

Figure 1: Nvidia Key Figures Summary

Market Cap	542.832B
Beta (5Y Monthly)	1.42
PE Ratio (TTM)	56.58
EPS (TTM)	3.85
Earnings Date	May 25, 2022
Forward Dividend & Yield	0.16 (0.08%)
Ex-Dividend Date	Mar 02, 2022

Source: Yahoo! Finance

EV Multiple	42.71
EV Valuation	2,310,230,360.00
DCF Valuation	370.24 PPS

Valuation Date: 4/14/2022

Current Price: 212.58

Ticker: NVDA

Recommendation: BUY

Target Price: 370.24

Undervalued by: 74.17%

Stock exchange: NASDAQ

Sector: Technology

Industry: Semiconductors



Source: Yahoo! Finance

HIGHLIGHTS

We have decided to issue a **BUY** recommendation on Nvidia Corporation (NVDA) with a target price of \$370.24 per share, which represents a 74.17% upside when compared to the current market price of \$212.58 per share (as of 4/14/2022). The valuation methodology that was used considered both a Discounted Cash Flow model as well as an EV/EBITDA Multiple in order to determine an accurate target price for Nvidia. This recommendation is supported by several key foundations, including the company's recent performance, the short-term and long-term outlook of several industries, and Nvidia's strategic business plan moving forward.

Q4 and FY22 Performance

Nvidia reported strong Q4 and FY22 results, highlighted by YOY revenue growth of 53% and 61% for Q4 and FY 2022, respectively. The company noticed its most significant increases in revenue growth from FY 2021 to FY 2022 in each of its biggest market segments (61% growth in Gaming, 58% growth in Data Center, 100% growth in Professional Visualization).

Competitive Positioning

The economic impacts of the COVID-19 pandemic had a significantly positive effect on many firms in the technology industry, as shown by the encouraging growth numbers reported by several of Nvidia's key competitors. However, even in a strong market, Nvidia still continued to outperform the rest of the industry with higher revenue growth numbers than several of their key competitors.

Strategic Plan

Nvidia has outlined a plan for optimizing their business model moving forward that includes several key strategic decisions. The company intends to continue developing a unified accelerated computing platform, to work towards further integrating AI-specific features into Graphics Processing Unit (GPU) design, to continue leading the evolution of computer graphics, and to continue developing solutions for the emerging autonomous vehicle industry.

BUSINESS DESCRIPTION

Nvidia is a multinational, American technology company based in Santa Clara, California. The company currently produces Graphics (59% of revenue) and Compute and Networking chips (41% of revenue) as its two primary business segments¹. Notable graphics products include the GeForce series GPUs for gaming and PCs, the RTX series GPUs for enterprise workstation graphics, the GeForce NOW game streaming service, and the NVIDIA DRIVE family of products for autonomous vehicles. Notable Compute and Networking products include the DGX systems for enterprise artificial intelligence (AI), the EGX platform for unified, accelerated data centers, the BlueField data processing unit (DPU) for networking infrastructure, and the Jetson Nano products for accelerated machine learning².

BUSINESS STRATEGIES

Accelerated Computing Platform

Nvidia’s accelerated computing platform was designed to solve complex problems quicker and more efficiently. The acquisition of Mellanox Technologies in 2020 provided expertise in data center architectures, which is significant as data centers are essential to the future of computing. Since the data centers are programmable by nature, several of Nvidia’s market segments can be supported by the same underlying technology³.

Artificial Intelligence

The accelerated computing platform that Nvidia provides allows continued deep learning and machine learning for AI, which connects GPUs, systems, programming languages, algorithms, libraries, and other software. Nvidia seeks to continue adding AI-specific features as essential parts of future GPU architecture to further extend their leadership position in the market. The Inception Program has also enabled Nvidia to partner with hundreds of universities and thousands of startups working toward continued AI development⁴.

Computer Graphics

Nvidia believes that the expansion and evolution of computing fundamentally requires the continued enhancement of computer graphics. Graphics technology is an essential component of the consumer entertainment experience. Nvidia’s computer graphics platforms, led by the GeForce and RTX GPUs, are being continually optimized to support further applications⁵.

Autonomous Vehicles

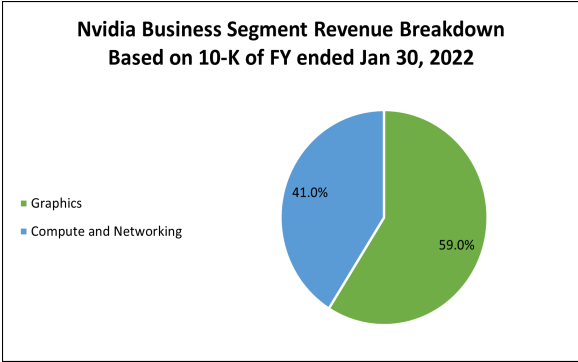
Nvidia believes that the rise of autonomous vehicles will revolutionize the transportation industry, and that the advancement of autonomous vehicles will be fundamentally driven by advancements in AI technology. Nvidia provides GPU-based hardware for autonomous vehicle network development, as well as AI-based hardware and software solutions for autonomous vehicles through the Nvidia DRIVE platform⁶.

INDUSTRY OVERVIEW

Economic Influence

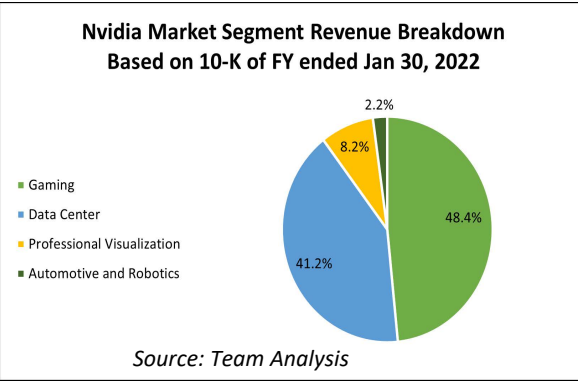
Nvidia gets most of its revenue from GPUs, a key component of PC architecture. According to Nvidia’s announced financial results reported in 10-K of the FY 2022, the company reported total revenue of \$26.914 billion, and a net income of \$9.752 billion, which rose 61.4% and 125.1% from the results of FY 2021. Between the two segments of Nvidia, Graphics and Compute and Networking segments, Graphics segment was the one that generated the most revenue for the company: the segment generated \$15.868 billion, which accounted for 58.96% of the total revenue and was up 61.36% from previous year. The Compute and Networking segment grew the fastest – the segment’s revenue was \$11.046 billion in FY 2022, which comprised 41.04% of total revenue and was up 61.47% on a year-over-year basis.

Figure 2: Nvidia Business Segment Revenue FY 2022



Source: Team Analysis

Figure 3: Nvidia Market Segment Revenue FY 2022



Source: Team Analysis

COVID-19 has had a very positive impact on Nvidia’s financial performance. People working from home due to the pandemic have helped boost the revenue of gaming, data center, and professional visualization platforms of the company. Other than Graphics/Chips segments, the Compute and Networking segment’s AI platforms had also been positively influenced since people started adopting the use of cloud computing. Along with the highly increased trend in AI, on January 24, 2022, Meta Platforms, (formerly known as Facebook), announced that they had chosen Nvidia’s AI Research SuperCluster’s largest customer installation, Nvidia’s DGX A100 system, to provide comprehensive solutions for analytics, training, and inference applications. However, the giant GPU designer also faced some issues in their acquisition projects. On February 7, 2022, Nvidia announced the termination of their \$40 billion-valued acquisition of the semiconductor design firm Arm Inc. from Soft Bank Corp. The company had reported the reason for the termination was mainly due to significant regulatory challenges, as the company had been facing anti-trust issues from the U.S. Federal Trade Commission, U.K.’s Competition and Markets Authority, and European and Chinese regulators.

Technology

There are four markets that Nvidia has been focused on growing and innovating, which include Gaming, Professional Visualization, Data Center, and Automotive markets. Revenue generated from Gaming market rose 61% from the previous year. Nvidia has further developed GPUs for the Gaming market by installing streaming multiprocessors, unified memory, and NVLink in latest graphics cards to improve the performance of these GPUs. Gaming markets have been so successful that Nvidia has reinvested in gaming consoles, and other cloud gaming services. Revenue from Data Center segment was up 58% from a year ago was reported as the company’s second-biggest revenue generator. Nvidia has been upgrading data center performance to meet the market demand by working with other partners in the industry such as IBM, Google, and Microsoft to develop parallel computing infrastructures for machine learnings. Professional Visualization’s revenue grew 100% YOY in FY ended Jan 2022. Nvidia has been further developing its GPUs for this market to meet the needs of people who work in design, publishing, and any other industries that rely on GPUS’ visualization purposes. For instance, Nvidia’s Quadro GPUs have high performance capabilities, helping professionals to handle complex designs across multiple screens. Revenue generated from Automotive segment was up 6% from a year ago due to self-driving the solutions offset by a decline in legacy cockpit revenue.

Figure 4: Business Segment

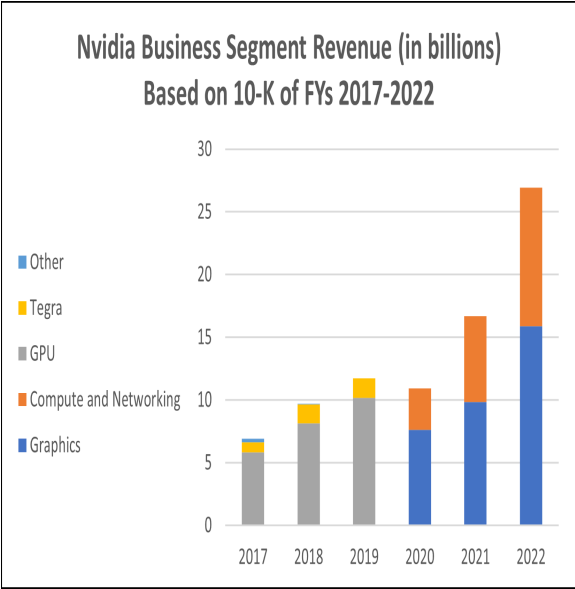


Figure 5: Market Segment

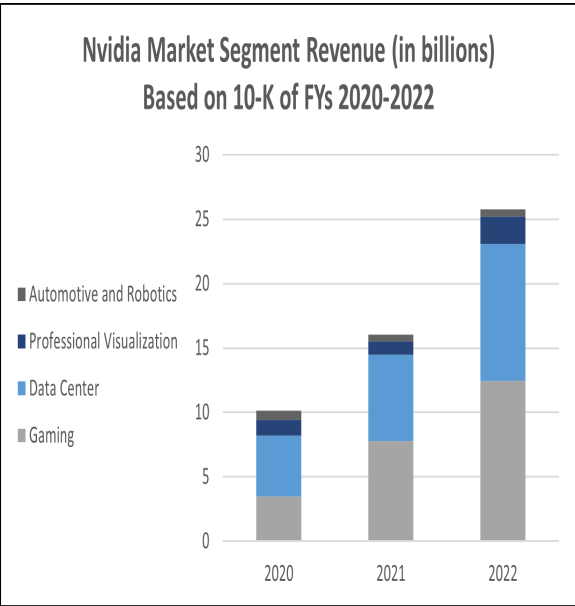


Figure 6: Nvidia Executive Officers

List of Executive Officers	
Jen-Hsun Huang	Co-Founder, President, CEO
Colette Kress	Executive Vice President, CFO
Ajay Puri	Executive Vice President (Worldwide Field Operations)
Debora Shoquist	Executive Vice President (Operations)
Timothy Teter	Executive Vice President, General Counsel, Secretary

Competitive Positioning

Nvidia's key competitors in the industry are:

Intel Corp.: Intel is Nvidia's key competitor in the GPU market. Intel's product line includes processors that power PCs, data centers, tablets, wearables, and embedded systems, as well as platforms specifically designed for IoT, autonomous vehicles, drones, etc. Intel's product marketing strategy entails demographic and psychographic segmentation of its target market for each product. In 2020, Intel held the number one position in the semiconductor market with a 15.6% market share. The company's FY 2022 revenue is 79 billion, up 1% compared to FY 2021⁸.

Advanced Micro Devices (AMD): AMD's product line includes semiconductor chips for PCs, servers, video game consoles, and other embedded systems, as well as GPUs for computer gaming, cryptocurrency mining, visualization markets, and enterprise system solutions. AMD also provides server chips for cloud computing applications. AMD's FY 2021 revenue is \$16.4 billion, and doubling YOY driven by growing adoption of processors across cloud and enterprise customers⁹.

Qualcomm Inc.: Qualcomm's product line includes chips for smartphones and tablets; technology licensing; mobile payment products; applications processors for cars, wearables, drones, IoT devices; high-performance computing; servers; base stations; etc. Qualcomm's revenue for FY 2021 was \$33.57 billion, which grew 42.7% from the previous year¹⁰.

