio = $\left(\frac{Share\ Price}{Book\ Value\ Per\ Share}\right)$

The price-to-book ratio, or P/B ratio, is a financial ratio used to compare a company's current market value to its book value. AMD is overvalued based on its PB Ratio (16.4x) compared to the US Semiconductor industry average (4.8x). Intel's Ratio is 3.19 compared to this and suggests it's more of a realistic comparison of market value to book value.

AMD VS INTEL P/B Graph

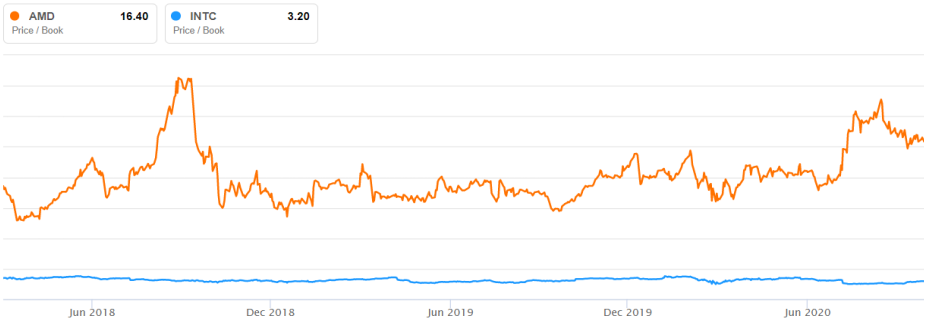


Figure 37- Top AMD VS INTEL P/B

Fundamental and Technical Valuations

Finacial Ratios	2018	2019	2020
ROA	8.04%	6.40%	35.03%
Debt/Equity Ratio	2.6	1.13	0.54
Quick Ratio	1.36	1.53	1.96
Net Profit Margin	5%	5%	26%
ROI	16%	11%	56%

Return on Investments (ROI) = $\left(\frac{Amount\ Gained - Amount\ Spent}{Amount\ Spent}\right)$ **X 100**

This formula calculates whether a company is getting more money back then they are putting in or a profit or loss in a fiscal year expressed as a percentage of initial investment. In recent times their ROI has improved. As we can see in the graph investments are finally starting to pay off with a huge jump to 56% last year. R&D in their CPU products especially will continue to grow that rate into the coming year. It is often better to invest the money rather than holding onto it. Decision-makers should know that ROI figures alone are not a sufficient basis for choosing one action over another. That is because ROI shows how returns compare to costs only if the hoped-for results arrive. The ROI figure, therefore, shows expected profitability but says nothing about uncertainty or risk.

Net Profit Margin = $\left(\frac{Net\ Profit}{Revenue}\right)$

AMD's Net Profit Margin has taken a huge leap at the end of last year and we can gauge the degree to which the company has made money. This indicates that the company has made 26 cents for every dollar of sales. It is a respectable Figure but again it should be compared to their competitors to really get a feel as to how they have done. Last year Intel had 29% NPM, so in that context AMD will still need to push on but a healthy increase compared to previous years.

Quick Ratio = $\left(\frac{Current\ Assets - Inventory}{Current\ Liabilities}\right)$

AMD's Quick Ratio was 1.96 at the end of 2020, the higher the quick ratio, the better the position of the company. The commonly acceptable current ratio is 1 but may vary from industry to industry. A company with a quick ratio of less than 1 cannot currently pay back its current liabilities: it is the bad sign for investors and partners. So, in this case AMD have a very healthy Quick Ratio and it is something a potential investor might like to note. This is better than Intel's 1.2 Quick Ratio and again we could say that maybe AMD could use some of this spare cash and invest it into R&D.

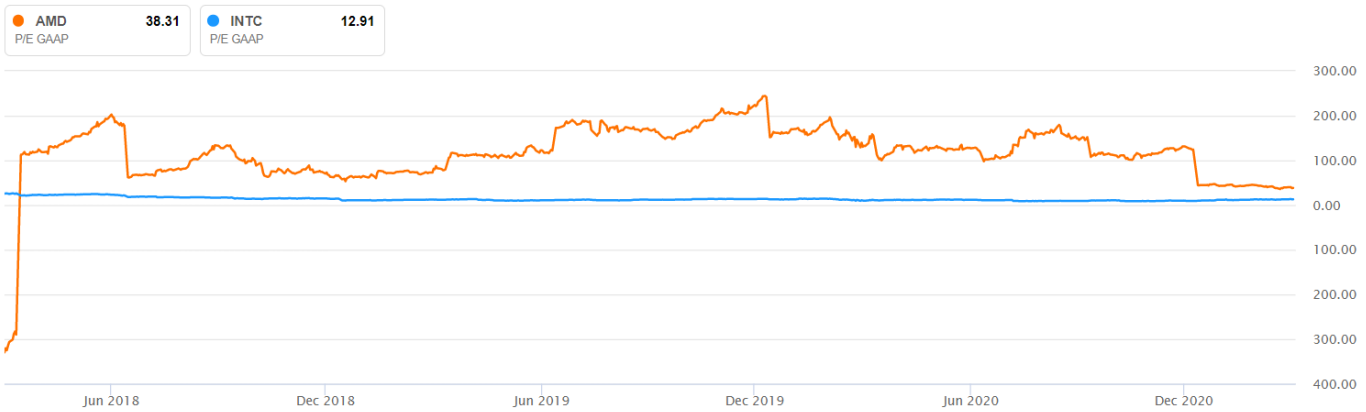
Return on Assets (ROA) = $\left(\frac{Net\ Income}{Total\ Assets}\right)$

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage, the higher the ROA the better. Like other Ratios we have seen a huge leap in ROA as noted above in the financial ratios table.

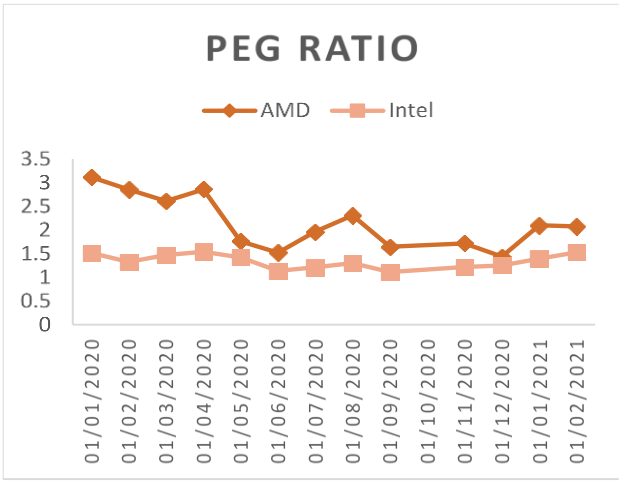
Debt Equity Ratio = $\left(\frac{Short\ Term\ Debt + Long\ Term\ Debt + Oher\ fixed\ Payments}{Shareholder's Equity}\right)$

The debt-equity ratio is a measure of the relative contribution of the creditors and shareholders or owners in the capital employed in business. Simply stated, ratio of the total long-term debt and equity capital in the business is called the debt-equity ratio. AMD's Debt Equity Ratio dropped to 0.54 last year this could be a sign that perhaps the company is over-relying on equity to finance the business and it may be costly and inefficient. This ratio can vary industry to industry, but we could look at this positively as the banks will trust them, in fact in 2018 you could argue it was too high and they were over relying on debt. In conclusion AMD's D/E Ratio combined with their ROA would suggest they are in a healthy position. Similarly, to Intel's position around 0.45.

