**Advanced Micro Devices (AMD) vs. NVIDIA**

FIN 326-Fall 2019 Financial Analysis Project

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Client Letter

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Dear HR:

Today in the 21st century, computers have become an indispensable tool. Whether it is office, do pictures, games, medical, aerospace and other industries are inseparable from the computer. And now people's requirements for computers are not limited to input text, writing code, and simple entertainment this level, so the rapid development of computer technology also led to some computer-related industries, for example, in mathematical computing and processing data CPU is very important. For gamers and cartographic designers, GPUs (graphics cards) are essential, as well as a range of products such as storage technology. In this environment, there are also some very famous enterprises. The two companies I want to introduce and compare are similar in their corporate culture and products, they are the most authoritative GUP product manufacturers in the world, and every computer we use uses their products, which are NVIDIA and Advanced Micro Devices (AMD). Here's my analysis of the various aspects of these two companies. Includes financial statements, balance sheet income and statement. We can understand the differences between the two companies in electronic technology in a comprehensive way, but also a deeper understanding of the different advantages of the two companies.

I hope this is helpful, if you would like to talk further about this matter, please feel free to contact me and set up an appointment with me at (610)-909-6816. Or you may e-mail me at [XZ905820@wcupa.edu](mailto:XZ905820@wcupa.edu). I will proceed as quickly as possible one I hear from you.

Sincerely yours,

Xian Zhao

# **Introduction**

NVIDIA began to transform computer graphics technology 26 years ago. The booming gaming market and the continued demand for better 3D graphics in the market are driving NVIDIA to develop GPUs into the brains of computers, making a name for themselves in the intersection of virtual reality, high-performance computing and artificial intelligence. NVIDIA GPU computing has become a must-have tool for today's "Da Vinci" and "Einstein". For them, NVIDIA's creation is comparable to that of a time machine. NVIDIA revolutionized modern computer graphics technology. The GPU developed by NVIDIA in 1999 brings real-time programmable coloring to life, providing artists with a variety of palettes to create. In 2018, NVIDIA's Turing architecture and NVIDIA RTX ray-tracing technology enabled computer scientists to take another vision and pave the way for a new leap in art and realism in real-time graphics technology. For decades, NVIDIA has led the way in the field of visual computing. An NVIDIA RTX server is equipped with 40 Turing GPUs, allowing 320 users to run graphics applications simultaneously. The RTX server sits software optimized to deliver superior performance and high price/performance for the rendering, remote workstation, and cloud gaming markets. GeForce RTX has revolutionized the gaming market. Real-time ray tracing and neurography processing work together to create stunning graphics and take the realism of PC games to new heights.

AMD Radeon ™ ultra-high-performance embedded standalone GPUs to increase graphics processing performance to ultra-high levels, support 4K high-speed video, 3D visualization, and other compute-intensive graphics applications. Optimized for high-end systems such as amusement machines, arcades, medical imaging and conventional defense and aerospace applications. AMD ultra-high-performance embedded GPUs support efficient thermal design power (TDP) configurations while delivering stunning immersive visual experiences.

Brief company histories and recent developments. Whether it's gaming, virtual reality, augmented reality, artificial intelligence, or emerging cloud workloads, these applications require high performance, and AMD's expertise is to converge generation solutions. AMD Semiconductor, Inc. designs and manufactures innovative microprocessors (CPUs, GPUs, APUs, motherboard chipsets, TV card chips, etc.) and provides flash memory and low-power processor solutions for the computer, communications and consumer electronics industries, founded in 1969. AMD is committed to providing standards-based, customer-centric solutions to technology users, from businesses and government agencies to individual consumers. AMD is a global company with high-performance graphics and computing technology at the same time.

# **Historical**

NVIDIA, founded in 1993, is headquartered in Santa Clara, California, USA. Jensen Huang is founder and CEO. In 1999, NVIDIA invented the GPU, which greatly promoted the development of the PC gaming market, redefined modern computer graphics technology, and revolutionized parallel computing. NVIDIA was listed on Nasdaq in January 1999 and sold 10 million drawing processors in May of the same year. NVIDIA invented GPU, which greatly promoted the development of the PC game market, redefined modern computer graphics technology, and revolutionized parallel computing. In 2000 it acquired the intellectual property rights of 3dfx, a generation of kings. 3dfx was one of the largest graphics processor manufacturers in the mid-1990s. NVIDIA has created close relationships with many OEMs and organizations. In February 2002, NVIDIA sold its first 100 million drawing processors. NVIDIA's most famous product line of GeForce graphics processors debuted in 1999. The GeForce product line has been expanded to cover desktop and mobile computers. For handheld devices, NVIDIA has a Terga product line. It provides high efficiency while maintaining low power consumption. These products are typically used in wireless communication devices. On February 8, 2018, Nvidia reported fourth-quarter and full-year results. The results showed That Nvidia's full-year 2017 revenue hit a record high of $9.71 billion, up 41% year-on-year and up 83% from profit. Nvidia earned $4.82 per share per share for the full year, up 88% year-on-year. In the fourth quarter of 2017, Nvidia's revenue reached $2.91 billion, up 34% year-on-year. GPU revenue rose 33% year-on-year to $2.46 billion.

AMD: Founded in Silicon Valley in 1969 with a few dozen employees, AMD has been on the path to innovation and has been at the forefront of semiconductor products ever since. Starting with an obscure company in its inception, AMD has grown to become a global company with tens of thousands of employees and achieved breakthrough industry innovations. AMD is working hard today to develop high-performance computing and visualization products to solve the world's toughest and most interesting challenges. Today is the best time in the semiconductor industry, and we're ready to continue to innovate over the next 50 years, working to build high-performance computing and graphics technologies that will make life better. On July 24, 2006, AMD officially announced a $5.4 billion cash and stock acquisition of ATI. On October 25th AMD announced that its acquisition of ATI had been completed and that ATI was a stand-alone brand. AMD also became the first company in PC history to offer both CPUs, GPUs, and chipsets, a milestone in PC history. In 2007, AMD (ATI) released the R600 Core. Inheriting the ATI tradition of focusing on video playback capabilities, all of the R600 series features a built-in 5.1-channel audio chip that delivers audio and video signals through the HDMI interface, and the R600, like the G80, is a full-strength DX10-enabled hardware design. With 64 US totals 320SPs, floating-point computing capabilities reach 475GFLOPS, significantly exceeding the G80 345GFLOPS level. The 512-bit loopback bus provides greater display bandwidth for the chip. A new UVD video scheme is used to support hardware decoding of VC-1 and AVC/H.264. Full support for Vista's HDMI audio and video output, the DVI-HDMI's turn interface delivers 5.1 surround audio and HDTV video signals at the same time. AMD demonstrated for the first time at the computex 2010 Taipei Computer Show in June 2010 with its APU acceleration processor based on the CPU-GPU Fusion fusion concept. In January 2011, AMD officially released the world's first acceleration processor (APU). This is the only APU for embedded systems.

# Recent Developments: NVIDIA

# THE ERA OF AI, three converging forces brought about the era of AI: the availability of immense stores of data, the invention of deep learning algorithms, and the intense performance of GPU computing. New Internet Services, Like Google Assistant, have learned speech from sound. Self-driving cars use deep learning to recognize the space car inhabits and what to avoid. In, healthcare networks trained with millions of medical images can find clues in MRIs that until now can only be found rough biopsies. AI will spur a wave of social progress unmatched since the industrial revolution. THE BRAIN OF AI CARS. Autonomous vehicles will modernize the $10 trillion transportation industry. NVIDIA DRIVE™ is a scalable AI car platform that spans the entire range of autonomous driving. 225 companies around the world have adopted the platform, ranging from car companies and suppliers, to startups and research organizations. THE BRAIN OF INTELLIGENT MACHINES AND IoT, Deep learning and affordable sensors have created the conditions for a Cambrian explosion of autonomous machines — IoT with AI. NVIDIA Jetson TX2, an embedded AI supercomputer, delivers 1 teraflops of performance in a credit card-sized module. Such power will enable a new wave of automation in manufacturing, drones that can inspect hazardous places, and robots that can deliver the millions of packages shipped every day

# . Recent Developments: AMD (**Advanced Micro Devices**)

AMD Radeon RX 5700 Series Graphics and AMD Ryzen 3000 Series Desktop Processors Worldwide Marketed.07/07/2019, AMD (NASDAQ: AMD) Announces New AMD Radeon RX 5700 Series Graphics and Third Generation AMD Ryzen desktop processor's top computer game platform is available worldwide simultaneously. Together, these products push game performance, immersive experiences, and visual fidelity to the next level. The AMD Radeon RX 5700 Series graphics card redefines the possibilities of 1440p games. The new graphics card is based on a groundbreaking new AMD RDNA game architecture and 7nm process technology that delivers superior visual fidelity, lightning-fast performance and advanced features to power the latest AAA-class and competitive games. The third-generation AMD Ryzen desktop processor is another powerful example of AMD's technological leadership, with a 12-core 24-thread design and the first high-performance 7nm processor in the consumer-grade desktop market. Designed based on the new "Zen2" microarchitecture architecture, the processor enhances multiple features while continuing the traditional high-performance "Zen" architecture, with an approximately 15% improvement in IPC (instructions per clock cycle), higher gaming performance and faster content creation.