Figure 7: Nvidia & Competitor Sales Revenue by year

Sales Revenue	January-22	January-21	January-20	January-19
Nvidia	\$ 26,406	\$ 16,675	\$ 10,918	\$ 11,716
Average	\$ 38,858	\$ 31,959	\$ 28,472	\$ 33,311
Median	\$ 29,986	\$ 20,103	\$ 17,596	\$ 17,164
Intel	\$ 79,024	\$ 77,867	\$ 71,965	\$ 70,848
AMD	\$ 16,434	\$ 9,763	\$ 6,731	\$ 6,475
Qualcomm	\$ 33,566	\$ 23,531	\$ 24,273	\$ 22,611

Source: Team Analysis

Figure 8: Nvidia & Competitor Year End Stock Price

Year-end Stock Price	January-22	January-21	January-20
Nvidia	\$ 244.86	\$ 129.90	\$ 62.62
Average	\$ 112.94	\$ 99.14	\$ 65.41
Median	\$ 145.01	\$ 107.77	\$ 63.28
Intel	\$ 48.82	\$ 55.51	\$ 63.93
AMD	\$ 114.25	\$ 85.64	\$ 47.00
Qualcomm	\$ 175.76	\$ 156.28	\$ 85.31

Source: Team Analysis

Figure 9: Nvidia & Competitor Comp Set-Trading Multiples as of 3/28/2022

Company Name	TEV/Total Revenues LTM - Latest	TEV/EBITDA LTM - Latest	TEV/EBIT LTM - Latest
Advanced Micro Devices, Inc. (NasdaqGS:AMD)	11.7x	46.1x	52.5x
Broadcom Inc. (NasdaqGS:AVGO)	10.0x	18.1x	28.9x
Micron Technology, Inc. (NasdaqGS:MU)	2.8x	5.5x	9.7x
QUALCOMM Incorporated (NasdaqGS:QCOM)	5.1x	14.1x	16.4x
Texas Instruments Incorporated (NasdaqGS:TXN)	9.2x	16.8x	18.7x
Intel Corporation (NasdaqGS:INTC)	2.8x	6.3x	9.9x
Analog Devices, Inc. (NasdaqGS:ADI)	10.8x	26.0x	45.5x
Marvell Technology, Inc. (NasdaqGS:MRVL)	15.1x	53.8x	NM
ON Semiconductor Corporation (NasdaqGS:ON)	4.4x	14.6x	21.3x
Microchip Technology Incorporated (NasdaqGS:MCHP)	7.8x	17.9x	31.2x
NVIDIA Corporation (NasdaqGS:NVDA)	25.4x	60.1x	68.2x

Figure 10: Nvidia & Competitor Comp Set-Operating Statistics as of 3/28/2022

Source: Capital IQ

Company Name	LTM Gross Margin %	LTM EBITDA Margin %	LTM EBIT Margin %	LTM Net Income Margin %
Advanced Micro Devices, Inc. (NasdaqGS:AMD)	48.2%	24.7%	22.2%	19.24%
Broadcom Inc. (NasdaqGS:AVGO)	74.5%	55.0%	34.7%	27.47%
Micron Technology, Inc. (NasdaqGS:MU)	41.5%	50.6%	29.0%	24.86%
QUALCOMM Incorporated (NasdaqGS:QCOM)	58.2%	35.4%	30.9%	27.71%
Texas Instruments Incorporated (NasdaqGS:TXN)	67.5%	54.1%	49.2%	42.35%
Intel Corporation (NasdaqGS:INTC)	55.4%	42.9%	27.9%	25.14%
Analog Devices, Inc. (NasdaqGS:ADI)	61.0%	40.8%	23.7%	15.18%
Marvell Technology, Inc. (NasdaqGS:MRVL)	50.6%	26.6%	(1.3%)	(9.44%)
ON Semiconductor Corporation (NasdaqGS:ON)	40.3%	29.4%	20.6%	14.98%
Microchip Technology Incorporated (NasdaqGS:MCHP)	64.5%	42.8%	25.1%	14.95%
NVIDIA Corporation (NasdaqGS:NVDA)	64.9%	41.7%	37.3%	36.23%

Source: Capital IQ

FINANCIAL ANALYSIS

Nvidia is positioned for continued growth across all four major market segments. Nvidia's strong cash position, as well as consistent pattern of YOY Revenue and Net Income growth, has set the company on track to continue to outpace their peers. We believe the company is positioned for continued organic growth over the next twelve months and will continue to increase market share. All assumptions made reflect the views of the valuation group.

Revenue

We have estimated Nvidia's future growth rate to be 51.46%. As can be seen in Figure 12, besides FY 2020 which was adversely impacted by the COVID-19 pandemic, Nvidia has experienced strong and consistent revenue growth with a 5-year average of 33.6%. Adjusting for the impact of COVID-19 in 2020 and coupled with the fact that revenue growth has averaged 55% for the past two fiscal years, we are confident that the forward growth rate should be higher than the 5-year average of 33.63%. We established 51.46% as the forward growth rate as it represents the average percentage of the top three growth years in recent history. The percentage is supported not only by recent revenue growth but including Nvidia's new revenue streams that will be available soon. Nvidia has also recently signed a deal with Jaguar Land Rover that will result in all Jaguar Land Rover vehicles starting in 2025 to be manufactured with the Nvidia DRIVE software platform¹¹. This partnership will positively impact Nvidia's Automotive Processor segment and was considered when establishing future revenue growth rates.

Expenses

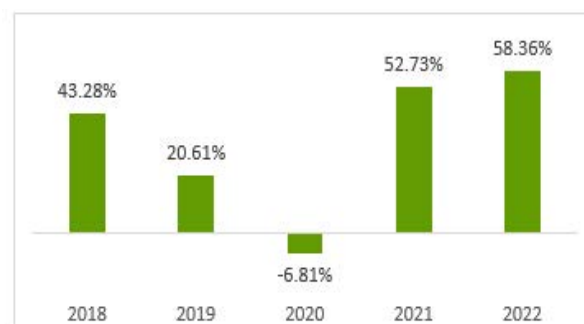
Nvidia has an accelerating profit margin profile as seen in Figure 13. Nvidia's Cost of Revenue has ranged consistently between 35%-40% of Revenue. Our forecast is conservative in believing Nvidia does not dramatically improve upon margin, therefore we forecasted Cost of Revenue at 38% of Revenue. Research and Development (R&D) expenses have averaged between 18%-25% with increases in more recent periods. We estimate that R&D will return to normal ranges, therefore we have forecasted them at 21% of Revenue. Selling, General and Administrative (SG&A) expenses averaged between 8% and 12% of Revenue. We averaged this expense as well and have forecasted it as 9.3% of Revenue moving forward. Total Operating Expenses have averaged between 27% and 36% of Revenue for Nvidia through the base period with increases in recent years driven by an increase in R&D spending. We were also conservative when forecasting total Operating Expenses and decided to hold them at 31% of Revenue. Nvidia's ability to hold Cost of Revenue and total Operating Expenses to consistent percentages of Revenue through recent years has had positive impacts on Net Income as can be seen in Figure 14. We expect the positive Net Income growth to continue in future periods as well. Expense control and strong sales have also led to positive Earnings Per Share (EPS) values as is seen in Figure 15.

Figure 11: Nvidia & Competitor YOY Revenue Growth Rate

Revenue YOY Growth Rate	January-22	January-21	January-20
Nvidia	58.36%	52.73%	-6.81%
Average	42.70%	25.73%	1.52%
Median	50.50%	26.62%	2.77%
Intel	1.49%	8.20%	1.58%
AMD	68.33%	45.05%	3.95%
Qualcomm	42.65%	-3.06%	7.35%

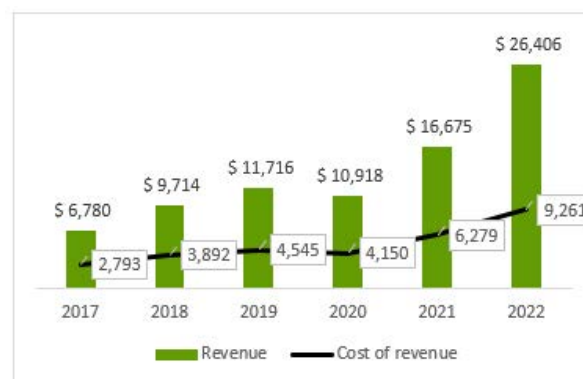
Source: Team Analysis

Figure 12: Nvidia YOY Revenue Growth Rate



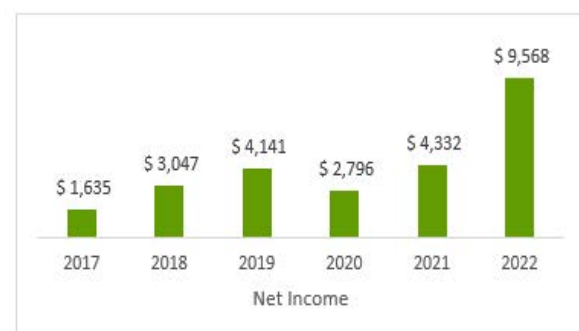
Source: Team Analysis

Figure 13: Nvidia Revenue vs. Cost of Revenue



Source: Team Analysis

Figure 14: Nvidia Net Income



Source: Team Analysis

Balance Sheet Drivers

Nvidia ended FY 2022 with an extremely strong Cash and Cash Equivalents sum of \$19.298B. This value represents an increase of 90% in cash over the previous ending fiscal year. As can be seen in Figure 16, this strong cash position has positively impacted Nvidia’s liquidity ratios. We believe this cash position will afford Nvidia the ability to navigate through current supply chain constraints as well as to potentially build inventory if necessary due to combat market chip shortages. Nvidia’s cash position is also beneficial to the firm in terms of potential mergers and acquisitions. For the rest of the Balance Sheet items, we forecasted based on overall averages determined from our common size analysis. Assets and Liabilities are expected to remain proportional to their current 5-year trend and have been forecasted as such.

VALUATION

Valuation Method

In valuing Nvidia, the model prioritizes consistency when determining assumptions: assumptions are related to each other by taking an average year-over-year growth for the main variable in each of the three statements (Revenue, Total Assets, Total liabilities and Equity, Net Income) and using judgment based on prior years on how to grow these variables. From there, common size analysis from historical data forecasts the subsequent line items of the statements, allowing each line to grow at a consistent rate. This methodology was based on analyses of historical growth rates and historical common size, and would allow for the most consistency across the board and provide a fair and confident valuation of Nvidia from both a Discounted Cash Flow and EV/EBITDA Multiple process.

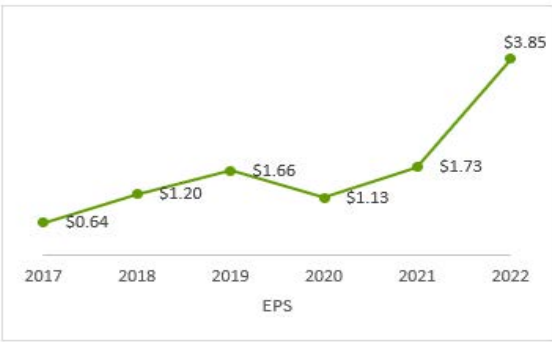
Income Statement Assumptions

Based on year-over-year growth, the average growth rate for the past 5 years for Revenue has been 33.63%, with the top 3 averages being 51.46% and the bottom 3 averages being 19.03%. The trend for the past couple years has been high Revenue growth (52.73% and 58.36% respectively). Comparing these Revenue growths to the new Revenue streams that will be available soon, like the AI that Nvidia is currently pursuing, we felt it would be appropriate to use the top 3 average of 51.46% to grow Revenue for the next 5 years. This number is appropriate based on past trends of Revenue and the information about AI referenced above; this growth rate is also realistic for a company like Nvidia with its high growth potential. For the other line items in the Income Statement, an average common size relative to Revenue over the past 5 years is applied.

Balance Sheet Assumptions

Similar to how Revenue was forecasted, Total Assets and Total Liabilities + Equity are forecasted using an average of the past 5 years and comparing that average to historical data. Total Assets and Total Liabilities + Equity grows differently than Revenue: instead of having a consistent growth rate, the historical data shows a growing growth rate for the first 3 years (40%, 42%, 44%) and slowing growth of each line item at years 4-5 (45%). These assumptions are appropriate due to Nvidia’s increasing its exposure in the AI industry by accumulating assets, followed by tapered growth once the AI market is more developed. For the other line items of the Balance Sheet, the same forecasting process is used.

Figure 15: Nvidia EPS



Source: Team Analysis

Figure 16: Nvidia Balance Sheet Ratios

Key Balance Sheet Ratios	
Liquidity	
Current Ratio	6.65
Quick Ratio	5.96
Solvency	
Liabilities to Equity	0.66
Total Debt to Equity	0.41

Source: Team Analysis

Statement of Cash Flows Assumptions

Net Income assumptions from the Income Statement stay consistent in the forecast, with common size analysis for the other line items in the Statement of Cash Flows.

Valuation Highlights

Based on the forecasted numbers previously described, the Discounted Cash Flow model is consistent with this independent research and other market speculation on Nvidia. The model uses a Return on Investment of 28%, a Reinvestment Rate of 14.93%, and a Terminal Growth Rate of 4.13%. These numbers are consistent with Nvidia's historical performance and forecasted performance. The model also calculates a WACC of 7.13% which is consistent with the industry. All other assumptions (i.e., Beta, Risk Free, Marginal Tax rate) are taken as April 14th, 2022, or from the Nvidia's latest 10-K. Based on the Discounted Cash Flow valuation, Nvidia has a value of \$927,083,846,311.00; relative to outstanding shares of 2,504,000,000.00 (as of 3/27/2022), a share of Nvidia stock is worth \$370.24, which as of 4/14/2022 is undervalued by 74%.

INVESTMENT SUMMARY

Based on the industry outlook of the technology and semiconductor industries, Nvidia is well-positioned to capitalize on its strategic goals of organic semiconductor growth, AI market expansion, and bolstering its automotive processor segment. With a seasoned management team and a clear strategic plan in place, Nvidia is poised to grow above the industry average and further lead in the artificial intelligence market.