P/E Ratio = $\left(\frac{Share\ Price}{Earnings\ Per\ Share}\right)$



The price-earnings ratio, also known as P/E ratio, P/E, or PER, is the ratio of a company's share price to the company's earnings per share. The ratio is used for valuing companies and to find out whether they are overvalued or undervalued. On the P/E TTM graph above We can see all the way back in 2019 AMD had a whopping 243.61 compared to Intels 13.91. Overall Intel has stayed steady around 10 or 15. AMD has fluctuated as we can see on the graph most recently, they were 40.10 compared to Intel's 13.11. For an investor looking this could potentially mean their stock was overvalued but coming to more of a realistic price in recent times.



PEG Ratio = $\left(\frac{P/E}{Annual\ EPS\ Growth}\right)$

Currently, Advanced Micro Devices has a PEG ratio of 1.91 compared to the Electronics - Semiconductors industry's PEG ratio of 1.81 and INTC's 1.6. The company's trailing twelve-month (TTM) PEG ratio is the P/E ratio divided by its growth rate over the past 12 months. This ratio essentially compares the P/E to its growth rate, thus, for many, telling a more complete story than just the P/E ratio alone. Usually, a PEG ratio of 1 or less is considered good (at par or undervalued to its growth rate). A value greater than 1, in general, is not as good (overvalued to its growth rate). Intel in this case is at a slightly better situation.

DuPont Analysis

DuPont Analysis is an extremely useful framework which can give the border picture when it comes to company's return that is earning on the equity. The technique helps the investors and financiers to understand the company in a better way. It also shows the strength and weakness of the company and the spot where both lies. Along with that, DuPont Analysis can help in understanding the chances of improvement if it is possible or not. The best advantage of using this tool is to get a better picture of a company and its overall financial health. Including the company's performance and comparing the limited equity to the valuation tools. We can see in the ROE that AMD deleveraged and the reduced their debt, we saw this is in the debt equity ratio also. Intel's leverage has remained similar whereas AMDs has changed drastically over the previous years. We also saw their EBIT margin increase, the larger your EBIT number, the more profitable your business operations, and the happier prospective lenders are likely to be. Overall AMD's ROE has looked much healthier and for an investor it is a positive note. Both companies look healthy however AMD look to be generating profit at a faster rate.

Advanced Micro Devices Inc.

Five-component disaggregation of ROE

	ROE	=	Tax Burden	×	Interest Burden	×	EBIT Margin	×	Asset Turnover	×	Financial Leverage
Dec 26, 2020	42.66%		1.95		0.96		13.59%		1.09		1.54
Dec 28, 2019	12.06%		0.92		0.80		6.92%		1.12		2.13
Dec 29, 2018	26.62%		1.03		0.73		6.93%		1.42		3.60
Dec 30, 2017	7.04%		0.69		0.33		3.53%		1.51		5.79
Dec 31, 2016	-119.47%		—		—		-7.07%		1.29		7.98

Based on:10-K (filing date: 2021-01-29),10-K (filing date: 2020-02-04),10-K (filing date: 2019-02-08),10-K (filing date: 2018-02-27),10-K (filing date: 2017-02-21).

Intel Corp.

Five-component disaggregation of ROE

	ROE	=	Tax Burden	×	Interest Burden	×	EBIT Margin	×	Asset Turnover	×	Financial Leverage
Dec 26, 2020	25.79%		0.83		0.98		33.01%		0.51		1.89
Dec 28, 2019	27.16%		0.87		0.98		34.11%		0.53		1.76
Dec 29, 2018	28.24%		0.90		0.98		33.57%		0.55		1.72
Dec 30, 2017	13.91%		0.47		0.97		33.46%		0.51		1.79
Dec 31, 2016	15.58%		0.80		0.95		23.02%		0.52		1.71

Based on:10-K (filing date: 2021-01-22),10-K (filing date: 2020-01-24),10-K (filing date: 2019-02-01),10-K (filing date: 2018-02-16),10-K (filing date: 2017-02-17).

Advanced Micro Devices Inc.

Four-component disaggregation of ROA

	ROA	=	Tax Burden	×	Interest Burden	×	EBIT Margin	×	Asset Turnover
Dec 26, 2020	27.78%		1.95		0.96		13.59%		1.09
Dec 28, 2019	5.66%		0.92		0.80		6.92%		1.12
Dec 29, 2018	7.40%		1.03		0.73		6.93%		1.42
Dec 30, 2017	1.21%		0.69		0.33		3.53%		1.51
Dec 31, 2016	-14.97%		—		—		-7.07%		1.29

Based on:10-K (filing date: 2021-01-29),10-K (filing date: 2020-02-04),10-K (filing date: 2019-02-08),10-K (filing date: 2018-02-27),10-K (filing date: 2017-02-21).

Intel Corp.

Four-component disaggregation of ROA

	ROA	=	Tax Burden	×	Interest Burden	×	EBIT Margin	×	Asset Turnover
Dec 26, 2020	13.65%		0.83		0.98		33.01%		0.51
Dec 28, 2019	15.42%		0.87		0.98		34.11%		0.53
Dec 29, 2018	16.45%		0.90		0.98		33.57%		0.55
Dec 30, 2017	7.79%		0.47		0.97		33.46%		0.51
Dec 31, 2016	9.10%		0.80		0.95		23.02%		0.52

Based on:10-K (filing date: 2021-01-22),10-K (filing date: 2020-01-24),10-K (filing date: 2019-02-01),10-K (filing date: 2018-02-16),10-K (filing date: 2017-02-17).

Figure 40- I have taken the DuPont template from Stock Analysis.Net and used it to get a four component Disaggregation of ROA and Five component of ROE

Technical Analysis

On the 26/03/21 AMD closed at a share price of $77.41.