Appendix

Table 1-Return for AMD and NVIDIA (Oct' 14-Sept' 19)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | AMD-Adj Close | AMD Return | NVIDIA-Adj Close | NVIDIA Return |
| Oct-14 | 2.80 | -0.36% | 18.77 | 7.32% |
| Nov-14 | 2.79 | -4.30% | 20.15 | -3.98% |
| Dec-14 | 2.67 | -3.75% | 19.34 | -4.24% |
| Jan-15 | 2.57 | 21.01% | 18.52 | 14.90% |
| Feb-15 | 3.11 | -13.83% | 21.28 | -4.76% |
| Mar-15 | 2.68 | -15.67% | 20.27 | 6.07% |
| Apr-15 | 2.26 | 0.88% | 21.50 | -0.32% |
| May-15 | 2.28 | 5.26% | 21.43 | -8.71% |
| Jun-15 | 2.40 | -19.58% | 19.57 | -0.80% |
| Jul-15 | 1.93 | -7.77% | 19.41 | 12.68% |
| Aug-15 | 1.78 | -3.37% | 21.87 | 10.11% |
| Sep-15 | 1.72 | 23.26% | 24.08 | 15.09% |
| Oct-15 | 2.12 | 11.32% | 27.72 | 11.81% |
| Nov-15 | 2.36 | 21.61% | 30.99 | 4.30% |
| Dec-15 | 2.87 | -23.34% | 32.33 | -11.13% |
| Jan-16 | 2.20 | -2.73% | 28.73 | 7.07% |
| Feb-16 | 2.14 | 33.18% | 30.76 | 14.03% |
| Mar-16 | 2.85 | 24.56% | 35.07 | -0.28% |
| Apr-16 | 3.55 | 28.73% | 34.97 | 31.49% |
| May-16 | 4.57 | 12.47% | 45.99 | 0.88% |
| Jun-16 | 5.14 | 33.46% | 46.39 | 21.46% |
| Jul-16 | 6.86 | 7.87% | 56.35 | 7.43% |
| Aug-16 | 7.40 | -6.62% | 60.54 | 11.91% |
| Sep-16 | 6.91 | 4.63% | 67.75 | 3.85% |
| Oct-16 | 7.23 | 23.24% | 70.36 | 29.57% |
| Nov-16 | 8.91 | 27.27% | 91.16 | 15.94% |
| Dec-16 | 11.34 | -8.55% | 105.70 | 2.29% |
| Jan-17 | 10.37 | 39.44% | 108.11 | -7.05% |
| Feb-17 | 14.46 | 0.62% | 100.49 | 7.48% |
| Mar-17 | 14.55 | -8.59% | 108.00 | -4.25% |
| Apr-17 | 13.30 | -15.86% | 103.41 | 38.40% |
| May-17 | 11.19 | 11.53% | 143.12 | 0.25% |
| Jun-17 | 12.48 | 9.05% | 143.48 | 12.42% |
| Jul-17 | 13.61 | -4.34% | 161.29 | 4.26% |
| Aug-17 | 13.02 | -2.07% | 168.17 | 5.60% |
| Sep-17 | 12.75 | -13.80% | 177.59 | 15.68% |
| Oct-17 | 10.99 | -0.91% | 205.44 | 2.32% |
| Nov-17 | 10.89 | -5.60% | 210.21 | -8.49% |
| Dec-17 | 10.28 | 33.66% | 192.35 | 27.03% |
| Jan-18 | 13.74 | -11.86% | 244.34 | -1.55% |
| Feb-18 | 12.11 | -17.01% | 240.57 | -4.24% |
| Mar-18 | 10.05 | 8.26% | 230.36 | -2.89% |
| Apr-18 | 10.88 | 26.19% | 223.71 | 12.13% |
| May-18 | 13.73 | 9.18% | 250.85 | -6.00% |
| Jun-18 | 14.99 | 22.28% | 235.79 | 3.36% |
| Jul-18 | 18.33 | 37.32% | 243.71 | 14.63% |
| Aug-18 | 25.17 | 22.73% | 279.36 | 0.18% |
| Sep-18 | 30.89 | -41.05% | 279.85 | -24.98% |
| Oct-18 | 18.21 | 16.97% | 209.95 | -22.48% |
| Nov-18 | 21.30 | -13.33% | 162.75 | -18.23% |
| Dec-18 | 18.46 | 32.23% | 133.08 | 7.68% |
| Jan-19 | 24.41 | -3.61% | 143.30 | 7.31% |
| Feb-19 | 23.53 | 8.46% | 153.77 | 16.52% |
| Mar-19 | 25.52 | 8.27% | 179.18 | 0.80% |
| Apr-19 | 27.63 | -0.80% | 180.61 | -25.16% |
| May-19 | 27.41 | 10.80% | 135.17 | 21.38% |
| Jun-19 | 30.37 | 0.26% | 164.07 | 2.73% |
| Jul-19 | 30.45 | 3.28% | 168.55 | -0.72% |
| Aug-19 | 31.45 | -2.83% | 167.34 | 6.76% |
| Sep-19 | 30.56 | -100.00% | 178.65 | -100.00% |

Table 2-AMD-INCOME STATEMENT

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| AMD-INCOME STATEMENT | 2014 | 2015 | 2016 | 2017 | 2018 |
| Gross Profit | 1,839,000,000 | 1,080,000,000 | 998,000,000 | 1,823,000,000 | 2,447,000,000 |
| Total Revenue | 5,506,000,000 | 3,991,000,000 | 4,272,000,000 | 5,329,000,000 | 6,475,000,000 |
| Business Revenue | 5,506,000,000 | 3,991,000,000 | 4,272,000,000 | 5,329,000,000 | 6,475,000,000 |
| Other Revenue | 0 | 0 |  |  |  |
| Cost of Revenue | -3,667,000,000 | -2,911,000,000 | -3,274,000,000 | -3,506,000,000 | -4,028,000,000 |
| Cost of Goods and Services | -3,667,000,000 | -2,911,000,000 | -3,274,000,000 | -3,506,000,000 | -4,028,000,000 |
| Operating Income/Expenses | -1,690,000,000 | -1,432,000,000 | -1,380,000,000 | -1,619,000,000 | -1,996,000,000 |
| Selling, General and Administrative Expenses | -604,000,000 | -482,000,000 | -460,000,000 | -511,000,000 | -562,000,000 |
| Research and Development Expenses | -1,072,000,000 | -947,000,000 | -1,008,000,000 | -1,160,000,000 | -1,434,000,000 |
| Other Income/Expense, Operating |  |  | 88,000,000 | 52,000,000 | 0 |
| Other Income, Operating |  |  | 88,000,000 | 52,000,000 | 0 |
| Depreciation, Amortization and Depletion | -14,000,000 | -3,000,000 | 0 |  |  |
| Depreciation and Amortization | -14,000,000 | -3,000,000 | 0 |  |  |
| Amortization | -14,000,000 | -3,000,000 | 0 |  |  |
| Total Operating Profit/Loss | 149,000,000 | -352,000,000 | -382,000,000 | 204,000,000 | 451,000,000 |
| Non-Operating Income/Expenses, Total | -547,000,000 | -294,000,000 | -66,000,000 | -135,000,000 | -121,000,000 |
| Total Net Finance Income/Expense | -174,000,000 | -160,000,000 | -154,000,000 | -120,000,000 | -103,000,000 |
| Net Interest Income/Expense | -174,000,000 | -160,000,000 | -154,000,000 | -120,000,000 | -103,000,000 |
| Interest Expense Net of Capitalized Interest | -177,000,000 | -160,000,000 | -156,000,000 | -126,000,000 | -121,000,000 |
| Interest Income | 3,000,000 |  | 2,000,000 | 6,000,000 | 18,000,000 |
| Irregular Income/Expenses | -365,000,000 | -129,000,000 | -58,000,000 | -12,000,000 | -12,000,000 |
| Gain/Loss on Extinguishment of Debt | -61,000,000 | 0 | -68,000,000 | -12,000,000 | -12,000,000 |
| Restructuring and Reorganization Income/Expense | -71,000,000 | -129,000,000 | 10,000,000 |  | 0 |
| Goodwill Impairment/Write Off | -233,000,000 |  | 0 |  |  |
| Impairment/Write Off/Write Down of Other Assets | 0 |  |  |  |  |
| Litigation Income/Expense | 0 |  |  |  |  |
| Other Irregular Income/Expenses |  |  |  |  |  |
| Impairment/Write Off/Write Down of Capital Assets |  |  |  |  |  |
| Other Income/Expense, Non-Operating | -8,000,000 | -5,000,000 | 0 | -6,000,000 | -6,000,000 |
| Net Investment Income |  |  | 146,000,000 | 3,000,000 |  |
| Income from Associates, Joint Ventures and Other Participating Interests |  |  | 146,000,000 | 3,000,000 |  |
| Pretax Income | -398,000,000 | -646,000,000 | -448,000,000 | 69,000,000 | 330,000,000 |
| Provision for Income Tax | -5,000,000 | -14,000,000 | -39,000,000 | -19,000,000 | 9,000,000 |
| Earnings from Equity Interest, Post-Tax |  |  | -10,000,000 | -7,000,000 | -2,000,000 |
| Net Income from Continuing Operations | -403,000,000 | -660,000,000 | -497,000,000 | 43,000,000 | 337,000,000 |
| Net Income after Extraordinary Items and Discontinued Operations | -403,000,000 | -660,000,000 | -497,000,000 | 43,000,000 | 337,000,000 |
| Net Income after Non-Controlling/Minority Interests | -403,000,000 | -660,000,000 | -497,000,000 | 43,000,000 | 337,000,000 |
| Net Income Available to Common Stockholders | -403,000,000 | -660,000,000 | -497,000,000 | 43,000,000 | 337,000,000 |
| Diluted Net Income Available to Common Stockholders | -403,000,000 | -660,000,000 | -497,000,000 | 43,000,000 | 337,000,000 |
| Discontinued Operations |  |  |  |  |  |
| Non-Controlling/Minority Interests |  |  |  |  |  |
| Preferred/Other Stock Distribution |  |  |  |  |  |
| Preferred Stock Dividends |  |  |  |  |  |
| Reported Total Revenue | 5,506,000,000 | 3,991,000,000 | 4,272,000,000 | 5,329,000,000 | 6,475,000,000 |
| Reported Total Operating Profit/Loss | -155,000,000 | -481,000,000 | -372,000,000 | 204,000,000 | 451,000,000 |