Valuation Confirms Rating

The valuation above takes a two-pronged approach that includes a Discounted Cash Flow analysis and EV/EBITDA Multiple analysis. Based on valuation results and overall market sentiment, this model recommends a BUY rating on Nvidia (NASDAQ: NVDA) stock. The model sets a target share price of \$370.24 which implies a 74% discount from current trading value. This price target results from determining an appropriate terminal growth and terminal value that match reasonable expectations for the company. The valuation also considers management expectations with conservative scale backs. Throughout 2022, investors will keep a close eye on potential supply chain constraints as well as negative blowback from the failed ARM merger. It is not unreasonable to expect the stock price to fluctuate positively or negatively as news becomes available in the short-term. There is also risk associated with the automotive processor segment in the short to mid-term as legislation or lack of infrastructure could negatively impact the future of autonomous vehicles. However, Nvidia's ability to outperform peers over the next five years could be greatly derived from its growth in Automotive Processor as well as expansion in AI Technologies.

Figure 17: Nvidia Debt to Equity calculation as of 4/14/2022

Firm D/E	
Equity	26,612.00
Debt	10,946.00
Leases	741.00
Total	38,299.00

Source: Team Analysis

Figure 18: Nvidia WACC calculation as of 4/14/2022

WACC Calculation	
CAPM	
Beta	1.42
Risk free rate	1.60%
Market premium	5.50%
Return on equity	9.41%
Rd	2.06%
Percent equity	69.48%
Percent debt	28.58%
WACC	7.13%
Debt	2.12%
Marginal tax rate	21%
Terminal growth rate estimate	4.13%
Reinvestment rate	14.93%
ROI	28%

Source: Team Analysis

Figure 19: Nvidia share price as of 4/14/2022

BUY	
Share Price (\$USD)	\$ 212.58
Target Price	\$ 370.24
Implied Discount	74%

Source: Team Analysis

Potential Upside Drivers

There are significant drivers in the short-term that will continue to drive stock price appreciation. Major drivers that are currently coming into fruition include:

1. Growing market demand for AI and computing technologies
2. AI market expected to grow 62.5B (+21.3%) in 2022¹²
3. Low unemployment and strong overall economic performance in the U.S. have awarded consumers with higher disposable income which will positively impact Nvidia's core business sectors
4. Gain in consumer interest of autonomous vehicles as well as launching deal with Jaguar Land Rover could positively impact Automotive Processor segment

Potential Downside Risks

There are potential risks in the short-term that could impact stock price appreciation. Major risks that are currently a threat include:

1. Supply chain disruptions as well as overall market chip supply
2. Chip Neutrality/FTC resistance could limit Nvidia's potential to gain market share¹³
3. Low unemployment figures have led to a shortage of skilled workforce which could potentially impact Nvidia's production and growth opportunities
4. Rising interest rates could cause borrowing constraints

Valuation Sensitivity

With an estimated price per share at \$370.24 using the Discounted Cash Flow model, various sensitivity and scenario analyses, outlined below, test the model assumptions. Sensitivity analyses are performed on various model inputs that are deemed to be of high consequences: Terminal Growth Rate, Beta, Risk-free rate, Market Premium, Cash tax rate, and Marginal Tax Rate (Figure 20). The method for determining the "what if" analyses takes the observed metric and multiplies it by 0.25, 0.5, 0.75, 1.25, 1.5, and 1.75, resulting in six new input sextiles from which to perform an analysis. In order to determine which sensitivities had the largest spread, the analysis calculates the min, max, range, and standard deviations of the seven septiles (original metric and the six new metrics), and observed the model inputs that resulted in the greatest standard deviations across the sensitivities. Based on these results, Nvidia's Discounted Cash Flow valuation is least impacted by changes in the Cash Tax Rate, resulting in a \$1.07 standard deviation in the share price. The Cash Tax Rate is relatively low compared to the Marginal Tax Rate, the latter of which yielded a \$11.68 standard deviation spread in share price. The third-least impactful input, the Risk-Free Rate, yielded a \$85.18 standard deviation spread in share price. The second-highest sensitivities, Beta and Market Premium resulted in equal standard deviations in the share price, at \$1655.23. Finally, and inexplicably, the Terminal Growth Rate resulted in a standard deviation spread of \$3873.29(*we believe this to be a model error that could not be determined). The model also independently performed a sensitivity analysis on the EV/EBITDA multiple using the same breakdown septiles outlined above and yielded a standard deviation of \$1.21 million.

Figure 20: Sensitivity Analysis

Terminal Growth		PPS	
4.13%	\$	927,083.85	\$ 370.24
1.03%	\$	478,067.23	\$ 190.92
2.07%	\$	566,592.61	\$ 226.28
3.10%	\$	700,568.04	\$ 279.78
5.17%	\$	1,392,603.14	\$ 556.15
6.20%	\$	2,897,805.75	\$ 1,157.27
7.24%	\$	(24,405,275.14)	\$ (9,746.52)
Beta		PPS	
1.42	\$	927,083.85	\$ 370.24
0.36	\$	(2,813,335.06)	\$ (1,123.54)
0.71	\$	10,509,701.13	\$ 4,197.16
1.07	\$	1,744,732.04	\$ 696.78
1.78	\$	620,465.81	\$ 247.79
2.13	\$	460,343.60	\$ 183.84
2.49	\$	362,263.49	\$ 144.67
Rf		PPS	
1.60%	\$	927,083.85	\$ 370.24
0.40%	\$	1,307,677.69	\$ 522.24
0.80%	\$	1,151,802.52	\$ 459.99
1.20%	\$	1,027,907.89	\$ 410.51
2.00%	\$	843,448.73	\$ 336.84
2.40%	\$	772,963.40	\$ 308.69
2.80%	\$	712,762.09	\$ 284.65
Market Premium		PPS	
5.50%	\$	927,083.85	\$ 370.24
1.38%	\$	(2,813,335.06)	\$ (1,123.54)
2.75%	\$	10,509,701.13	\$ 4,197.16
4.13%	\$	1,744,732.04	\$ 696.78
6.88%	\$	620,465.81	\$ 247.79
8.25%	\$	460,343.60	\$ 183.84
9.63%	\$	362,263.49	\$ 144.67
Cash tax rate		PPS	
2.50%	\$	927,083.85	\$ 370.24
0.63%	\$	923,368.91	\$ 368.76
1.25%	\$	924,604.10	\$ 369.25
1.88%	\$	925,842.40	\$ 369.75
3.13%	\$	928,328.44	\$ 370.74
3.75%	\$	929,576.20	\$ 371.24
4.38%	\$	930,827.13	\$ 371.74
Marginal tax rate		PPS	
21.00%	\$	927,083.85	\$ 370.24
5.25%	\$	888,736.42	\$ 354.93
10.50%	\$	901,059.40	\$ 359.85
15.75%	\$	913,833.56	\$ 364.95
26.25%	\$	940,837.11	\$ 375.73
31.50%	\$	955,122.25	\$ 381.44
36.75%	\$	969,970.41	\$ 387.37

Source: Team Analysis

INVESTMENT RISKS

Nvidia is in a strong position moving forward in many industries due to forecasted and potential growth opportunities, along with competitive advantages that it has built. With these new opportunities, new challenges will arise; some can be predicted and others cannot.

Systemic Risk

Nvidia is one of the largest producers of GPUs and semiconductor chips, along with other firms such as AMD and Intel. Nvidia's size and market share has proven to be a factor following a blocked acquisition of ARM¹⁴. While the ARM deal could be a one-time failure, this event could also be the start of a new precedent set out by the FTC. The FTC has shown possible concerns over chip neutrality due to the market value held by Nvidia and, in this specific example, the size of global use of ARM products¹⁵.

Many new challenges have been brought to light following the onset of the COVID-19 pandemic and the subsequent economic downturn. One of the major potential and current challenges presented by the pandemic includes impacts on the supply chain. The delay in the global supply chain adversely affects all industries but has had a major impact in the chip making field, which has led to high demand and low supply for Nvidia products. This disequilibrium has the potential to cause prices to rise and limit future sales¹⁶. Another way a diminishing supply chain could impact Nvidia is by decreasing its sales to other firms such as Apple and Tesla, which both use Nvidia processors. These issues may cause these firms to begin developing their own products to limit their dependence on other firms¹⁷.

Political Risk

Among the potential risks that cannot be foreseen is that of political strife and how political climates will impact the industry. A current example of this includes the Russian invasion of Ukraine and uncertainty about relations with China. In an increasingly globalized chip market, flares of political tension between two nations has the ability to impact the industry as a whole.

Figure 21: Nvidia & Competitor Credit Health Ratings as of 3/28/2022

Details				
Template:	Capital IQ Default Comps			
Currency:	US Dollar			
As-Of Date:	Mar-28-2022			
1 Top 2 Above Average 3 Below Average 4 Bottom ▲/▼ Score Change				
Company Comp Set				
Company Name	Overall	Operational	Solvency	Liquidity
Micron Technology, Inc. (NasdaqGS:MU)	1	2	1	1
Texas Instruments Incorporated (NasdaqGS:TXN)	2	1	2	2
Advanced Micro Devices, Inc. (NasdaqGS:AMD)	2	2	1	4
Intel Corporation (NasdaqGS:INTC)	2	3	2	3
QUALCOMM Incorporated (NasdaqGS:QCOM)	3	2	3	4
ON Semiconductor Corporation (NasdaqGS:ON)	3	3	3	3
Broadcom Inc. (NasdaqGS:AVGO)	3	3	4	2
Analog Devices, Inc. (NasdaqGS:ADI)	4	4	3	3
Microchip Technology Incorporated (NasdaqGS:MCHP)	4	4	4	2
Marvell Technology, Inc. (NasdaqGS:MRVL)	4	4	4	4
NVIDIA Corporation (NasdaqGS:NVDA)	1	1	2	1

Source: Capital IQ

Figure 22: Nvidia & Competitor S&P Credit Ratings as of 3/28/2022

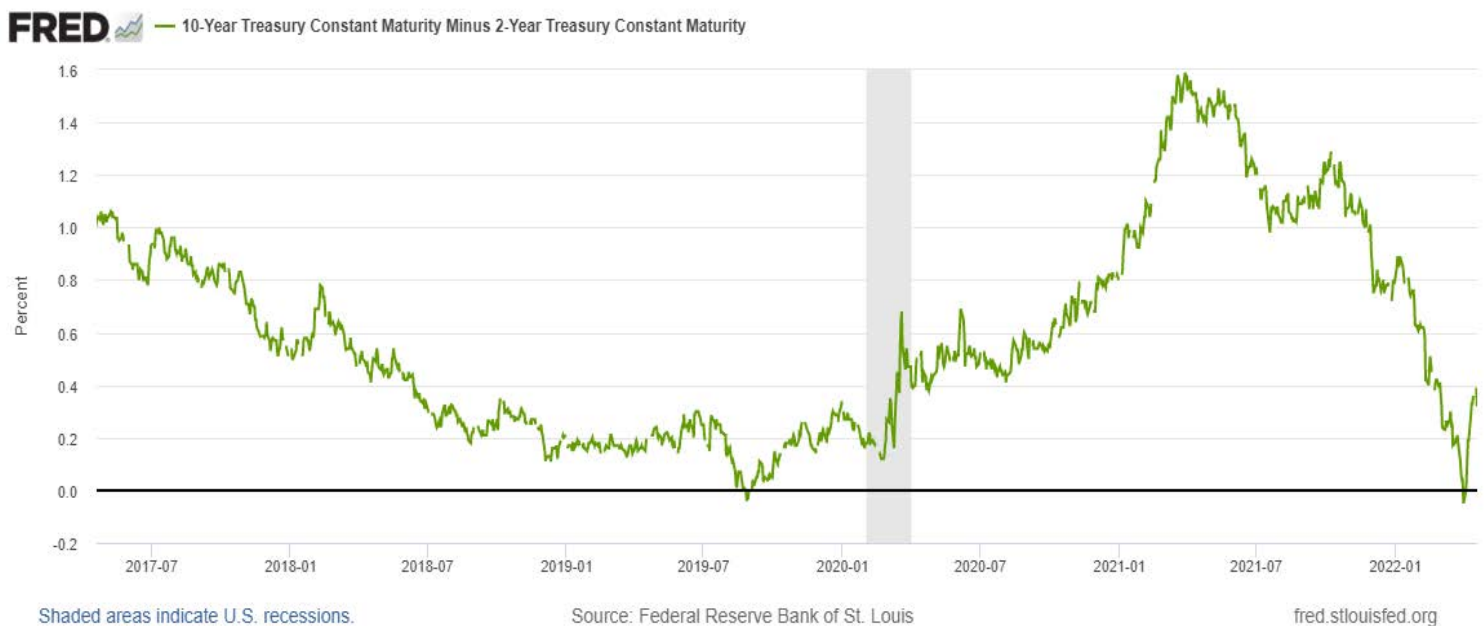
Company Name	LTM Period Ending	Financials Updated	S&P Issuer Credit Rating Foreign Currency LT Rating	Primary Industry Classification
Micron Technology, Inc. (NasdaqGS:MU)	Dec-02-2021	Jan-07-2022	BBB-	Semiconductors
Texas Instruments Incorporated (NasdaqGS:TXN)	Dec-31-2021	Feb-06-2022	A+	Semiconductors
Advanced Micro Devices, Inc. (NasdaqGS:AMD)	Dec-25-2021	Feb-06-2022	A-	Semiconductors
Intel Corporation (NasdaqGS:INTC)	Dec-25-2021	Jan-29-2022	A+	Semiconductors
QUALCOMM Incorporated (NasdaqGS:QCOM)	Dec-26-2021	Feb-03-2022	A	Semiconductors
ON Semiconductor Corporation (NasdaqGS:ON)	Dec-31-2021	Feb-15-2022	BB+	Semiconductors
Broadcom Inc. (NasdaqGS:AVGO)	Jan-30-2022	Mar-12-2022	BBB-	Semiconductors
Analog Devices, Inc. (NasdaqGS:ADI)	Jan-29-2022	Feb-17-2022	A-	Semiconductors
Microchip Technology Incorporated (NasdaqGS:MCHP)	Dec-31-2021	Feb-06-2022	NR	Semiconductors
Marvell Technology, Inc. (NasdaqGS:MRVL)	Jan-29-2022	Mar-11-2022	BBB-	Semiconductors
NVIDIA Corporation (NasdaqGS:NVDA)	Jan-30-2022	Mar-19-2022	A	Semiconductors

Source: Capital IQ

Market Risk

Another potential and important challenge brought on since the economic rebound from the COVID-19 pandemic is rising interest rates. As of the most recent releases by Fitch¹⁸ and Moody's¹⁹, both have Nvidia rated as an A in terms of credit rating. However, due to rising interest rates there is the potential for loan repayment issues and cost of debt overall.

