Money Jet

Portfolio Performance Review and

NVDA Stock Analysis

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Section A: Portfolio Review

Introduction

Unlike traditional funds focused on maximizing returns, the Money Jet portfolio objective was to provide investors with diversified protection against risk and loss in periods of economic downturn. As a result of rampant inflation, persistent supply chain issues, international conflict, and the lingering effects of COVID-19, we predicted that the global economy would enter a severe recession and designed a low-volatility portfolio focused on mitigating loss. Our portfolio investment strategy involved carefully investing in undervalued value stocks and dividend stocks with consistent returns, as we preferred small gains with low risk over risky growth and innovation stocks. Through active portfolio management, we secured small gains by selling stocks when they reached or exceeded our calculated intrinsic values while collecting returns on our dividends. We Dollar-Cost Averaged into our positions to mitigate the effects of mistiming the market. Based on our valuation models, we only bought stocks when they were significantly below their intrinsic price.

The Money Jet fund operated on the following policy: “Through our unique micro-portfolio strategy, we provide investors with diversified protection against risk and loss in periods of economic downturn. Our key decision-making factor is limiting losses for our investors.” Our investment process was simple; for every action we took, we considered the individual action’s risk and its impact on the risk of the total portfolio. With an investment universe focused on global mid- and large-cap value stocks, we invested primarily in well-known, proven brands. Stocks with consistent returns in low-volatility sectors were more desirable, as they could better weather a recession. Rather than speculate about future growth based on news, we used simple financial analysis to identify undervalued stocks to purchase. We simply waited for them to return to intrinsic values because speculation, especially in volatile sectors like tech, is incredibly risky. We researched every investment heavily through Bloomberg Terminals and read relevant news articles from CNBC and the Wall Street Journal. While this information helped affirm our decisions, it played a much smaller role than our fundamental valuation models, which included the Dividend Discount Model, Operating Free Cash Flow Model, and Free Cash Flow From Equity Model. After identifying undervalued stocks, we avoided immediately investing large amounts of cash. Instead, Dollar-Cost Averaging into our desired positions over several weeks, a technique that made it challenging to capture early short-term gains but protected our positions against early loss.

To reduce our risk, we ensured that none of these securities were overweight, restricting them to a weight of 10% in our portfolio. With strict risk control, we began divesting from holdings that lost over 7.5% to limit our losses while also ensuring our portfolio beta was below 1.0 during recessionary periods. Our fund operated with fairly strict sell discipline as well, as we generally secured returns by selling value stocks once they reached our calculated intrinsic value prices.

Our ending portfolio was comprised of 80.5% large-cap securities, 13.6% mid-cap securities, and 5.9% small-cap securities. Due to our slow DCA approach, 50.5% of our ending portfolio was cash. 40.1% was invested in Long Equities, and 8% was invested in mutual funds. Short Equities made up 1% of our portfolio, and another .3% was in Long Options. Our cash holdings were higher than desired, primarily because we believe the market is still declining, but we also haven't finished averaging into our positions. As we continue to monitor the progress of our portfolio and macroeconomic signals, we plan to eventually decrease significantly from the current 50.5% cash allocation through careful investments.

As for our sector breakdown, our largest defined sector is retail trade at 18.7% of our invested capital, which includes companies like Walmart, Target, and Costco. These companies are traditionally strong value picks and are consistent in times of economic recession. The second-heaviest sector, tech services, made up 14.9% of our portfolio. While slightly more volatile, we were extremely careful with our tech investments and used them to secure quick gains. Rounding out our top 5 sectors, we had 8.4% in the financial sector, 8.3% in electronic tech, which includes semiconductor companies like NVIDIA, and 5% in utilities, which traditionally do very well in times of economic recession. Various small investments in other sectors made up the rest of our holdings, alongside some small, generally unsuccessful options trades and some successful crypto shorting.

Performance

As of November 30th, 2022, Money Jet's portfolio had a standard deviation of 0.69%, a Sharpe ratio of 4.29, and a portfolio return rate of 6.76%. Because Money Jet's portfolio held high cash reserves (50.5% of the portfolio value), we feel that our low standard deviation does not accurately reflect our invested capital, so we recalculated without our cash reserves, generating a standard deviation of 1.3%, which shows our portfolio was not prone to volatility. Using the initial standard deviation considering the cash reserves, we calculated a Sharpe ratio of 4.29, which is incredibly high due to our low standard deviation from our high cash reserves. This high Sharpe ratio displays excellent investment performance, given the minimal risk of our portfolio as measured by our beta of 0.8348. Money Jet's top 10 holdings and their weights are visible in the chart below.

SYMBOL	QTY	PRICE PAID	LAST PRICE	DAY'S CHG	P/L	P/L %	MKT VALUE (USD)
SPY	1321	$376.55	406.91	-0.47	40,110.33	8.06%	$537,528.11
VOO	900	$339.25	374.00	-0.54	31,277.00	10.24%	$336,600.00
COST	620	$480.13	494.53	-9.33	8,928.00	3.00%	$306,608.60
ADBE	737	$276.03	341.53	-2.58	48,274.35	23.73%	$251,707.61
WMT	1600	$130.92	153.22	-0.15	35,680.00	17.03%	$245,152.00
NRG	5000	$39.75	41.25	-0.88	7,500.00	3.77%	$206,250.00
BRK-B	600	$271.92	316.15	0.31	26,538.00	16.27%	$189,690.00
CSCO	3750	$41.50	49.70	-0.27	30,750.00	19.76%	$186,375.00
KO	2600	$57.24	64.35	0.56	18,486.00	12.42%	$167,310.00
ABBV	1000	$136.12	163.66	2.03	27,540.00	20.23%	$163,660.00

Figure 1: A list of Money Jet's top 10 holdings

To further comment on our portfolio returns, our top gainers included NVDA (NVIDIA Corporation), VALE (Vale S.A.), and COST (Costco Wholesale). At the start of the semester, NVIDIA Corporation experienced significant obstacles, including export restrictions and supply chain constraints, that caused a massive decrease in valuation despite releasing their new RTX 4000 graphics cards. Starting mid-October, NVIDIA has gradually recovered from the dip, surging from an initial stock price of $112 to $169.23 as of November 30th, 2022. Overall, our portfolio saw a 32.82% return on our NVIDIA investment. Vale S.A., one of the largest producers of iron and nickel, saw mid-October recovery as well, as iron and copper reached their lowest in a year and the company signed a long-term nickel supply agreement with General Motors (Surran, Sickles). Money Jet's Vale investment returned 30.95%. Despite not yielding as much as other stocks, Costco Wholesale best portrayed our "safety-first" investment approach as a safe, slightly undervalued large-cap consumer brand. Costco observed rising sales growth of 8.5% in September and 6% in October, staying consistently less volatile than other stocks and returning 12.31% in the Money Jet portfolio (Kuruthukulangara).

