University of Oregon TAMID Fund

Winter Term Pitch Report

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Table of Contents

Executive Summary

Advanced Micro Devices is a global company that operates in the Computing & Graphics and Embedded and Semi-custom segments. Even though the company has been around since 1969 it has been able to provide a superior product line throughout the years by focusing on innovation and reliability. In 2020, AMD's stock price has risen more than 85% with the potential for further growth. Along with their diverse leadership team, lead by CEO Dr. Lisa Su, AMD has been able to build out its product portfolio through strategic acquisitions such as Nitero and Xilinx. The recent acquisition of Xilinx is the largest deal in AMD history and is expected to increase EPS by $0.12 through manufacturing and data synergies.

AMD currently operates within the semiconductor industry, in which the products are used within computing, gaming, and crypto-mining technologies. The industry has continued to rapidly grow since its birth in the 1960's with revenues reaching $481 billion in 2018. Companies such as NVIDIA, Intel, and Qualcomm continue to fight for market share in their respective sectors. Currently, AMD is competing with Intel in the computing market whereas they are competing with NVIDIA in the gaming market. AMD has been able to gain ground in the CPU market passing Intel in market share for desktop processors.

Currently, due to pandemic and the rise of demand for stay-at-home technology, there is a global shortage of semiconductors and microchips. This shortage is likely to last through most of 2021 and the race to meet demand is on within the industry. AMD is looking to scale production, but will most likely fall short in meeting the demand of the market. Even though this year might be hard for the semiconductor industry, it is an opportunity for AMD to capture more of the market and show consumers the power of their products.

Over the past 5-years AMD has been able to capture a compound annual revenue growth rate of 19.59%. We believe that their release of the Ryzen has established itself in the CPU desktop market and will continue to grow revenues for years to come. On top of this, AMD has focused its efforts on meeting the GPU demand in the Playstation and Xbox markets. Through these revenue funnels and a healthy balance sheet consisting of $2.3 billion in cash & cash equivalents and only $572 million in debt, AMD will maintain its strong growth for years to come. We are recommending a buy of AMD with a price target of $82.48 and a potential 12% upside.

Key Statistics	
Company Name	Advanced Micro Devices
Ticker	AMD
52 Week Price Range	$36.75 - $93.23
Current Price as of 3/8/21	$73.96
Shares Outstanding (In Millions)	1211.3
Market Capitalization (In Millions)	$89,589.60
Dividend Yield	N/A
P/E Ratio	35.90
EPS (TTM)	2.06
Current Ratio	2.54
Debt-to-Equity Ratio	0.1
5 Year Revenue CARG	19.59%

Industry Overview

Industry Description

AMD is considered a part of the semiconductor industry. This sector is mostly filled with companies that develop, produce, and sell computer parts and similar technologies. This industry started to take shape in about the 1960's when the creation of semiconductors became a profitable business. Since then, the industry has grown exponentially and recorded over $481 billion in revenue in 2018. The United States has been the leader in this industry since its creation and will be playing a large role in future technologies such as 5G and artificial intelligence.

Comparable Companies

We chose to focus on three major companies as relevant comparisons to AMD within the industry. While all three of these comparison companies are considered more prominent and established within the industry, AMD has the potential to compete with each one. The comparison companies are as follows: Intel, QUALCOMM, and NVIDIA. Intel Corporation designs, manufactures, and sells essential technologies. These technologies are utilized by cloud, smart, and connected devices for retail, industrial, and consumer uses worldwide. QUALCOMM Incorporated engages in the development and commercialization of foundational technologies and products used in mobile devices and other wireless products. NVIDIA Corporation engages in the design and manufacture of computer graphics processors, chipsets, and related multimedia software. It operates through the Graphics Processing Unit (GPU) and Tegra Processor segments. In this rapidly evolving industry AMD is positioned well for future growth in the consistently expanding consumer marketplace of technology.