Table 3-NVIDIA-INCOME STATEMENT

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NVIDIA-INCOME STATEMENT | 2015 | 2016 | 2017 | 2018 | 2019 |
| Gross Profit | 2,599,477,000 | 2,811,000,000 | 4,063,000,000 | 5,822,000,000 | 7,171,000,000 |
| Total Revenue | 4,681,507,000 | 5,010,000,000 | 6,910,000,000 | 9,714,000,000 | 11,716,000,000 |
| Business Revenue | 4,681,507,000 | 5,010,000,000 | 6,910,000,000 | 9,714,000,000 | 11,716,000,000 |
| Cost of Revenue | -2,082,030,000 | -2,199,000,000 | -2,847,000,000 | -3,892,000,000 | -4,545,000,000 |
| Operating Income/Expenses | -1,840,488,000 | -1,933,000,000 | -2,126,000,000 | -2,612,000,000 | -3,367,000,000 |
| Selling, General and Administrative Expenses | -480,763,000 | -602,000,000 | -663,000,000 | -815,000,000 | -991,000,000 |
| Research and Development Expenses | -1,359,725,000 | -1,331,000,000 | -1,463,000,000 | -1,797,000,000 | -2,376,000,000 |
| Other Income/Expense, Operating |  |  |  |  |  |
| Total Operating Profit/Loss | 758,989,000 | 878,000,000 | 1,937,000,000 | 3,210,000,000 | 3,804,000,000 |
| Non-Operating Income/Expenses, Total | -4,153,000 | -135,000,000 | -32,000,000 | -14,000,000 | 92,000,000 |
| Total Net Finance Income/Expense | -18,043,000 | -8,000,000 | -4,000,000 | 8,000,000 | 78,000,000 |
| Net Interest Income/Expense | -18,043,000 | -8,000,000 | -4,000,000 | 8,000,000 | 78,000,000 |
| Interest Expense Net of Capitalized Interest | -46,133,000 | -47,000,000 | -58,000,000 | -61,000,000 | -58,000,000 |
| Interest Income | 28,090,000 | 39,000,000 | 54,000,000 | 69,000,000 | 136,000,000 |
| Irregular Income/Expenses |  | -131,000,000 | -3,000,000 | 0 | 0 |
| Restructuring and Reorganization Income/Expense |  | -131,000,000 | -3,000,000 | 0 | 0 |
| Litigation Income/Expense |  |  |  |  |  |
| Other Irregular Income/Expenses |  |  |  |  |  |
| Other Income/Expense, Non-Operating | 13,890,000 | 4,000,000 | -25,000,000 | -22,000,000 | 14,000,000 |
| Pretax Income | 754,836,000 | 743,000,000 | 1,905,000,000 | 3,196,000,000 | 3,896,000,000 |
| Provision for Income Tax | -124,249,000 | -129,000,000 | -239,000,000 | -149,000,000 | 245,000,000 |
| Net Income from Continuing Operations | 630,587,000 | 614,000,000 | 1,666,000,000 | 3,047,000,000 | 4,141,000,000 |
| Net Income after Extraordinary Items and Discontinued Operations | 630,587,000 | 614,000,000 | 1,666,000,000 | 3,047,000,000 | 4,141,000,000 |
| Net Income after Non-Controlling/Minority Interests | 630,587,000 | 614,000,000 | 1,666,000,000 | 3,047,000,000 | 4,141,000,000 |
| Net Income Available to Common Stockholders | 630,587,000 | 614,000,000 | 1,666,000,000 | 3,047,000,000 | 4,141,000,000 |
| Diluted Net Income Available to Common Stockholders | 630,587,000 | 614,000,000 | 1,666,000,000 | 3,047,000,000 | 4,141,000,000 |
| Reported Total Revenue | 4,681,507,000 | 5,010,000,000 | 6,910,000,000 | 9,714,000,000 | 11,716,000,000 |
| Reported Operating Expense | -1,840,488,000 | -2,064,000,000 | -2,129,000,000 | -2,612,000,000 | -3,367,000,000 |
| Reported Total Operating Profit/Loss | 758,989,000 | 747,000,000 | 1,934,000,000 | 3,210,000,000 | 3,804,000,000 |
| Reported Normalized Income | 800,988,000 | 929,000,000 | 1,851,000,000 | 3,085,000,000 | 4,143,000,000 |
| Reported Effective Tax Rate | 0 | 0 | 0 | 0 | 0 |
| Reported Normalized Operating Profit |  | 1,125,000,000 | 2,221,000,000 | 3,617,000,000 | 4,407,000,000 |