Our top losers consisted of Chargepoint Inc. (CHPT), Meta Platforms (META), and The Walt Disney Company (DIS). Chargepoint, which incurred losses of 20.94% in our portfolio, faces rapidly rising competition sparked by manufacturers and governments investing extensively in EV charging infrastructure. Our Meta Platforms investment lost 13.85% of its value, likely caused by its massive 11,000-employee layoff. Cutting 13% of its workforce while Zuckerberg reiterated his support of the unproven metaverse caused an enormous selloff of

META stock, crashing the stock price. Disney's 5% stock price dip likely arose from intense competition in the streaming sector.

Notably, our biggest losers were underperforming growth stocks that did not align with Money Jet's core mission, as they carried more risk than our preferred value stocks. However, the bulk of our success stemmed from buying and holding underpriced value stocks and waiting for them to recover to intrinsic values.

Benchmark Returns and Risk Comparison

We chose the Russell 1000 Index as our primary benchmark and the S&P 500 as our secondary benchmark. The Russell 1000 Index was chosen as the primary benchmark because it had more similar sector weights to Money Jet's portfolio than the S&P 500. Over the entire semester, we consistently outperformed the Russell 1000 and S&P 500, achieving an overall portfolio return of approximately 6.76% [Figure 2] [Figure 3]. With our beta being 0.8348 and having an incredibly low standard deviation of 0.69%, we can infer that our portfolio was significantly less volatile than the overall market, as represented by the S&P 500 Benchmark [Figure 4]. Throughout the semester, we were able to mitigate loss as the market recessed. Careful DCA, divesting, diversification, and a large cash holding allowed us to limit losses and generate healthy excess returns.

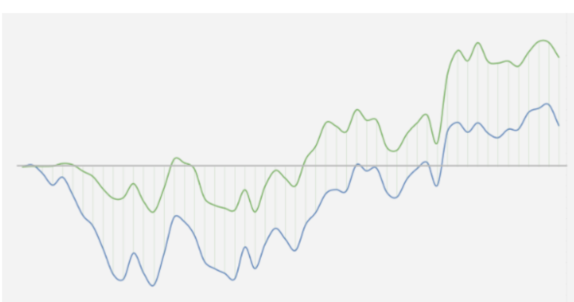
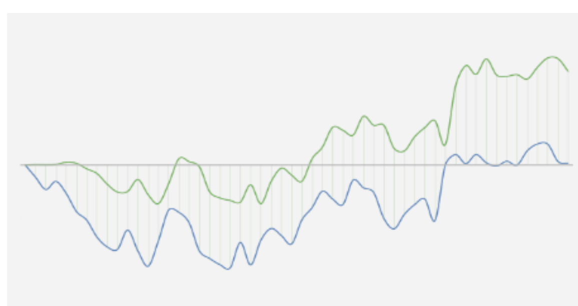



Figure 2 (Left): Money Jet's Portfolio Returns Vs. Russell 1000 Index

Figure 3 (Right): Money Jet's Portfolio Returns Vs. S&P 500

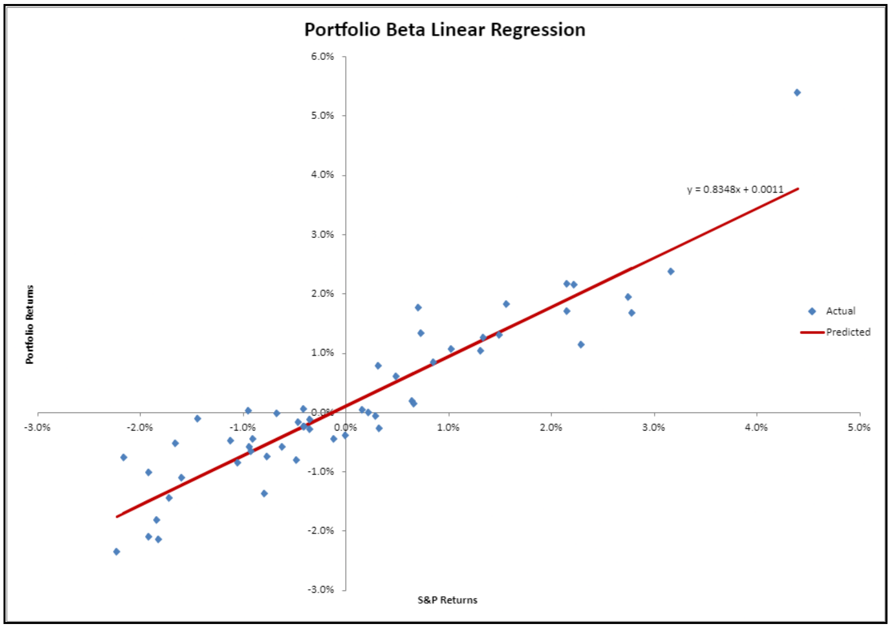


Figure 4: Portfolio Beta Linear Regression Graph

Future Plans

Looking forward to the future of the Money Jet fund, we intend to stay consistent with our current investment strategy — which has already seen incredible success, returning approximately 6.76% over the semester. By diversifying our security selection as well as minimizing our risk through buying undervalued stocks, we can ensure the continuation of our investors' success, especially in this current market recession. Therefore, we plan to hold our undervalued stocks and strive for consistent returns until the market recovers long-term. As a result of a few days of strong performance, many of our holdings, such as Adobe, have become overvalued compared to our calculated intrinsic values, so we intend to follow our outlined sell discipline policy and sell these securities as soon as possible to secure our returns while avoiding any potential losses to maximize profitability for our investors.

Section B: Stock Investment Analysis

Executive Summary

Money Jet firmly believes that NVIDIA Corporation stock (NVDA) is a BUY opportunity based on financial analysis, multiple valuation metrics, and recent news. Utilizing various valuation models, including the Dividend Discount Model, Operating Free Cash Flow Model, and Free Cash Flow from Equity model, we have determined NVDA stock's intrinsic value to be $228.07. NVDA is currently trading at $169.23 as of 11/30/22, far below the calculated intrinsic price, indicating an excellent opportunity to purchase stock. Following this recommendation, Money Jet will invest a considerable amount of capital into NVIDIA.

Company Background

NVIDIA Corporation was founded by CEO Jensen Huang in 1993, and its IPO was in 1999. It is an American technology company that specializes in computer hardware and software. NVIDIA leads the semiconductor industry in the development of Graphic Processing Units (GPUs) and AI acceleration hardware. GPUs are heavily utilized in media design, engineering, gaming, and, most importantly, the rapidly growing data center industry. Additionally, NVIDIA provides data center solutions for cloud computing and custom chip systems for various deployments, including AI acceleration and mobile processors.