Technical Indicators

RSI and MACD

The relative strength index (RSI) is a momentum indicator used in technical analysis that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of a stock or other asset. The RSI is displayed as an oscillator (a line graph that moves between two extremes) and can have a reading from 0 to 100. The RSI provides technical traders signals about bullish and bearish price momentum, and it is often plotted beneath the graph of an asset's price. An asset is usually considered overbought when the RSI is above 70% and oversold when it is below 30%. From this information we can see if AMD is overbought or oversold. Then on the other hand the Moving average convergence divergence (MACD) is a trend-following momentum indicator that shows the relationship between two moving averages of a security's price. The MACD is calculated by subtracting the 26-period exponential moving average (EMA) from the 12-period EMA.

The result of that calculation is the MACD line. A nine-day EMA of the MACD called the "signal line," is then plotted on top of the MACD line, which can function as a trigger for buy and sell signals. Traders may buy the security when the MACD crosses above its signal line and sell—or short—the security when the MACD crosses below the signal line. Moving average convergence divergence (MACD) indicators can be interpreted in several ways, but the more common methods are crossovers, divergences, and rapid rises/falls. MACD measures the relationship between two EMAs, while the RSI measures price change in relation to recent price highs and lows. These two indicators are often used together to provide analysts a more complete technical picture of a market. If the MACD crosses below its signal line following a brief move higher within a longer-term downtrend, traders would consider that a bearish confirmation.

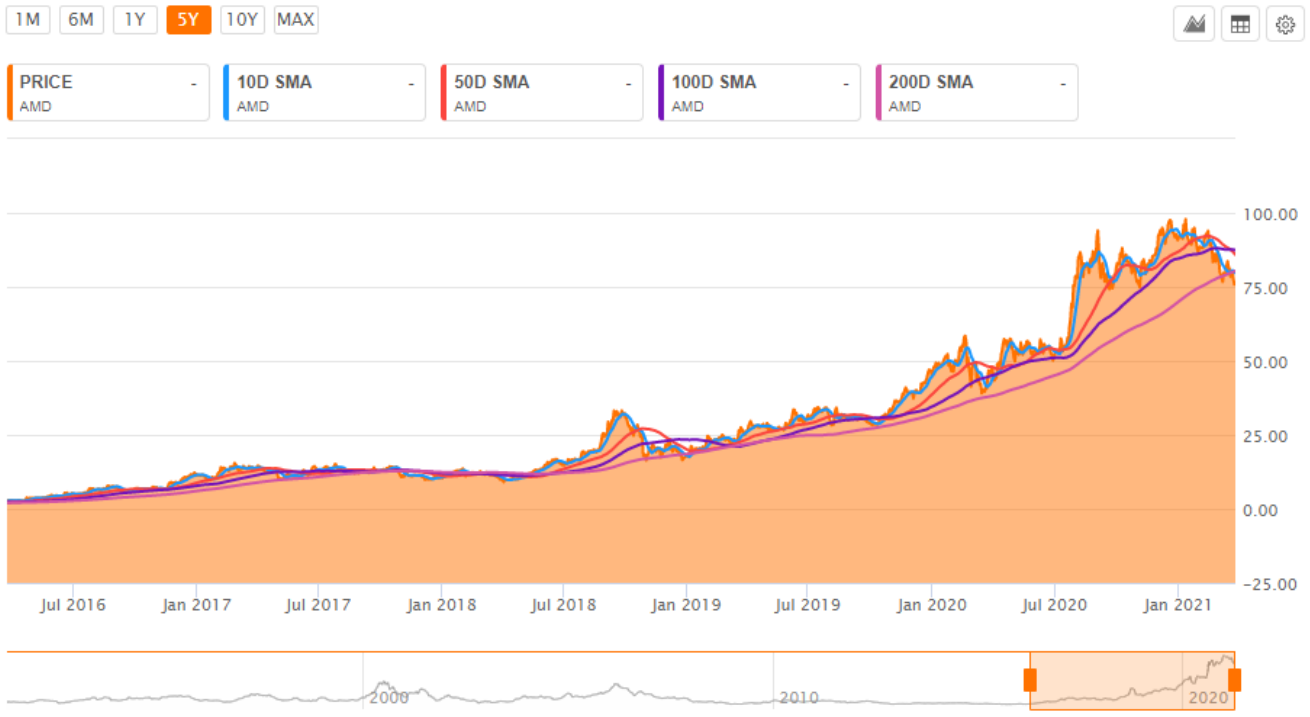
It can follow the formula of:

Relative Strength Index (RSI) = $\left(100 - \frac{100}{1+RS}\right)$ **/ MACD Line: 12- Period EMA – 26-Period EMA**

Above we can see the RSI and MACD over two years we can argue that it turned slightly bearish most recently when the MACD dropped below the signal line, but it hasn't fluctuated too much either. One can also see the share price slightly drops around February and that is also when the MACD drops. Indicating it most likely is a realistic share price as any crossovers or overlaps between the MACD and signal line were matched by the share price. The RSI has stayed relatively steady but perhaps took a small fall when the MACD dropped. It is clear over the past 2 years the RSI was in "overbought" territory mainly in February 2020 and December 2020. But has never really spent time in the "Oversold" section. We can argue that the if the price rises again more people will buy the shares and thus this could lead to a drop in the price in the future. It's hard to say in the current climate but we may see a bearish market in the coming months.

Technical Analysis

Simple Moving Average (SMA)



A simple moving average (SMA) is an arithmetic moving average calculated by adding recent prices and then dividing that figure by the number of time periods in the calculation average. It can follow the formula of:

$$\text{Simple Moving Average (SMA)} = \left(\frac{A1+A2+\cdots+An}{n}\right)$$

Short-term averages respond quickly to changes in the price of the underlying security, while long-term averages are slower to react. There are other types of moving averages, including the exponential moving average (EMA) and the weighted moving average (WMA). Moving averages are an important analytical tool used to identify current price trends and the potential for a change in an established trend. The simplest use of an SMA in technical analysis is using it to quickly identify if a security is in an uptrend or downtrend. Another popular, albeit slightly more complex, analytical use is to compare a pair of simple moving averages with each covering different time frames. If a shorter-term simple moving average is above a longer-term average, an uptrend is expected. On the other hand, if the long-term average is above a shorter-term average, then a downtrend might be the expected outcome. Here we can see AMD's SMA without as much volatility. They can tell us what has happened in the past, which is often a good way to make predictions, however more and more analysts are starting to realise that past performance does not guarantee future results. We can see over the past few years AMD has shown huge growth. The 50-day SMA growing the highest. Two popular trading patterns that use simple moving averages include the death cross and a golden cross. A death cross occurs when the 50-day SMA crosses below the 200-day SMA. This is considered a bearish signal, that further losses are in store. The golden cross occurs when a short-term SMA breaks above a long-term SMA. Reinforced by high trading volumes, this can signal further gains are in store. We saw this happen in 2018 and this may have been a potentially great time to buy in and most recently it has shown trends of crossing over as it drops below 78$ is this a potential bearish moment for AMD. This could certainly be a time to buy in as the stock market is experiencing bearish symptoms. A potential death cross on the radar and investors can take good note of this.

