

# NVIDIA CORPORATION (NVDA)

## Information Technology – Semiconductors

February 25, 2023

### Investment Thesis

We recommend a SELL rating for NVIDIA Corporation (NVDA), as our primary valuation models yield a target price of \$230.92, representing a 0.8% downside over the current trading price. NVDA's stock price has risen starkly in 2023, largely driven by the popularity and excitement surrounding generative AI applications. While we are optimistic regarding NVDA's long-term growth prospects, we believe the price is overvalued relative to its intrinsic price, with the market having priced in strong expected growth from AI.

### Investment Positives

- NVDA is positioned to greatly benefit from generative AI growth, which drives our FY23-33 13.3% CAGR estimate for the Data Center segment. NVDA is the market leader in discrete GPUs, used to power AI applications.
- NVDA's GPUs and software are poised to be essential towards many high-growth industries, namely Data Center, Professional Visualization, and Automotive, allowing for high growth over our forecast horizon.
- NVDA is diversified beyond being solely a GPU designer, through offering other services and software, such as GeForce NOW and NVIDIA Omniverse.

### Investment Negatives

- Unfavorable macroeconomic conditions could decrease consumer and enterprise demand for NVDA's product offerings.
- NVDA faces high geopolitical risk, as 47% of FY2023 revenue came from China and Taiwan, with NVDA having chips manufactured in Taiwan.
- Our current target price assumes that NVDA can successfully break into several potentially high-growth industries, with high sensitivity to our growth assumptions. If this growth fails to materialize, it could adversely impact NVDA's share price.

### Earnings Estimates

Year	2021	2022	2023	2024E	2025E	2026E
EPS	\$1.76	\$3.91	\$1.76	\$4.41	\$5.77	\$7.42
HF est.				\$3.65	\$4.77	\$7.40
growth	52.87%	125.57%	-54.99%	107.39%	30.68%	55.14%

### 12 Month Performance



### Stock Rating

**SELL**

### Target Price

**\$215-235**

Henry Fund DCF	\$230
Henry Fund DDM	\$130
Relative Multiple	\$88

### Price Data

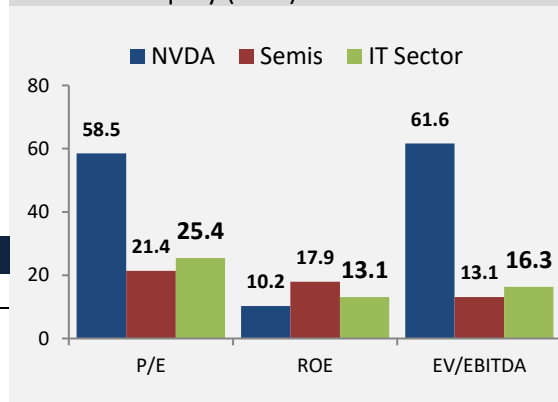
Current Price	\$232.86
52wk Range	\$108.13 – 289.46
Consensus 1yr Target	\$248.20

### Key Statistics

Market Cap (B)	\$558.4
Shares Outstanding (M)	2,460
Institutional Ownership	66.7%
Beta	1.56
Dividend Yield	0.07%
LT Consensus Growth	21.2%
Price/Earnings (LTM)	133.8
Price/Earnings (FY1)	60.3
Price/Sales (Current)	21.7

### Profitability

Operating Margin	23.2%
Profit Margin	58.6%
Return on Assets (TTM)	10.23%
Return on Equity (TTM)	17.9%



Source: FactSet

### Company Description

NVIDIA Corporation (NVDA) is a market leader in the design of discrete graphics processing units (GPUs), chipsets, and multimedia software. The company's computing technologies power among the most demanding applications and facilitate deep learning, AI, and other data-intensive workloads. NVDA operates through two business segments: Compute & Networking and Graphics, serving four main specialized markets: Gaming, Data Center, Professional Visualization, and Automotive. NVDA was founded in 1993 by Jensen Huang, and is headquartered in Santa Clara, CA.

## COMPANY DESCRIPTION

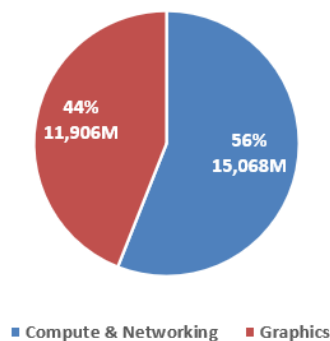
### Business Segments

NVDA's business is consolidated into two segments: Compute and Networking and Graphics, with Compute and Networking comprising the majority of revenue in FY2023, with \$15.1 billion (56%) and Graphics with \$11.9 billion (46%)<sup>4</sup>.

The Compute and Networking segment includes: NVDA's Data Center accelerated computing platform, networking solutions, automotive AI cockpit and autonomous driving (AV) development agreements, AV solutions, electric vehicle (EV) computing platforms, Jetson for robotics and embedded platforms, NVIDIA AI Enterprise and other software, and cryptocurrency mining processors (CMP)<sup>1</sup>.

The Graphics segment includes: GeForce GPUs for gaming and PCs, solutions for gaming platforms, the GeForce NOW game streaming service and related infrastructure, Quadro/NVIDIA RTX GPUs for enterprise workstation graphics, virtual GPU (vGPU) software for cloud-based visual and virtual computing, automotive platforms for infotainment systems, and Omniverse Enterprise software for building and operating metaverse and 3D internet applications<sup>1</sup>.

NVDA Business Segments FY 2023



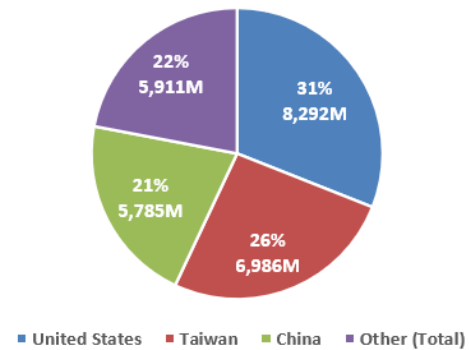
Source: FactSet

### Geographic Segments

It is important to note the global nature of NVDA's business, as while the United States may be their largest market (30.7%), their two next largest markets by revenue are Taiwan and China (including Hong Kong), comprising 25.9% and 21.4% respectively<sup>1</sup>. Additionally, NVDA partners with suppliers, contract manufacturers, and assembly partners based in China and Taiwan, such as

Taiwan Semiconductor, comprising a critical component of NVDA's supply chain<sup>1</sup>. Therefore, macroeconomic and geopolitical events relating to China and Taiwan will be key points to monitor, as they are likely to impact NVDA's revenue.