Table 4-AMD-BALANCE SHEET

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| AMD-BALANCE SHEET | 2014 | 2015 | 2016 | 2017 | 2018 |
| Total Assets | 3,767,000,000 | 3,109,000,000 | 3,321,000,000 | 3,540,000,000 | 4,556,000,000 |
| Total Current Assets | 2,736,000,000 | 2,320,000,000 | 2,530,000,000 | 2,622,000,000 | 3,540,000,000 |
| Cash, Cash Equivalents and Short-Term Investments | 1,040,000,000 | 785,000,000 | 1,264,000,000 | 1,185,000,000 | 1,156,000,000 |
| Cash and Cash Equivalents | 805,000,000 | 785,000,000 | 1,264,000,000 | 1,185,000,000 | 1,078,000,000 |
| Cash |  | 409,000,000 | 67,000,000 | 108,000,000 | 315,000,000 |
| Cash Equivalents |  | 376,000,000 | 1,197,000,000 | 1,077,000,000 | 763,000,000 |
| Short Term Investments | 235,000,000 | 0 |  |  | 78,000,000 |
| Inventories | 685,000,000 | 678,000,000 | 751,000,000 | 739,000,000 | 845,000,000 |
| Raw Materials, Consumables and Supplies | 40,000,000 | 16,000,000 | 11,000,000 | 34,000,000 | 134,000,000 |
| Work-in-Process | 431,000,000 | 482,000,000 | 564,000,000 | 468,000,000 | 354,000,000 |
| Finished Goods and Merchandise | 214,000,000 | 180,000,000 | 176,000,000 | 237,000,000 | 357,000,000 |
| Trade and Other Receivables, Current | 818,000,000 | 533,000,000 | 311,000,000 | 400,000,000 | 1,235,000,000 |
| Trade/Accounts Receivable, Current | 818,000,000 | 533,000,000 | 311,000,000 | 400,000,000 | 1,235,000,000 |
| Gross Trade/Accounts Receivable, Current |  |  |  |  |  |
| Allowance/Adjustments for Trade/Accounts Receivable, Current |  |  |  |  |  |
| Prepayments and Deposits, Current | 193,000,000 | 76,000,000 | 95,000,000 | 110,000,000 | 109,000,000 |
| Other Current Assets |  | 65,000,000 | 109,000,000 | 188,000,000 | 195,000,000 |
| Assets Held for Sale/Discontinued Operations, Current |  | 183,000,000 | 0 |  |  |
| Deferred Tax Assets, Current |  |  |  |  |  |
| Deferred Costs/Assets, Current |  |  |  |  |  |
| Total Non-Current Assets | 1,031,000,000 | 789,000,000 | 791,000,000 | 918,000,000 | 1,016,000,000 |
| Net Property, Plant and Equipment | 302,000,000 | 188,000,000 | 164,000,000 | 261,000,000 | 348,000,000 |
| Gross Property, Plant and Equipment | 1,680,000,000 | 984,000,000 | 881,000,000 | 1,001,000,000 | 1,055,000,000 |
| Properties | 250,000,000 | 146,000,000 | 148,000,000 | 187,000,000 | 179,000,000 |
| Leasehold and Improvements |  |  | 148,000,000 | 187,000,000 | 179,000,000 |
| Land and Improvements | 4,000,000 | 1,000,000 |  |  |  |
| Buildings and Improvements | 246,000,000 | 145,000,000 |  |  |  |
| Machinery, Furniture and Equipment | 1,416,000,000 | 821,000,000 | 714,000,000 | 758,000,000 | 798,000,000 |
| Other Equipment | 1,416,000,000 | 821,000,000 | 714,000,000 | 758,000,000 | 798,000,000 |
| Construction in Progress and Advance Payments | 14,000,000 | 17,000,000 | 19,000,000 | 56,000,000 | 78,000,000 |
| Accumulated Depreciation and Impairment | -1,378,000,000 | -796,000,000 | -717,000,000 | -740,000,000 | -707,000,000 |
| Accumulated Depreciation | -1,378,000,000 | -796,000,000 | -717,000,000 | -740,000,000 | -707,000,000 |
| Net Intangible Assets | 604,000,000 | 467,000,000 | 521,000,000 | 528,000,000 | 515,000,000 |
| Gross Goodwill and Other Intangible Assets | 1,008,000,000 | 936,000,000 | 521,000,000 | 528,000,000 | 515,000,000 |
| Goodwill | 320,000,000 | 278,000,000 | 289,000,000 | 289,000,000 | 289,000,000 |
| Intangibles other than Goodwill | 688,000,000 | 658,000,000 | 232,000,000 | 239,000,000 | 226,000,000 |
| Software and Technology | 477,000,000 | 447,000,000 | 232,000,000 | 239,000,000 | 226,000,000 |
| Trademarks and Patents | 37,000,000 | 37,000,000 |  |  |  |
| Research and Development | 6,000,000 | 6,000,000 |  |  |  |
| Customer Relationships | 168,000,000 | 168,000,000 |  |  |  |
| Licenses and Rights |  |  |  |  |  |
| Other Intangible Assets |  |  |  |  |  |
| Accumulated Amortization and Impairment | -404,000,000 | -469,000,000 |  |  |  |
| Accumulated Amortization of Intangible Assets | -404,000,000 | -407,000,000 |  |  |  |
| Accumulated Amortization of Intangibles other than Goodwill | -404,000,000 | -407,000,000 |  |  |  |
| Accumulated Amortization of Trademarks and Patents | -36,000,000 | -36,000,000 |  |  |  |
| Accumulated Amortization of Software and Technology | -201,000,000 | -204,000,000 |  |  |  |
| Accumulated Amortization of Research and Development | 0 | 0 |  |  |  |
| Accumulated Amortization of Customer Relationships | -167,000,000 | -167,000,000 |  |  |  |
| Accumulated Impairment of Intangible Assets |  | -62,000,000 |  |  |  |
| Accumulated Impairment of Other Intangible Assets |  | -62,000,000 |  |  |  |
| Total Long Term Investments | 0 |  | 59,000,000 | 58,000,000 | 58,000,000 |
| Long Term Equity Investments |  |  | 59,000,000 | 58,000,000 | 58,000,000 |
| Investment in Financial Assets, Non-Current | 0 |  |  |  |  |
| Other Non-Current Assets | 125,000,000 | 134,000,000 | 47,000,000 | 71,000,000 | 95,000,000 |
| Total Liabilities | 3,580,000,000 | 3,521,000,000 | 2,905,000,000 | 2,929,000,000 | 3,290,000,000 |
| Total Current Liabilities | 1,440,000,000 | 1,403,000,000 | 1,346,000,000 | 1,486,000,000 | 1,984,000,000 |
| Payables and Accrued Expenses, Current | 1,052,000,000 | 901,000,000 | 1,098,000,000 | 1,131,000,000 | 1,588,000,000 |
| Trade and Other Payables, Current | 672,000,000 | 574,000,000 | 847,000,000 | 837,000,000 | 1,089,000,000 |
| Trade/Accounts Payable, Current | 415,000,000 | 279,000,000 | 440,000,000 | 384,000,000 | 528,000,000 |
| Amount Due to Related Parties/Shareholders, Current | 218,000,000 | 245,000,000 | 383,000,000 | 412,000,000 | 533,000,000 |
| Other Payable, Current | 39,000,000 | 50,000,000 | 24,000,000 | 41,000,000 | 28,000,000 |
| Accrued Expenses, Current | 380,000,000 | 327,000,000 | 251,000,000 | 294,000,000 | 499,000,000 |
| Financial Liabilities, Current | 177,000,000 | 230,000,000 | 0 | 70,000,000 | 136,000,000 |
| Current Debt and Capital Lease Obligation | 177,000,000 | 230,000,000 | 0 | 70,000,000 | 136,000,000 |
| Current Debt | 177,000,000 | 230,000,000 | 0 | 70,000,000 | 136,000,000 |
| Current Portion of Long Term Debt and Capital Lease |  |  |  |  |  |
| Provisions, Current | 139,000,000 | 95,000,000 | 116,000,000 | 206,000,000 | 236,000,000 |
| Provision for Employee Entitlements, Current | 139,000,000 | 95,000,000 | 116,000,000 | 206,000,000 | 236,000,000 |
| Other Current Liabilities |  | 45,000,000 | 69,000,000 | 57,000,000 | 24,000,000 |
| Deferred Liabilities, Current | 72,000,000 | 53,000,000 | 63,000,000 | 22,000,000 |  |
| Deferred Income/Customer Advances/Billings in Excess of Cost, Current | 72,000,000 | 53,000,000 | 63,000,000 | 22,000,000 |  |
| Liabilities Held for Sale/Discontinued Operations, Current |  | 79,000,000 | 0 |  |  |
| Total Non-Current Liabilities | 2,140,000,000 | 2,118,000,000 | 1,559,000,000 | 1,443,000,000 | 1,306,000,000 |
| Financial Liabilities, Non-Current | 2,035,000,000 | 2,032,000,000 | 1,435,000,000 | 1,325,000,000 | 1,114,000,000 |
| Long Term Debt and Capital Lease Obligation | 2,035,000,000 | 2,032,000,000 | 1,435,000,000 | 1,325,000,000 | 1,114,000,000 |
| Long Term Debt | 2,035,000,000 | 2,032,000,000 | 1,435,000,000 | 1,325,000,000 | 1,114,000,000 |
| Notes Payables, Non-Current |  |  | 1,459,000,000 |  |  |
| Bank/Credit Facilities, Non-Current |  |  | 0 |  |  |
| Other Loans, Non-Current |  |  | -24,000,000 |  |  |
| Other Non-Current Liabilities | 105,000,000 | 86,000,000 | 124,000,000 | 118,000,000 | 192,000,000 |
| Tax Liabilities, Non-Current |  |  |  |  |  |
| Deferred Tax Liabilities, Non-Current |  |  |  |  |  |
| Total Equity | 187,000,000 | -412,000,000 | 416,000,000 | 611,000,000 | 1,266,000,000 |
| Equity Attributable to Parent Stockholders | 187,000,000 | -412,000,000 | 416,000,000 | 611,000,000 | 1,266,000,000 |
| Paid in Capital | 6,838,000,000 | 6,902,000,000 | 8,224,000,000 | 8,365,000,000 | 8,710,000,000 |
| Capital Stock | 6,957,000,000 | 7,025,000,000 | 8,343,000,000 | 8,473,000,000 | 8,760,000,000 |
| Common Stock | 8,000,000 | 8,000,000 | 9,000,000 | 9,000,000 | 10,000,000 |
| Common Stock, with Par Value | 8,000,000 | 8,000,000 | 9,000,000 | 9,000,000 | 10,000,000 |
| Additional Paid in Capital/Share Premium | 6,949,000,000 | 7,017,000,000 | 8,334,000,000 | 8,464,000,000 | 8,750,000,000 |
| Treasury Stock | -119,000,000 | -123,000,000 | -119,000,000 | -108,000,000 | -50,000,000 |
| Retained Earnings/Accumulated Deficit | -6,646,000,000 | -7,306,000,000 | -7,803,000,000 | -7,760,000,000 | -7,436,000,000 |
| Reserves/Accumulated Comprehensive Income/Losses | -5,000,000 | -8,000,000 | -5,000,000 | 6,000,000 | -8,000,000 |
| Non-Controlling/Minority Interests |  |  |  |  |  |
| Common Shares Issued | 776,000,000 | 792,397,854 | 935,000,000 | 967,000,000 | 1,005,000,000 |
| Common Shares Outstanding | 776,000,000 | 792,397,854 | 935,000,000 | 967,000,000 | 1,005,000,000 |
| Common Shares Treasury | 12,000,000 | 14,000,000 | 14,000,000 | 12,000,000 | 5,000,000 |