Porter's Five Forces

Supplier Bargaining Power

Semiconductors and computer parts in general require valuable raw materials such as quartz, steel, gold, iron, glass, and many others. These are materials that are harder to come by than those in other industries. Suppliers know this and have the power to control price points for these valuable materials. AMD must develop strong relationships with suppliers and offer valuable assets such as setting up supply lines in order to strike long term deals with suppliers.

Buyer Bargaining Power

AMD sells a lot of individual computer parts. Their buyer market is relatively small which gives the customers a lot of power. They can demand better performance and lower costs or they will buy from other companies like Intel. AMD should try and expand their market to reach customers who are more casual when it comes to computers as well as strike more deals with companies who will use AMD parts to build pcs.

Threat of Substitutes

Consumers may switch away from needing high tech hardware that AMD sells to Cloud based technology. Cloud based technology could allow certain consumers to access high quality hardware remotely and for a much cheaper price. AMD should be investing into cloud based technology and set up servers for it using their own computer parts. That way, if customers do stop using their hardware, they can still maintain profits from their own cloud based program.

Threat of Entry

A threat of entry into an industry like this would most likely come from a revolutionary product. AMD needs to either buy out companies trying to enter the industry and incorporate that new technology or continue to develop tech and be the leaders of the semiconductor industry.

Rivalry Among Existing Competitors

AMD has to compete with some huge companies like Intel and Nvidia. These companies have a lot of money going towards research and development to try and compete with AMD's technologies. AMD needs to continue to research and develop new products that will put them ahead of their competitors while still maintaining competitive prices.

Industry Trends

The semiconductor industry is on track to reach trillion dollar yearly revenue by 2030. This huge revenue increase comes as a result of the growth of cryptocurrency. Cryptocurrency mines require computer rigs that put to use AMD and its competitor's products. New technologies such as 5G and continued realization of phones and computers will also lead to large growth for both companies. The semiconductor industry is growing rapidly and really starting to enter a mature state.

Company Overview

Company Description

Advanced Micro Devices is a worldwide company that supplies both computing processors and graphic cards. Both of these products feature cutting-edge technology in smaller sizes with the best efficiency consumers can buy. AMD was founded in 1969 in Santa Clara, CA and had its Initial Public Offering in 1979. Currently, AMD is employing 12,600 people. AMD's products reach a wide range of market segments. These include advanced CPU and GPU, architecture, console gaming, server and datacenter computing, custom PC hardware, Pre-built computer hardware, and also crypto-mining.

Product Portfolio

As stated above, Advanced Micro Devices two main products are their processors and graphic cards. The AMD processor is called Ryzen: Revolutionary CPU Architecture and is available on desktop and mobile devices. What makes these so special is that they have an industry-leading

7-nanometer transistor and the AMD processor is quickly outpacing Intel in performance. Their second product, the graphic cards, are known as Radeon: AMD's Reliable Graphic Technology. This product is widely used in Apple inc. computers and they are also the leading graphics solution for gaming consoles. Their technology will spearhead the next generation of high-performance gaming.

Executive Leadership

At the helm of the executive board is Dr. Lisa Su who serves as the President and CEO of AMD. She has been a part of the team since 2012 and took over as the head in 2014. Dr. Su has also won numerous awards in her field which makes her very respected in the industry. The rest of the crew that joins her has all been a part of this company for some time. This includes CFO Devinder Kumar, Chief of Sales Darren Grasby, Chief Technology Officer Mark Papermaster, and Rick Bergman who is the head of Computer and Graphics. This team all holds Executive Vice President positions.

Timeline & Major Acquisitions

AMD has gone through 5 major acquisitions in the last two and a half decades that have helped to get AMD to where they are today. The first one was in 1996 when they acquired NexGen. This allowed AMD to keep up with Intel in the microprocessor industry. In 2006, AMD next acquired ATI technologies for their video game graphics software. Next, AMD acquired HiAlgo in 2016 which allowed AMD's Radeon software to maximize their gaming experience by the dollar. In 2017, AMD acquired Nitero where they could install this company's developing and manufacturing of wireless chips meant for streaming virtual reality. Lastly, AMD's most recent acquisition is Xilinx. This will allow them to gain dynamic processing technology. These trends over the last five years of three major acquisitions show that AMD is implementing a strategic growth strategy.