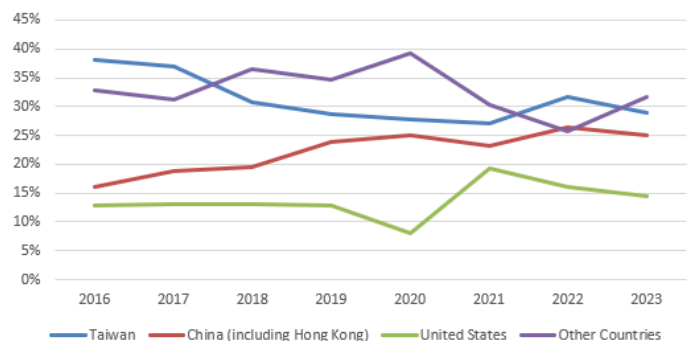
NVDA Geographic Segments FY 2023



Source: FactSet

The figure below shows the revenue mix by geographic period over our historical time period from 2016-2023. Over this time period, China has generally become a more important market for NVDA as well as the US, while Taiwan has seen a decrease from its 2016 standing. Other countries remain the most volatile geographic segment as a percentage of revenue.

Geographic Segments % of Revenue FY2016-2023



Source: NVDA

### Specialized Markets & Platforms

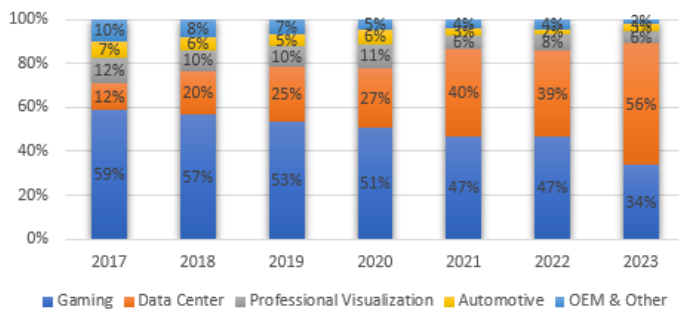
Demand for NVDA's products are primarily driven by their different end markets. NVDA divides their revenue into 5 platforms based on their key specialized markets: Gaming, Data Center, Professional Visualization, Automotive, and OEM & Other.

In the figure below, we see the shifting of sources of revenue from each platform over time. Notably, the Data

Center platforms has seen drastic growth over this period, growing from 12% in 2017 to now being the majority source of revenue in 2023, with 56%. Growth in the Data Center platform has led to all other segments comprising a lower share of revenue over time, notably Gaming.

We believe this trend will continue, driven by NVDA's extension of their business strategy through furthering their leadership in AI and increased demand for their data center market<sup>1</sup>. Given the differing growth assumptions pertaining to each market, we based our year-by-year growth assumptions on NVDA's key platforms. NVDA's growth has been primarily organically driven,

**Market % of Revenue Decomposition  
FY 2017-2023**



Source: FactSet

## Data Center

NVDAs' Data Center platform focuses on accelerating computer-intensive workloads, including AI, graphics, and scientific computing across a variety of data centers, including hyperscale, cloud, enterprise, public sector, and edge data center<sup>1</sup>.

This platform consists of<sup>1</sup>:

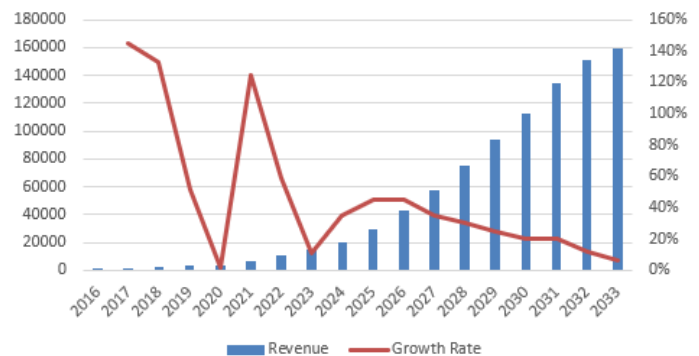
- Energy efficient GPUs
- Data processing units (DPUs)
- Interconnects and systems
- CUDA programming model
- Software libraries, and software development kits (SDKs)

From 2016-2023, the Data Center platform had a CAGR of 71.85%, experiencing a 58.50% growth in 2022 and 11.00% growth in 2023. Strong growth in the Data Center platform was driven by high demand from large-scale cloud service providers (CSPs), which include multi-year cloud service agreements for NVIDIA AI platform<sup>1</sup>.

The global data accelerator market is expected to grow at a CAGR of 23.5% from 2022 to 2030<sup>7</sup>, with increasing adoption and development of technologies such as artificial intelligence (AI), internet of things (IoT), and big data analytics<sup>7</sup>. In addition, the usage of GPUs has been increasing in this market, with growth in applications such as supercomputing, drug research, AI training and inference, and financial modeling<sup>7</sup>.

We are more optimistic regarding NVDA's Data Center platform growth, as we anticipate a CAGR of 25.2% from 2023 to 2033. This is driven by our anticipation that NVDA will be able to successfully capitalize on growth in generative AI (which will be discussed later), expand their products beyond GPUs, and continue to partner with major CSPs.

**Data Center Revenue (M) Growth FY2016-2033E**



Source: FactSet, HF Estimates 2024 onwards

The AI global market is projected to grow at a CAGR of 37.3% from 2023-2030, driven by heavy investments in AI technology by several tech giants, including Amazon, Google, and Microsoft<sup>7</sup>. Benefits of AI for enterprises and industries include increasing automation, far more efficient analysis, high levels of accuracy, and increasing ROI for businesses relying on data and operating at scale<sup>8</sup>.