Table 5-NVIDIA-BALANCE SHEET

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NVIDIA-BALANCE SHEET | 2015 | 2016 | 2017 | 2018 | 2019 |
| Total Assets | 7,201,368,000 | 7,370,000,000 | 9,841,000,000 | 11,241,000,000 | 13,292,000,000 |
| Total Current Assets | 5,713,297,000 | 6,053,000,000 | 8,536,000,000 | 9,255,000,000 | 10,557,000,000 |
| Cash, Cash Equivalents and Short-Term Investments | 4,623,339,000 | 5,037,000,000 | 6,798,000,000 | 7,108,000,000 | 7,422,000,000 |
| Cash and Cash Equivalents | 496,654,000 | 596,000,000 | 1,766,000,000 | 4,002,000,000 | 782,000,000 |
| Short Term Investments | 4,126,685,000 | 4,441,000,000 | 5,032,000,000 | 3,106,000,000 | 6,640,000,000 |
| Available-for-Sale Securities, Current | 4,126,685,000 | 4,441,000,000 | 5,032,000,000 | 3,106,000,000 | 6,640,000,000 |
| Inventories | 482,893,000 | 418,000,000 | 794,000,000 | 796,000,000 | 1,575,000,000 |
| Raw Materials, Consumables and Supplies | 156,846,000 | 105,000,000 | 252,000,000 | 227,000,000 | 613,000,000 |
| Work-in-Process | 91,778,000 | 103,000,000 | 176,000,000 | 192,000,000 | 238,000,000 |
| Finished Goods and Merchandise | 234,269,000 | 210,000,000 | 366,000,000 | 377,000,000 | 724,000,000 |
| Trade and Other Receivables, Current | 473,637,000 | 505,000,000 | 826,000,000 | 1,265,000,000 | 1,424,000,000 |
| Trade/Accounts Receivable, Current | 473,637,000 | 505,000,000 | 826,000,000 | 1,265,000,000 | 1,424,000,000 |
| Gross Trade/Accounts Receivable, Current | 490,619,000 | 516,000,000 | 839,000,000 | 1,278,000,000 |  |
| Allowance/Adjustments for Trade/Accounts Receivable, Current | -16,982,000 | -11,000,000 | -13,000,000 | -13,000,000 |  |
| Prepayments and Deposits, Current | 70,174,000 | 93,000,000 | 118,000,000 | 86,000,000 | 136,000,000 |
| Deferred Tax Assets, Current | 63,254,000 | 0 |  |  |  |
| Other Current Assets |  |  |  |  |  |
| Deferred Costs/Assets, Current |  |  |  |  |  |
| Total Non-Current Assets | 1,488,071,000 | 1,317,000,000 | 1,305,000,000 | 1,986,000,000 | 2,735,000,000 |
| Net Property, Plant and Equipment | 557,282,000 | 466,000,000 | 521,000,000 | 997,000,000 | 1,404,000,000 |
| Gross Property, Plant and Equipment | 1,179,257,000 | 1,100,000,000 | 1,191,000,000 | 1,737,000,000 | 2,171,000,000 |
| Properties | 411,455,000 | 405,000,000 | 407,000,000 | 764,000,000 | 820,000,000 |
| Land and Improvements | 218,496,000 | 218,000,000 | 218,000,000 | 218,000,000 | 218,000,000 |
| Buildings and Improvements | 19,268,000 | 13,000,000 | 13,000,000 | 348,000,000 | 339,000,000 |
| Leasehold and Improvements | 173,691,000 | 174,000,000 | 176,000,000 | 198,000,000 | 263,000,000 |
| Machinery, Furniture and Equipment | 711,711,000 | 655,000,000 | 727,000,000 | 914,000,000 | 1,216,000,000 |
| Furniture, Fixtures and Office Equipment | 314,392,000 | 301,000,000 | 300,000,000 | 452,000,000 | 700,000,000 |
| Other Equipment | 397,319,000 | 354,000,000 | 427,000,000 | 462,000,000 | 516,000,000 |
| Construction in Progress and Advance Payments | 27,610,000 | 12,000,000 | 29,000,000 | 31,000,000 | 107,000,000 |
| Leased Property, Plant and Equipment | 28,481,000 | 28,000,000 | 28,000,000 | 28,000,000 | 28,000,000 |
| Accumulated Depreciation and Impairment | -621,975,000 | -634,000,000 | -670,000,000 | -740,000,000 | -767,000,000 |
| Accumulated Depreciation | -621,975,000 | -634,000,000 | -670,000,000 | -740,000,000 | -767,000,000 |
| Net Intangible Assets | 839,893,000 | 784,000,000 | 722,000,000 | 670,000,000 | 663,000,000 |
| Gross Goodwill and Other Intangible Assets | 1,256,291,000 | 1,273,000,000 | 1,279,000,000 | 1,282,000,000 | 1,304,000,000 |
| Goodwill | 618,179,000 | 618,000,000 | 618,000,000 | 618,000,000 | 618,000,000 |
| Intangibles other than Goodwill | 638,112,000 | 655,000,000 | 661,000,000 | 664,000,000 | 686,000,000 |
| Trademarks and Patents | 448,873,000 | 462,000,000 | 468,000,000 | 469,000,000 | 491,000,000 |
| Other Intangible Assets | 189,239,000 | 193,000,000 | 193,000,000 | 195,000,000 | 195,000,000 |
| Licenses and Rights |  |  |  |  |  |
| Accumulated Amortization and Impairment | -416,398,000 | -489,000,000 | -557,000,000 | -612,000,000 | -641,000,000 |
| Accumulated Amortization of Intangible Assets | -416,398,000 | -489,000,000 | -557,000,000 | -612,000,000 | -641,000,000 |
| Accumulated Amortization of Intangibles other than Goodwill | -416,398,000 | -489,000,000 | -557,000,000 | -612,000,000 | -641,000,000 |
| Accumulated Amortization of Trademarks and Patents | -282,336,000 | -337,000,000 | -390,000,000 | -432,000,000 | -453,000,000 |
| Accumulated Amortization of Other Intangible Assets | -134,062,000 | -152,000,000 | -167,000,000 | -180,000,000 | -188,000,000 |
| Accumulated Amortization of Licences and Rights |  |  |  |  |  |
| Other Non-Current Assets | 90,896,000 | 67,000,000 | 62,000,000 | 319,000,000 | 668,000,000 |
| Total Long Term Investments |  |  |  |  |  |
| Other Investments, Non-Current |  |  |  |  |  |
| Prepayments and Deposits, Non-Current |  |  |  |  |  |
| Prepayments, Non-Current |  |  |  |  |  |
| Deposits Paid for Business and Fixed Assets, Non-Current |  |  |  |  |  |
| Deferred Tax Assets, Non-Current |  |  |  |  |  |
| Total Liabilities | 2,783,386,000 | 2,901,000,000 | 4,079,000,000 | 3,770,000,000 | 3,950,000,000 |
| Total Current Liabilities | 896,030,000 | 2,438,000,000 | 1,819,000,000 | 1,153,000,000 | 1,329,000,000 |
| Payables and Accrued Expenses, Current | 435,296,000 | 437,000,000 | 696,000,000 | 884,000,000 | 1,176,000,000 |
| Trade and Other Payables, Current | 298,575,000 | 301,000,000 | 518,000,000 | 658,000,000 | 622,000,000 |
| Trade/Accounts Payable, Current | 293,223,000 | 296,000,000 | 485,000,000 | 596,000,000 | 511,000,000 |
| Interest Payable, Current | 2,542,000 | 3,000,000 | 21,000,000 | 20,000,000 | 20,000,000 |
| Taxes Payable, Current | 2,810,000 | 2,000,000 | 4,000,000 | 33,000,000 | 91,000,000 |
| Other Payable, Current |  |  | 8,000,000 | 9,000,000 |  |
| Accrued Expenses, Current | 136,721,000 | 136,000,000 | 178,000,000 | 226,000,000 | 554,000,000 |
| Financial Liabilities, Current |  | 1,500,000,000 | 827,000,000 | 15,000,000 | 0 |
| Current Debt and Capital Lease Obligation |  | 1,500,000,000 | 827,000,000 | 15,000,000 | 0 |
| Current Portion of Long Term Debt and Capital Lease |  | 1,500,000,000 | 827,000,000 | 15,000,000 | 0 |
| Current Portion of Long Term Debt |  | 1,500,000,000 | 827,000,000 | 15,000,000 | 0 |
| Convertible Loans/Debentures, Current Portion of LT Debt |  | 1,500,000,000 | 827,000,000 | 15,000,000 | 0 |
| Deferred Liabilities, Current | 292,735,000 | 322,000,000 | 85,000,000 | 53,000,000 | 92,000,000 |
| Deferred Income/Customer Advances/Billings in Excess of Cost, Current | 292,735,000 | 322,000,000 | 85,000,000 | 53,000,000 | 92,000,000 |
| Other Current Liabilities | 167,999,000 | 179,000,000 | 211,000,000 | 201,000,000 | 61,000,000 |
| Total Non-Current Liabilities | 1,887,356,000 | 463,000,000 | 2,260,000,000 | 2,617,000,000 | 2,621,000,000 |
| Financial Liabilities, Non-Current | 1,398,428,000 | 17,000,000 | 1,989,000,000 | 1,985,000,000 | 1,988,000,000 |
| Long Term Debt and Capital Lease Obligation | 1,398,428,000 | 10,000,000 | 1,989,000,000 | 1,985,000,000 | 1,988,000,000 |
| Long Term Debt | 1,384,342,000 | 0 | 1,983,000,000 | 1,985,000,000 | 1,988,000,000 |
| Convertible Debentures/Loans, Non-Current | 1,384,342,000 | 0 |  |  | 1,988,000,000 |
| Notes Payables, Non-Current |  |  | 1,983,000,000 | 1,985,000,000 |  |
| Capital Lease Obligations, Non-Current | 14,086,000 | 10,000,000 | 6,000,000 |  |  |
| Derivative and Hedging Liabilities, Non-Current |  | 7,000,000 |  |  |  |
| Provisions, Non-Current | 7,428,000 | 1,000,000 |  | 12,000,000 | 20,000,000 |
| Provision for Employee Entitlements, Non-Current |  |  |  | 12,000,000 | 20,000,000 |
| Provision for Asset Retirement Obligation/Site Restoration and Rehabilitation, Non-Current | 7,428,000 | 1,000,000 |  |  |  |
| Tax Liabilities, Non-Current | 232,307,000 | 301,000,000 | 141,000,000 | 18,000,000 | 19,000,000 |
| Deferred Tax Liabilities, Non-Current | 232,307,000 | 301,000,000 | 141,000,000 | 18,000,000 | 19,000,000 |
| Deferred Liabilities, Non-Current | 107,838,000 | 44,000,000 | 4,000,000 | 24,000,000 | 67,000,000 |
| Deferred Income/Customer Advances/Billings in Excess of Cost, Non-Current | 107,838,000 | 44,000,000 | 4,000,000 | 15,000,000 | 46,000,000 |
| Other Deferred Liabilities, Non-Current |  |  |  | 9,000,000 | 21,000,000 |
| Payables and Accrued Expenses, Non-Current | 120,961,000 | 78,000,000 | 106,000,000 | 576,000,000 | 513,000,000 |
| Trade and Other Payables, Non-Current | 120,961,000 | 78,000,000 | 106,000,000 | 576,000,000 | 513,000,000 |
| Taxes Payable, Non-Current | 120,961,000 | 78,000,000 | 96,000,000 | 559,000,000 | 513,000,000 |
| Other Payables, Non-Current |  |  | 10,000,000 | 17,000,000 |  |
| Other Non-Current Liabilities | 20,394,000 | 22,000,000 | 20,000,000 | 2,000,000 | 14,000,000 |
| Total Equity | 4,417,982,000 | 4,469,000,000 | 5,762,000,000 | 7,471,000,000 | 9,342,000,000 |
| Equity Attributable to Parent Stockholders | 4,417,982,000 | 4,469,000,000 | 5,762,000,000 | 7,471,000,000 | 9,342,000,000 |
| Paid in Capital | 461,261,000 | 123,000,000 | -330,000,000 | -1,298,000,000 | -3,211,000,000 |
| Capital Stock | 3,855,846,000 | 4,171,000,000 | 4,709,000,000 | 5,352,000,000 | 6,052,000,000 |
| Common Stock | 754,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 |
| Common Stock, with Par Value | 754,000 | 1,000,000 | 1,000,000 | 1,000,000 | 1,000,000 |
| Preferred Stock | 0 | 0 | 0 | 0 | 0 |
| Additional Paid in Capital/Share Premium | 3,855,092,000 | 4,170,000,000 | 4,708,000,000 | 5,351,000,000 | 6,051,000,000 |
| Treasury Stock | -3,394,585,000 | -4,048,000,000 | -5,039,000,000 | -6,650,000,000 | -9,263,000,000 |
| Retained Earnings/Accumulated Deficit | 3,948,877,000 | 4,350,000,000 | 6,108,000,000 | 8,787,000,000 | 12,565,000,000 |
| Reserves/Accumulated Comprehensive Income/Losses | 7,844,000 | -4,000,000 | -16,000,000 | -18,000,000 | -12,000,000 |
| Common Shares Issued | 544,913,000 | 538,000,000 | 585,000,000 | 606,000,000 | 606,000,000 |
| Common Shares Outstanding | 544,913,000 | 538,000,000 | 585,000,000 | 606,000,000 | 606,000,000 |
| Common Shares Treasury | 213,959,000 | 242,000,000 | 283,000,000 | 326,000,000 | 0 |

# Financial Statement Analysis

AMD and Nvidia's financial earnings contrast sharply. Nvidia has made significant progress in revenue growth and profitability, while AMD's computing and graphics divisions have stagnated and continued to lose money. AMD's performance this year is in stark contrast to the expectations and beliefs of its supporters and investors. AMD has launched a war with Polaris architecture GPUs as its main weapon and Nvidia, not just for PC users and gamers, but also for investors to regain confidence in AMD. Adm’s financial position is not as optimistic as NVIDIA's, according to the company's recent earnings reports.