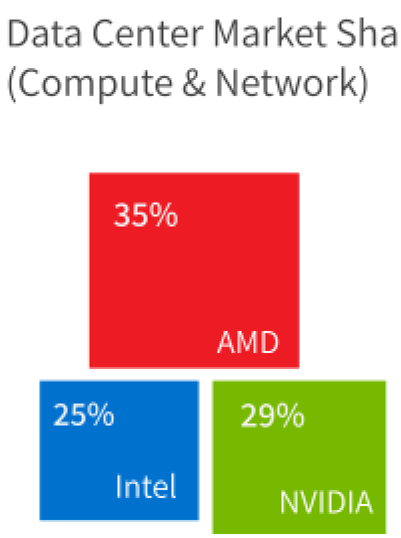
Industry Background

The semiconductor industry comprises three key competitors: Intel, AMD, and NVIDIA. The three companies focus on developing graphics processors, custom chip systems, and AI acceleration hardware in the dGPU, iGPU, and data center markets. NVIDIA currently competes in two key segments: Graphics and Compute & Network, which have Total Addressable Markets of $8.59 billion and $321.37 billion, respectively. In recent years, the $573.44 billion semiconductor industry has been characterized by unstable growth due to supply chain constraints post-pandemic. Furthermore, this industry serves as the backbone for tech, with growth in the technology industry correlating strongly with returns in the semiconductor industry.

Currently, a recent 20% rise in costs of computer chip manufacturing processes has led to a decrease in supply. The global recession has decreased consumer discretionary income. As a result, the video game industry — once labeled as "recession-proof" — is declining as consumer spending falls 8.7% from the year prior (Piscatella). However, the need for cloud computing is rapidly increasing as companies seek to utilize data centers to outsource their data processing needs. This majorly affects NVIDIA's future business plans as they dominate the video game graphics industry through their advancements in the discrete GPUs that power gaming computers. However, as expressed in their Q3 investor presentation, NVIDIA plans to reallocate their R&D into developing data center services that rely heavily on the same dGPU architecture (NVIDIA).

Unfortunately, NVIDIA does not compete in the third main semiconductor market, integrated GPUs. This is a slight issue for the company as iGPUs are chips sold in nearly every commercial computer. This relatively stable market makes up 75% of the total GPU sector (Syed). Intel holds a significant position in the iGPU market along with AMD.

Focusing on the dGPU market, it is worth noting that NVIDIA has around 79% percent of the total market share, followed by AMD at 20%, and Intel, who recently emerged into this market, at 1%. NVIDIA's dominance is due to the $5.2 billion it pours into R&D (a 40% increase year over year)(NVIDIA). This expenditure puts them at the forefront of technological advancements in this sector. The reasoning behind their continued investment becomes apparent when realizing that as of 2020, the data center market was valued at $180 billion. Additionally, the service is expected to reach a market cap of $500 billion by 2030 (Kanhaiya, Himanshu, Vineet). As of now, AMD holds the largest share in the data center market, but it is worth noting that 361 out of the top 500 supercomputers are powered by NVIDIA hardware, and all new emerging data centers are pivoting towards utilizing NVIDIA technologies (NVIDIA). Thus, NVIDIA seems to have a headstart on the competition in a market with huge potential to grow.



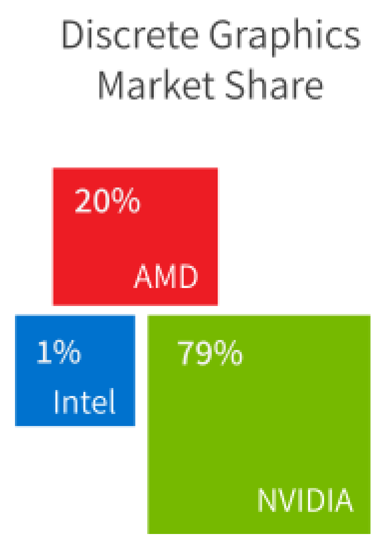


Figure 5 (Left): Data Center Market Share

Figure 6 (Right): Discrete Graphics Market Share

A dive into NVIDIA's SWOT analysis details the company's key strength of consistently entering new markets. This is visible in their willingness to shift the company's primary source of revenue from the video game industry to data center operations and services. While a previously mentioned weakness lies in not producing iGPUs, the company's centralized decision-making process also limits creative thinking and difference of opinion, as primary stakeholders and leading executives drive a majority of decisions. A growing opportunity for NVIDIA lies in the AI and data center markets. With these industries projected to 5x their current market cap, NVIDIA has a chance to capture a significant market share and increase revenue. The primary threat facing NVIDIA and its competitors is supply chain shortages. Fortunately, the global economy is slowly adjusting out of the supply chain shortages formed by COVID-19, and geopolitical tensions in Taiwan have seemed to settle down. However, the semiconductor industry is extremely sensitive to supply chain disruptions, and issues facing the distribution of computer chips can severely affect NVIDIA's business operations.

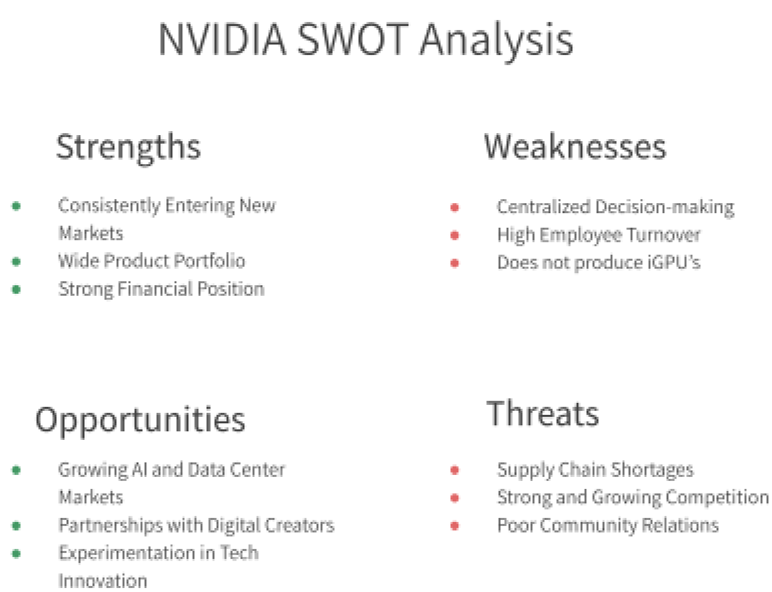


Figure 7: NVIDIA SWOT Analysis

Valuation Analysis

When compared to its competitors, NVIDIA's P/E ratios are much higher than the industry average. As of Nov 2022, NVIDIA recorded a P/E multiple of 55.62x, more than double that of the industry at 20.4x. In years prior, NVIDIA's drastic P/E ratio could be attributed to various macroeconomic factors, such as COVID-19 and the supply chain issues that followed.