However, AI applications are very computationally intensive, with GPUs being used to greatly accelerate these applications. Currently, NVDA is the market leader in the discrete GPU market, holding 78% of total market share, followed by AMD with only 17%<sup>6</sup>, as well as NVDA GPUs being favored for computing acceleration, as they deliver the best performance, are the most supported, and being the easiest to work with<sup>9</sup>. We believe this, paired with NVDA's early timing to the market, positions NVDA well to be a market leader in facilitating AI solutions going

into the future, and potentially grow at a rate closer to the AI global market CAGR.

Beyond GPUs, NVDA released the NVIDIA Bluefield data processing unit (DPU), which accelerates a variety of data center workloads, such as networking, security, and storage from the server CPU<sup>1</sup>. In the first half of FY2024, NVDA is planning on releasing the Grace CPU, designed for AI infrastructure and high-performance computing (HPC), claiming it provides the highest performance and twice the memory bandwidth and energy efficiency compared to its competitors<sup>1</sup>. This has the potential to greatly disrupt the current CPU market, where the current key players are AMD and Intel, who hold 34.4% and 63.1% CPU market share, respectively<sup>10</sup>. We factor NVDA's successful breach into the CPU market in FY2024 and FY2025 into our growth estimates, though this will depend on consumer reception and NVDA's CPU specifications.

In addition, we believe that NVDA will be able to effectively monetize the services they offer regarding AI. NVDA offers paid licenses to NVIDIA AI Enterprise, which offers a comprehensive suite of enterprise-grade AI software<sup>1</sup>, which NVDA claims is the operating system of AI systems today<sup>2</sup>. NVDA also announced the NVIDIA DGX Cloud, which allows for access to NVDA's AI supercomputer capabilities from one's browser<sup>2</sup>. We see this having the potential to have a substantial impact on a greater number of enterprises across many industries adopting NVDA's AI services, spurring the increase in growth for the Data Center platform.

## Gaming

NVDA's Gaming platform consists of<sup>1</sup>:

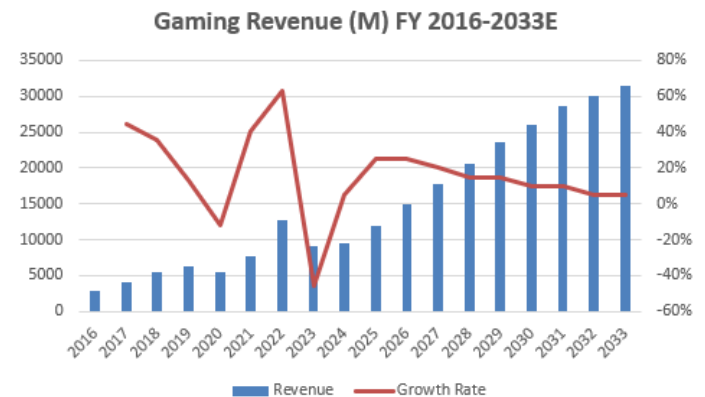
- GeForce RTX and GeForce GTX GPUs for gaming desktop and laptop PCs
- GeForce NOW cloud gaming platform
- SHIELD for high-quality streaming on TV
- System-on-chips (SOCs) and development services for game consoles

Over the past 5 years, the Gaming platform had a CAGR of 25%<sup>3</sup>, experiencing a 62.63% growth rate in 2022 and falling 46% in 2023. Growth was driven by strong reception of NVDA's 40 series GeForce RTX GPUs<sup>1</sup>. The recent decrease was driven by inventory channel correction, which NVDA claims is largely behind them<sup>1</sup> with global macroeconomic conditions and COVID-19 related

disruptions in China negatively impacting Gaming demand<sup>1</sup>.

The Gaming GPU market is expected to grow at a CAGR of 15.23% from 2023-2028<sup>11</sup>, while the Gaming industry is expected to grow at a CAGR of 10.2% from 2022-2030<sup>7</sup>. This is driven by increased adoption of smartphones, tablets, PCs, and consoles for gaming purposes, major game developers focusing on high graphic quality, as well as increasing incorporation of AR and VR in various applications<sup>11</sup>.

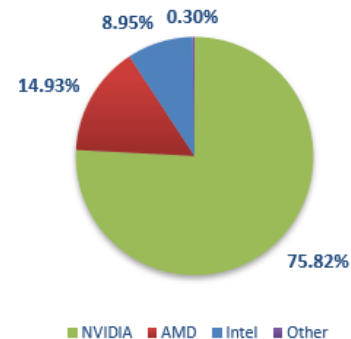
Our expected CAGR from 2023-2033 is 13.3%, as we are optimistic in the growth of cloud gaming in the future, NVDA's positioning in that industry, as well as NVDA's continued market leadership.



Source: FactSet, HF Estimates 2024 onwards

The use of GPUs is critical in the gaming industry, as they can handle the graphics and video rendering required for gaming applications<sup>12</sup>. Steam, the most popular PC gaming platform, conducts a monthly survey into the kinds of computer hardware and software its users use. As of February 2023, NVDA was the undisputed leader in PC GPU popularity with 75.8% of users using NVDA GPUs<sup>13</sup>:

## PC GPU Usage by Company - Feb. 2023





Source: Steam

A major driver of growth we see in NVDA's Gaming platform is the growth of cloud gaming, which is expected to grow at an annual growth rate of 41.7% over the next 10 years, reaching over \$42 billion revenue in 2032<sup>14</sup>. This increase in growth is driven by users not having to invest in high-cost hardware or game titles but can rather subscribe to a game streaming service to access them across a variety of devices<sup>14</sup>.

In this space, we consider NVDA to be well-positioned, with 25 million GeForce NOW subscribers as of FY2023, an increase of 15 million from 1-year ago<sup>14</sup>. According to Newzoo, there were 31.6 million users paying for cloud gaming services as of last year, implying a 79% market share for NVDA<sup>14,15</sup>. NVDA current GeForce NOW subscription tiers consist of Free, Priority, and the recently released Ultimate. These cost \$0, \$9.99, and \$19.99 respectively, with differing session lengths, frame rates, speeds of servers, and GPU access.

An important bottleneck to consider regarding cloud gaming is internet speeds. For GeForce NOW, NVDA states that at least 15Mbps are required for gaming at 720p and 60 FPS (frames per second), and 25Mbps for 1080p at 60 FPS<sup>3</sup>, with 60 FPS being the benchmark for optimal performance. This is paired with a recommended less than 40ms latency from an NVIDIA data center<sup>3</sup>. While we see internet infrastructure improving in the long-term, this might hinder cloud gaming's growth in the short-term among those who do not have access to these higher internet speeds.