It's not optimistic, but AMD's last-minute move surprised NVIDIA. In July 2019, the game world will see the war between GPUs, but it's likely that we'll only see two separate GPU giants, Nvidia and AMD. On the E3 on June 10, AMD announced that July 7 will be an important day in its history as it will launch the industry's first 7nm gaming CPU and GPU, which says the 7nm Navi GPU will have a price and performance advantage over Nvidia's mid-range RTX 2070 GPU. The announcement pushed AMD shares to a 13-year high. Less than a month later, on July 2nd Nvidia announced an upgrade to its Turing-based VERSION of the RTX GPU, which improved performance by an average of 15% compared to the standard version of the same price. This new Super series is superior to AMD's Radeon RX 5700 series in terms of performance and price. It seems AMD is ready for this. On July 5, two days before the Launch of the Nvidia GPU, it cut the price of the Radeon RX 5700 series by $50, offsetting the impact of the Nvidia "Super" version, according to foreign media. In June, AMD said its first Navi 10 would include two game GPUs-- the Radeon RX 5700 and 5700 XT, as well as a special 50th anniversary edition. At the time, it priced the GPUs $450, $380 and $500, respectively. However, a report by VideoCardz says AMD has reduced the price of its RX 5700 XT and anniversary version by $50 to $400 and $450, respectively, while the RX 5700 has been reduced by $30 to $350. The rumor sent Nvidia shares down 1.55 per cent on July 5. These price cuts will once again bring price and performance benefits to AMD's RX 5700 series GPUs, even surpassing Nvidia's upcoming super GPUs. On the E3, AMD says its Radeon RX 5700 XT performs better in game performance than Nvidia's mid-range RTX 2070 GPU and is $50 less expensive. However, AMD's GPUs lack real-time ray-tracing technology from The VItA RTX GPU.

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However, ray tracing has not yet been widely adopted, so this technical disadvantage should not have any impact on the sales of the RX 5700 GPU. To maintain its price and performance advantage, Nvidia has introduced the RTX 2060, 2070 and 2080 GPUs. The RTX 2060 Super GPU costs $50 more than the standard version. In response to Nvidia's super GPU, AMD reduced the price of its RX 5700 XT by $50. If we combine these two performance assessments, we can conclude that AMD's RTX 5700 XT GPU will provide better performance than NVIDIA's RTX 2060 Super (except for ray-tracing technology) for the equivalent of $399. AMD's RX 5700 graphics card went on sale on July 7, while Nvidia's RTX 2060 Super and 2070 Super cards were available on July 9. The mid-range GPU segment will show fierce competition in July. The ultimate winner of this price war will be gamers, who will perform better with less. Nvidia strategically launches its mid-range super card near AMD's 7nm Navi card to mitigate the latter's competitive impact in the mid-market.

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Nvidia set a release date for its high-end RTX 2080 Super card on July 23rd, priced at $699. The company has been rolling out this card because it will not face competitive pressure from AMD's graphics cards in this area. AMD's only high-end GPU, the Radeon VII ($699), matches the performance of the Nvidia Standard RTX 2080 GPU. Nvidia's RTX 2080 Super Card will offer a 15% performance improvement at the same price, providing a better price/performance ratio. AMD is touting its upcoming products. Its 7Nm Navi GPU has been the subject of rumors since last year. It confirmed its Navi GPU on Computex 2019 on May 27 and announced it on E3 on June 10. Nvidia remained silent on the news of the Super GPU lineup until July 2. Nvidia's super GPU trailer is planned to be released to spoil AMD's Navi debut and steal some of the limelight. It deliberately retains its additional performance gains, giving it the opportunity to roll out a refreshed version against AMD. It may launch a new super GPU lineup within one to two months of its announcement. AMD's GPU shipments grew from strong demand in the laptop space, especially gaming notebooks. AMD went further after the launch of its first graphics card in July. As one of the market front-market leaders, Nvidia was snapped up by AMD in the second quarter of 2019. However, in addition to integrating graphics processors and laptop graphics chips, it still dominates the discrete desktop graphics card market. AMD's share of the discrete desktop graphics market was 32.1% in the second quarter of 2019, according to Jon Peddie. Nvidia continues to dominate with a 67.9 per cent market share. However, Nvidia has been in trouble since October 2018 when the encryption bubble burst. Despite the losses, the company's share price quickly "rebounded" as it focused on high-demand markets such as automotive, artificial intelligence, data centers and professional visualization. Many institutional investors have also increased their stakes in Nvidia. The company's shares are up about 25.8 percent so far this year.

# Liquidity Ratios

**Table 6-NVIDIA and AMD Current Ratio and Quick Ratio**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Current Assets | Current Liabilities | Inventory | Current Ratio | Quick Ratio |
| NVIDIA |  |  |  |  |  |
| 2015 | $5,713,297,000 | $896,030,000 | $482,893,000 | 6.38 | 5.84 |
| 2016 | $6,053,000,000 | $2,438,000,000 | $418,000,000 | 2.48 | 2.31 |
| 2017 | $8,536,000,000 | $1,819,000,000 | $794,000,000 | 4.69 | 4.26 |
| 2018 | $9,255,000,000 | $1,153,000,000 | $796,000,000 | 8.03 | 7.34 |
| AMD |  |  |  |  |  |
| 2015 | $2,320,000,000 | $1,403,000,000 | $678,000,000 | 1.65 | 1.17 |
| 2016 | $2,530,000,000 | $1,346,000,000 | $751,000,000 | 1.88 | 1.32 |
| 2017 | $2,622,000,000 | $1,486,000,000 | $739,000,000 | 1.76 | 1.27 |
| 2018 | $3,540,000,000 | $1,984,000,000 | $845,000,000 | 1.78 | 1.36 |

# Debt Management Ratio

**Table 7-NVIDIA and AMD Debt/Equity**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Debt | Total Equity | Debt/Equity |
| NVIDIA |  |  |  |
| 2015 | $2,783,386,000 | $4,417,982,000 | 0.63 |
| 2016 | $2,901,000,000 | $4,469,000,000 | 0.65 |
| 2017 | $4,079,000,000 | $5,762,000,000 | 0.71 |
| 2018 | $3,770,000,000 | $7,471,000,000 | 0.50 |
| AMD |  |  |  |
| 2015 | $3,521,000,000 | $-412,000,000 | (8.55) |
| 2016 | $2,905,000,000 | $416,000,000 | 6.98 |
| 2017 | $2,929,000,000 | $611,000,000 | 4.79 |
| 2018 | $3,290,000,000 | $1,266,000,000 | 2.60 |

# Asset Management Ratio

**Table 8-NVIDIA and AMD Inventory, Accounts Receivable Days and Total Asset Turnover**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | COGS | Inventory | Accounts Receivable | Sales |
| NVIDIA |  |  |  |  |
| 2015 | $-2,082,030,000 | $482,893,000 | $473,637,000 | $4,681,507,000 |
| 2016 | $-2,199,000,000 | $418,000,000 | $505,000,000 | $5,010,000,000 |
| 2017 | $-2,847,000,000 | $794,000,000 | $826,000,000 | $6,910,000,000 |
| 2018 | $-3,892,000,000 | $796,000,000 | $1,265,000,000 | $9,714,000,000 |
| AMD |  |  |  |  |
| 2015 | $-2,911,000,000 | $678,000,000 | $533,000,000 | $3,991,000,000 |
| 2016 | $-3,274,000,000 | $751,000,000 | $311,000,000 | $4,272,000,000 |
| 2017 | $-3,506,000,000 | $739,000,000 | $400,000,000 | $5,329,000,000 |
| 2018 | $-4,028,000,000 | $845,000,000 | $1,235,000,000 | $6,475,000,000 |
|  |  |  |  |  |
|  | Total Assets | Inventory Turnover | Accounts Receivable Days | Total Asset Turnover |
| NVIDIA |  |  |  |  |
| 2015 | $7,201,368,000 | (4.31) | 36.93 | 0.65 |
| 2016 | $7,370,000,000 | (5.26) | 36.79 | 0.68 |
| 2017 | $9,841,000,000 | (3.59) | 43.63 | 0.70 |
| 2018 | $11,241,000,000 | (4.89) | 47.53 | 0.86 |
| AMD |  |  |  |  |
| 2015 | $3,109,000,000 | (4.29) | 48.75 | 1.28 |
| 2016 | $3,321,000,000 | (4.36) | 26.57 | 1.29 |
| 2017 | $3,540,000,000 | (4.74) | 27.40 | 1.51 |
| 2018 | $4,556,000,000 | (4.77) | 69.62 | 1.42 |