Figure 23: Treasury Yield Curve over past 5 years



Source: FRED

Conclusion

Based on our financial valuation of Nvidia and analyses of its business model and industry, we believe Nvidia is currently undervalued and our recommendation is that Nvidia is a **BUY**. Guided by strong leadership, and sound business acumen, Nvidia has consistently outpaced their competition in nearly all categories. It is our belief that Nvidia will continue to produce strong results for the next period and therefore conclude Nvidia is a **BUY**.

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Appendix 1:

Forecast Ratios Statement of Cash Flows

	Trend Analysis						YOY growth rate						Common Size Analysis							
	2017	2018	2019	2020	2021	2022	2017	2018	2019	2020	2021	2022	Average	2017	2018	2019	2020	2021	2022	Average
Cash flows from operating activities:																				
Net income	100%	183%	249%	168%	260%	585%	n/a	83%	36%	-32%	55%	125%	53%	100%	100%	100%	100%	100%	100%	100%
Adjustments to reconcile net income to net cash provided by operating activities:	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%
Stock-based compensation expense	15%	158%	226%	342%	566%	811%	n/a	58%	42%	52%	66%	43%	52%	15%	13%	13%	30%	32%	21%	21%
Depreciation and amortization	11%	106%	140%	204%	587%	628%	n/a	6%	32%	45%	188%	7%	56%	11%	7%	6%	14%	25%	12%	13%
Deferred income taxes	12%	-182%	-160%	9%	-143%	-206%	n/a	-282%	-12%	-106%	-1667%	44%	-405%	12%	-12%	-8%	1%	-7%	-4%	3%
Loss on early debt conversions	1%	90%	0%	0%	0%	-476%	n/a	-10%	-100%	n/a	n/a	n/a	n/a	1%	1%	0%	0%	0%	-1%	0%
Other	2%	61%	-136%	15%	-61%	142%	n/a	-39%	-325%	-111%	-500%	-335%	-262%	2%	1%	-1%	0%	0%	0%	0%
Changes in operating assets and liabilities, net of acquisitions:	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%
Accounts receivable	-19%	137%	46%	73%	171%	690%	n/a	37%	-66%	56%	136%	303%	93%	-19%	-14%	-4%	-8%	-13%	-23%	-14%
Inventories	-23%	0%	207%	-159%	140%	206%	n/a	-100%	n/a	-177%	-188%	48%	n/a	-23%	0%	-19%	21%	-12%	-8%	-7%
Prepaid expenses and other assets	-1%	-117%	306%	-428%	2189%	9528%	n/a	-217%	-362%	-240%	-612%	335%	-219%	-1%	1%	-1%	3%	-9%	-18%	-4%
Accounts payable	11%	49%	-73%	105%	197%	309%	n/a	-51%	-250%	-244%	87%	56%	-80%	11%	3%	-3%	7%	8%	6%	5%
Accrued and other current liabilities	-8%	-24%	-190%	-40%	-177%	-430%	n/a	-124%	676%	-79%	343%	143%	192%	-8%	1%	6%	2%	6%	6%	2%
Other long-term liabilities	-1%	-3436%	-14%	-200%	-1164%	-1371%	n/a	-3536%	-100%	1300%	482%	18%	-367%	-1%	16%	0%	1%	4%	2%	4%
Net cash provided by operating activities	100%	209%	224%	285%	348%	545%	n/a	109%	7%	27%	22%	56%	44%	100%	115%	90%	170%	134%	93%	117%
Cash flows from investing activities:																				
Proceeds from maturities of marketable securities	58%	111%	746%	490%	907%	1568%	n/a	11%	571%	-34%	85%	73%	141%	58%	35%	175%	170%	203%	156%	133%
Proceeds from sales of marketable securities	93%	56%	28%	218%	34%	66%	n/a	-44%	-50%	686%	-84%	94%	120%	93%	28%	10%	120%	12%	10%	46%
Purchases of marketable securities	-188%	1%	356%	47%	616%	791%	n/a	-99%	30867%	-87%	1222%	28%	6386%	-188%	-1%	-269%	-52%	-446%	-254%	-202%
Acquisitions, net of cash acquired							n/a	n/a	n/a	n/a	213000%	-97%	n/a	0%	0%	0%	0%	-197%	-3%	-33%
Purchases related to property and equipment and intangible assets	-11%	337%	341%	278%	641%	555%	n/a	237%	1%	-19%	131%	-13%	67%	-11%	-19%	-14%	-17%	-26%	-10%	-16%
Investments and other, net	0%	720%	180%	200%	680%	480%	n/a	620%	-75%	11%	240%	-29%	153%	0%	-1%	0%	0%	-1%	0%	-1%
Proceeds from sale of long-lived assets and investments	0%	29%	0%	0%	0%	0%	n/a	-71%	-100%	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%
Net cash provided by (used in) investing activities	-48%	-161%	517%	-775%	2481%	1240%	n/a	-261%	-421%	-250%	-420%	-50%	-280%	-48%	42%	-99%	220%	-454%	-101%	-73%
Cash flows from financing activities:	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%
Issuance of debt, net of issuance costs	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0%	n/a	0%	0%	0%	0%	115%	51%	28%
Proceeds related to employee stock plans	10%	83%	82%	89%	116%	168%	n/a	-17%	-1%	9%	30%	45%	13%	10%	5%	3%	5%	4%	3%	5%
Payments related to tax on restricted stock units	-11%	348%	586%	313%	535%	1082%	n/a	248%	69%	-47%	71%	102%	89%	-11%	-20%	-25%	-20%	-22%	-20%	-19%
Repayment of debt	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	-10%	-2%
Dividends paid	-16%	131%	142%	149%	151%	153%	n/a	31%	9%	5%	1%	1%	9%	-16%	-11%	-9%	-14%	-9%	-4%	-10%
Principal payments on property and equipment							n/a	n/a	n/a	n/a	n/a	388%	n/a	0%	0%	0%	0%	0%	-1%	0%
Payments related to repurchases of common stock	-44%	123%	214%	0%	0%	0%	n/a	23%	74%	-100%	n/a	n/a	n/a	-44%	-30%	-38%	0%	0%	0%	-19%
Repayment of Convertible Notes	-40%	121%	2%	0%	0%	0%	n/a	21%	-98%	-100%	n/a	n/a	n/a	-40%	-27%	0%	0%	0%	0%	-11%
Other	-1%	60%	33%	0%	27%	47%	n/a	-40%	-44%	-100%	n/a	75%	n/a	-1%	0%	0%	0%	0%	0%	0%
Net cash provided by (used in) financing activities	17%	-874%	-985%	-272%	1307%	641%	n/a	-974%	13%	-72%	-580%	-51%	-333%	17%	-83%	-69%	-28%	88%	19%	-9%
Change in cash and cash equivalents	70%	191%	-275%	864%	-859%	98%	n/a	91%	-244%	-414%	-199%	-111%	-176%	70%	73%	-78%	362%	-232%	12%	35%
Cash and cash equivalents at beginning of period	36%	296%	671%	131%	1828%	142%	n/a	196%	127%	-80%	1293%	-92%	289%	36%	58%	97%	28%	252%	9%	80%
Cash and cash equivalents at end of period	106%	227%	44%	617%	48%	113%	n/a	127%	-80%	1293%	-92%	135%	276%	106%	131%	19%	390%	20%	20%	114%
Supplemental disclosures of cash flow information:							n/a													
Cash paid for income taxes, net	1%	157%	436%	1257%	1779%	2829%	n/a	57%	177%	189%	41%	59%	105%	1%	1%	1%	6%	6%	4%	3%
Cash paid for interest	1%	423%	423%	415%	1062%	1892%	n/a	323%	0%	-2%	156%	78%	111%	1%	2%	1%	2%	3%	3%	2%
Non-cash investing and financing activity:							n/a	n/a	n/a	n/a	n/a	n/a	n/a	0%	0%	0%	0%	0%	0%	0%
Assets acquired by assuming related liabilities	1%	225%	475%	1325%	0%	0%	n/a	125%	111%	179%	-100%	#DIV/0!	#DIV/0!	1%	1%	2%	8%	0%	0%	2%

Appendix 2:

Statement of Cash Flows Historical and Forecast

CONSOLIDATED STATEMENTS OF CASH FLOWS - USD (\$) \$ in Millions	Jan. 29, 2017	Jan. 28, 2018	Jan. 27, 2019	Jan. 26, 2020	Jan. 31, 2021	Jan. 30, 2022	2023F	2024F	2025F	2026F	2027F
Cash flows from operating activities:											
Net income	\$ 1,666	\$ 3,047	\$ 4,141	\$ 2,796	\$ 4,332	\$ 9,752	\$ 11,908	\$ 18,035	\$ 27,315	\$ 41,371	\$ 62,659
Adjustments to reconcile net income to net cash provided by operating activities:											
Stock-based compensation expense	247	391	557	844	1,397	2,004	2,463	3,730	5,649	8,556	12,959
Depreciation and amortization	187	199	262	381	1,098	1,174	1,490	2,257	3,419	5,178	7,842
Deferred income taxes	197	(359)	(315)	18	(282)	(406)	(349)	(529)	(801)	(1,213)	(1,837)
Loss on early debt conversions	21	19	0	0	0	(100)	17	26	39	59	90
Other	33	20	(45)	5	(20)	47	35	53	80	121	183
Changes in operating assets and liabilities, net of acquisitions:							0	0	0	0	0
Accounts receivable	(321)	(440)	(149)	(233)	(550)	(2,215)	(1,609)	(2,436)	(3,690)	(5,588)	(8,464)
Inventories	(375)	0	(776)	597	(524)	(774)	(792)	(1,200)	(1,818)	(2,753)	(4,170)
Prepaid expenses and other assets	(18)	21	(55)	77	(394)	(1,715)	(509)	(771)	(1,168)	(1,768)	(2,678)
Accounts payable	184	90	(135)	194	363	568	633	958	1,451	2,198	3,329
Accrued and other current liabilities	(135)	33	256	54	239	581	249	378	572	867	1,313
Other long-term liabilities	(14)	481	2	28	163	192	431	653	989	1,498	2,269
Net cash provided by operating activities	1,672	3,502	3,743	4,761	5,822	9,108	13,967	21,154	32,039	48,525	73,494
Cash flows from investing activities:							0	0	0	0	0
Proceeds from maturities of marketable securities	969	1,078	7,232	4,744	8,792	15,197	15,810	23,946	36,268	54,930	83,195
Proceeds from sales of marketable securities	1,546	863	428	3,365	527	1,023	5,447	8,250	12,495	18,925	28,662
Purchases of marketable securities	(3,134)	(36)	(11,148)	(1,461)	(19,308)	(24,787)	(24,027)	(36,390)	(55,115)	(83,475)	(126,429)
Acquisitions, net of cash acquired	0	0	0	(4)	(8,524)	(263)	(3,961)	(6,000)	(9,087)	(13,763)	(20,845)
Purchases related to property and equipment and intangible assets	(176)	(593)	(600)	(489)	(1,128)	(976)	(1,946)	(2,947)	(4,464)	(6,761)	(10,240)
Investments and other, net	(5)	(36)	(9)	(10)	(34)	(24)	(61)	(93)	(141)	(213)	(322)
Proceeds from sale of long-lived assets and investments	7	2	0	0	0	0	10	15	22	33	51
Net cash provided by (used in) investing activities	(793)	1,278	(4,097)	6,145	(19,675)	(9,830)	(8,728)	(13,220)	(20,022)	(30,324)	(45,928)
Cash flows from financing activities:							0	0	0	0	0
Issuance of debt, net of issuance costs	0	0	0	0	4,968	4,977	3,289	4,981	7,544	11,426	17,306
Proceeds related to employee stock plans	167	139	137	149	194	281	607	919	1,392	2,109	3,194
Payments related to tax on restricted stock units	(176)	(612)	(1,032)	(551)	(942)	(1,904)	(2,313)	(3,503)	(5,306)	(8,036)	(12,171)
Repayment of debt	0	0	0	0	0	(1,000)	(204)	(308)	(467)	(707)	(1,071)
Dividends paid	(261)	(341)	(371)	(390)	(395)	(399)	(1,250)	(1,893)	(2,867)	(4,342)	(6,577)
Principal payments on property and equipment	0	0	0	0	(17)	(83)	(25)	(37)	(57)	(86)	(130)
Payments related to repurchases of common stock	(739)	(909)	(1,579)	0	0	0	(2,229)	(3,376)	(5,113)	(7,745)	(11,730)
Repayment of Convertible Notes	(673)	(812)	(16)	0	0	0	(1,338)	(2,027)	(3,070)	(4,650)	(7,042)
Other	(15)	(9)	(5)	0	(4)	(7)	(29)	(45)	(67)	(102)	(155)
Net cash provided by (used in) financing activities	291	(2,544)	(2,866)	(792)	3,804	1,865	(1,124)	(1,702)	(2,578)	(3,904)	(5,914)
Change in cash and cash equivalents	1,170	2,236	(3,220)	10,114	(10,049)	1,143	4,115	6,232	9,439	14,296	21,652
Cash and cash equivalents at beginning of period	596	1,766	4,002	782	10,896	847	9,498	14,385	21,786	32,997	49,976
Cash and cash equivalents at end of period	1,766	4,002	782	10,896	847	1,990	13,612	20,617	31,225	47,293	71,628
Supplemental disclosures of cash flow information:							0	0	0	0	0
Cash paid for income taxes, net	14	22	61	176	249	396	380	575	871	1,320	1,999
Cash paid for interest	13	\$ 55	\$ 55	\$ 54	\$ 138	\$ 246	229	347	526	797	1,207
Non-cash investing and financing activity:							0	0	0	0	0
Assets acquired by assuming related liabilities	16	\$ 36	\$ 76	\$ 212	0	0	229	347	526	797	1,207