With investors still willing to pay a high price, the ratio indicates the expected growth the company is projected to gain. It can also be seen that NVIDIA's price is correcting from 2020 as its EPS growth continues to remain extremely strong. As of 2025, they are still projected to have higher P/E ratios than their main competitors (at 27.88) but will be at the lowest since 2019 and much closer to the industry average.

	FY 2018	FY 2019	FY 2020	FY 2021	Nov 2022	FY 2023 Est.	FY 2024 Est.	FY 2025 Est.
NVDA	52.74	26.51	218.50	64.06	55.62	48.53	36.31	27.88
AMD	53.49	106.75	89.43	57.13	38.21	19.91	15.76	12.12
INTC	10.65	12.99	10.61	11.15	15.11	15.98	11.81	12.13
Industry	**11.5**	**25.7**	**30.8**	**31.3**	**20.4**	**18.52**	**19.7**	**20.3**

Figure 8: Historical and projected P/E ratios of NVIDIA and its Competitors

In a similar vein, NVIDIA's price to book value ratio has also steadily corrected. At 14.45x for 2022, its P/BV multiple is up 5 points compared to the industry average of 9.16x. NVIDIA's P/BV ratio is also higher than AMD and Intel at 2.2 and 1.23 (Macrotrends). While this is a drastic difference from its competitors, it is also indicative of the amount of working capital being reinvested into the company. Our financial model predicts NVIDIA's P/BV ratio falling to 5.41 as of 2027. And since NVIDIA's stock price is expected to rise, this fall in P/BV is solely attributable to NVIDIA's increase in net assets over the upcoming years.

Over the last 12 months, NVIDIA's price-to-cash flow ratio has decreased dramatically from 82.50 to 20.91x. This value indicates that the company's cash flows are covered by lower stock prices than the industry average (23.50x). In relation to its competitors, AMD has a price-to-cash ratio of 33.40, while Intel has a ratio of -6.2. And while Intel's ratio indicates the company is reinvesting its cash back into development, it is clear that future growth is more anticipated in NVIDIA's valuation metrics. As of 2026, NVIDIA's P/CF is anticipated to decrease steadily to 8.55x (lowest in 2025 at 7.36). This is a result of NVIDIA's growth in cash on hand, which increased 83.44% in 2022 compared to the year prior and is projected to keep growing. Overall, this ratio will continue to normalize and level out as NVIDIA generates larger revenues.

NVIDIA's price-to-sales ratio has also declined from 27.71 to 18.49 in 2022. However, this value is still well above the industry average at 6.62. NVIDIA's P/S ratio is also greater than AMD and Intel at 4.48 and 1.77, respectively. While this does demonstrate that the stock may be overvalued in the current period, it is also a clear indication that investors are willing to pay more as they project future growth within this company. And following suit with the three previous valuation metrics, we predict NVIDIA's P/S ratio to also decrease to 9.45 by 2026 — an indication of higher generated sales from anticipated sales growth in the data center industry.

Ultimately, while it could be assumed that all future growth may already be priced in by viewing these valuation metrics, a detailed analysis of NVIDIA's financial statements will further prove that there is still room for NVIDIA to grow and its stock price to rise.

Financial Analysis

Money Jet generated the following financial statements using a combination of NVIDIA's historical financial statements and projections about the firm's future performance.

Nvidia Corporation Consolidated Statements of Income									
Year ended December 31 (In thousands except per share data)	**1/31/2019** **12 Months**	**1/31/2020** **12 Months**	**1/31/2021** **12 Months**	**1/31/2022** **12 Months**	1/31/2023 Prediction	1/31/2024 Prediction	1/31/2025 Prediction	1/31/2026 Prediction	1/31/2027 Prediction
Net operating revenues	**$11,716,000**	**$10,918,000**	**$16,675,000**	**$26,914,000**	$40,747,796	$65,196,474	$103,662,393	$162,749,957	$255,517,433
Cost of goods sold	4,545,000	4,150,000	6,279,000	9,439,000	13,378,000	20,241,075	30,427,697	43,125,514	65,249,423
Gross profit	**7,171,000**	**6,768,000**	**10,396,000**	**17,475,000**	27,369,796	44,955,398	73,234,696	119,624,443	190,268,010
SG&A expenses	991,000	1,093,000	1,940,000	2,166,000	3,279,324	5,386,351	8,774,647	14,332,855	22,797,044
Other operating charges	2,376,000	2,829,000	3,924,000	5,268,000	7,975,752	11,062,867	14,851,984	22,485,903	31,189,355
Operating income	**3,804,000**	**2,846,000**	**4,532,000**	**10,041,000**	16,114,720	28,506,181	49,608,066	82,805,685	136,281,611
Interest income (net)	136,000	178,000	57,000	29,000	35,000	20,000	17,500	50,000	100,000
Interest expense	58,000	52,000	184,000	236,000	236,000	317,407	332,833	469,396	516,130
Equity income-net		819	602	769	769	750	740	800	600
Other income (loss)-net	14,000	(2,000)	4,000	107,000	105,000	10,000	20,000	100,000	256,000
Gains on issuances of stock by equity investees	-	-	-	-	-				
EBT before cumulative effect of accounting change	**3,896,000**	**2,970,819**	**4,409,602**	**9,941,769**	16,019,489	28,219,524	49,313,473	82,487,089	136,122,081
Income taxes	(245,000)	174,000	77,000	189,000	189,000	332,938	581,807	973,193	1,605,986
Net income before cumulative effect of accounting change	**4,141,000**	**2,796,819**	**4,332,602**	**9,752,769**	15,830,489	27,886,587	48,731,666	81,513,895	134,516,095
Net income after cumulative effect of accounting change and other adjustments	**4,140,938**	**2,796,752**	**4,332,560**	**9,752,743**	15,830,463	27,886,561	48,731,640	81,513,869	134,516,069
Average shares outstanding	2,432,000	2,436,000	2,468,000	2,496,000	2,500,000	2,900,000	3,500,000	5,465,500	7,860,000
Net income per share	$1.70	$1.15	$1.76	$3.91	$6.33	$9.62	$13.92	15	17
Dividends paid per share	**$0.15**	**$0.16**	**$0.16**	**$0.16**	$0.16	$0.14	$0.11	0	0

Figure 9: Yearly income statement (4 years + projection)