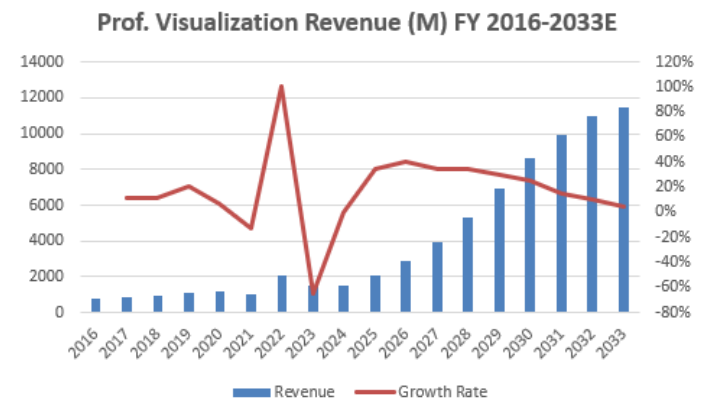
In addition, NVDA and Microsoft (MSFT) have announced a 10-year partnership to bring MSFT's lineup of Xbox PC games to GeForce NOW<sup>2</sup>. This includes popular titles including Minecraft, Halo, and Flight Simulator. If MSFT's Activision-Blizzard acquisition is successful, this would also bring Call of Duty and Overwatch to GeForce NOW<sup>2</sup>, greatly enhancing its value.

## Professional Visualization

The Professional Visualization platform consists of RTX GPUs and software for enterprise customers, helping to accelerate workflows in fields such as design and manufacturing and digital content creation<sup>1</sup>, with RTX GPUs having very high ray tracing capabilities. In addition, this platform contains NVIDIA Omniverse, which is used to

simulate virtual worlds. Users can use this service to build and operate metaverse and 3D internet applications for a variety of end uses, such as surgical training and architectural walkthroughs<sup>1</sup>.

The Professional Visualization platform grew 100.47% YoY in FY2022, and fell 65% in FY2023, with this decrease being driven by inventory correction, which NVDA anticipates will end by the first half of FY2024<sup>2</sup>. Growth in the platform was driven by demand for desktop workstations, namely in the automotive and industrial manufacturing industries<sup>2</sup>. We anticipate high growth in this market, with a 22.2% CAGR from 2023-2033.



Source: FactSet, HF Estimates 2024 onwards

We expect two key factors to drive growth in this segment: growth in the hybrid working environment and expected growth in the metaverse market.

The hybrid working environment is expected to not only stay but continue becoming more prevalent in the long-term. The hybrid model is expected to grow from 42% in 2021 to 81% in 2024<sup>16</sup>, which is expected to result in increased demand for GPUs for workstations in the future.

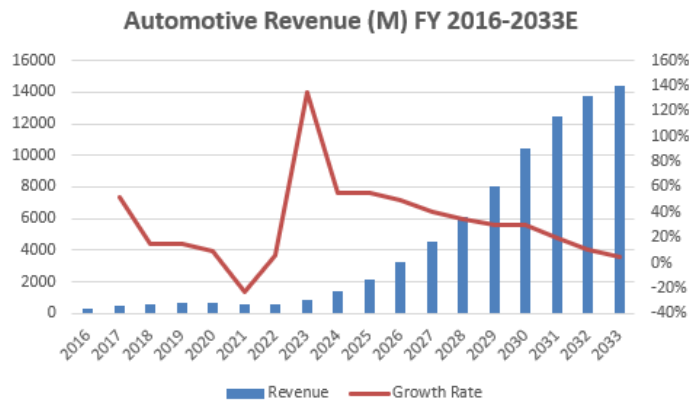
Another expected driver of growth in this platform is the metaverse, described as a highly immersive 3D virtual world experience using technologies such as augmented reality (AR), virtual reality (VR), and mixed reality (MR)<sup>7</sup>. The global metaverse market is expected to grow at a CAGR of about 40% from 2022-2030, reaching a cash revenue of \$700 billion by 2030<sup>17</sup>, driven by a growing focus to integrate digital and physical worlds using the internet, and increasing momentum/popularity of AR, VR, and MR<sup>7</sup>.

However, the metaverse market still remains in its infancy, it has strong additional potential through the development

and use of digital twins. Digital twins are virtual models designed to accurately reflect a physical object<sup>18</sup>. The digital twin market alone is expected to grow at a CAGR of 37.5% from 2023 to 2030, as it has strong enterprise applications in improving product performance and predicting future issues<sup>7</sup>. NVIDIA's Omniverse has the capability to be used for the creation of these digital twins. Given the current macroeconomic climate, we do not anticipate strong growth this fiscal year, but as this market grows, we expect NVDA to be able to successfully capitalize on it.

## Automotive

NVDA's automotive platform consists of autonomous vehicle (AV), AI cockpit, electric vehicle (EV) computing platforms, and infotainment platform solutions. The automotive platform grew by 5.60% in FY2022, and 135% in FY2023<sup>1</sup>, with recent growth driven by increased sales in AI automotive solutions and increased automotive development agreements<sup>1</sup>. We expect NVDA's Automotive platform to grow by a CAGR of 32.4% from 2023-2022.



Source: FactSet, HF Estimates 2024 onwards

While the AV industry is still in its infancy, we see strong potential for growth over our forecast horizon. The global autonomous vehicle market is projected to grow at a CAGR of 40.4% from 2023-2030<sup>6</sup>, with estimates going as high as a 53.6% CAGR from 2022-2030<sup>7</sup>. This is driven by AV being the potential catalyst for the technological development of automobiles, stark improvements in AV technology, and government entities taking action to launch AV's in their respective countries<sup>7</sup>.