# Profitability Ratio

**Table 9-NVIDIA and AMD Profit Margin, ROA and ROE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Net Income | Sales | Total Asset | Total Equity |
| NVIDIA |  |  |  |  |
| 2015 | $1509672000 | $4,681,507,000 | $7,201,368,000 | $4,417,982,000 |
| 2016 | $614000000 | $5,010,000,000 | $7,370,000,000 | $4,469,000,000 |
| 2017 | $1666000000 | $6,910,000,000 | $9,841,000,000 | $5,762,000,000 |
| 2018 | $3047000000 | $9,714,000,000 | $11,241,000,000 | $7,471,000,000 |
| AMD |  |  |  |  |
| 2015 | $-660000000 | $3,991,000,000 | $3,109,000,000 | $-412,000,000 |
| 2016 | $-487000000 | $4,272,000,000 | $3,321,000,000 | $416,000,000 |
| 2017 | $50000000 | $5,329,000,000 | $3,540,000,000 | $611,000,000 |
| 2018 | $339000000 | $6,475,000,000 | $4,556,000,000 | $1,266,000,000 |
|  |  |  |  |  |
|  | Profit Margin | ROA | ROE |  |
| NVIDIA |  |  |  |  |
| 2015 | 0.32 | 0.21 | 0.34 |  |
| 2016 | 0.12 | 0.08 | 0.14 |  |
| 2017 | 0.24 | 0.17 | 0.29 |  |
| 2018 | 0.31 | 0.27 | 0.41 |  |
| AMD |  |  |  |  |
| 2015 | (0.17) | (0.21) | 1.60 |  |
| 2016 | (0.11) | (0.15) | (1.17) |  |
| 2017 | 0.01 | 0.01 | 0.08 |  |
| 2018 | 0.05 | 0.07 | 0.27 |  |

# DuPont Analysis

DuPont Analysis uses the relationship between several major financial ratios to analyze the financial position of a business in a comprehensive manner. It is a classic method used to evaluate the profitability and shareholder equity return level of the company and evaluate the performance of the company from a financial point of view. Its basic idea is to break down the return on net assets of enterprises into multiple financial ratios, which helps to analyze the business performance of enterprises in depth. The return on net assets is the starting point and core of the whole analysis system. The level of this indicator reflects the size of the investor's net asset profitability. The return on net assets is determined by the rate of return on sales, the turnover rate of total assets and the multiplier of equity. The equity factor indicates the degree of liability of the enterprise. The larger the indicator, the higher the liability of the enterprise, which is the inverse of the equity ratio of assets. The total asset return is the product of sales profit margin and total asset turnover rate, is the comprehensive reflection of the enterprise's sales achievement and asset operation, in order to improve the total asset return, we must increase the sales revenue and reduce the capital occupation. The turnover rate of total assets reflects the comprehensive ability of the enterprise's assets to achieve sales revenue. In the analysis, it is necessary to analyze the reasonable structure of enterprise assets, that is, the structural ratio relationship between current assets and long-term assets. At the same time, we should analyze the efficiency index of the use of assets such as current asset turnover rate, inventory turnover rate, accounts receivable turnover rate, etc., and find out the exact reason for the change in the turnover rate of total assets

**Table 10-NVIDIA and AMD DuPont Analysis**.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ROA | ROE | Total Asset/Total Equity | DuPont Identity |
| NVIDIA |  |  |  |  |
| 2015 | 0.21 | 0.34 | 1.63 | 0.12 |
| 2016 | 0.08 | 0.14 | 1.65 | 0.02 |
| 2017 | 0.17 | 0.29 | 1.71 | 0.08 |
| 2018 | 0.27 | 0.41 | 1.50 | 0.17 |
| AMD |  |  |  |  |
| 2015 | (0.21) | 1.60 | 1.63 | (0.55) |
| 2016 | (0.15) | (1.17) | 1.65 | 0.28 |
| 2017 | 0.01 | 0.08 | 1.71 | 0.00 |
| 2018 | 0.07 | 0.27 | 1.50 | 0.03 |

From DuPont analysis data, NVIDIA’s ROE from 2015 to 2018 is positive, while AMD's ROE in 2016 is negative. According to the 2015 NVIDIA and AMD ROE, AMD's ROE value is much higher than NVIDIA's, indicating that AMD's profitability was greater in 2015. Using the DuPont identity value, we can know that NVIDIA from 2015 to 2018 is on the rise, while AMD is the overall trend of decline, to increase the return on total assets, increase or decrease sales revenue, reduce the amount of capital occupied.

**Table 11-NVIDIA & AMD Bond Data**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Issuer Name | Maturity | Price | Yield | Amount Outstanding ( $ Million) | MV Debt | Weight | WA YTM |
| AMD | 08/15/2022 | 111.500 | 3.686% | 37.00 | $ 41.26 | 0.000012325 | 0.0000454% |
| AMD | 08/15/2022 | 112.750 | 2.762% | 346784.00 | $ 390,998.96 | 0.116814713 | 0.3226422% |
| AMD | 07/01/2024 | 104.000 | 4.420% | 231000.00 | $ 240,240.00 | 0.071774018 | 0.3172412% |
| AMD | 09/01/2026 | 400.000 | -18.135% | 678973.00 | $ 2,715,892.00 | 0.811398944 | -14.7147198% |
|  |  |  |  | Total | $ 3,347,172.22 | 1 | -14.07% |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Issuer Name | Maturity | Price | Yield | Amount Outstanding ( $ Million) | MV Debt | Weight | WA YTM |
| NVIDIA | 09/16/2021 | 100.529 | 1.90% | 1000000.00 | $ 1,005,290.00 | 0.488104371 | 0.92837% |
| NVIDIA | 09/16/2026 | 105.429 | 2.32% | 1000000.00 | $ 1,054,290.00 | 0.511895629 | 1.18504% |
|  |  |  |  | Total | $ 2,059,580.00 | 1 | 2.11% |

