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Business Finance

Ratio Project

Alka B.

Financial Analysis of NVIDIA (NVDA) for Possible Investment

Objective & Purpose

Perspective investors are tasked with determining if NVIDIA (NVDA) is a preferable investment in the tech sector by analyzing the various historical and current financial ratios in conjunction with comparisons to the rest of the tech industry. NVIDIA has potentially exponential upside however many more companies have lost than those who have gained. While NVIDIA has shown impressive growth, particularly driven by its role in AI, gaming, and data centers, the technology sector remains volatile, with many companies underperforming. A thorough investigation into NVIDIA's financial ratios is essential before making any investment recommendations.

Company's Background & Industry

NVIDIA is an American multinational corporation and technology company that designs and manufactures graphics processing units, software, and systems for gaming, professional visualization, and data centers. The company is a key player in the semiconductor industry, known for its innovations in graphics technologies, AI-powered platforms, and cloud gaming. Its products, including the flagship GeForce GPUs, are crucial for high-end gaming, while its data center solutions power modern AI workloads and deep learning applications. NVIDIA has also made significant strides in autonomous vehicle technology with its *Drive* platform, which will further expand the company's market reach. More recently the company has seen growth in sectors like cloud gaming, robotics, and the metaverse. However, the technology sector is highly competitive and dynamic, with products and services becoming obsolete at a higher-than-average pace. As a result, efficient Inventory Turnover and significant Return on Assets are critical for predicting the future growth of NVIDIA. Many comparisons have been drawn between NVIDIA's possible future growth and the stock price boom that was experienced by Apple shortly after going public. As both NVIDIA and Apple are within the technology sector, an additional analysis will be conducted on the possibility that the financial ratios of NVIDIA today correlate with the financial ratios of Apple before the rapid increase in its stock price. If any connection is found, it could be reasonably argued that NVIDIA may see a similar rise in value in the near future, suggesting that an investment in the company should be undertaken as soon as possible.

Discussion of Ratios & Solutions

Current Ratio

$$\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$$

The Current Ratio measures the company's ability to pay off its short-term liabilities within one year. A current ratio above 1 indicates financial stability and an ability to meet short-term obligations. In 2024, the industry average current ratio for a technology company is 1.87. In the same year NVIDIA had a current ratio of 4.17, which was down from 6.65 in 2022 but up from 3.52 in 2023. Although the current ratio has fluctuated noticeably over the past 3 years, the industry average current ratio has moved in a similar pattern over the same period of time. However, regardless of fluctuation the NVIDIA current ratio has out performed the industry average each year. This difference in current ratio demonstrates the financial security of Nvidia, which can lend itself to a prediction of future long-term growth in value. The closest connection seen between the years leading up to Apple's stock price climbing exponentially, and the past three years with NVIDIA is with the current ratio, which showed a very similar trend of peaking before dipping down and then returning. This could be a possible indication of the future potential growth of NVIDIA as it reports a strong ability to pay off short-term dues as well as being a testament to the liquidity and stable financial base available to the company for future investments and innovations.

Debt to Equity

$$\text{Debt to Equity} = \text{Total Liabilities} / \text{Shareholders Equity}$$

The Debt to Equity Ratio measures the extent to which a company utilizes debt as a source of funds to finance its operations. The technology sector industry average Debt to Equity in 2024 was 51%, with 2023 and 2022 averages being 50% and 56% respectively. NVIDIA had a Debt to Equity ratio of 26%, 54%, and 44% in 2024, 2023, and 2022. With Nvidia reporting a Debt to Equity ratio far below the industry average, this indicates that NVIDIA is using less debt compared to its equity which is a positive sign for investors concerned about the rapidly evolving technology landscape and the inherent instability found within the technology sector. A low debt to equity ratio also indicates that the company is not over-relying on borrowed funds, resulting in a more stable and financially resilient organization.

Debt to Assets

$$\text{Debt to Assets} = (\text{Short Term Debt} + \text{Long Term Debt}) / \text{Total Assets}$$

Debt to Assets measures the proportion of a company's total assets that are financed by debt, or how much of a company's assets are owned by creditors rather than shareholders. A debt to assets ratio between 0.3 and 0.6 is generally considered acceptable. NVIDIA's ratios for the past three years, which have been much closer to 0 when compared to the tech sector industry average, suggests that the company is managing its assets efficiently and avoiding excessive reliance on debt for financing. This reinforces the notion of financial security and sustainability as discussed in the analysis of NVIDIA's Debt to Equity Ratio.

Return on Assets

$$\text{Return on Assets Ratio} = \text{Net Income} / \text{Total Assets}$$

Return on Assets (ROA) measures a company's profitability relative to its total assets. It is used by management or investors to determine whether a company uses its assets efficiently to generate a profit. The industry average ROA for a technology company in 2024 was 15.42%. This is up from 2023 when the average ROA was 9.87%, but down from 2022 when the average was 17.92%. As a result of the nature of the tech sector, many firms do not have a high value for ROA as the importance of continued development and innovation drives higher levels of funding for R&D, assets, and new technologies that will improve production. NVIDIA's ROA in 2024 is 45.28%, a value that is significantly above its competitors and the technology sector's overall average ROA which demonstrates the company's ability to generate strong profits on its assets, despite the required constant reinvestment seen within the tech sector. Although differentiating in value, NVIDIA's ROA trends share a similar pattern with Apple's early ROA; dipping before seeing a steady rise. Although the increase in ROA over the past year has not been as steep as was in Apple's case, it still shows a possible trend between the two that could be taken into consideration when evaluating an investment in NVIDIA.