Swot Analysis

<u>Strengths</u> - Superior Price/Performance in CPUs - Go-To Supplier for Console Components - Apple uses AMD exclusively as Dedicated Graphics Solution	<u>Weaknesses</u> - Significantly behind Nvidia in gaming performance for graphics cards - Lower Brand Recognition than Intel - Nvidia Partners with many AAA Game Titles
<u>Opportunities</u> - Known for building strong relationships - AMD's recent performance hikes could allow them to replace Intel's	<u>Threats</u> - Nvidia's graphics dominance could push AMD out of the market - Political Tension Between Taiwan and China

hardware that is still in use - Potential growth available in the laptop market	- Intel CPUs could make a comeback at any time

Historical Financial Trends

In March 2016, AMD's share price was at a meager $2.52. Within the year, the share price quadrupled and raised steadily throughout that year. The next year 2017-2018 showed a small drop in price but the stock was just consolidating during this time, waiting for its next release or acquisition. In 2018, we saw a large spike in stock price to $32.72 at its peak, and then it went back down at the end of the year. In 2019, AMD saw another large increase in share price all the way to $55 in quarter 1. AMD once again saw even more large growth going into 2021 with their high on January 8 at $94. Since this day the price has been holding around the low $80 area but is still on a steep upwards path within the last 5 years. These last 5 years it has been incredible to have seen AMD at a low of $2.52 and make their way to $94.

Financial Analysis & Valuation

Assumptions

Through conducting due diligence on AMD we were able to gather imperative information on the future outlook of the company. By filtering through their 10-K fillings and online articles we could make confident assumptions to project their cash flows. To calculate the WACC we used an average of the 6-month, 1-year, and 5-year beta which was calculated to be 1.38. With a market risk premium assumed to be 5.6% and the risk-free rate (10-year Treasury yield) currently at 1.41%, the cost of equity was calculated to be 9.14%. Currently, AMD has negative net debt of $1.72 billion and a market capitalization of $89.6 billion. Using a calculated cost of debt of 6.98%, along with the weighted capital structure and an assumed tax rate of 15%, AMD's WACC is calculated to be 9.2% which will be used to discount future cash flows. To calculate the terminal WACC we changed the 10-year risk-free to the 30-year risk-free resulting in a discount rate of 10.02%.

Discounted Cash Flow

AMD has seen a 5-year compound annual revenue growth rate of 19.59% between 2016-2020. We believe that they will continue this growth through the acquisitions of niche companies and gaining market share in the computer and gaming industry. This led us to assume a terminal growth rate of 4.5% as we are projecting AMD's cash flows from the year 2025 and beyond. AMD's revenue is broken down into two separate segments which include computing & graphics and enterprise, embedded, & semi-custom. With AMD focusing on providing a sustainable line of GPUs & CPUs they will see strong growth into the year 2025. Based on our assumptions, AMD will have a 5-year compounded annual revenue growth rate of 17.81% from 2021-2025.

Using a discounted cash flow analysis and the assumptions above, AMD has a present terminal value of $84.17 billion and the sum of the present value of cash flows from the years 2021 to 2025 of $13.7 billion. By adding these together and subtracting the net debt, we could find the market value of equity of AMD to be $99.59 billion. To find the implied price of $82.22, we took the market value of equity and divided it by the 1.21 billion shares outstanding.

Comparable Companies

Along with the DCF, we ran a comparable companies analysis by analyzing AMD's main competitor's financial ratios. This includes calculating companies such as NVIDIA, Intel, and Qualcomm's enterprise value to their revenue, EBIT, EBITDA, and their price to earnings. After weighing major competitors like NIVDA and Intel 40% each and the rest of the companies 5%, we can find the industries implied ratios. Since AMD's stock tends to move the most on its revenue growth, we weigh the implied price from EV/Revenue at 90% and EV/EBITDA at 10%. Through using these weights and multiples, we found a comparable companies analysis implied price of $83.96.