- Net Income is pulled from the Income Statement
- Each line item is an average size of Net Income from the past 5 years data

Appendix 3:

Balance Sheet Assumptions

	Trend Analysis					YOY growth rate						Common Size Analysis					
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	Average	2018	2019	2020	2021	2022	Average
Current assets:																	
Cash and cash equivalents	100%	20%	272%	21%	50%	n/a	-80.46%	1293.35%	-92.23%	134.95%	313.90%	35.60%	5.88%	62.93%	2.94%	4.50%	22.37%
Marketable securities	100%	214%	0%	345%	619%	n/a	113.78%	-99.98%	1071300.00%	79.37%	267848.29%	27.63%	49.95%	0.01%	37.21%	43.49%	31.66%
Accounts receivable, net	100%	113%	131%	192%	368%	n/a	12.57%	16.36%	46.59%	91.44%	41.74%	11.25%	10.71%	9.57%	8.44%	10.52%	10.10%
Inventories	100%	198%	123%	229%	327%	n/a	97.86%	-37.84%	86.52%	42.66%	47.30%	7.08%	11.85%	5.65%	6.34%	5.90%	7.36%
Prepaid expenses and other current assets	100%	158%	183%	278%	426%	n/a	58.14%	15.44%	52.23%	53.14%	44.74%	0.77%	1.02%	0.91%	0.83%	0.83%	0.87%
Total current assets	100%	114%	148%	173%	311%	n/a	14.07%	29.68%	17.28%	79.56%	35.15%	82.33%	79.42%	79.06%	55.76%	65.24%	72.37%
Property and equipment, net	100%	141%	168%	216%	279%	n/a	40.82%	19.23%	28.38%	29.27%	29.42%	8.87%	10.56%	9.67%	7.46%	6.29%	8.57%
Operating lease assets						n/a	0.00%	0.00%	14.40%	17.26%	7.91%	0.00%	0.00%	3.57%	2.46%	1.88%	1.58%
Goodwill	100%	100%	100%	678%	704%	n/a	0.00%	0.00%	578.48%	3.72%	145.55%	5.50%	4.65%	3.57%	14.56%	9.84%	7.62%
Intangible assets, net	100%	87%	94%	5263%	4498%	n/a	-13.46%	8.89%	5485.71%	-14.54%	1366.65%	0.46%	0.34%	0.28%	9.51%	5.29%	3.18%
Deferred income tax assets						n/a	0.00%	-2.14%	47.08%	51.61%	24.14%	0.00%	4.21%	3.16%	2.80%	2.77%	2.59%
Other assets	100%	34%	37%	672%	1204%	n/a	-66.14%	9.26%	1716.95%	79.15%	434.80%	2.84%	0.81%	0.68%	7.45%	8.69%	4.09%
Total assets	100%	118%	154%	256%	393%	n/a	18.25%	30.27%	66.28%	53.48%	42.07%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Current liabilities:																	
Accounts payable	100%	86%	115%	193%	299%	n/a	-14.26%	34.44%	67.25%	55.18%	35.65%	5.30%	3.84%	3.97%	3.99%	4.04%	4.23%
Accrued and other current liabilities	100%	151%	202%	328%	471%	n/a	50.92%	34.11%	61.99%	43.61%	47.66%	4.82%	6.15%	6.34%	6.17%	5.78%	5.85%
Short-term debt	100%	0%	0%	6660%	0%	n/a	-100.00%	0.00%	0.00%	-100.00%	-50.00%	0.13%	0.00%	0.00%	3.47%	0.00%	0.72%
Total current liabilities	100%	115%	155%	340%	376%	n/a	15.26%	34.24%	120.01%	10.45%	44.99%	10.26%	10.00%	10.30%	13.63%	9.81%	10.80%
Long-term debt	100%	100%	100%	300%	551%	n/a	0.15%	0.15%	199.55%	83.53%	70.85%	17.66%	14.96%	11.50%	20.71%	24.77%	17.92%
Long-term operating lease liabilities						n/a	0.00%	0.00%	13.01%	16.88%	7.47%	0.00%	0.00%	3.24%	2.20%	1.68%	1.42%
Other long-term liabilities	100%	100%	123%	218%	246%	n/a	0.16%	22.43%	77.42%	12.95%	28.24%	5.62%	4.76%	4.48%	4.78%	3.51%	4.63%
Total liabilities	100%	105%	136%	316%	466%	n/a	4.77%	29.39%	132.79%	47.71%	53.67%	33.54%	29.72%	29.52%	41.33%	39.77%	34.77%
Commitments and contingencies - see Note 13																	
Shareholders' equity:																	
Preferred stock, \$0.001 par value; 2 shares authorized; none issued												0	0	0	0	0	0.00%
Common stock, \$0.001 par value; 4,000 shares authorized; 2,506 shares	100%	100%	100%	300%	300%	n/a	0.00%	0.00%	200.00%	0.00%	50.00%	8.9E-05	7.52E-05	5.78E-05	0.000104	6.79E-05	0.01%
Additional paid-in capital	100%	113%	132%	163%	194%	n/a	13.08%	16.43%	23.76%	19.11%	18.09%	0.476025	0.455236	0.406873	0.302838	0.235024	37.52%
Treasury stock, at cost (None as of January 30, 2022 and 1,380 shares as	100%	139%	148%	162%	0%	n/a	39.29%	5.95%	9.60%	-100.00%	-11.29%	-0.59158	-0.69689	-0.56679	-0.37359	0	-44.58%
Accumulated other comprehensive income (loss)	100%	67%	-6%	-106%	61%	n/a	-33.33%	-108.33%	1800.00%	-157.89%	375.11%	-0.0016	-0.0009	5.78E-05	0.00066	-0.00025	-0.04%
Retained earnings	100%	143%	170%	215%	185%	n/a	43.00%	19.15%	26.30%	-14.14%	18.58%	0.781692	0.945305	0.864626	0.656733	0.367416	72.32%
Total shareholders' equity	100%	125%	163%	226%	356%	n/a	25.04%	30.64%	38.42%	57.53%	37.91%	0.664621	0.702829	0.704822	0.586746	0.602259	65.23%
Total liabilities and shareholders' equity	100%	118%	154%	256%	393%	n/a	18.25%	30.27%	66.28%	53.48%	42.07%	100%	100%	100%	100%	100%	100.00%

Appendix 4:

Balance Sheet Historical

CONSOLIDATED BALANCE SHEETS - USD (\$)' \$ in Millions	Jan. 28, 2018	Jan. 27, 2019	Jan. 26, 2020	Jan. 31, 2021	Jan. 30, 2022	2023F	2024F	2025F	2026F	2027F
Current assets:										
Cash and cash equivalents	\$ 4,002	\$ 782	\$ 10,896	\$ 847	\$ 1,990	13,839.55	19,652.16	28,299.12	41,033.72	59,498.89
Marketable securities	3,106	6,640	1	10,714	19,218	19,585.08	27,810.82	40,047.58	58,068.99	84,200.04
Accounts receivable, net	1,265	1,424	1,657	2,429	4,650	6,247.61	8,871.61	12,775.11	18,523.92	26,859.68
Inventories	796	1,575	979	1,826	2,605	4,555.77	6,469.20	9,315.64	13,507.68	19,586.14
Prepaid expenses and other current assets	86	136	157	239	366	538.62	764.83	1,101.36	1,596.97	2,315.61
Total current assets	9,255	10,557	13,690	16,055	28,829	44,766.63	63,568.62	91,538.81	132,731.28	192,460.35
Property and equipment, net	997	1,404	1,674	2,149	2,778	5,301.68	7,528.39	10,840.88	15,719.28	22,792.96
Operating lease assets	0	0	618	707	829	977.53	1,388.09	1,998.85	2,898.33	4,202.58
Goodwill	618	618	618	4,193	4,349	4,716.61	6,697.58	9,644.52	13,984.56	20,277.61
Intangible assets, net	52	45	49	2,737	2,339	1,965.22	2,790.62	4,018.49	5,826.81	8,448.88
Deferred income tax assets	0	560	548	806	1,222	1,601.35	2,273.91	3,274.44	4,747.93	6,884.50
Other assets	319	108	118	2,144	3,841	2,532.77	3,596.54	5,179.01	7,509.57	10,888.87
Total assets	11,241	13,292	17,315	28,791	44,187	61,861.80	87,843.76	126,495.01	183,417.76	265,955.76
Current liabilities:										
Accounts payable	596	511	687	1,149	1,783	2,615.52	3,714.04	5,348.22	7,754.92	11,244.64
Accrued and other current liabilities	542	818	1,097	1,777	2,552	3,620.00	5,140.40	7,402.18	10,733.16	15,563.08
Short-term debt	15	0	0	999	0	445.81	633.05	911.59	1,321.81	1,916.62
Total current liabilities	1,153	1,329	1,784	3,925	4,335	6,681.33	9,487.50	13,661.99	19,809.89	28,724.34
Long-term debt	1,985	1,988	1,991	5,964	10,946	11,085.69	15,741.68	22,668.02	32,868.62	47,659.50
Long-term operating lease liabilities	0	0	561	634	741	880.79	1,250.72	1,801.04	2,611.50	3,786.68
Other long-term liabilities	632	633	775	1,375	1,553	2,864.30	4,067.31	5,856.93	8,492.55	12,314.19
Total liabilities	3,770	3,950	5,111	11,898	17,575	21,512.12	30,547.21	43,987.98	63,782.57	92,484.72
Commitments and contingencies - see Note 13										
Shareholders' equity:										
Preferred stock, \$0.001 par value; 2 shares authorized; none issued	0	0	0	0	0	-	-	-	-	-
Common stock, \$0.001 par value; 4,000 shares authorized; 2,506 shares issued and	1	1	1	3	3	4.88	6.92	9.97	14.45	20.96
Additional paid-in capital	5,351	6,051	7,045	8,719	10,385	23,210.49	32,958.90	47,460.82	68,818.19	99,786.37
Treasury stock, at cost (None as of January 30, 2022 and 1,380 shares as of	(6,650)	(9,263)	(9,814)	(10,756)	0	(27,576.14)	(39,158.12)	(56,387.69)	(81,762.15)	(118,555.12)
Accumulated other comprehensive income (loss)	(18)	(12)	1	19	(11)	(25.18)	(35.76)	(51.49)	(74.66)	(108.26)
Retained earnings	8,787	12,565	14,971	18,908	16,235	44,735.64	63,524.60	91,475.43	132,639.37	192,327.09
Total shareholders' equity	7,471	9,342	12,204	16,893	26,612	40,349.68	57,296.55	82,507.03	119,635.20	173,471.04
Total liabilities and shareholders' equity	\$ 11,241	\$ 13,292	\$ 17,315	\$ 28,791	\$ 44,187	61,861.80	87,843.76	126,495.01	183,417.76	265,955.76

- Assets, Liabilities and Equity grow by 40% in year 1, 42% in year 2, 44% in year 3, and taper off to 45% growth in year 4-5
- All other Asset line items are an average size of Total Assets over the past 5 years
- All other Liabilities and Equity are an average size of Total Liabilities and Equity over the past 5 years

Appendix 5:

EV/EBITDA Calculation

Mkt Cap	\$ 141,500,000,000.00	\$ 87,850,000,000.00	\$ 143,990,000,000.00	\$ 337,600,000,000.00	\$ 570,770,000,000.00					
Total Debt	\$ 2,000,000,000.00	\$ 1,988,000,000.00	\$ 1,991,000,000.00	\$ 6,963,000,000.00	\$ 10,946,000,000.00					
Cash	\$ (4,002,000,000.00)	\$ (782,000,000.00)	\$ (10,896,000,000.00)	\$ (847,000,000.00)	\$ (1,990,000,000.00)					
EV	\$ 139,498,000,000.00	\$ 88,056,000,000.00	\$ 135,085,000,000.00	\$ 343,716,000,000.00	\$ 579,726,000,000.00					
	\$ 139,498.00	\$ 89,056.00	\$ 135,085.00	\$ 343,716.00	\$ 579,726.00					
EV/EBITDA	40.36	21.12	39.70	60.40	51.95	42.71				

Appendix 6:

Income Statement Assumptions

	Trend Analysis								YOY growth rate										Common Size Analysis						
	2017	2018	2019	2020	2021	2022		2017	2018	2019	2020	2021	2022	Average	Top 3 Average	Bottom 3 Average		2017	2018	2019	2020	2021	2022	Average	
Income Statement [Abstract]																									
Revenue	100%	143%	173%	161%	246%	389%	n/a	43.28%	20.61%	-6.81%	52.73%	58.36%	33.63%	51.46%	19.03%		100%	100%	100%	100%	100%	100%			
Cost of revenue	100%	139%	163%	149%	225%	332%	n/a	39.33%	16.78%	-8.69%	51.30%	47.49%	29.24%				41%	40%	39%	38%	38%	35%	38%		
Gross profit	100%	146%	180%	170%	261%	430%	n/a	46.05%	23.17%	-5.62%	53.61%	64.92%	36.43%				59%	60%	61%	62%	62%	65%	62%		
Operating expenses																									
Research and development	100%	125%	166%	197%	273%	360%	n/a	25.19%	32.22%	19.07%	38.71%	31.72%	29.38%				21%	18%	20%	26%	24%	20%	21%		
Sales, general and administrative	100%	125%	152%	168%	298%	327%	n/a	25.29%	21.60%	10.29%	77.49%	9.54%	28.84%				10%	8%	8%	10%	12%	8%	9%		
Total operating expenses	100%	0%	0%	0%	0%	0%	n/a	-100.00%	0.00%	0.00%	0.00%	0.00%	-20.00%				0%	0%	0%	0%	0%	0%	0%		
Income from operations	100%	125%	161%	188%	281%	349%	n/a	25.05%	28.91%	16.48%	49.52%	24.38%	28.87%				31%	27%	29%	36%	35%	28%	31%		
Interest income	100%	169%	200%	150%	239%	519%	n/a	69.17%	18.50%	-25.18%	59.24%	117.38%	47.82%				28%	33%	32%	26%	27%	37%	31%		
Interest expense	100%	130%	257%	336%	108%	54%	n/a	30.24%	97.10%	30.88%	-67.98%	-50.08%	8.03%				1%	1%	1%	2%	0%	0%	1%		
Other, net	100%	107%	102%	91%	323%	407%	n/a	7.19%	-4.92%	-10.34%	253.85%	25.84%	54.32%				-1%	-1%	0%	0%	-1%	-1%	-1%		
Other income (expense), net	100%	90%	-57%	8%	-16%	-428%	n/a	-10.31%	-163.64%	-114.29%	-300.00%	2524.53%	387.26%				0%	0%	0%	0%	0%	0%	0%		
Income before income tax	100%	49%	-323%	-436%	432%	345%	n/a	-50.80%	-757.14%	34.78%	-199.19%	-20.23%	-198.52%				0%	0%	1%	1%	-1%	0%	0%		
Income tax expense	100%	171%	208%	159%	236%	522%	n/a	71.00%	21.90%	-23.77%	48.45%	121.22%	47.76%				28%	33%	33%	27%	26%	37%	31%		
Net income	100%	64%	-104%	74%	33%	79%	n/a	-36.46%	-264.43%	-171.02%	-55.75%	140.82%	-77.37%				3%	2%	-2%	2%	0%	1%	1%		
Net income per share:	100%	186%	253%	171%	265%	585%	n/a	86.41%	35.90%	-32.48%	54.94%	120.87%	53.13%				24%	31%	35%	26%	26%	36%	30%		
Basic (in USD per share)																									
Diluted (in USD per share)	100%	168%	225%	152%	232%	127%	n/a	68.44%	33.79%	-32.60%	52.94%	-45.30%	15.45%				0%	0%	0%	0%	0%	0%	0%		
Weighted average shares used in per share computation:	100%	191%	263%	179%	274%	150%	n/a	91.16%	37.55%	-31.83%	52.65%	-45.22%	20.86%				0%	0%	0%	0%	0%	0%	0%		
Basic (in shares)																									
Diluted (in shares)																									

Appendix 7:

Income Statement Forecast

CONSOLIDATED STATEMENTS OF INCOME - USD (\$) shares in Millions, \$ in Millions													Jan. 29, 2017	Jan. 28, 2018	Jan. 27, 2019	Jan. 26, 2020	Jan. 31, 2021	Jan. 30, 2022	2023F	2024F	2025F	2026F	2027F
Income Statement [Abstract]																							
Revenue							\$ 6,780	\$ 9,714	\$ 11,716	\$ 10,918	\$ 16,675	\$ 26,406	\$ 39,993.91	\$ 60,573.40	\$ 91,742.39	\$ 138,949.87	\$ 210,448.71						
Cost of revenue							2,793	3,892	4,545	4,150	6,279	9,261	\$ 15,384.12	\$ 23,300.26	\$ 35,289.77	\$ 53,448.67	\$ 80,951.52						
Gross profit							3,986	5,822	7,171	6,768	10,396	17,145	\$ 24,609.79	\$ 37,273.14	\$ 56,452.62	\$ 85,501.21	\$ 129,497.19						
Operating expenses																							
Research and development							1,435	1,797	2,376	2,829	3,924	5,169	\$ 8,596.58	\$ 13,020.08	\$ 19,719.76	\$ 29,866.88	\$ 45,235.35						
Sales, general and administrative							650	815	991	1,093	1,940	2,125	\$ 3,741.85	\$ 5,667.28	\$ 8,583.46	\$ 13,000.22	\$ 19,689.68						
Restructuring and other charges							3	0	0	0	0	0											
Total operating expenses							2,089	2,612	3,367	3,922	5,864	7,294	\$ 12,341.32	\$ 18,691.74	\$ 28,309.86	\$ 42,877.15	\$ 64,940.26						
Income from operations							1,898	3,210	3,804	2,846	4,532	9,852	\$ 12,268.47	\$ 18,581.41	\$ 28,142.76	\$ 42,624.06	\$ 64,556.93						
Interest income							53	69	136	178	57	28	\$ 315.45	\$ 477.77	\$ 723.62	\$ 1,095.97	\$ 1,659.92						
Interest expense							(57)	(61)	(58)	(52)	(184)	(232)	\$ (294.55)	\$ (446.12)	\$ (675.68)	\$ (1,023.36)	\$ (1,549.94)						
Other, net							(25)	(22)	14	(2)	4	105	\$ (4.37)	\$ (6.62)	\$ (10.02)	\$ (15.18)	\$ (22.99)						
Other income (expense), net							(28)	(14)	92	124	(123)	(98)	\$ 16.53	\$ 25.04	\$ 37.92	\$ 57.43	\$ 86.99						
Income before income tax							1,869	3,196	3,896	2,970	4,409	9,753	\$ 12,285.00	\$ 18,606.44	\$ 28,180.68	\$ 42,681.49	\$ 64,643.92						
Income tax expense							234	149	(245)	174	77	185	\$ 377.22	\$ 571.33	\$ 865.31	\$ 1,310.57	\$ 1,984.94						
Net income							\$ 1,635	\$ 3,047	\$ 4,141	\$ 2,796	\$ 4,332	\$ 9,568	\$ 11,907.78	\$ 18,035.12	\$ 27,315.37	\$ 41,370.92	\$ 62,658.98						
Net income per share:																							
Basic (in USD per share)							\$ 3.02	\$ 5.09	\$ 6.81	\$ 4.59	\$ 7.02	\$ 3.84											
Diluted (in USD per share)							\$ 2.52	\$ 4.82	\$ 6.63	\$ 4.52	\$ 6.90	\$ 3.78											
Weighted average shares used in per share computation:																							
Basic (in shares)										2,439	2,467	2,496											
Diluted (in shares)										2,472	2,510	2,535											

- Revenue growth is based on Top 3 growth rates averaged from historical revenue (5 years)
- Other line items are based on average size compared to Revenue from the past historical data

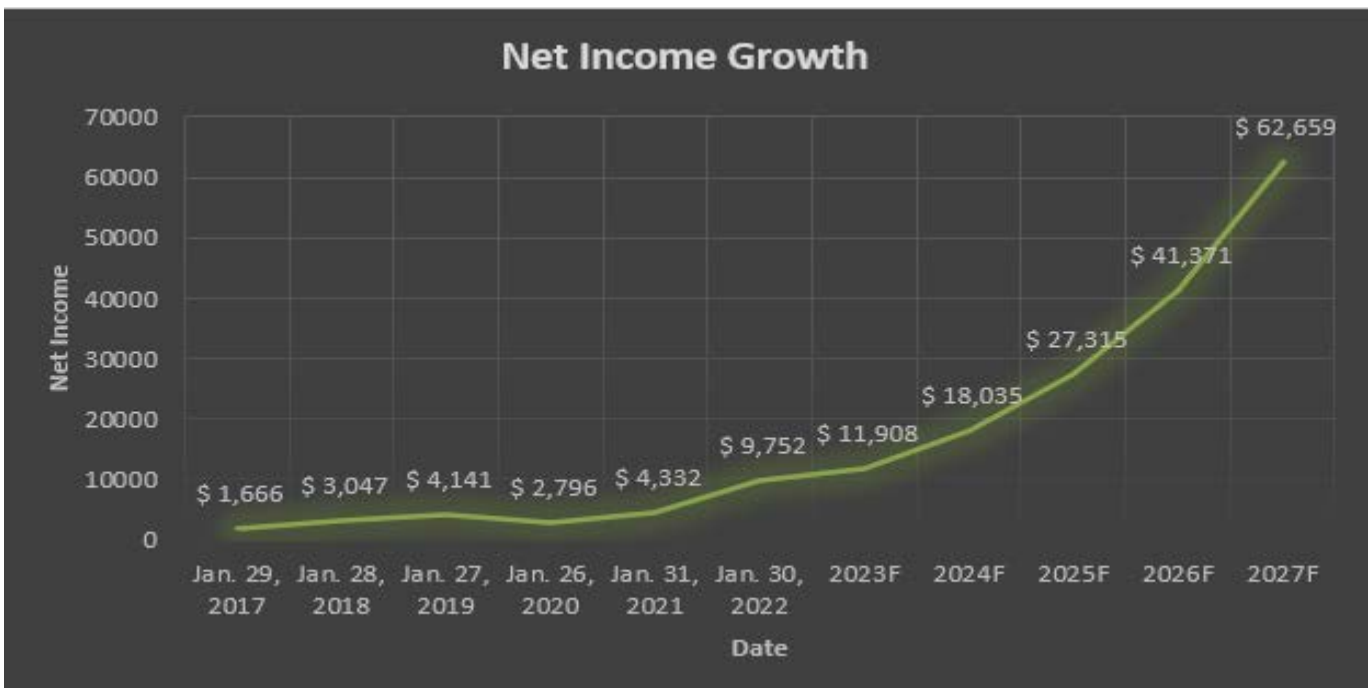
Appendix 8:

Revenue Growth Chart



Appendix 9:

Net Income Growth Chart



Appendix 10:

Model Terminal Growth Sensitivity

		Terminal Growth		PPS		
	4.13%	4.13%	\$ 927,083.85	\$ 370.24	Max = 1157.27066884727	
4.13%	0.25	1.03%	\$ 478,067.23	\$ 190.92	Min = -9746.51562987531	
4.13%	0.5	2.07%	\$ 566,592.61	\$ 226.28	Range = 10903.7862987226	
4.13%	0.75	3.10%	\$ 700,568.04	\$ 279.78	StdDev = 3873.2896021119	
4.13%	1.25	5.17%	\$ 1,392,603.14	\$ 556.15		
4.13%	1.5	6.20%	\$ 2,897,805.75	\$ 1,157.27		
4.13%	1.75	7.24%	\$ (24,405,275.14)	\$ (9,746.52)		

- Model Terminal Growth of 4.13% x 6 multiples resulting in 6 new Terminal Growth scenarios. Standard Deviation of all 7 scenario prices per share (model + 6 sensitivities) = \$3,873.29.
- First column: model input. Second column: scenario multiple. Third column: new input. Fourth column: new valuation. Fifth column: new price per share. Sixth column: scenario analysis.

Appendix 11:

Model Beta Sensitivity

		Beta		PPS		
	1.42	1.42	\$	927,083.85	\$	370.24 Max = 4197.16498835356
1.42	0.25	0.36	\$	(2,813,335.06)	\$	(1,123.54) Min = -1123.53636606054
1.42	0.5	0.71	\$	10,509,701.13	\$	4,197.16 Range = 5320.7013544141
1.42	0.75	1.07	\$	1,744,732.04	\$	696.78 StdDev = 1655.229662926
1.42	1.25	1.78	\$	620,465.81	\$	247.79
1.42	1.5	2.13	\$	460,343.60	\$	183.84
1.42	1.75	2.49	\$	362,263.49	\$	144.67

- Model Beta of 1.42 x 6 multiples resulting in 6 new Beta scenarios. Standard Deviation of all 7 scenario prices per share (model + 6 sensitivities) = \$1,655.23.
- First column: model input. Second column: scenario multiple. Third column: new input. Fourth column: new valuation. Fifth column: new price per share. Sixth column: scenario analysis.