Breakdown	10/31/2022	7/31/2022	4/30/2022	1/31/2022	10/31/2021
> Total Revenue	5,931,000	6,704,000	8,288,000	7,643,000	7,103,000
Cost of Revenue	2,754,000	3,789,000	2,857,000	2,644,000	2,472,000
Gross Profit	3,177,000	2,915,000	5,431,000	4,999,000	4,631,000
> Operating Expense	2,576,000	2,416,000	2,210,000	2,029,000	1,960,000
Operating Income	601,000	499,000	3,221,000	2,970,000	2,671,000
> Net Non Operating Interest Inc...	23,000	-19,000	-50,000	-52,000	-55,000
> Other Income Expense	-11,000	-5,000	-1,366,000	-53,000	22,000
Pretax Income	613,000	475,000	1,805,000	2,865,000	2,638,000
Tax Provision	-67,000	-181,000	187,000	-138,000	174,000
> Net Income Common Stockhold...	680,000	656,000	1,618,000	3,003,000	2,464,000
Diluted NI Available to Com Stock...	680,000	656,000	1,618,000	3,003,000	2,464,000
Basic EPS	0.27	0.26	0.65	-	0.99
Diluted EPS	0.27	0.26	0.64	-	0.97
Basic Average Shares	2,483,000	2,495,000	2,506,000	-	2,499,000
Diluted Average Shares	2,499,000	2,516,000	2,537,000	-	2,538,000
Total Operating Income as Reported	601,000	499,000	1,868,000	2,970,000	2,671,000
Total Expenses	5,330,000	6,205,000	5,067,000	4,673,000	4,432,000
Net Income from Continuing & Dis...	680,000	656,000	1,618,000	3,003,000	2,464,000
Normalized Income	680,000	656,000	2,831,641	3,003,000	2,464,000
Interest Income	88,000	46,000	18,000	9,000	7,000
Interest Expense	65,000	65,000	68,000	61,000	62,000
Net Interest Income	23,000	-19,000	-50,000	-52,000	-55,000
EBIT	678,000	540,000	1,873,000	2,926,000	2,700,000
EBITDA	-	-	-	-	-
Reconciled Cost of Revenue	2,754,000	3,789,000	2,857,000	2,644,000	2,472,000
Reconciled Depreciation	406,000	378,000	334,000	309,000	298,000
Net Income from Continuing Oper...	680,000	656,000	1,618,000	3,003,000	2,464,000
Total Unusual Items Excluding Goo...	0	0	-1,353,000	-	-
Total Unusual Items	0	0	-1,353,000	-	-
Normalized EBITDA	1,084,000	918,000	3,560,000	3,235,000	2,998,000
Tax Rate for Calcs	0	0	0	0	0
Tax Effect of Unusual Items	0	0	-139,359	0	0

Figure 10: Quarterly income statement (past year)

Nvidia Corporation Consolidated Balance Sheets										
Year ended December 31 (In thousands except per share data)	1/31/2018 12 Months	1/31/2019 12 Months	1/31/2020 12 Months	1/31/2021 12 Months	1/31/2022 12 Months	1/31/2023 Prediction	1/31/2024 Prediction	1/31/2025 Prediction	1/31/2026 Prediction	1/31/2027 Prediction
ASSETS										
Cash & cash equivalents	$7,111,000	$7,422,000	$10,897,000	$11,561,000	$21,208,000	34,427,093	60,645,891	105,978,382	177,270,990	292,536,643
ST investments and Marketable securities	-	-	-	-	-					
Total cash & mktable sec	7,111,000	7,422,000	10,897,000	11,561,000	21,208,000	34,427,093	60,645,891	105,978,382	177,270,990	292,536,643
Accounts receivable	1,275,000	1,424,000	1,657,000	2,429,000	4,650,000	7,548,377	13,297,029	23,236,490	38,867,885	64,140,673
Inventories	796,000	1,575,000	979,000	1,826,000	2,605,000	4,228,715	7,449,196	13,017,431	21,774,374	35,932,570
Prepaid expenses and other assets	86,000	136,000	157,000	239,000	366,000	594,130	1,046,605	1,828,937	3,059,279	5,048,492
Total current assets	$9,268,000	$10,557,000	$13,690,000	$16,055,000	$28,829,000	$46,798,315	$82,438,721	$144,061,239	$240,972,528	$397,658,378
Total Long Term Investments	$0	$8,374	$10,448	$11,512	$13,625	22,118	38,962	68,085	113,887	187,939
Other assets	$0	$3,495	$3,585	$4,661	$4,407	7,154	12,602	22,022	36,837	60,789
Total invest. & other assets	$0	$11,869	$14,033	$16,173	$18,032	$29,271	$51,564	$90,108	$150,724	$248,728
Property, plant & equipment										
Land	-	218,000	218,000	218,000	218,000	218,000	218,000	218,000	218,000	218,000
Buldings and improvements	-	339,000	340,000	341,000	874,000	1,418,770	2,499,270	4,367,461	7,305,491	12,055,688
Machinery and equipment	-	700,000	982,000	1,273,000	2,852,000	4,629,671	8,155,511	14,251,714	23,838,969	39,339,613
Containers	-	914,000	1,763,000	2,432,000	1,566,000	2,542,099	4,478,096	7,825,450	13,089,701	21,600,923
Total Gross PP&E	$1,745,000	$2,171,000	$3,303,000	$4,264,000	$5,510,000	$8,808,540	$15,350,877	$26,662,624	$44,452,161	$73,214,224
Less allowances for depreciation	740,000	767,000	1,011,000	1,408,000	1,903,000	3,089,153	5,441,773	9,509,471	15,906,577	26,249,398
Net PP&E	$1,005,000	$1,404,000	$2,292,000	$2,856,000	$3,607,000	$5,719,387	$9,909,104	$17,153,154	$28,545,583	$46,964,826
Goodwill & Trademarks	618,000	618,000	618,000	4,193,000	4,349,000	7,059,762	12,436,297	21,732,364	36,351,921	59,988,771
Other Intangible Assets	371,000	$701,131	$700,967	$5,670,827	$7,383,968	11,986,446	21,115,019	36,898,386	61,720,262	101,852,188
Total assets	$11,262,000	$13,292,000	$17,315,000	$28,791,000	$44,187,000	$71,593,182	$125,950,703	$219,935,251	$367,741,017	$606,712,891
Liabilities										
A/P and accrued expenses	$0	$1,176,000	$1,467,000	$2,456,000	$3,192,000	5,181,596	9,127,767	15,950,726	26,680,922	44,029,468
Loans & notes payable	-	-	91,000	1,120,000	-					
Current portion of long-term debt	-	92,000	141,000	288,000	300,000	486,992	857,873	1,499,128	2,507,605	4,138,108
Other current liabilities	-	61,000	85,000	61,000	843,000	1,368,448	2,410,623	4,212,551	7,046,371	11,628,083
Total current liabilities	$1,155,000	$1,329,000	$1,784,000	$3,925,000	$4,335,000	$7,037,035	$12,396,263	$21,662,405	$36,234,899	$59,795,659
Long-term debt	-	1,988,000	2,552,000	6,598,000	11,687,000	18,971,588	33,419,866	58,401,044	97,687,951	161,206,891
Other liabilities	-	614,000	746,000	1,134,000	1,308,000	2,123,285	3,740,326	6,536,200	10,933,160	18,042,151
Deferred Income Taxes	-	19,000	29,000	241,000	245,000	397,710	700,596	1,224,288	2,047,878	3,379,455
Total long-term liabilities	$2,621,000	$2,621,000	$3,327,000	$7,973,000	$13,240,000	$21,492,584	$37,860,788	$66,161,532	$110,668,988	$182,628,496
Total liabilities	$3,776,000	$3,950,000	$5,111,000	$11,898,000	$17,575,000	$28,529,619	$50,257,051	$87,823,937	$146,903,887	$242,424,156
Shareholders' equity										
Common stock	-	1,000	1,000	1,000	3,000					
Capital surplus	-	6,051,000	7,045,000	8,721,000	10,385,000	16,858,042	29,696,698	51,894,827	86,804,943	143,247,503
Reinvested earnings	-	12,565,000	14,971,000	18,908,000	16,235,000	26,354,388	46,425,219	81,127,830	135,703,250	223,940,607
Accumulated comprehensive income (los	-	(12,000)	1,000	19,000	-11000.00	-148867.362	-428264.2081	-911343.3739	-1671062.792	-2899374.634
Less treasury stock	-	(9,263,000)	(9,814,000)	(10,756,000)	-	-	-	-	0	0
Shareholders' equity	$7,486,000	$9,342,000	$12,204,000	$16,893,000	$26,612,000	$43,063,563	$75,693,653	$132,111,314	$220,837,130	$364,288,735
Total liab. & shareholders' equity	$11,262,000	$13,292,000	$17,315,000	$28,791,000	$44,187,000	$71,593,182	$125,950,703	$219,935,251	$367,741,017	$606,712,891