NVDA has announced a strategic partnership with Foxconn, the world's largest technology manufacturer and service provider based in China and Taiwan, to develop

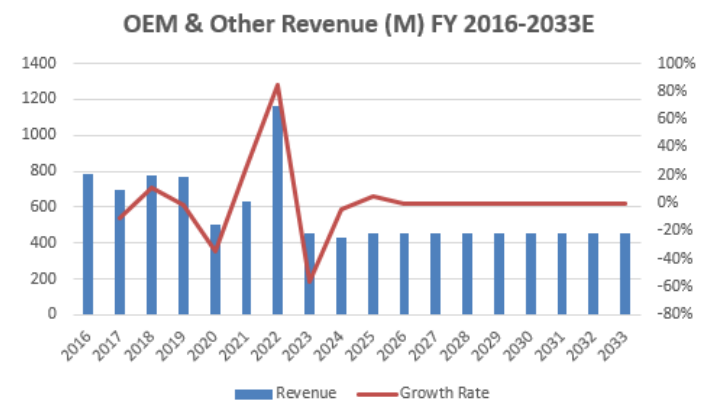
automated and autonomous vehicle platform<sup>2</sup>. Specifically, Foxconn will use NVIDIA Drive and Hyperion architecture for its electric vehicles<sup>2</sup>.

In February 2023, NVDA announced a partnership with Mercedes-Benz to use NVDA's DRIVE Orin platform for use in next-generation Mercedes-Benz vehicles<sup>3</sup>. Mercedes-Benz has also begun incorporating NVIDIA Omniverse in its production process, including creating a digital twin of factories to increase productivity<sup>3</sup>.

We ultimately expect that NVDA will see strong growth in this market, given its early entry into the AV industry with its high growth potential, as well as its strategic partnerships which we believe will cement NVDA's foothold in the industry.

## OEM & Other

OEM (original equipment manufacturer) & Other is NVDA's smallest platform by percentage of total revenue, with growth or decline being driven primarily by cryptocurrency mining processors (CMP)<sup>1</sup> but is also impacted by sales of notebook OEMs as of FY2023. We project a CAGR of -0.03% over 2023-2033.



Source: FactSet, HF Estimates 2024 onwards

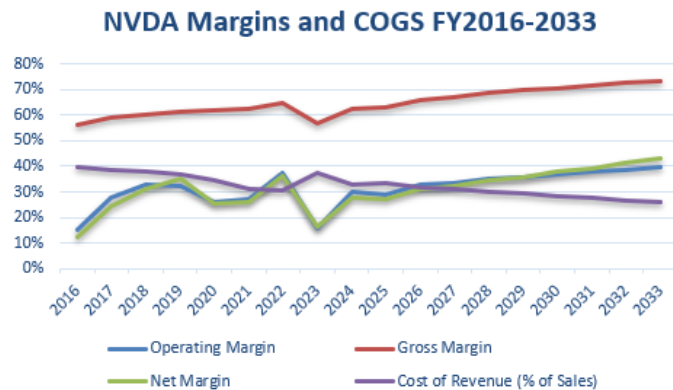
Historically, this segment has experienced the most volatility, with CMP sales notably declining in FY2023 by 56%<sup>1</sup>, with there being a high downturn in crypto prices over the period, decreasing the demand for cryptocurrency mining. In addition, with the collapse of the cryptocurrency exchange FTX in late 2022, investors may be further deterred from the cryptocurrency industry, which may decrease demand in the future<sup>19</sup>.

Given the platform's high volatility and NVDA providing very little information on this platform, we forecast a

decline of 5%, in-line with consensus estimates<sup>1</sup>, with a 0% growth onwards. We do not anticipate this platform to have a significant impact on NVDA's revenue over our forecast horizon.

## Cost Structure Analysis

The figure below shows NVDA's gross margin, operating margin, cost of revenue, net margin, and operating margins over both the historical period and our forecast horizon:



Source: FactSet, HF estimates 2024 onwards

Over the historical period, NVDA has seen a noted decrease in their cost of revenue, from 39.96% as a percentage of sales in 2016 to 30.71% in 2022, increasing to 37.35% in 2023, leading to lower margins for FY2023. These lower margins were driven by excess inventory, which NVDA states will be resolved by 1H FY2024<sup>2</sup>. As a result, we forecast using trends from 2022 onwards, while taking FY2023 into account. As a whole, we expect NVDA's margins to increase over time, due to the increasing scale of the business as well as NVDA further diversifying their business model to be at the heart of many high-growth industries, generating additional revenue. As for cost of revenue, this has been generally declining over our historical period, which we expect to continue. We anticipate this will be driven factors such as an expansion in their product mix beyond just GPUs to more data center products, the former of which has historically had higher COGs than other products.

A key difference in our assumptions from the consensus is our tax rate. We assume a constant tax rate of 9.40%, the derivation of which is described in the "WACC Assumptions" section. Historically, however, NVDA has maintained a relatively low effective tax rate, with 5.9% being the maximum value from 2016-2023. As such, we do

sensitivity test for this factor, though our margins may differ than the actual if NVDA continues to maintain their historically low tax rate.

## Debt Maturity Analysis

In FY2022, NVDA repaid the \$1.00 billion of 2.20% notes due 2021<sup>1</sup>, with NVDA currently having \$9.7 billion in long-term debt on their balance sheet, a decrease of FY2022's value of \$10.9 billion. The figure below shows NVDA's debt maturity schedule as of FY2023:

Year	% of Notes Due	Fair Value (M)
2023	0.309%	1230
2024	0.584%	1185
2026	3.20%	966
2028	1.55%	1099
2030	2.85%	1364
2031	2.00%	1044
2040	3.50%	870
2050	3.50%	1637
2060	3.70%	410
<b>Total LT Debt</b>		<b>\$10,953</b>

Source: NVDA FY2023 10K

The figure below shows NVDA's bond rating relative to peers in the semiconductor industry. S&P Global gives NVDA an "A" rating, which is considered investment-grade<sup>21</sup>.

Company	Rating
NVIDIA Corporation (NVDA)	A
Advanced Micro Devices (AMD)	A-
Intel Corporation (INTC)	A
Broadcom Inc. (AVGO)	BBB-
QUALCOMM Inc (QCOM)	A
Applied Materials (AMAT)	A
Texas Instruments	A+

Source: S&P Global

We do not anticipate NVDA having issues repaying their debt, given their total balance of cash, cash equivalents, and marketable securities of \$13.3 billion as of FY2023.