**Table 12- NVIDIA &AMD Stock Price and Return**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | NVIDIA | | AMD | | S&P 500 | |  |
| Date | NVIDIA Adj Close | NVIDIA Return | AMD Adj Close | AMD Return | S&P Adj Close | S&P Return | Risk Free |
| 2019/8/1 | 167.3443 | -0.72% | 31.4500 | 3.28% | 2926.4600 | -1.81% | -0.1520% |
| 2019/7/1 | 168.5531 | 2.73% | 30.4500 | 0.26% | 2980.3799 | 1.31% | 0.1087% |
| 2019/6/1 | 164.0676 | 21.38% | 30.3700 | 10.80% | 2941.7600 | 6.89% | 0.5570% |
| 2019/5/1 | 135.1718 | -25.16% | 27.4100 | -0.80% | 2752.0601 | -6.58% | -0.5654% |
| 2019/4/1 | 180.6149 | 0.80% | 27.6300 | 8.27% | 2945.8301 | 3.93% | 0.3219% |
| 2019/3/1 | 179.1779 | 16.52% | 25.5200 | 8.46% | 2834.3999 | 1.79% | 0.1482% |
| 2019/2/1 | 153.7733 | 7.31% | 23.5300 | -3.61% | 2784.4900 | 2.97% | 0.2444% |
| 2019/1/1 | 143.2964 | 7.68% | 24.4100 | 32.23% | 2704.1001 | 7.87% | 0.6332% |
| 2018/12/1 | 133.0788 | -18.23% | 18.4600 | -13.33% | 2506.8501 | -9.18% | -0.7990% |
| 2018/11/1 | 162.7515 | -22.48% | 21.3000 | 16.97% | 2760.1699 | 1.79% | 0.1476% |
| 2018/10/1 | 209.9547 | -24.98% | 18.2100 | -41.05% | 2711.7400 | -6.94% | -0.5976% |
| 2018/9/1 | 279.8533 | 0.18% | 30.8900 | 22.73% | 2913.9800 | 0.43% | 0.0357% |
| 2018/8/1 | 279.3619 | 14.63% | 25.1700 | 37.32% | 2901.5200 | 3.03% | 0.2488% |
| 2018/7/1 | 243.7101 | 3.36% | 18.3300 | 22.28% | 2816.2900 | 3.60% | 0.2953% |
| 2018/6/1 | 235.7875 | -6.00% | 14.9900 | 9.18% | 2718.3701 | 0.48% | 0.0403% |
| 2018/5/1 | 250.8506 | 12.13% | 13.7300 | 26.19% | 2705.2700 | 2.16% | 0.1783% |
| 2018/4/1 | 223.7055 | -2.89% | 10.8800 | 8.26% | 2648.0500 | 0.27% | 0.0226% |
| 2018/3/1 | 230.3600 | -4.24% | 10.0500 | -17.01% | 2640.8701 | -2.69% | -0.2268% |
| 2018/2/1 | 240.5652 | -1.55% | 12.1100 | -11.86% | 2713.8301 | -3.89% | -0.3305% |
| 2018/1/1 | 244.3427 | 27.03% | 13.7400 | 33.66% | 2823.8101 | 5.62% | 0.4565% |
| 2017/12/1 | 192.3528 | -8.49% | 10.2800 | -5.60% | 2673.6101 | 3.43% | 0.2818% |
| 2017/11/1 | 210.2093 | 2.32% | 10.8900 | -0.91% | 2584.8401 | 0.37% | 0.0309% |
| 2017/10/1 | 205.4411 | 15.68% | 10.9900 | -13.80% | 2575.2600 | 2.22% | 0.1830% |
| 2017/9/1 | 177.5867 | 5.60% | 12.7500 | -2.07% | 2519.3601 | 1.93% | 0.1595% |
| 2017/8/1 | 168.1704 | 4.26% | 13.0200 | -4.34% | 2471.6499 | 0.05% | 0.0046% |
| 2017/7/1 | 161.2923 | 12.42% | 13.6100 | 9.05% | 2470.3000 | 1.93% | 0.1598% |
| 2017/6/1 | 143.4768 | 0.25% | 12.4800 | 11.53% | 2423.4099 | 0.48% | 0.0400% |
| 2017/5/1 | 143.1177 | 38.40% | 11.1900 | -15.86% | 2411.8000 | 1.16% | 0.0960% |
| 2017/4/1 | 103.4096 | -4.25% | 13.3000 | -8.59% | 2384.2000 | 0.91% | 0.0754% |
| 2017/3/1 | 108.0000 | 7.48% | 14.5500 | 0.62% | 2362.7200 | -0.04% | -0.0032% |
| 2017/2/1 | 100.4868 | -7.05% | 14.4600 | 39.44% | 2363.6399 | 3.72% | 0.3048% |
| 2017/1/1 | 108.1115 | 2.29% | 10.3700 | -8.55% | 2278.8701 | 1.79% | 0.1478% |
| 2016/12/1 | 105.6953 | 15.94% | 11.3400 | 27.27% | 2238.8301 | 1.82% | 0.1504% |
| 2016/11/1 | 91.1611 | 29.57% | 8.9100 | 23.24% | 2198.8101 | 3.42% | 0.2804% |
| 2016/10/1 | 70.3582 | 3.85% | 7.2300 | 4.63% | 2126.1499 | -1.94% | -0.1633% |
| 2016/9/1 | 67.7480 | 11.91% | 6.9100 | -6.62% | 2168.2700 | -0.12% | -0.0103% |
| 2016/8/1 | 60.5373 | 7.43% | 7.4000 | 7.87% | 2170.9500 | -0.12% | -0.0102% |
| 2016/7/1 | 56.3528 | 21.46% | 6.8600 | 33.46% | 2173.6001 | 3.56% | 0.2920% |
| 2016/6/1 | 46.3948 | 0.88% | 5.1400 | 12.47% | 2098.8601 | 0.09% | 0.0076% |
| 2016/5/1 | 45.9892 | 31.49% | 4.5700 | 28.73% | 2096.9500 | 1.53% | 0.1268% |
| 2016/4/1 | 34.9742 | -0.28% | 3.5500 | 24.56% | 2065.3000 | 0.27% | 0.0225% |
| 2016/3/1 | 35.0727 | 14.03% | 2.8500 | 33.18% | 2059.7400 | 6.60% | 0.5340% |
| 2016/2/1 | 30.7574 | 7.07% | 2.1400 | -2.73% | 1932.2300 | -0.41% | -0.0345% |
| 2016/1/1 | 28.7272 | -11.13% | 2.2000 | -23.34% | 1940.2400 | -5.07% | -0.4330% |
| 2015/12/1 | 32.3267 | 4.30% | 2.8700 | 21.61% | 2043.9399 | -1.75% | -0.1473% |
| 2015/11/1 | 30.9928 | 11.81% | 2.3600 | 11.32% | 2080.4099 | 0.05% | 0.0042% |
| 2015/10/1 | 27.7196 | 15.09% | 2.1200 | 23.26% | 2079.3601 | 8.30% | 0.6665% |
| 2015/9/1 | 24.0849 | 10.11% | 1.7200 | -3.37% | 1920.0300 | -2.64% | -0.2231% |
| 2015/8/1 | 21.8726 | 12.68% | 1.7800 | -7.77% | 1972.1801 | -6.26% | -0.5371% |
| 2015/7/1 | 19.4110 | -0.80% | 1.9300 | -19.58% | 2103.8401 | 1.97% | 0.1630% |
| 2015/6/1 | 19.5666 | -8.71% | 2.4000 | 5.26% | 2063.1101 | -2.10% | -0.1768% |
| 2015/5/1 | 21.4329 | -0.32% | 2.2800 | 0.88% | 2107.3899 | 1.05% | 0.0870% |
| 2015/4/1 | 21.5007 | 6.07% | 2.2600 | -15.67% | 2085.5100 | 0.85% | 0.0707% |
| 2015/3/1 | 20.2707 | -4.76% | 2.6800 | -13.83% | 2067.8899 | -1.74% | -0.1461% |
| 2015/2/1 | 21.2831 | 14.90% | 3.1100 | 21.01% | 2104.5000 | 5.49% | 0.4463% |
| 2015/1/1 | 18.5238 | -4.24% | 2.5700 | -3.75% | 1994.9900 | -3.10% | -0.2624% |
| 2014/12/1 | 19.3439 | -3.98% | 2.6700 | -4.30% | 2058.8999 | -0.42% | -0.0350% |
| 2014/11/1 | 20.1462 | 7.32% | 2.7900 | -0.36% | 2067.5601 | 2.45% | 0.2022% |
| 2014/10/1 | 18.7724 | 5.91% | 2.8000 | -17.89% | 2018.0500 | 2.32% | 0.1913% |
| 2014/9/1 | 17.7252 | -4.72% | 3.4100 | -18.23% | 1972.2900 | -1.55% | -0.1302% |
| 2014/8/1 | 18.6037 | 11.14% | 4.1700 | 6.65% | 2003.3700 | 3.77% | 0.3085% |
| 2014/7/1 | 16.7385 |  | 3.9100 |  | 1930.6700 |  |  |

# CAPM & WACC

**Table 13-NVIDIA & AMD CAPM**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Beta | Risk Free Average Return | S&P 500 Average Return | Expected Return (CAPM) | CAPM Annual Return |
| NVIDIA | 2.019787224 | 0.0572% | 0.74% | 1.4423% | 17.3077% |
| AMD | 2.999645058 | 0.0572% | 0.74% | 2.1142% | 25.3710% |
| My data is from 8/1/2014 to 8/12019 | | | | | |

Capital Asset Model (CAPM), which focuses on the relationship between the expected rate of return on assets and risk assets in the securities market and how equilibrium prices are formed, is the backbone of the price theory of modern financial markets and is widely used in the field of investment decision-making and corporate finance. The capital asset pricing model assumes that all investors invest according to Markowitz's asset selection theory, and that the estimates of expected returns, variances are identical, allowing investors to borrow freely. Based on this assumption, the focus of the capital asset pricing model research is to explore the quantitative relationship between risk assets returns and risks, that is, how much return investors should receive in order to compensate for a particular level of risk.

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The size of the risk premium depends on the size of the beta value. The higher the beta value, the higher the risk to a single security, the higher the compensation. AMD's beta value is greater than NVIDIA's beta value, which can indicate that AMD is taking more risk than NVIDIA, and AMD's final return is greater than NVIDIA. CAPM has a very simple conclusion: there is only one reason why investors get higher returns: investing in risky stocks. The beta factor reflects the sensitivity of a security or portfolio to market changes, and when there is a good grasp of predicting the arrival of a bull market, those securities or portfolios with high beta coefficients should be selected. These high-beta-factor securities will multiply market yields, resulting in higher returns. Instead, when the bear market comes, you should choose those with low beta factors or combinations to reduce losses from the market's decline.

The

**Figure 1-NVIDIA & S&P 500**

**Figure 2- AMD-S&P 500**

Weighted average cost of capital (WACC) is a method of calculating the company's capital cost according to the weighted average of the total capital sources of various types of capital. When measuring the expected cost of capital, we use the market value of each component, the particularity of the financing method, and the difference between its cost and common equity bonds.

**Table 14-NVIDIA & AMD WACC**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Market Price Per Share | Share of outstanding | MV Debt |
| NVIDIA | $210.18 | 612000000 | $3,347,172.22 |
| AMD | $40.70 | 440100000 | $2,059,580.00 |
|  | **MV Equity** | **MV Assets** |  |
| NVIDIA | $128,630,160,000.00 | $3,347,172.22 |  |
| AMD | $17,912,070,000.00 | $2,059,580.00 |  |
|  |  |  |  |
|  | **We** | **Re** | **Wd** |
| NVIDIA | 38429.5016 | 17.31% | 1.000E+00 |
| AMD | 8696.9528 | 25.37% | 1 |
|  | **Eff. Tax** | **Rd** | **WACC** |
| NVIDIA | -3.48% | -14.07% | 665113.58% |
| AMD | -12.76% | 2.11% | 220652.68% |

# Conclusion:

Through the analysis and comparison of each data of AMD and NVIDIA, the electronics industry is growing faster and more important in other industries. AMD and NVIDIA have made very important contributions with the development of artificial AI technology. AMD's CPU technology is already able to compete with the CPU leader Intel, while NVIDIA has reached its limits in GPU technology. They really do to serve people with high technology. Back in terms of market value and finance between the two companies, we can see that NVIDIA is generally higher than AMD, especially in terms of stock prices and market earnings in 2018. Because NVIDIA has improved its graphics performance, it has helped both gamers and regular users.

# Reference:

NVIDIA Income Statement, Balance Sheet, and Cash Flow

<https://www.morningstar.com/stocks/xnas/nvda/financials>

AMD Income Statement, Balance Sheet, and Cash Flow

<https://www.morningstar.com/stocks/xnas/amd/financials>

NVIDIA Historical Data

<https://finance.yahoo.com/quote/NVDA/history?period1=1417496400&period2=1575262800&interval=1mo&filter=history&frequency=1mo>

AMD Historical Data

<https://finance.yahoo.com/quote/AMD/history?period1=1417496400&period2=1575262800&interval=1mo&filter=history&frequency=1mo>

NVIDIA Bond Data

<http://finra-markets.morningstar.com/BondCenter/Results.jsp>

AMD Bond Data

<http://finra-markets.morningstar.com/BondCenter/Results.jsp>

About NVIDIA

<https://www.nvidia.com/en-us/about-nvidia/>

About AMD

<https://www.amd.com/zh-hans/corporate/about-amd>

NVIDIA Picture

<https://twitter.com/nvidia>

<https://www.nvidia.com/en-us/deep-learning-ai/products/titan-rtx/>

AMD Picture

<https://logoeps.com/amd-logo-vector/5397/>

<https://www.wallpaperflare.com/amd-ryzen-logo-amd-ryzen-wallpaper-227091>

<https://www.anandtech.com/show/13832/amd-radeon-vii-high-end-7nm-february-7th-for-699>