Technical Analysis

Bollinger Bands

Bollinger Bands are envelopes plotted at a standard deviation level above and below a simple moving average of the price. Because the distance of the bands is based on standard deviation, they adjust to volatility swings in the underlying price. There are three lines that compose Bollinger Bands: A simple moving average (middle band) and an upper and lower band. The upper and lower bands are typically 2 standard deviations +/- from a 20-day simple moving average but can be modified. Many analysts believe the closer the prices move to the upper band, the more overbought the market, and the closer the prices move to the lower band, the more oversold the market. The squeeze is the central concept of Bollinger Bands. When the bands come close together, constricting the moving average, it is called a squeeze. A squeeze signals a period of low volatility and is considered by traders to be a potential sign of future increased volatility and possible trading opportunities. Conversely, the wider apart the bands move, the more likely the chance of a decrease in volatility and the greater the possibility of exiting a trade. We can see back in 2020 that the bands were very wide, and the share price fluctuated quite a bit. At the current moment, the bands are squeezing together, and this can tell us that we will experience little volatility, and, in the future, we can experience a good trading opportunity. For now, it's a moment of holding on to these stocks rather than selling as this can tell us that the stock is quite stable. Usually when the share price hits the upper band it tends to drop lower as we can see in the graph in the past. Now we see that the price is at the lower bound so this can tell us it is quite oversold now and if anything, it is a time to get in and buy more or hold if anything.

Sensitivity Analysis

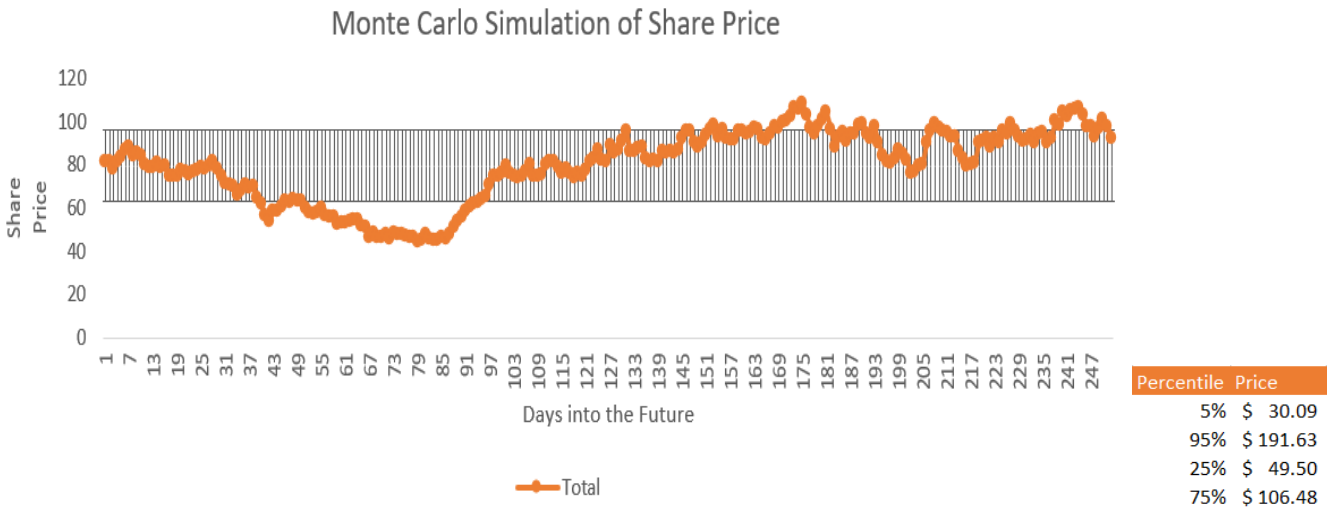


Figure 44- Individual Analysis; Monte Carlo Simulation on Excel to Estimate Price 252 Trading days from now using Volatility rates and company data. Simulated 1000 times. Noted the Price is likely to Fluctuate around the 100$ Price. Included in the graph is the Standard deviation.

News and Investment Risks

AMD will introduce the new 3rd Gen AMD EPYC™ server processors, featuring the EPYC™ 7763 the world's highest performing server processor1. AMD EPYC™ 7003 Series helps elevate your business productivity by enabling faster application performance.

It has been engineered for data centers that rely on CPU performance and throughput. From hyper converged infrastructure, to database, to big data analytics to high performance computing, workloads have more cores to work with. AMD EPYC™ 7003 Series Processors scale from 8 to 64 cores (or 16 to 128 threads per socket). No other x86 server processor achieves this level of core density. This new processor will encourage sales. When looking at their market share in comparison to Intel's it was extremely poor, Intel dominated the market share. Now one can expect larger market share from AMD in the coming year with this new development. AMD have really shown initiative to understand where they needed to research and develop. From an investors point of view this is an exciting prospect.

AMD has also reportedly become TSMC's number one customer with respect to purchasing 7nm wafers. Apple was previously the main customer for this node but has now moved its focus mainly on to 5nm. By securing more of TSMC's 7nm output, AMD might be able to tackle the shortage of Ryzen 5000 chips and ensure delivery for EPYC Milan orders.

This will lead to additional market share gains for the chip company. Per Alexey Stolyar, CTO of International Computer Concepts, AMD is extending a leadership position in server CPUs that when combined with a consistent product upgrade release cycle will provide more customer confidence:

According to AMD they have just unveiled the AMD Radeon RX 6700 XT Graphics Card, which is delivering exceptional 1440p PC Gaming experiences as modern games are more demanding than ever, requiring increasing levels of computing horsepower to deliver the breath taking, immersive experiences gamers expect. This is huge news for an AMD investor or potential investor. The future is truly bright.

However, the effects of COVID-19 are still present today and AMD must continue to fight through this. For large parts of 2020, the bad news kept rolling in and yet, the stock market has rallied through the past 12 months like rarely before. Exactly one year ago, on March 23, 2020, the U.S. stock market hit rock bottom after the coronavirus outbreak had led to a turbulent month with wild swings in both directions, resulting in 30+ percent drops for each of the three major stock market indices from their previous peaks. 12 months later, the world is still in crisis, but stock prices are near all-time highs.