Figure 11: Yearly Balance sheet (4 years + projection)

Breakdown	10/31/2022	7/31/2022	4/30/2022	1/31/2022	10/31/2021
> Total Assets	40,488,000	43,476,000	45,212,000	44,187,000	40,632,000
> Total Liabilities Net Minority Int...	19,139,000	19,625,000	18,892,000	17,575,000	16,834,000
> Total Equity Gross Minority Inte...	21,349,000	23,851,000	26,320,000	26,612,000	23,798,000
Total Capitalization	31,050,000	33,551,000	37,267,000	37,558,000	34,742,000
Common Stock Equity	21,349,000	23,851,000	26,320,000	26,612,000	23,798,000
Capital Lease Obligations	798,000	743,000	752,000	741,000	883,000
Net Tangible Assets	15,127,000	17,443,000	19,744,000	19,924,000	17,042,000
Working Capital	16,368,000	19,845,000	24,013,000	24,494,000	22,194,000
Invested Capital	32,299,000	34,800,000	37,267,000	37,558,000	34,742,000
Tangible Book Value	15,127,000	17,443,000	19,744,000	19,924,000	17,042,000
Total Debt	11,748,000	11,692,000	11,699,000	11,687,000	11,827,000
Net Debt	8,150,000	7,936,000	7,060,000	8,956,000	9,656,000
Share Issued	2,468,000	2,489,000	2,504,000	2,506,000	2,502,000
Ordinary Shares Number	2,468,000	2,489,000	2,504,000	2,506,000	2,502,000

Figure 12: Quarterly Balance sheet (past year)

Nvidia Corporation Consolidated Statements of Cash Flows									
Year ended December 31 (In thousands except per share data)	1/31/2019 12 Months	1/31/2020 12 Months	1/31/2021 12 Months	1/31/2022 12 Months	1/31/2023 Prediction	1/31/2024 Prediction	1/31/2025 Prediction	1/31/2026 Prediction	1/31/2027 Prediction
Operating Activities									
Net Income	$4,141,000	$2,796,000	$4,332,000	$9,752,000	$15,830,489	$27,886,587	$48,731,666	$81,513,895	$134,516,095
Depreciation and amortization	262,000	381,000	1,098,000	1,174,000	1,905,762	3,357,142	5,866,589	9,813,096	16,193,796
Stock based compensation expense	557,000	844,000	1,397,000	2,004,000	3,000,000	5,284,724	9,235,027	15,447,513	25,491,839
Deferred income taxes	(315,000)	18,000	(282,000)	(406,000)	(300,000)	(180,000)	2,000	50000	67800
Equity income or loss, net of dividends	-	-	-	-	-	-	-		
Foreign currency adjustments	-	-	-	-					
Gains on issuance of stock by equity investees	-	-	-	-					
(Gains) losses on sales of assets	-	-	-	(100,000)	-	-	-		
Cumulative effect of accounting changes	-	-	-	-					
Other operating charges	-	-	-	-					
Other items	(45,000)	5,000	(20,000)	47,000					
Net change in operating assets and liabilities	(857,000)	717,000	(703,000)	(3,363,000)	(5,459,181)	(6,765,000)	(1,000,000)	(1,500,000)	(4,500,000)
Net cash provided by operating activities	**3,743,000**	**4,761,000**	**5,822,000**	**$9,108,000**	**$14,977,070**	**$29,583,453**	**$62,835,283**	**$105,324,505**	**$171,769,530**
Investing Activities									
Acquisitions &invest. (trademarks and bottling cos.)	-	-	-	-					
Purchases of investments and other assets	(11,157,000)	(1,475,000)	(19,342,000)	(24,811,000)	(40,275,868)	(55,000,000)	(33,467,000)	(25,648,900)	(20,789,000)
Proceeds from disposals of investments and other assets	7,660,000	8,109,000	9,319,000	16,220,000	26,330,038	30,890,000	45,879,000	64,380,090	54,087,000
Purchases of property, plant and equipment	(600,000)	(489,000)	(1,128,000)	(976,000)	(1,584,348)	(10,167,800)	(979,000)	(10,167,800)	(10,167,800)
Proceeds from disposals of PP&E	-	-	-	-					
Other investing activities	-	-	(8,524,000)	(263,000)	(426,930)	(752,069)	(1,314,236)	(2,198,334)	(3,627,741)
Net cash used in investing activities	**(4,097,000)**	**6,145,000**	**(19,675,000)**	**(9,830,000)**	**(15,957,107)**	**(35,029,869)**	**10,118,764**	**26,365,056**	**19,502,459**
Financing Activities									
Issuance of debt	(16,000)	-	4,968,000	3,977,000	897,000	1,250,000	789,000	700,000	-
Payments of debt	-	-	-	-					
Issuance of stock	(1,579,000)	-	-	-					
Purchases of stock for treasury	-	-	-	-					
Dividends and other financing activities	(1,271,000)	(792,000)	(1,164,000)	(2,112,000)	(3,428,424)	(6,039,425)	(10,553,864)	(17,653,543)	(29,132,280)
Net cash used in financing activities	**(2,866,000)**	**(792,000)**	**3,804,000**	**1,865,000**	**(2,531,424)**	**(4,789,425)**	**(9,764,864)**	**(16,953,543)**	**(29,132,280)**
Effect of exchange rate changes on cash	-	-	-	-	-				
Net increase during the year	-$3,220,000	$10,114,000	-$10,049,000	$1,143,000	-$3,511,461	-$10,235,841	$63,189,183	$114,736,018	$162,139,709
Balance at beginning of year	$7,111,000	$7,422,000	$10,897,000	$11,561,000	$21,208,000	$34,427,093	$60,645,891	$105,978,382	$177,270,990
Balance at end of year	**$3,891,000**	**$17,536,000**	**$848,000**	**$12,704,000**	**$17,696,539**	**$24,191,252**	**$123,835,074**	**$220,714,400**	**$339,410,699**