Inventory Turnover

$$\text{Inventory Turnover Ratio} = \text{COGS} / \text{Inventory Value}$$

Inventory Turnover measures the number of times a company has turned over its inventory stores. Higher values are preferred, as it indicates higher sales with products in tech that are often priced higher than other goods. A low value for inventory turnover would be threatening to any proposal to invest in a tech stock, as many of the goods produced in the tech sector are constantly under threat of becoming obsolete. NVIDIA does struggle in this particular analysis as it is the only time in this study where NVIDIA does not outperform the industry average. In 2024, the industry average was 7.84, while NVIDIA in 2024 had a value of 3.146. NVIDIA has not outperformed the market in this statistic for the past three years, with 2023 and 2022 having values of 2.252 and 3.623, while the industry average for the same period was 11.21 and 12.54. One potential solution for low Inventory Turnover is to increase COGS by exploring opportunities to diversify its product offerings or enter new markets, which could improve overall sales and reduce the impact of lower turnover in specific product categories. NVIDIA is already on track to optimize their turnover with this strategy as they invest in new technologies in AI and autonomous vehicles.

Price per Earnings Ratio

$$\text{Price per Earnings Ratio} = \text{Share Price} / \text{Earnings Per Share}$$

The Price to Earnings (P/E) Ratio is utilized to evaluate the relative value of a company's stock. P/E measures the relationship between a company's stock price and its earnings per share (EPS). As of 2024, NVIDIA's P/E ratio stands at 145.26, which is significantly higher than the industry average of 51.8. One potential solution for a high P/E ratio is prioritizing share price when determining budgets, and continuing the growth of the company. Although Nvidia's P/E ratio has fallen from a peak of 116.96x, it still is currently performing above the industry average of 29.72x. A high P/E value compared to the industry could suggest investors could overvalue the company. However, the tech industry does receive the majority of its funding through investors gauging potential future growth, which can result in higher or lower P/E ratios compared to the industry depending on general knowledge of the company rather than potential under or overvaluations.

Conclusion

Based on our collective analysis of NVIDIA's financial ratios, it appears NVIDIA will emerge as a promising investment within the tech sector. The company's strong liquidity, low debt levels, efficient asset management, and potential for future growth, particularly in AI and other emerging technologies, position it well for long-term success. While a high P/E ratio may raise concerns about overvaluation, it is reflective of the optimism and trust regarding NVIDIA's potential. This results in an overall recommendation that the investment opportunity presented should be undertaken.

Table: Summary of ratios

Industry (Technology)

Ratio	2024	2023	2022
Current Ratio	1.87	1.27	1.6786
Debt to Equity	0.51	0.5	0.56
Debt to Assets	26%	57.61%	41.35%
Return on Assets	15.42%	9.87%	17.92%
Inventory Turnover	7.84	11.21	12.54
P/E	29.72	24.4	21.8

NVIDIA

Ratio	2024	2023	2022
Current Ratio	4.17	3.52	6.65
Debt to Equity	0.26	0.54	0.44
Debt to Assets	12.87%	23.56%	24.77%
Return on Assets	45.28%	10.61%	22.07%
Inventory Turnover	3.1467	2.252	3.6234
P/E	51.15	116.96	59.23

Apple

Ratio	2015	2014	2013
Current Ratio	1.1088	1.0801	1.6786
Debt to Equity	0.539	0.3164	0.1373
Debt to Assets	18.37%	12.51%	8.19%
Return on Assets	18.39%	17.04%	17.89%
Inventory Turnover	59.6377	53.1776	60.4342
P/E	12.57	10.63	9.68

References:

<https://www.investopedia.com/how-nvidia-makes-money-4799532#:~:text=Nvidia%20designs%20and%20sells%20GPUs,the%20company's%20biggest%20revenue%20generator.>

<https://finance.yahoo.com/quote/NVDA/financials/>

<https://stockanalysis.com/stocks/nvda/financials/balance-sheet/>

<https://stockanalysis.com/stocks/nvda/>

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

<https://fullratio.com/current-ratio-by-industry>

<https://fullratio.com/roa-by-industry>

<https://www.macrotrends.net/stocks/charts/AAPL/apple/financial-ratios>

<https://www.macrotrends.net/stocks/charts/GTLS/chart-industries/current-ratio#:~:text=Chart%20Industries%20average%20current%20ratio,a%2030.64%25%20increase%20from%202020.>

<https://fullratio.com/debt-to-equity-by-industry>

https://csimarket.com/Industry/industry_ManagementEffectiveness.php?s=1000#google_vignette