## ESG Analysis

ESG, or Environment, Social, and Governance, is a framework to assess the sustainability and ethical impact of companies based on those three metrics. We find NVDA to be well positioned among its peers, having a "Low" ESG

risk rating of 13.62, the lowest in its peer group. A lower ESG risk rating score is considered better.

Company	ESG Risk Rating	
NVIDIA Corporation (NVDA)	13.62	Low
Advanced Micro Devices (AMD)	20.40	Medium
Intel Corporation (INTC)	18.48	Low
Broadcom Inc. (AVGO)	22.41	Medium
QUALCOMM Inc. (QCOM)	14.48	Low
Applied Materials (AMAT)	15.41	Low
Texas Instruments (TXN)	21.76	Medium

Source: Morningstar Sustainalytics

This is driven by NVDA's strong ESG initiatives, which include strong human capital management, and the following towards combating and mitigating the impact of climate change<sup>1</sup>:

- Goal to purchase or generate enough renewable energy to match 100% of NVDA's global electricity usage by FY2025.
- Presence on the Green500 list for most energy-efficient systems, powering 23 of the top 30 most energy efficient systems.
- Plan to build Earth-2, a digital twin of NVIDIA AI and NVIDIA Omniverse platforms. This is expected to enable ultra-high-resolution predictions of the impact of climate change, and related strategies.

## RECENT DEVELOPMENTS

### Q4 FY 2023 Earnings Announcement

NVDA announced their fourth quarter earnings for FY 2023 on February 22, 2023. Their quarterly EPS beat consensus estimates by 9.46%, and revenue by 0.53%. For the previous fiscal year, NVDA traded flat seeing a YoY growth in revenue of only 0.22%, compared to FY2022's YoY growth of 61.40%<sup>2</sup>. In their earnings call, NVDA maintained a strong focus on AI in their business model.

NVDA expects their revenue growth to be driven by strong growth in their data center and gaming market segments. It announced strategic partnerships with Deutsche Bank to accelerate the use of AI in financial services, with Foxconn to develop AV platforms, and with MSFT to expand GeForce NOW's game offerings<sup>2</sup>, which are poised to benefit NVDA's two largest segments: Data Center and Gaming.

NVDA announced that they released H100 data center GPU in time to serve the development and scale of large language models<sup>2</sup>. Given the success of generative AI in 2023, we expect this to be a significant growth driver in FY2023.

### COVID-19 Impact

The COVID-19 pandemic caused significant supply chain disruptions in the semiconductor industry, which culminated in a chip shortage that affected the entire industry. However, the pandemic also led to a stark increase in demand for GPUs, as gamers upgraded their systems and enterprises digitized their workplaces to support remote work.

For NVDA, they experienced the largest growth in Data Center, Gaming, and OEM & Other, with 40.61%, 124.47%, and 24.95% YoY growth in FY2021<sup>1</sup>. OEM & Other was driven by increased demand for cryptocurrency mining, thereby CMPs. Automotive and professional visualization experienced YoY declines in FY2021. However, this ultimately led to excess inventory issues, which NVDA expects to work down in the first half of FY2023.

### ARM Acquisition Termination

In February 2022, NVDA and SoftBank announced the termination of the agreement by which NVDA would have acquired Arm Limited, who design ARM processors for use in a wide range of electronic devices. This was due to significant regulatory challenges preventing the transaction from going through, resulting in NVDA recording a termination cost of \$1.35 billion in FY2023<sup>3</sup>.

However, NVDA intends to continue to partner closely with ARM, with NVDA retaining its 20-year Arm license<sup>3</sup>. Softbank Group (SBG) intends to prepare for a public offering in FY2023<sup>3</sup>. From a long-term perspective, while this would have provided NVDA opportunities to expand their product offerings, thereby increasing their competitive moat, we do not believe this acquisition falling through will hinder NVDA in the long-term. As mentioned previously, NVDA has a strong record of organic growth, and we believe that NVDA will be able to focus and deliver strong growth in its core markets.



## INDUSTRY TRENDS

### Generative AI

Generative AI is a form of artificial intelligence that uses deep learning to generate new content<sup>23</sup>. This technology has very strong end-use applications for generating content based on user inputs across a variety of topics, automating analysis, and automating workflows<sup>23</sup> that could greatly benefit enterprises.

Since the start of 2023, there has been a high level of excitement surrounding this technology, both among individuals and enterprises. ChatGPT, a generative AI chatbot developed by OpenAI, can take in user text input and output detailed responses across a very wide array of topics. ChatGPT has set the record for the fast-growing userbase of any application, with 100 million active users only two months after launch, with 13 million unique users per day<sup>24</sup>. Many large cap technology firms have already made significant investments into AI technology, with MSFT announcing a \$10 billion investment in OpenAI<sup>5</sup>, Google looking to incorporate generative AI into its biggest products<sup>5</sup>.

With the strong end-use potential of generative AI and its reliance on GPUs, of which NVDA is the market leader, we see high expected growth rates over our forecast horizon in NVDA's AI initiatives, namely in their Data Center platform. In 2023, NVDA's stock soared over 55% YTD, as many investors see NVDA's chips powering this technology in the long-term. NVDA's Jensen Huang noted that AI is at an inflection point, with adoption being expected in nearly every industry, as well as there being heightened interest in the capabilities of generative AI<sup>2</sup>. During NVDA's upcoming GTC conference, we expect NVDA to unveil technologies and initiatives that will ideally provide insight as to how they plan on further capitalize on generative AI technologies.

### Ending of Moore's Law

Moore's Law, created by Intel co-founder Gordon Moore in 1965, states that the number of transistors on a microprocessor chip roughly doubles every two years, with the cost being halved over the same period. For the semiconductor industry, this has significant implications as Moore's Law has been used for long-term planning and research and development targets<sup>12</sup>. Therefore, an end to

Moore's Law would have negative implications on future growth for companies reliant upon it, such as Intel.

However, there are conflicting claims regarding the status of Moore's Law, with NVDA CEO Jensen Huang stating that "Moore's Law is dead"<sup>3</sup>. Others, including Intel CEO Pat Gelsinger, state that Moore's Law is "alive and well"<sup>12</sup>. While Moore's Law has held historically, it is our view that Moore's Law is ending. This is driven primarily by physical limitations, which are now at the atomic scale, and rapidly increasing costs related to energy, cooling, and manufacturing<sup>25</sup>.