Appendix 12:

Model Risk Free Rate Sensitivity

		Rf		PPS	
	1.60%	1.60%	\$ 927,083.85	\$ 370.24	Max = 522.235497268629
1.60%	0.25	0.40%	\$ 1,307,677.69	\$ 522.24	Min = 284.64939696715
1.60%	0.5	0.80%	\$ 1,151,802.52	\$ 459.99	Range = 237.586100301479
1.60%	0.75	1.20%	\$ 1,027,907.89	\$ 410.51	StdDev = 85.1829555797905
1.60%	1.25	2.00%	\$ 843,448.73	\$ 336.84	
1.60%	1.5	2.40%	\$ 772,963.40	\$ 308.69	
1.60%	1.75	2.80%	\$ 712,762.09	\$ 284.65	

- Model Risk Free Rate of 1.60% x 6 multiples resulting in 6 new Risk Free Rate scenarios. Standard Deviation of all 7 scenario prices per share (model + 6 sensitivities) = \$85.18.
- First column: model input. Second column: scenario multiple. Third column: new input. Fourth column: new valuation. Fifth column: new price per share. Sixth column: scenario analysis.

Appendix 13:

Model Market Premium Sensitivity

		Market Premium		PPS	
	5.50%	5.50%	\$ 927,083.85	\$ 370.24	Max = 4197.16498835356
5.50%	0.25	1.38%	\$ (2,813,335.06)	\$ (1,123.54)	Min = -1123.53636606054
5.50%	0.5	2.75%	\$ 10,509,701.13	\$ 4,197.16	Range = 5320.7013544141
5.50%	0.75	4.13%	\$ 1,744,732.04	\$ 696.78	StdDev = 1655.229662926
5.50%	1.25	6.88%	\$ 620,465.81	\$ 247.79	
5.50%	1.5	8.25%	\$ 460,343.60	\$ 183.84	
5.50%	1.75	9.63%	\$ 362,263.49	\$ 144.67	

- Model Market Premium of 5.50% x 6 multiples resulting in 6 new Market Premium scenarios. Standard Deviation of all 7 scenario prices per share (model + 6 sensitivities) = \$1,655.23.
- First column: model input. Second column: scenario multiple. Third column: new input. Fourth column: new valuation. Fifth column: new price per share. Sixth column: scenario analysis.

Appendix 14:

Model Cash Tax Rate Sensitivity

		Cash tax rate		PPS	
	2.50%	2.50%	\$ 927,083.85	\$ 370.24	Max = 371.736072312612
2.50%	0.25	0.63%	\$ 923,368.91	\$ 368.76	Min = 368.757553545459
2.50%	0.5	1.25%	\$ 924,604.10	\$ 369.25	Range = 2.97851876715237
2.50%	0.75	1.88%	\$ 925,842.40	\$ 369.75	StdDev = 1.0723884728825
2.50%	1.25	3.13%	\$ 928,328.44	\$ 370.74	
2.50%	1.5	3.75%	\$ 929,576.20	\$ 371.24	
2.50%	1.75	4.38%	\$ 930,827.13	\$ 371.74	

- Model Cash Tax Rate of 2.50% x 6 multiples resulting in 6 new Cash Tax Rate scenarios. Standard Deviation of all 7 scenario prices per share (model + 6 sensitivities) = \$1.07.
- First column: model input. Second column: scenario multiple. Third column: new input. Fourth column: new valuation. Fifth column: new price per share. Sixth column: scenario analysis.

Appendix 15:

Model Marginal Tax Rate Sensitivity

		Marginal tax rate		PPS	
	21.00%	21.00%	\$ 927,083.85	\$ 370.24	Max = 387.368373080165
21.00%	0.25	5.25%	\$ 888,736.42	\$ 354.93	Min = 354.926686623305
21.00%	0.5	10.50%	\$ 901,059.40	\$ 359.85	Range = 32.4416864568597
21.00%	0.75	15.75%	\$ 913,833.56	\$ 364.95	StdDev = 11.6783970481783
21.00%	1.25	26.25%	\$ 940,837.11	\$ 375.73	
21.00%	1.5	31.50%	\$ 955,122.25	\$ 381.44	
21.00%	1.75	36.75%	\$ 969,970.41	\$ 387.37	

- Model Marginal Tax Rate of 21.00% x 6 multiples resulting in 6 new Marginal Tax Rate scenarios. Standard Deviation of all 7 scenario prices per share (model + 6 sensitivities) = \$11.68.
- First column: model input. Second column: scenario multiple. Third column: new input. Fourth column: new valuation. Fifth column: new price per share. Sixth column: scenario analysis.

Appendix 16:

EV/EBITDA Sensitivity

		EV/EBITDA		
42.71		\$	2,310,230.36	Max = 3990894.5014128
0.25	10.67655667	\$	629,566.23	Min = 629566.226365529
0.5	21.35311335	\$	1,189,787.61	Range = 3361328.27504727
0.75	32.02967002	\$	1,750,008.98	StdDev = 1210216.49737822
1.25	53.38278336	\$	2,870,451.74	
1.5	64.05934004	\$	3,430,673.12	
1.75	74.73589671	\$	3,990,894.50	

- Model EV/EBITDA Multiple of 42.71 x 6 multiples resulting in 6 new EV/EBITDA Multiple scenarios. Standard Deviation of all 7 scenario EV/EBITDAs (model + 6 sensitivities) = \$1,210,216.50.
- First column: model input and scenario multiples. Second column: new input. Third column: new valuation. Fifth column: scenario analysis.

Appendix 17:

Ratios Part 1

		assume statutory rate=			0.21
Misc. Ratios		2022	2021	2020	2019
ROE = Net income / Avg. Shareholder's Equity	✓	43.99% ✓	29.78% ✓	25.95% ✓	49.26%
ROA = Net income / Avg. Total Assets	✓	26.22% ✓	18.79% ✓	18.27% ✓	33.76%
Financial Leverage = 1+Avg. total liabilities/ Avg. total equity	✓				
=Avg. Total assets / Avg. total equity		2.51	2.14	1.82	1.64
Net Profit Margin = Net income / Sales		36.23%	25.98%	25.61%	35.34%
Gross Profit Margin = Gross income / Sales		62.34%	61.99%	61.21%	59.93%
DuPont Analysis					
ROE = Profit Margin * Assets Turnover * Financial Leverage		65.77%	40.21%	33.26%	55.43%
ROE adding back treasury stock		35.27%	17.44%	13.77%	25.31%
ROCE=(Net income - preferred dividends-noncontrolling interests) /(total equity - preferred stock - noncontrolling equities)	✓	43.99% ✓	29.78% ✓	25.95% ✓	49.26%
Adjusted ROA = [Net Income + Interest expense (1-statutory tax rate)]/ Average total assets	✓	26.16%	18.60%	17.35%	32.88%
RNOA=NOPAT/Average NOA					

Appendix 18:

Ratios Part 2

	2022	2021	2020	2019
Liquidity				
Current Ratio= Current assets/current liabilities	6.65	4.09	7.67	7.94
Quick Ratio= Cash+Marketable Sec.+ AR/ Current Liabilities	5.96	3.56	7.04	6.66
Solvency				
Liabilities to equity= Total Liabilites/Stockholders equity	0.66	0.70	0.42	0.42
Total debt to equity= Long term debt including current portion+ short term debt/ stockholders equity	0.41	0.41	0.16	0.21
Times interest earned (EBIT coverage)	2.77	22.96	56.12	66.17
EBITDA coverage ratio	13.95	28.93	63.44	70.69
Interest coverage ratio (cashflow coverage)	86.76	31.64	91.56	64.53
Cash from operations to total debt	0.83	0.84	2.39	1.88
Free operating cash flow to total debt	0.74	0.67	2.15	1.58
Productivity				
Assets Turnover = Sales / Average Total Assets	0.72	0.72	0.71	0.96
AR Turnover= Sales/ Average AR	7.46	8.16	7.09	8.71
Days AR outstanding= 365/ AR Turnover	48.92	44.72	51.50	41.89
Inventories Turnover= COGS/ Average Inventory	4.18	4.48	3.25	3.83
Days inventory outstanding= 365/ Inventories turnover	87.32	81.53	112.31	95.21
PPE Turnover= Sales/ Average PPE net	10.72	8.72	7.09	9.76
AP Turnover= COGS/ Average AP	6.21	6.65	6.93	8.21
Days of AP Outstanding= 365/ AP turnover	58.80	54.87	52.68	44.45

Appendix 19:

Conversion snapshot 53-week to 52-week

<u>IS Conversion</u>		<u>IS Conversion</u>	
53 week	52 week	53 week	52 week
Jan. 29,	Jan. 29,	Jan. 30,	Jan. 30,
2017	2017	2022	2022
\$ 6,910	6780	\$ 26,914	\$ 26,406
2,847	2793	9,439	9,261
4,063	3986	17,475	17,145
	0		0
1,463	1435	5,268	5,169
663	650	2,166	2,125
3	3	0	0
2,129	2089	7,434	7,294
1,934	1898	10,041	9,852
54	53	29	28
(58)	-57	(236)	(232)
(25)	-25	107	105
(29)	-28	(100)	(98)
1,905	1869	9,941	9,753
239	234	189	185
\$ 1,666	1635	\$ 9,752	\$ 9,568
	0		0
\$ 3.08	3	\$ 3.91	\$ 3.84
\$ 2.57	3	\$ 3.85	\$ 3.78

- Fiscal Years 2017 and 2022 were 53-week years and the Income Statement had to be converted to 52-week years to be comparable across previous periods for our analysis

Appendix 20:

Top Insider Shareholders

Top 3 Insider Shareholders

Names	Number of Shares Holding	% of Total Outstanding Shares	Roles
Jen-Hsun ('Jensen') Huang	1.3 million shares	0.21%	- Founder of Nvidia - Currently serves as Director, President, and CEO
Collette M. Kress	157,773 shares	0.03%	- Currently serves as Executive VP and CFO of Nvidia
Mark A. Stevens	157,186 shares	0.03%	- Has served on Nvidia's board from 1993 to 2006, and then since 2008

Appendix 21:

Top Institutional Shareholders

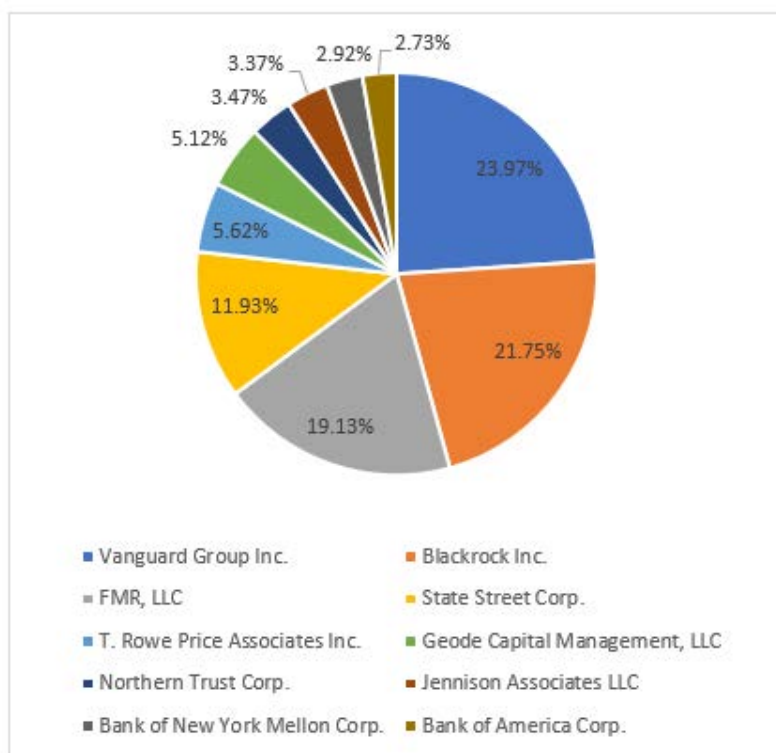
Top 3 Institutional Shareholders

Financial Institution	Number of Shares Holding	% of Total Outstanding Shares	Nvidia holding ranking in the fund portfolio
Vanguard Group Inc.	48.0 million shares	7.7%	Third largest (3.2% of total fund assets)
BlackRock Inc.	44.8 million shares	7.2%	Largest (8.8% of total fund assets)
FMR LLC	43.7 million shares	7.1%	Sixth largest (3.3% of total fund assets)

Source: <https://www.investopedia.com/articles/insights/120816/top-3-shareholders-nvidia-corporation-nvda.asp>

Appendix 22:

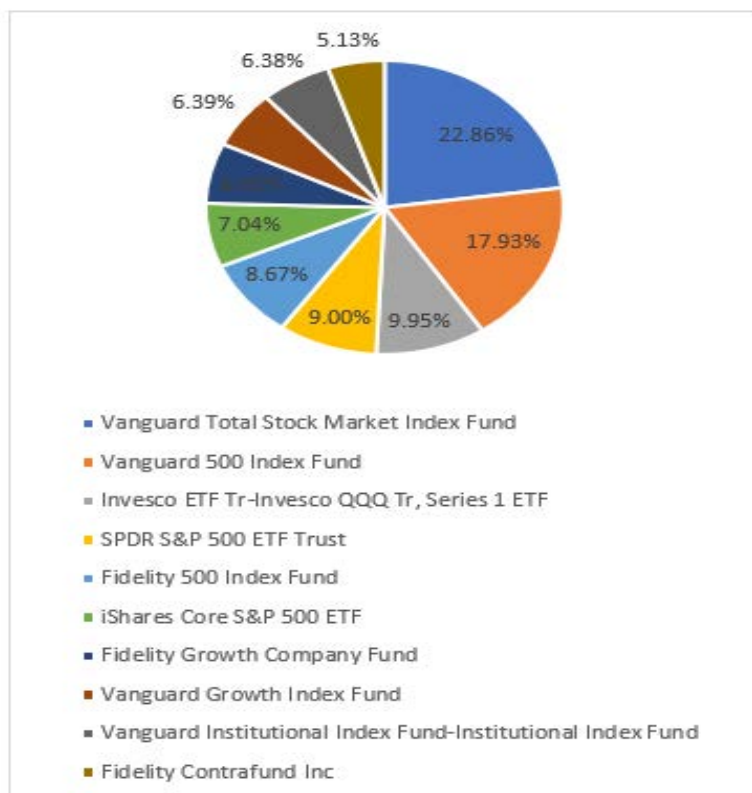
Nvidia Top 10 Institutional Investors as of YE 2021