Investment Thesis & Risk

Thesis 1

Microprocessor Shortage: In the current marketplace, as a result of the Pandemic and a surge in stay-at-home technology devices being purchased, there has been a significant semiconductor and microchip shortage that has now lasted several months and is likely to persist throughout the first half of 2021. To go along with this shortage, worldwide auto manufacturers have had to in some instances halt production due to the lack of semiconductor supply. This shortage has affected all suppliers, AMD included, as they race to meet the persistent demand. AMD continues its attempts at scaling its production rates but likely will still have supply shortfalls into the latter half of this year. AMD CEO Dr. Lisa Su described the shortage in a Q1 earnings call as "overall demand exceeding our planning" in response to the unprecedented surge in demand.

Thesis 2

Increasing Market Share: Though a relatively small company when compared to likes of Qualcomm or Intel, AMD has been steadily gaining market share in the semiconductor industry, specifically the CPU sector. In fact, in the last eight quarters, AMD has gained market share in some capacity. They have reached their highest CPU market share in 15 years and the highest for desktop processors in 8. The growth of market share is not expected to dwindle especially after beginning negotiations for a multi-year partnership with Samsung to begin installing microchips into their cellphones. In order for this to happen, however, their RDNA products will need to be made scalable in order to meet Samsung phone demand but analysts believe that this should be possible. This is not to say that swift action won't be taken by large competitors such as IBM in order to stay competitive and watch the growing threat that AMD is posing to its share of the market.

Thesis 3

Acquisition and Pricing Power: In the last few months of 2020 AMD announced an acquisition of former rival Xilinx ($XLNX) for $30 billion in stock. This is currently the largest acquisition that AMD has taken on to date and analysis predicts that this move will create an increase of $0.12 EPS. Additionally, over the next 4-5 years it could boost overall EPS by 30-50%. This acquisition will allow for AMD to be even more competitive in the single-chip solutions which are common in many devices and products. In addition to this acquisition, AMD overall has become much more competitive in the general prices of its products when compared to their rivals. In come instances, AMD products are significantly cheaper than their Intel counterparts but don't necessarily abandon good quality products to reach those prices. By doing this, it puts pressure on rivals to act in order to also remain competitive at these lower price points.

Potential Investment Risks & Risk Mitigation

Although AMD shows a promising future in the industry, there are some risks that should not be ignored, as they could just as well persuade investors' decisions. First, the largest risk is the shortage of semiconductors available. The supply is failing to keep up with increasing demand in the industry, which has halted some production and affected revenue growth. Furthermore, the emergence of Amazon, Facebook, and Google into the industry will put more pressure on AMD to produce cost efficient and effective products. Because Intel is already the dominant competitor in computer processing, AMD will need to hold its ground against big tech. This means they will need to keep up with the Notebook PC market (which they have already fallen behind in), along with other opportunities that present themselves. Finally, AMD will need to find an effective way to avoid shortages on other supplies and equipment because outsourcing production opens the market up to larger competitors who can buy up all the supplies.

Investment Recommendation

After running the DCF (which is weighted 85% and an implied price of $82.22), we believe that a hold of 3-4 years at the current price of the stock is the best option, with an implied upside of 12%**.** We weighted comparables at 15% and found an implied comparable price of $83.96 and came to a conclusion on $82.48 for the final implied price.

Conclusion

AMD is exceedingly well positioned to benefit from a number of recent developments including a growth in demand for chips for cryptocurrency data centers, 5g technology, and automotive electronics. AMD’s acquisition of Xilinx will also benefit AMD’s ability to capitalize on these trends and establish synergies between the firms. Additionally, AMD is trading at an attractive valuation at around 12% below its implied price and has likely not priced in the accretive results of the Xilinx deal. Furthermore, AMD’s management has a history of excellence and faith in

their ability to execute should result in equity outperformance. All in all, the combination of a number of highly favorable factors makes AMD a strong buy.