However, we believe NVDA is very well positioned given the ending of Moore's Law. Over the past decade, NVDA has advanced AI processing by a factor of one million, outpacing the pace of Moore's Law (around 100x) by magnitudes<sup>2</sup>. Over the next 10 years, NVDA expects to continue this same level of growth, driven by new chips, interconnects, systems, operating systems, and AI algorithms<sup>2</sup>. Given NVDA's proven track record of growth in this area, and their intended focus on capitalizing on AI technology, we expect this to help drive data center growth above peers in the industry.

### Export Restrictions to China

In October 2022, the US government imposed restrictions on advanced chip sales to China, in an effort to limit China's ability to develop and maintain supercomputer, as well as manufacture advanced semiconductors.

A significant portion of US-based semiconductor companies (including NVDA, AVGO, and AMD) generate a significant portion of their revenue from the Chinese market. For NVDA, China accounted for 21.4% of FY2023's total revenue alone<sup>1</sup>.

In November 2022, NVDA's A100 data center GPU fell under these trade restrictions, though NVDA has released the A800 GPU as an alternative to the Chinese market that complies with the new rules<sup>24</sup>. In addition, if restrictions increase in their scope NVDA will likely have to continue to develop alternative products to serve the Chinese market, though the success of this is not guaranteed.

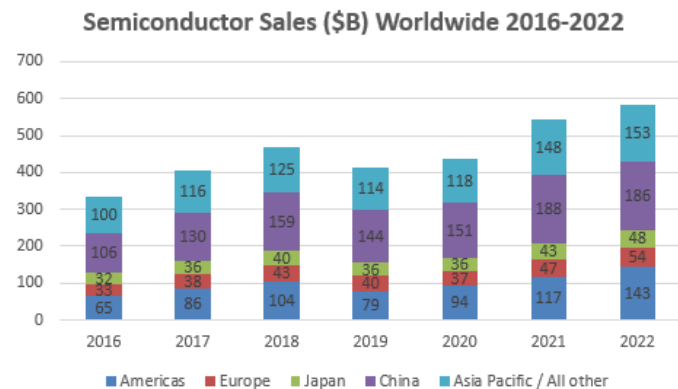
## MARKETS AND COMPETITION

NVDA engages in the semiconductor industry, a critical part of the Information Technology sector consisting of companies engaging in the production and design of

microchips, integrated circuits, and other components used in a wide range of electronic devices.

## Industry Geographic Segmentation

As of 2022, China made up the largest percentage of semiconductor sales, accounting for 31.8% of total sales, followed by Asia Pacific/All Other and the Americas<sup>6</sup>. While many chip designers are based in the US, including NVIDIA, AMD, and Intel, most of the semiconductor manufacturing is done outside of the US, primarily in Taiwan, but also in the Netherlands with ASML Holdings, N.V (ASML), which holds 8.21% of market share within its peer group<sup>26</sup>.



Source: Statista

## Types of Semiconductor Companies

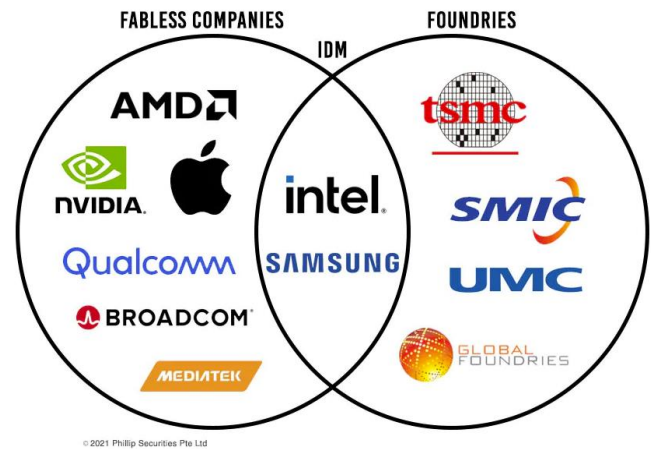
The semiconductor industry consists of three major business models: integrated devices manufacturers (IDMs), fabless, and foundry:

Fabless (non-fabrication) semiconductor companies focus solely on chip design, partnering with other foundries to manufacture chips<sup>27</sup>. Examples of fabless companies include NVIDIA, AMD, Qualcomm, and Broadcom. These companies tend to have the most significant R&D expenditures, with high concentration given the limited number of companies operating in the space. These firms have the lowest capital expenditures in the industry, given their relatively asset-light business model<sup>28</sup>.

Foundries are responsible solely for semiconductor manufacturing, and do not engage in the design of chips. These companies tend to have higher capital expenditures, as constructing a semiconductor plant can cost 10 times more than establishing a fabless company<sup>29</sup>. Examples of foundries include Taiwan Semiconductor Manufacturing

Company (TSMC) with 55% market share<sup>30</sup>, GlobalFoundries (GFS), and United Microelectronics Corporation (UMC).

IDMs are responsible for the full manufacturing process, including both designing and manufacturing. Examples of IDMs include Intel (INTC), Texas Instruments (TXN), and Samsung.



Source: Phillip Capital Management

## Types of GPUs

In the GPU market, there are two different types of GPUs: integrated GPUs (iGPU) and discrete GPUs (dGPU). Integrated GPUs comprise the majority of all GPUs on the market and come fully integrated with the CPU<sup>12</sup>. Intel currently holds the largest market share of all GPUs, with 71%<sup>6</sup>.

Discrete GPUs, on the other hand, come as a separate unit that is not integrated with the CPU. dGPUs come with their own memory, and are far better suited towards more resource-intensive tasks and high performance demands, such as gaming and AI applications. With this GPU, NVDA is the market leader, with 78% market share<sup>6</sup>.

## Peer Comparisons

We compared NVDA across two different peer groups: Those that directly compete with NVDA in its core GPU market, and a wider array of fabless and IDMs, which operate in the same industry and have generally similar business models to NVDA. We decided not to include foundries within our peer comparisons, due to the greatly differing business models and revenue streams compared to fabless companies and IDMs. The following peer

comparisons include the most recent available data for each firm.