Source: Yahoo! Finance

Appendix 23:

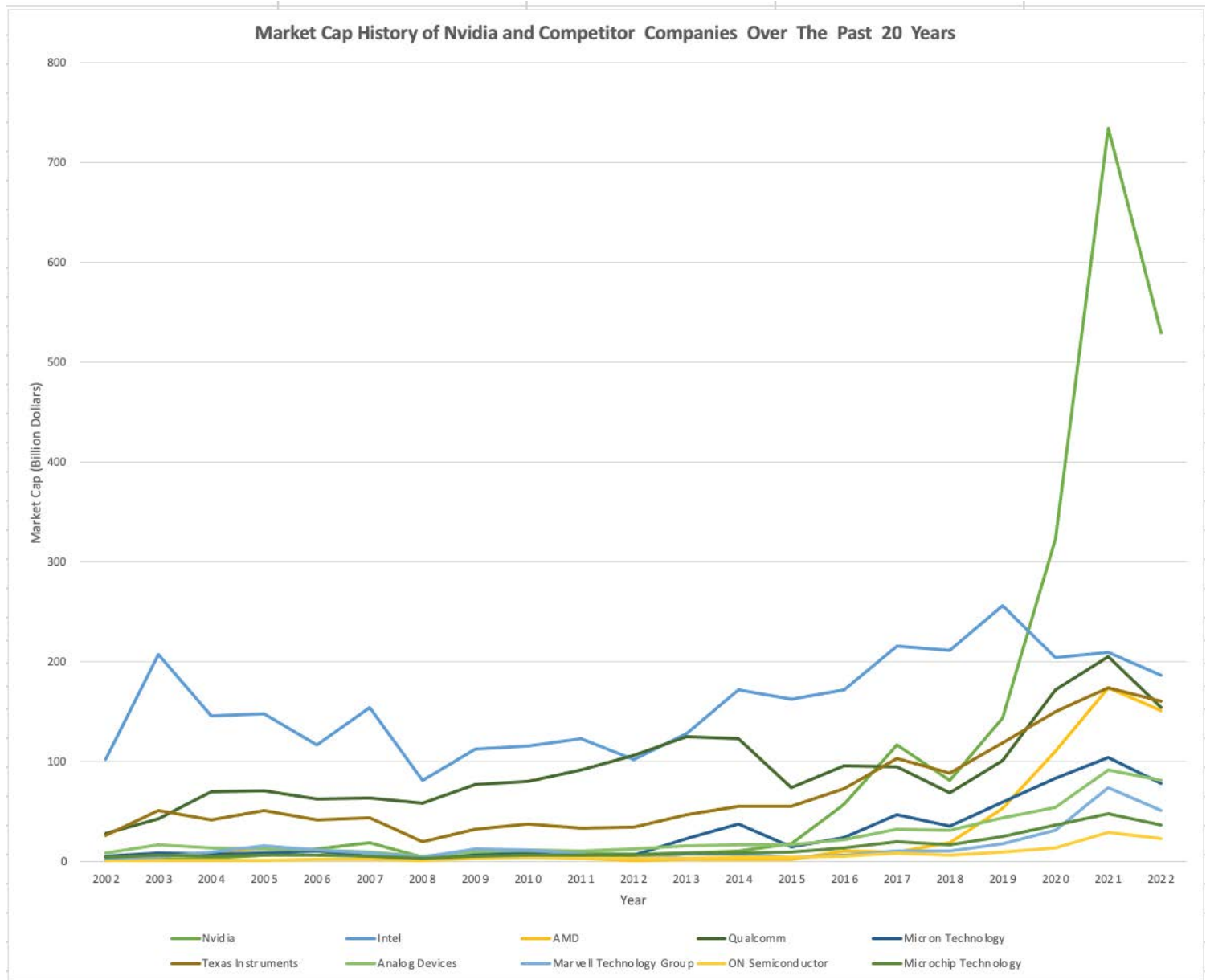
Nvidia Top 10 Mutual Fund Investors as of YE 2021



Source: Yahoo! Finance

Appendix 24:

Market Cap History

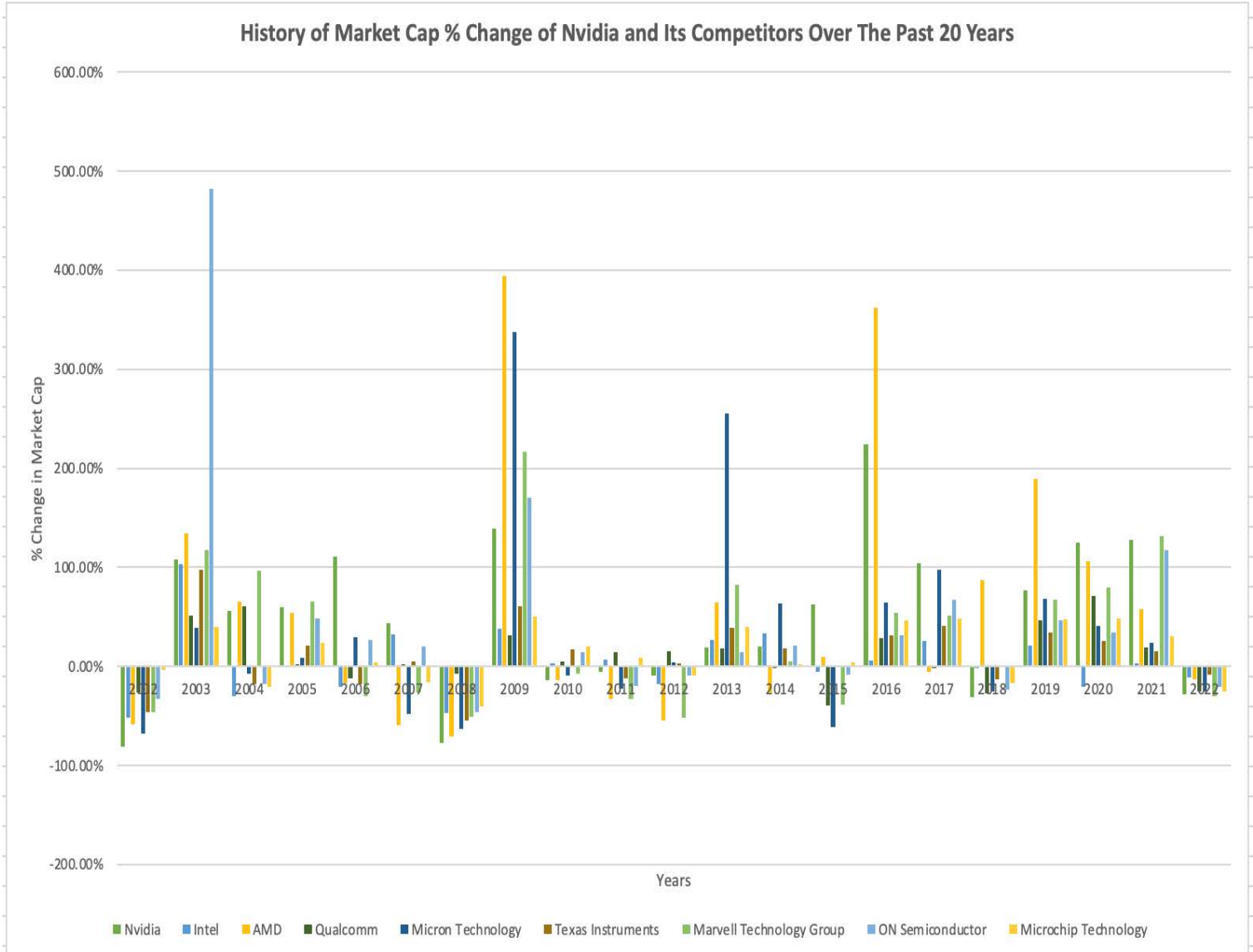


Market Capitalization, or also called Market Cap, is an effective measurement tool that can be used to compare companies, based on the (public) company's overall value set by the market. According to the line chart given which shows the history of Market Cap of Nvidia, and its competitors, we can observe that Nvidia has been showing a strong and impressive raise in its market value, especially after 2019. Nvidia's biggest competitor, Intel, while holding #1 in market value in those early years, towards recent years, has recently shown slow growth in their Market Cap, compared to Nvidia. Nvidia had been holding the position of small cap stock for 1-year, mid-cap stock for 4 years, and large-cap stock for 16 years since 2002. This impressive growth of Nvidia's Market Cap can be explained by the company's business and financial strategy in acquiring big and potential companies in the chips/GPUs industry.

Source: <https://companiesmarketcap.com/nvidia/marketcap/>

Appendix 25:

Market Cap % Change

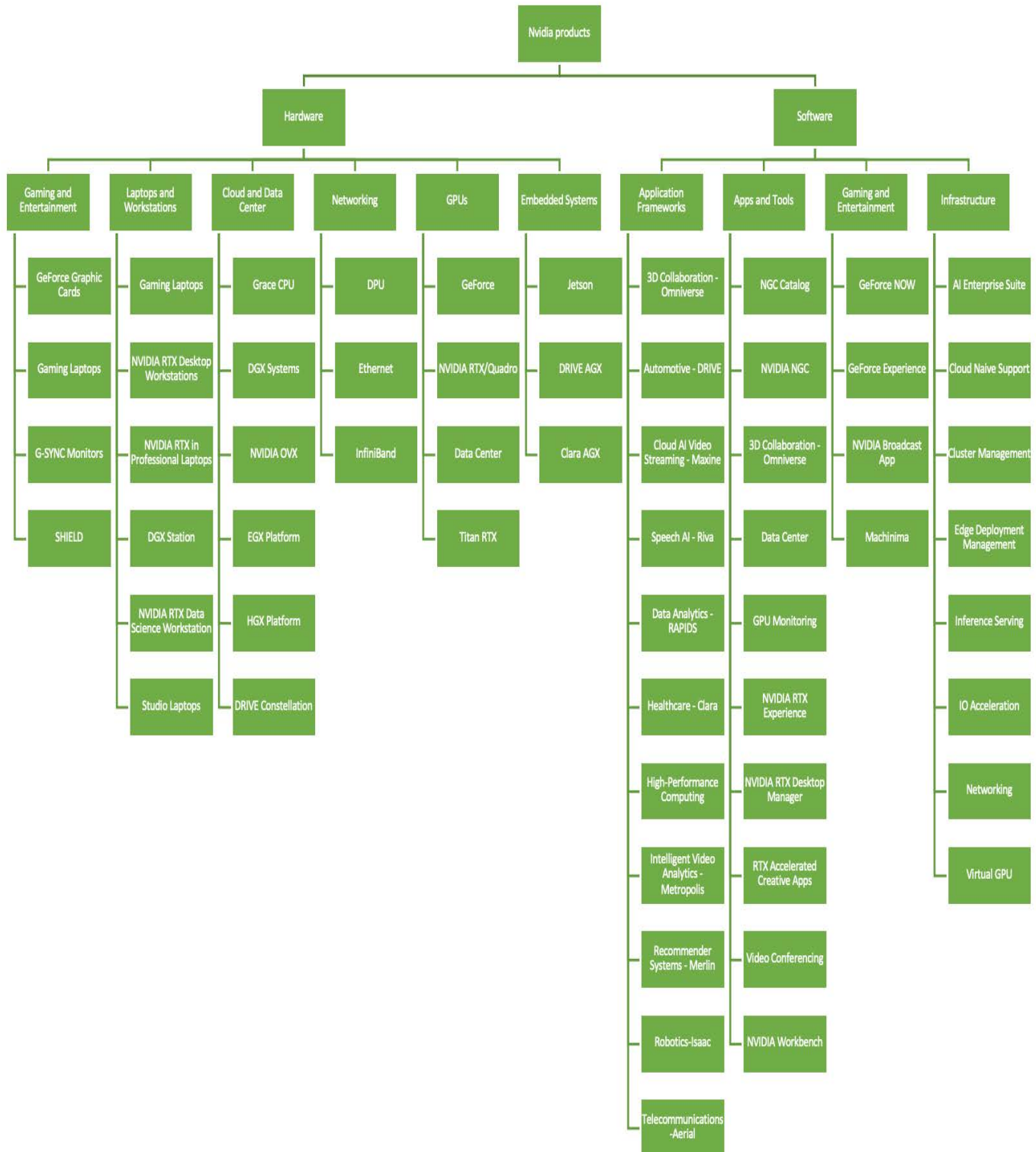


The bar plot shows the percentage change in Market Cap of Nvidia and its competitors during the past 20 years. In the early years (2002-2014), Nvidia showed positive change in its Market Cap, but still had lower and slower growth rate, compared to its competitors such as ON Semiconductor, Micron Technology, and AMD. These companies had been showing impressive positive % change in market value in the industry during the first half of our researched period. Nvidia had the largest positive % change in market cap in 2016 with 224.45% from a prior year. Notably in 2016, Nvidia started its revolution in AI with PASCAL, DGX-1, and DRIVE PX 2.

Source: <https://companiesmarketcap.com/nvidia/marketcap/>

Appendix 26:

Product List



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