Figure 13: Yearly Cash Flows (4 years + projection)

Breakdown	10/31/2022	7/31/2022	4/30/2022	1/31/2022	10/31/2021
> Operating Cash Flow	392,000	1,270,000	1,731,000	3,033,000	1,519,000
> Investing Cash Flow	3,148,000	1,618,000	2,612,000	-1,586,000	-4,439,000
> Financing Cash Flow	-3,753,000	-3,762,000	-2,446,000	-745,000	-1,420,000
> End Cash Position	2,800,000	3,013,000	3,887,000	1,990,000	1,288,000
Income Tax Paid Supplemental Data	264,000	-	-	-	-
Capital Expenditure	-530,000	-433,000	-361,000	-273,000	-222,000
Issuance of Debt	0	0	-	0	-8,000
Repayment of Debt	0	-	-22,000	0	-1,008,000
Repurchase of Capital Stock	-3,485,000	-3,345,000	-1,996,000	-	-
Free Cash Flow	-138,000	837,000	1,370,000	2,760,000	1,297,000

Figure 14: Quarterly Cash Flows (past year)

The 1-year analyst recommendations fall closely in line with MoneyJet's price prediction of $228/share, with a 35% upside. Prominent banks and analysts have provided the following predictions:

***Morningstar:** $200, buy*

***Credit Suisse:** $210, outperform*

***Evercore ISI:** $225, outperform*

***Fubon Securities:** $185, buy*

***Wells Fargo:** $250, overweight*

***Morgan Stanley:** $175, in-line*

***Citi:** $210, buy*

When looking at the 5-year forecast for NVIDIA, analyst consensus says that NVIDIA will grow at a rate of 21% YoY. This means that analysts believe NVIDIA will grow at a slower pace than MoneyJet predicts. MoneyJet's growth rate for NVIDIA over the next 5 years is expected to be 32%. Analysts believe that NVIDIA's sales growth will dramatically decline over the next 5 years to around 35% compared to MoneyJet's estimate of ~60%.

WACC + Assumptions

For NVIDIA's valuations, we calculated a WACC of 11.98%. The risk-free rate used was 3.8%, a tax rate of 1.9% (from NVIDIA's historical tax rate), an adjusted beta of 1.4, and debt and equity standing at 3% and 97%, respectively. Another important assumption for the valuation models includes cost-of-equity, which was calculated through CAPM to be around 12.2%. The terminal-growth rate used for NVIDIA is about 5%.

Dividend Discount Model

With NVIDIA's dividend rate being less than .1%, the dividend discount model is not as significant of a calculation compared to the latter methods. The assumptions for the dividend discount model include a cost-of-equity at 12.2%, cost-of-debt at 4.71%, WACC of 11.98, and a terminal growth rate of 5%. Looking at Exhibit…, the projected retention rate for NVIDIA decreases from 95.9% to 93%, and the return on equity reduces from 36% to 32%. The calculated growth rate for NVIDIA will fall from 35.1% to 29.8% as NVIDIA begins to mature. The present terminal value of NVIDIA is $6.30, and the present sum of dividends is $1.83, giving NVIDIA an intrinsic value of $8.13, which is 95.2% below NVIDIA's current stock price. As a result, we plan on not factoring in the dividend discount model into our calculations and instead focusing on calculating future prices from the averages of the OFCF and FCFE models.

Operating Free Cash Flow Model

For the operating free cash flow model, MoneyJet used the same assumptions for the Dividend Discount Model, including a WACC of 11.98% and a Terminal Growth Rate of 5.00%. When providing estimates for % changes in operating free cash flow, the trend from the last 4 years was projected into the next 5 years. Sales growth slowly decreases YoY as NVIDIA matures. As NVIDIA matures, the projected EBIT margin will gradually increase to 45% by 2027. An increase in working capital as a percentage of sales will decrease as NVIDIA shifts away from growth-focus and aims to provide more value to their investors. CAPEX/Sales will, in turn, decrease to around 25% from the current 36.52%. Referring to the exhibit, the present terminal value of the operating cash flows is $458,862,525,000. NVIDIA's firm value is calculated to be $524,983,136,000. The market value of debt as of 1/31/22 was 11,987,000, leaving an equity value of $512,996,136,000. With 2,496,000 shares outstanding, the intrinsic price per share is calculated to be $205.53, 21.45% higher than NVIDIA's current stock price.

Free Cash Flow to Equity

When calculating the intrinsic price of NVIDIA through Cash Flow to Equity, the assumptions from the previous models are carried over, including the terminal rate of 5% and the projection timeline of 5 years. The cost-of-equity is 12.2% for NVIDIA. Using the terminal rate of 5% and the cost-of-equity at 12.2%, the calculated present terminal value of free cash flows to equity is $538,092,876,000. Adding up the present value of the 5 projected years, NVIDIA has a total equity value of $625,533,627,000. With 2,496,000 shares outstanding, the intrinsic price per share is calculated to be around $250.61, 48.1% above the current stock price.