Some companies have benefitted from this pandemic and many people have taken gaming up as a hobby during these lockdowns that many countries faced. We can hope that as the vaccine rolls out the world will return to a point of normality.

AI/Machine Learning/Data Centres

Artificial Intelligence is becoming an increasing topic and it is extremely important that AMD meet the needs of the consumer.

Accelerating your data-driven insights with Deep Learning optimized systems powered by AMD Instinct™ MI100 accelerators. AMD are also in collaboration with top HPC industry solution providers, enabling enterprise-class system designs for the data centre. AI will be an important driver of change and will affect AMD positively as the set themselves aside from their competitors.

Market Anomalies

It is believed that prices should already fully reflect all available information. There is no way to "beat the market" to obtain abnormal returns. This is the famous "efficiency market hypothesis (EMH)". According to EMH, prices already reflect at least all past publicly available information — so-called the weak form; or prices change instantly to reflect all publicly available information — so-called the semi-strong form; or prices have also reflected any hidden insider information — so-called the strong form. After Eugene Fama proposed the EMH, there have been vigorous debates and empirical data analyses for decades. Eugene Fama, a 2013 Nobel Prize winner — believes anomalies are consistent with rational pricing. He attributes to the risk-return trade-off: there is no way to use predictive models to improve the risk-return trade-off. One thing to note is that we can potentially expect smaller gains in the coming months towards summer and then expect larger gains as we steer closer towards October or Halloween. The Halloween strategy, Halloween effect, or Halloween indicator is a market-timing strategy based on the hypothesis that stocks perform better between Oct. 31 (Halloween) and May 1 than they do between the beginning of May through the end of October. However, AMD can certainly expect growth in the future.

Investment Risks

BETA

Beta is a measure of a stock's volatility in relation to the overall market. The market, such as the S&P 500 Index, has a beta of 1.0, and individual stocks are ranked according to how much they deviate from the market.

A stock that swings more than the market over time has a beta above 1.0. If a stock moves less than the market, the stock's beta is less than 1.0. High-beta stocks are supposed to be riskier but provide higher return potential; low-beta stocks pose less risk but also lower returns.

AMD had a 1.59 Beta on the 29th of March most recently. This would tell us that their volatility is higher than the market's volatility and in fact could give an idea of what their growth will look like. In other words, AMD returns will likely be 1.59 times as volatile as of the market.

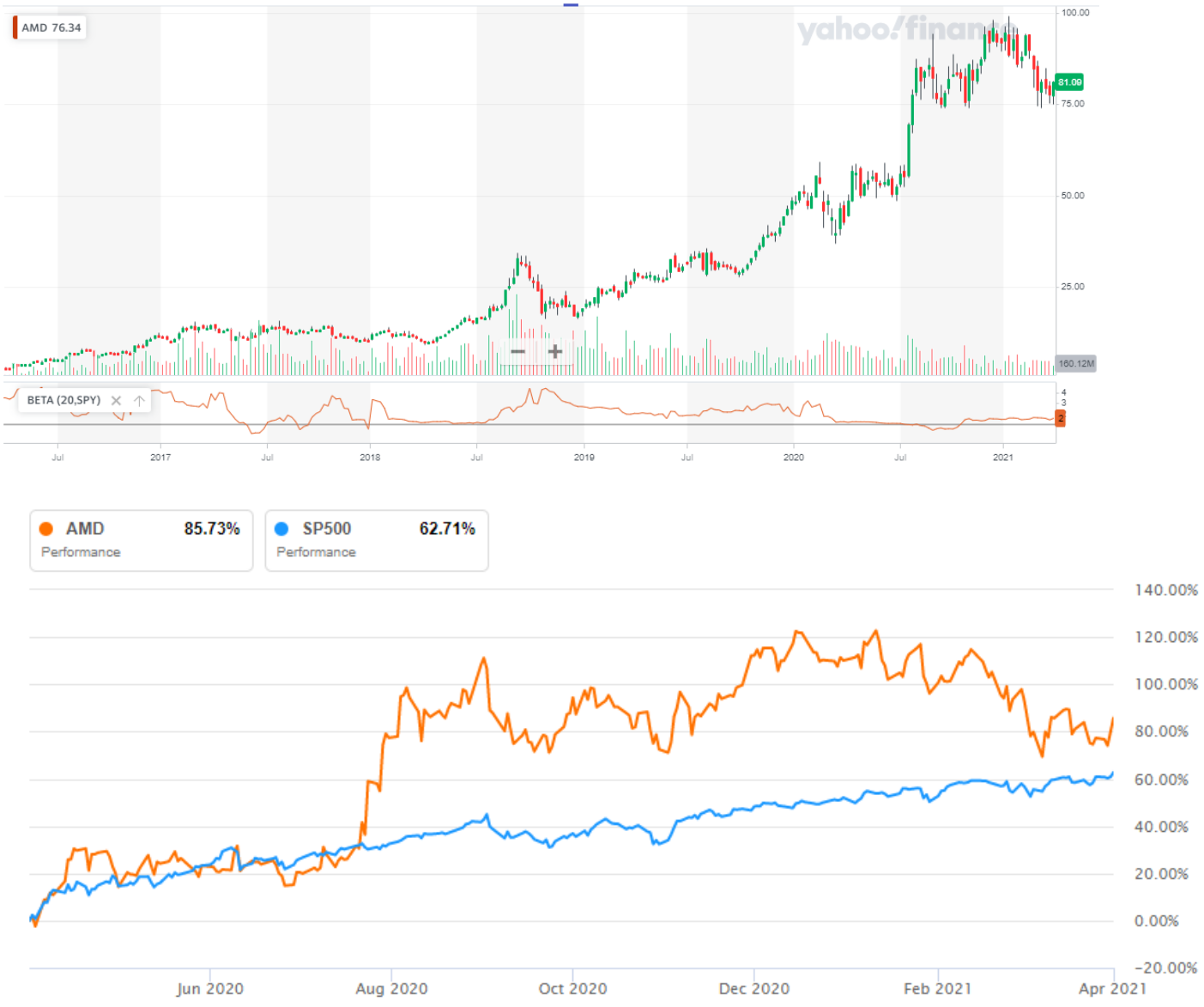


Figure 56- Price Return vs S&P 500 - Seeking Alpha

On the above graph we can see performance wise AMD have outperformed the S&P500 and it's most definitely worth taking into consideration when assessing the risk.

Advanced Micro Devices forecasts current-quarter revenue above estimates.

Advanced Micro Devices forecast current-quarter revenue above Wall Street expectations.

The company projected first-quarter revenue to be about $3.2 billion, plus or minus $100 million, compared to analysts' average estimate of $2.74 billion, according to IBES data from Refinitiv.

Investment Risks

RISK MATRIX

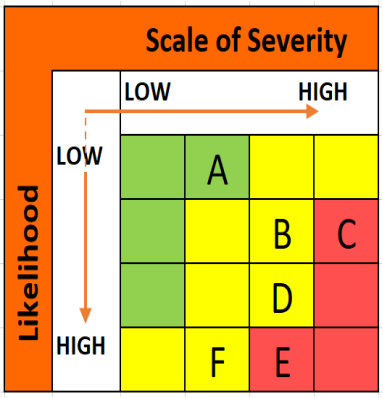


Figure 47- Individual Analysis- Risk Matrix (Full Matrix Can be seen in Appendix)

A) Changes in Brand Preferences

In the dynamic world of business today, nothing seems stable. Even customers, who a while back had fewer expectations and limited preferences, have become more demanding and their needs and inclinations change rapidly – with which companies seem unable to keep pace. However, companies have no choice but to increase their capabilities and must adapt to the changing preferences of customers or risk being overtaken by competitors, who might understand the customer's preferences a lot better. We know that the balance of power has shifted in favour of customers today – they are the ones who determine the success or failure of a company. AMD must adapt to set themselves aside from their competitors.

B) Negative Publicity

Negative information about companies can have a harmful effect on consumer perceptions. This could be potentially damaging information by presenting criticizing news about a product, service business unit, or individual in print or broadcast media or by word-of-mouth. All of this can affect a perception of AMD's brand and again it's a small risk that is mostly unlikely.

C) Data Breach

Data breaches exposes confidential, sensitive, or protected information to an unauthorized person. The files in a data breach are viewed and/or shared without permission. Anyone can be at risk of a data breach — from individuals to high-level enterprises and governments. It is important that AMD have the Incident Response (IR) plan in place. This is the practice of preparing an organization for the event of a security or data breach through a multitude of means. Not every incident is going to be the same and as such, incident responders must have the ability to react to different situations.

Advanced Micro Devices Inc.	5 Year
Systematic risk (β) estimation	
Variance(AMD)	286.57
Variance(S&P 500)	19.02
Covariance(AMD, S&P 500)	41.65
Correlation coefficient(AMD, S&P 500)	0.56
β(AMD)	2.19
α(AMD)	5.20%

Figure 48- Source: Stock Analysis on Net CAPM Model

D) Continuing Pandemic

Everyone has been affected by the pandemic in some way, and there is a risk that this pandemic will continue to present problems in the future and to mitigate the risk of this it's important that the vaccine unfolds at a rapid pace.

E) Recession

AMD are sensitive to recession cycles as they are a cyclical industry, this is a type of industry that is sensitive to the business cycle, such that revenues generally are higher in periods of economic prosperity and expansion and are lower in periods of economic downturn and contraction. Many economists have predicted a recession in the coming year as Unfortunately, the coronavirus has already delivered a major blow to businesses and economies around the world and top experts expect the damage to continue.

Advanced Micro Devices Inc.		
Expected rate of return		
Assumptions		
Rate of return on LT Treasury Composite	R(F)	2.22%
of return on market portfolio	E[R(M)]	11.72%
(β) of Advanced Micro Devices Inc.'s common stock	β(AMD)	2.19
Expected rate of return on Advanced Micro Devices Inc.'s common stock	**E[R(AMD)]**	**23.02%**

Figure 49- Source: Stock Analysis on Net CAPM Model

F) Increase in Competition

There is always a threat of new entrants, and of course, More market share from Intel and Nvidia will be a huge risk for AMD and investors.

Figure 50- Individual Risk Assessment, Low to High

Beta Vs Alpha

On the Left we can see Beta and Alpha Estimation over 5 Years. A high beta indicating a higher potential return and of course Alpha. Alpha shows how well (or badly) a stock has performed in comparison to a benchmark index. Beta indicates how volatile a stock's price has been in comparison to the market. A high alpha is always good. In this case, it is a good indicator that AMD will outperform the NASDAQ.

The expected return is the profit or loss that an investor anticipates on an investment that has known historical rates of return (RoR). In this case we can see an expected return of 23.02%. Earning 20% annual returns will put you squarely on the list of elite investment managers. It is no small feat to generate 20% annually when the S&P 500 has returned just 9.8% per year in the last 25 years, dividends reinvested.

(Full Matrix can be seen at Appendix 5)

Appendix 1

Key Financial Data (Sources: Nasdaq.com)

Income Statement

Period Ending:	12/26/2020	12/28/2019	12/29/2018	12/30/2017
Total Revenue	$9,763,000	$6,731,000	$6,475,000	$5,253,000
Cost of Revenue	$5,416,000	$3,863,000	$4,028,000	$3,466,000
Gross Profit	**$4,347,000**	**$2,868,000**	**$2,447,000**	**$1,787,000**
Operating Expenses				
Research and Development	$1,983,000	$1,547,000	$1,434,000	$1,196,000
Sales, General and Admin.	$995,000	$690,000	$562,000	$464,000
Non-Recurring Items	$0	$0	$0	$0
Other Operating Items	$0	$0	$0	$0
Operating Income	**$1,369,000**	**$631,000**	**$451,000**	**$127,000**
Add'l income/expense items	-$47,000	-$165,000	$0	-$9,000
Earnings Before Interest and Tax	$1,322,000	$466,000	$451,000	$118,000
Interest Expense	$47,000	$94,000	$121,000	$126,000
Earnings Before Tax	$1,275,000	$372,000	$330,000	-$8,000
Income Tax	-$1,210,000	$31,000	-$9,000	$18,000
Minority Interest	$5,000	$0	-$2,000	-$7,000
Equity Earnings/Loss Unconsolidated Subsidiary	$0	$0	$0	$0
Net Income-Cont. Operations	$2,490,000	$341,000	$337,000	-$33,000
Net Income	**$2,490,000**	**$341,000**	**$337,000**	**-$33,000**
Net Income Applicable to Common Shareholders	**$2,490,000**	**$341,000**	**$337,000**	**-$33,000**