Beta Calculations

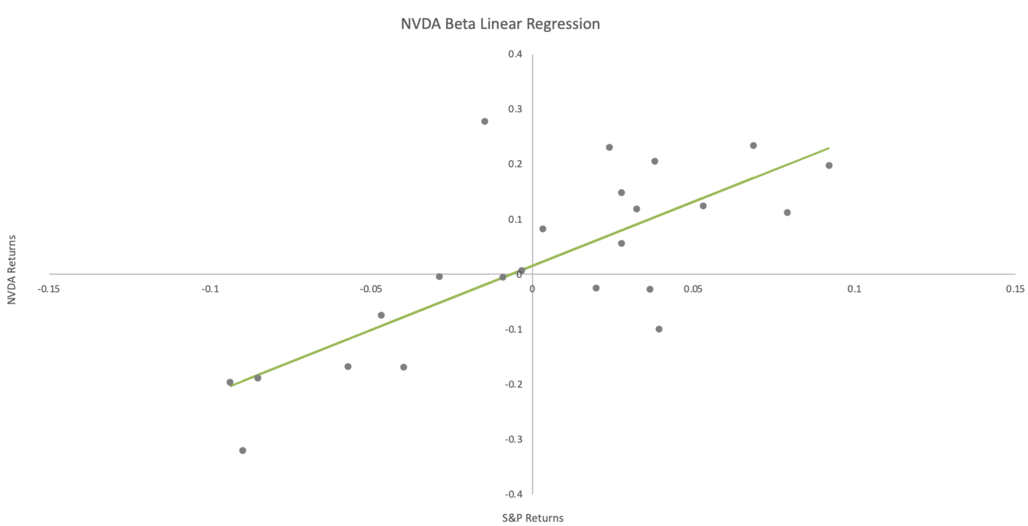


Figure 15: NVDA 2-year Monthly Beta

NVIDIA's 2-year monthly beta was calculated to be 2.33. This beta was determined by running a regression for the returns of NVIDIA for the past 2 years [Figure 15]. This 2-year regression also provided the alpha for NVIDIA at .015%. The standard deviation for NVIDIA's returns over this same time period was 15.87%, giving NVIDIA a Sharpe Ratio of 1.3. When comparing these values to Bloomberg's calculated values, it becomes apparent that this time period and frequency calculated an inflated Beta. According to Bloomberg, the 2-year weekly beta for NVIDIA is 1.7 and the 2-year daily beta, according to Bloomberg, is 1.39. The deviation of 15.87% is calculated with the same data as the 2-year monthly regression. For NVIDIA's valuation calculations, we used a beta of 1.4 to mimic the adjusted beta of NVIDIA during its most recent quarters. NVIDIA has a correlation to the S&P 500 of 0.85, meaning that our investment in NVIDIA gives our firm 15% diversification from the market.

Sector Summary

NVIDIA currently maintains a P/E ratio of 39.44, much higher than the average P/E of 20.4 in the overall semiconductor industry. Its current ratio of 6.65 and gross margin of 6.4% are similarly above the industry average of 3.02 and 49.7%, respectively. It is important to note that the semiconductor industry has been on a recovery trajectory for the last quarter and is projected to reach a $726.73 billion valuation by 2027, reaching $1 trillion just three years later. Bogged down by supply chain issues and material shortages throughout the COVID-19 pandemic and into early 2022, most semiconductor companies have struggled and seen their valuations plummet. Still, over the next few years, we anticipate both the industry and NVIDIA will recover and reach new heights. In the last quarter alone, the semiconductor industry has returned 22.22%, with NVDA achieving phenomenal returns of 39.41% quarter-to-date. NVIDIA has drastically outperformed the industry average in QTD returns compared to the overall sector, which we primarily attribute to its strong R&D investment and positioning in the Compute and Networking segment, as the lucrative data center market is experiencing explosive growth.

Conclusion

In conclusion, based on the average valuation of the Operating Free Cash Flow and Free Cash Flow to Equity models, we have set NVDA's target price at $228.07. We chose not to consider the absurdly low valuation generated by our Dividend Discount Model because NVIDIA rarely pays dividends and generally reinvests most of its profits into research and development. At a market price of $169.23 as of November 30th, we recommend investors BUY shares of NVIDIA, as our price target is nearly 35% higher than its current market price. The semiconductor industry is traditionally volatile and currently in recovery, so we do not expect the stock price to reach our target quickly. Investors in NVDA should BUY for the long term, as our financial analysis and interpretations of market news and signals indicate that NVIDIA will likely generate large returns in the future.

Works Cited

"AMD Price to Book Ratio 2010-2022: AMD." *Macrotrends*, https://www.macrotrends.net/stocks/charts/AMD/amd/price-book#:~:text=The%20current%20price%20to%20book,December%2001%2C%202022%20is%202.29.

Areej. "AMD's DGPU Market Share @ 4.1%, Nvidia @ 20%, Intel's IGPU Share at 62% [Q3 2021 Overall GPU Market Share]." *Hardware Times*, 16 Dec. 2021, https://www.hardwaretimes.com/amds-dgpu-market-share-4-1-nvidia-20-intels-igpu-share-at-62-q3-2021-overall-gpu-market-share/.

"Data Center Market Size, Share and Analysis: Forecast- 2030." *Allied Market Research*, https://www.alliedmarketresearch.com/data-center-market-A13117.

Kuruthukulangara, Jessica. "Costco Wholesale Comparable Sales Grow 6% in Oct, e-Commerce Comparable Sales Slip 0.7%." *SeekingAlpha*, Seeking Alpha, 2 Nov. 2022, https://seekingalpha.com/news/3900478-costco-wholesale-comparable-sales-grow-6-in-oct-e-commerce-comparable-sales-slip-07.

Kuruthukulangara, Jessica. "Costco Wholesale Reports 8.5% Comparable Sales Growth in September." *SeekingAlpha*, Seeking Alpha, 5 Oct. 2022, https://seekingalpha.com/news/3889026-costco-wholesale-reports-85-comparable-sales-growth-in-september.

"Nvidia Corporation (NVDA) Analyst Ratings, Estimates & Forecasts." *Yahoo! Finance*, Yahoo!, 4 Dec. 2022, https://finance.yahoo.com/quote/NVDA/analysis?p=NVDA.

"NVIDIA Investor Presentation Q3 FY2022." *Nvidia.com*, NVIDIA, https://s22.q4cdn.com/364334381/files/doc_financials/2023/q3/NVDA-F3Q23-Investor-Presentation_FINAL.pdf.

Piscatella, Mat. "2022's Video Game Market Declines Expected to Continue." *The NPD Group*, 5 July 2022, https://www.npd.com/news/blog/2022/2022s-video-game-market-declines-expected-to-continue/.

Sickels, ByDavid, et al. "Vale, GM Sign Long-Term Nickel Supply Agreement." *The Buzz - Electric Vehicle News*, 21 Nov. 2022, https://www.thebuzzevnews.com/vale-gm-supply-agreement/#:~:text=Vale%20Canada%20Limited%2C%20a%20subsidiary,at%20B%C3%A9cancour%2C%20Qu%C3%A9bec%2C%20Canada.

Surran, Carl. "Iron Ore Tumbles to Two-and-a-Half Year Low as Steel Demand Worries Rise (NYSE:BHP)." *SeekingAlpha*, Seeking Alpha, 28 Oct. 2022, https://seekingalpha.com/news/3897018-iron-ore-tumbled-to-two-and-a-half-year-low-as-steel-demand-worries-rise.

Stock Data Source: Bloomberg Terminal, Bloomberg Finance L.P.