Appendix 2

Key Financial Data

Balance Sheet

Period Ending:	12/26/2020	12/28/2019	12/29/2018	12/30/2017
Current Assets				
Cash and Cash Equivalents	$1,595,000	$1,466,000	$1,078,000	$1,185,000
Short-Term Investments	$695,000	$37,000	$78,000	$0
Net Receivables	$2,076,000	$1,879,000	$1,235,000	$454,000
Inventory	$1,399,000	$982,000	$845,000	$694,000
Other Current Assets	$378,000	$233,000	$304,000	$301,000
Total Current Assets	$6,143,000	$4,597,000	$3,540,000	$2,634,000
Long-Term Assets				
Long-Term Investments	$63,000	$58,000	$58,000	$58,000
Fixed Assets	$849,000	$705,000	$348,000	$261,000
Goodwill	$289,000	$289,000	$289,000	$289,000
Intangible Assets	$0	$0	$0	$0
Other Assets	$373,000	$357,000	$321,000	$310,000
Deferred Asset Charges	$1,245,000	$22,000	$0	$0
Total Assets	$8,962,000	$6,028,000	$4,556,000	$3,552,000
Current Liabilities				
Accounts Payable	$2,342,000	$2,285,000	$1,824,000	$1,351,000
Short-Term Debt / Current Portion of Long-Term Debt	$0	$0	$136,000	$70,000
Other Current Liabilities	$75,000	$74,000	$24,000	$92,000
Total Current Liabilities	$2,417,000	$2,359,000	$1,984,000	$1,513,000
Long-Term Debt	$330,000	$486,000	$1,114,000	$1,325,000
Other Liabilities	$378,000	$356,000	$192,000	$118,000
Deferred Liability Charges	$0	$0	$0	$0
Misc. Stocks	$0	$0	$0	$0
Minority Interest	$0	$0	$0	$0
Total Liabilities	$3,125,000	$3,201,000	$3,290,000	$2,956,000
Stock Holders Equity				
Common Stocks	$12,000	$12,000	$10,000	$9,000
Capital Surplus	-$4,605,000	-$7,095,000	-$7,436,000	-$7,775,000
Retained Earnings	-$131,000	-$53,000	-$50,000	-$108,000
Treasury Stock	$10,544,000	$9,963,000	$8,750,000	$8,464,000
Other Equity	$17,000	$0	-$8,000	$6,000
Total Equity	$5,837,000	$2,827,000	$1,266,000	$596,000
Total Liabilities & Equity	$8,962,000	$6,028,000	$4,556,000	$3,552,000

Appendix 3

Key Financial Data

Cash Flows

Period Ending:	12/26/2020	12/28/2019	12/29/2018	12/30/2017
Net Income	$2,490,000	$341,000	$337,000	-$33,000
Cash Flows-Operating Activities				
Depreciation	$368,000	$288,000	$208,000	$180,000
Net Income Adjustments	-$856,000	$406,000	$216,000	$109,000
Changes in Operating Activities				
Accounts Receivable	-$209,000	-$609,000	-$834,000	-$103,000
Changes in Inventories	-$417,000	-$137,000	-$151,000	-$3,000
Other Operating Activities	-$231,000	-$176,000	-$70,000	-$173,000
Liabilities	-$74,000	$380,000	$328,000	$35,000
Net Cash Flow-Operating	$1,071,000	$493,000	$34,000	$12,000
Cash Flows-Investing Activities				
Capital Expenditures	-$294,000	-$217,000	-$163,000	-$113,000
Investments	-$658,000	$66,000	-$7,000	$60,000
Other Investing Activities	$0	$2,000	$0	-$1,000
Net Cash Flows-Investing	-$952,000	-$149,000	-$170,000	-$54,000
Cash Flows-Financing Activities				
Sale and Purchase of Stock	$7,000	$517,000	$64,000	$20,000
Net Borrowings	$0	-$473,000	-$41,000	-$40,000
Other Financing Activities	-$1,000	-$1,000	$5,000	-$13,000
Net Cash Flows-Financing	$6,000	$43,000	$28,000	-$33,000
Effect of Exchange Rate	$0	$0	$0	$0
Net Cash Flow	$125,000	$387,000	-$108,000	-$75,000

Appendix 4

Below are the financials, valuations and differences between Intel and AMD. (Source: Seeking Alpha)

Metric	AMD	Sector Median	% Diff. to Sector	AMD 5Y Avg.	% Diff. to 5Y Avg.
Valuations					
P/E Non-GAAP (TTM)	62.83	27.89	1.2525	34.63	0.8144
P/E Non-GAAP (FWD)	42.21	26.64	0.5845	26.03	0.6218
P/E GAAP (TTM)	39.27	35.15	0.1174	NM	NM
P/E GAAP (FWD)	48.36	31.81	0.5203	NM	NM
PEG GAAP (TTM)	0.07	1	-0.9329	NM	NM
PEG Non-GAAP (FWD)	1.65	1.97	-0.165	NM	NM
EV / Sales (TTM)	9.91	4.66	1.1244	2.55	2.8895
EV / Sales (FWD)	7.25	4.37	0.6611	2.21	2.2772
EV / EBITDA (TTM)	57.54	20.63	1.789	31.36	0.8347
EV / EBITDA (FWD)	31.03	16.32	0.9013	21.72	0.4284
EV / EBIT (TTM)	70.65	28.55	1.4742	35.95	0.9651
EV / EBIT (FWD)	34.47	22	0.5668	NM	NM
Price / Sales (TTM)	9.83	4.4	1.236	2.41	3.0734
Price / Sales (FWD)	7.36	4.05	0.8162	2.05	2.5892
Price / Book (TTM)	16.82	4.88	2.4482	8.14	1.0669
Price / Book (FWD)	11.23	5.74	0.9559	NM	NM
Price / Cash Flow (TTM)	91.71	21.89	3.1899	75.64	0.2125
Growth					
Revenue Growth (YoY)	0.4505	0.051	7.8404	0.1419	2.1734
Revenue Growth (FWD)	0.3199	0.0864	2.7026	0.127	1.5191
EPS Diluted Growth (YoY)	5.8793	0.0553	105.2494	NM	NM
EPS Diluted Growth (FWD)	0.5806	0.1076	4.3938	0.5924	-0.02
Operating Cash Flow Growth (YoY)	1.1724	0.1811	5.4725	NM	NM
Operating Cash Flow Growth (FWD)	0.7807	0.1218	5.4096	1.7486	-0.5535
Profitability					
Gross Profit Margin (TTM)	44.53%	48.32%	-7.86%	35.30%	26.12%
EBIT Margin (TTM)	14.02%	7.19%	94.92%	2.87%	389.21%
EBITDA Margin (TTM)	17.22%	13.60%	26.64%	5.96%	189.11%
Net Income Margin (TTM)	25.50%	4.27%	497.35%	-0.06%	NM
Return on Total Capital (TTM)	17.25%	3.80%	353.64%	4.33%	298.46%
Return on Total Assets (TTM)	27.78%	2.68%	935.14%	-0.26%	NM
Asset Turnover Ratio (TTM)	1.30%	0.64%	105.09%	1.39%	-6.11%
Net Income Per Employee (TTM)	197.62K	7,298.20	2607.78%	6,933.83	2750.07%

Metric	INTC	Sector Median	% Diff. to Sector	AMD 5Y Avg.	% Diff. to 5Y Avg.
Valuations					
P/E Non-GAAP (TTM)	11.85	27.89	-0.5753	10.66	0.1108
P/E Non-GAAP (FWD)	13.25	26.64	-0.5027	10.89	0.2162
P/E GAAP (TTM)	12.73	35.15	-0.6377	12.63	0.0078
P/E GAAP (FWD)	14.04	31.81	-0.5585	11.98	0.1726
PEG GAAP (TTM)	2.61	1	1.6183	NM	NM
PEG Non-GAAP (FWD)	2.04	1.97	0.0341	1.36	0.5
EV / Sales (TTM)	3.45	4.66	-0.2608	2.78	0.2411
EV / Sales (FWD)	3.68	4.37	-0.1569	2.78	0.3228
EV / EBITDA (TTM)	7.43	20.63	-0.6397	6.39	0.1631
EV / EBITDA (FWD)	8.07	16.32	-0.5053	6.58	0.2268
EV / EBIT (TTM)	11.24	28.55	-0.6063	9.44	0.1911
EV / EBIT (FWD)	11.96	22	-0.4565	9.43	0.2686
Price / Sales (TTM)	3.39	4.4	-0.2284	2.74	0.2377
Price / Sales (FWD)	3.5	4.05	-0.1358	2.81	0.2483
Price / Book (TTM)	3.15	4.88	-0.3535	2.53	0.2443
Price / Book (FWD)	2.81	5.74	-0.5113	2.4	0.1676
Price / Cash Flow (TTM)	7.22	21.89	-0.67	7.15	0.0104
Growth					
Revenue Growth (YoY)	8.20%	5.10%	60.95%	7.10%	15.56%
Revenue Growth (FWD)	0.34%	8.64%	-96.08%	3.53%	-90.42%
EPS Diluted Growth (YoY)	4.88%	5.53%	-11.75%	21.07%	-76.83%
EPS Diluted Growth (FWD)	-0.11%	10.76%	NM	7.67%	NM
Operating Cash Flow Growth (YoY)	6.76%	18.11%	-62.71%	13.72%	-50.76%
Operating Cash Flow Growth (FWD)	-0.28%	12.18%	NM	6.69%	NM
Profitability					
Gross Profit Margin (TTM)	56.01%	48.32%	15.91%	60.73%	-7.77%
EBIT Margin (TTM)	30.66%	7.19%	326.23%	29.79%	2.93%
EBITDA Margin (TTM)	46.38%	13.60%	241.13%	43.70%	6.13%
Net Income Margin (TTM)	26.84%	4.27%	528.61%	23.47%	14.38%
Return on Total Capital (TTM)	13.30%	3.80%	249.68%	12.84%	3.58%
Return on Total Assets (TTM)	13.65%	2.68%	408.60%	12.30%	10.97%
Asset Turnover Ratio (TTM)	0.54%	0.64%	-15.34%	0.55%	-1.66%
Net Income Per Employee (TTM)	188.96K	7,298.20	2489.13%	149.29K	26.58%

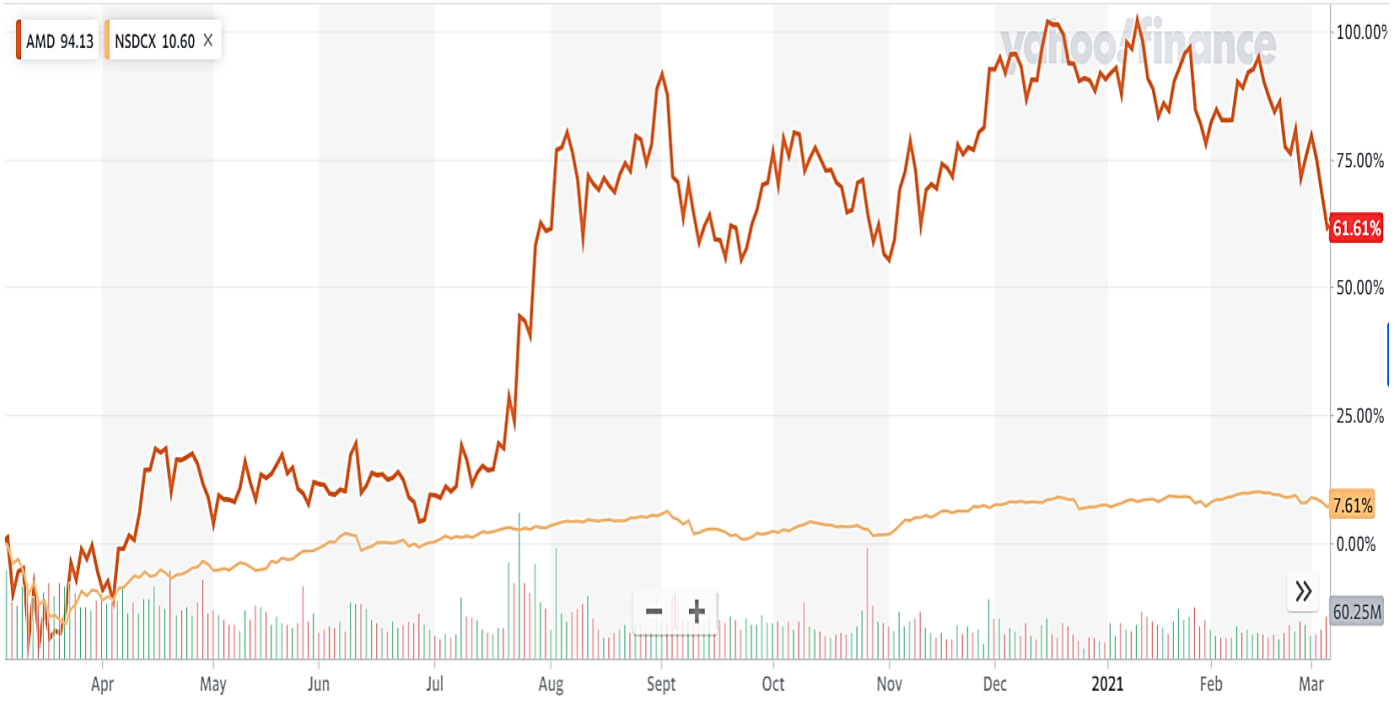
Appendix 5

Risk Matrix

		Scale of Severity			
		Acceptable	Tolerable	Unacceptable	Severely Unacceptable
Likelihood	Highly Unlikely		Change in consumer brand preferences		
	Unlikely			Negative publicity	Data Breach
	Likely			Continuing Pandemic	
	Certain		Increase in competition	Recession	

Appendix 6

AMD VS NASDAQ (Source: Yahoo)



AMD Revenue Per Region

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