### **GPU Market Peer Comparisons**

Company	NVDA	AMD	INTC
Type	Fabless	Fabless	IDM
Market Cap (B)	558.4	137.6	107.5
R&D %Sales	27.21%	21.21%	27.80%
CapEx %Sales	6.78%	1.91%	39.40%
Oper. Margin	20.68%	6.84%	3.70%
Gross Margin	61.58%	44.93%	42.31%
ROA	10.23	3.30	4.57
ROE	17.93	4.24	8.14
P/E (LTM)	138.8	25.5	13.4
Dividend Yield	0.07%	0.0%	1.9%
EV/EBITDA	67.48	17.26	8.15

Source: FactSet

### **Advanced Micro Devices, Inc. (AMD)**

AMD designs microprocessors for use in the computer and consumer electronics industries. The company operates two key business segments: Computing & Graphics (57% of total revenue) and Enterprise, Embedded, and Semi-Custom (43% of total revenue). The former includes computer processors and chipsets, discrete and integrated GPUs, data center and professional GPUs, and development services. The latter includes server and embedded processors, semi-custom System-on-Chip (SoC) products, and development services and technology for game consoles<sup>4</sup>. In 2022, AMD acquired Xilinx for \$50 billion, allowing them to increase their presence in the data center market, AI, and 5G communications<sup>24</sup>. We view AMD's further expansion into these markets as positive for the company, given very strong growth prospects in the data center end-market and for AI. However, given NVDA's stark market leadership in the discrete GPU market, we do not see AMD posing a threat to NVDA in the short-term.

### **Intel Corporation (INTC)**

INTC is world's largest chipmaker, engaging in the business of processor manufacturing for the global personal computer and data center markets<sup>4</sup>. INTC's revenue primarily comes from its Client Computing segment, consisting of platforms designed for computing devices, wireless and wired connectivity products, and mobile communication components<sup>1</sup>. INTC generates a significant

portion of their revenue from their United States and China geographic segments, making up 26% and 27% of their total revenue, respectively. As of their most recent earnings announcement, INTC reported weak Q4 results driven by weak consumer demand for the PC and server end-markets, as well as lowering expectations for full year results. Given our consensus of negative real GDP growth in the first half of 2023 and potential concerns surrounding Moore's Law, we anticipate decreased revenues for INTC for this fiscal year.

### **Broader Semiconductor Peer Comparisons**

Company	NVDA	AVGO	QCOM	TXN
Type	Fabless	Fabless	Fabless	IDM
Market Cap (B)	558.4	264.2	135.1	159.7
R&D %Sales	27.21%	14.81%	18.54%	8.34%
CapEx %Sales	6.78%	1.28%	5.12%	13.97%
Oper. Margin	20.68%	43.03%	33.49%	51.91%
Gross Margin	61.58%	62.01%	57.84%	68.76%
ROA	10.23	15.45	28.78	33.57
ROE	17.93	48.20	92.88	62.41
P/E (LTM)	138.8	21.5	11.7	18.7
Dividend Yield	0.07%	3.0%	2.6%	2.9%
EV/EBITDA	67.48	11.63	8.24	13.17

Source: FactSet

### **Broadcom, Inc. (AVGO)**

AVGO is a US-based company that designs, develops, and supplies semiconductor and infrastructure software products<sup>4</sup>. The company generates 78% of its revenue from its Semiconductor Solutions segment, which manages movement of data in data center, telecom, enterprise, and embedded networking applications<sup>4</sup>. In May 2022, AVGO announced their intention to buy VMWare Inc, a cloud-computing and virtualization technology company, for \$61 billion, though this is pending EU regulatory approval.

### **QUALCOMM Incorporated (QCOM)**

QCOM develops and licenses wireless technology and designs semiconductors. The company generates most of their revenue (86%) from their CDMA Technologies segment, which develops and supplies integrated circuits and system software for use in voice and data communications, networking, application processing, multimedia, and global positioning systems products<sup>4</sup>. QCOM is seen as a leader in 5G technology, which we

believe positions the firm well competitively to capitalize on expected growth in 5G technologies.

### Texas Instruments Incorporated (TXN)

TXN is an IDM that focuses on the design and manufacturing of semiconductors, operating through primarily their Analog segment (77% of total revenue), which makes semiconductors that is used for real-world signal processing, such as sound, temperature, or images<sup>4</sup>. As of their most recent earnings call, TXN is facing issues with excess inventory without providing a date as to when this is expected to resolve.<sup>5</sup> Given the lack of near-term outlook provided by players in the industry, we expect these inventory issues to persist in 2023.

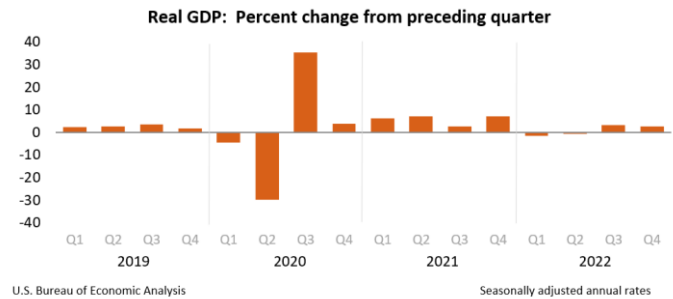
Overall, we view firms such as NVDA and AMD to have a positive outlook over this coming year, given their capability to capitalize on AI growth and broad product offerings. Other semiconductor firms, such as AVGO and QCOM, are expected to perform well given their strong positioning towards data center and 5G technologies, respectively.

## ECONOMIC OUTLOOK

### Real GDP Outlook

In Q4 and Q3 of 2022, the real gross domestic product (GDP) increased at an annual rate of 2.7% and 3.2%, respectively<sup>32</sup>. Looking forward, the Conference Board forecasts real GDP growth to be 0.3% in 2023<sup>33</sup>, though this may be negative if the US fails to achieve a soft landing for the economy. Among the key risks facing the economy currently that we expect to negatively impact GDP growth in the short-term include higher levels of inflation and increasing interest rates, negatively impacting consumer spending. This is paired with the heightened probability of recession in 2023, a hypothesis that is supported by the current inverted yield curve, which have historically preceded recessions.

For the semiconductor industry, lower GDP growth could result in decreased demand in the end-markets that use semiconductors. For NVDA, this may more heavily impact their consumer-driven end-markets, namely Gaming. However, it should be noted that NVDA boasts a diversified product portfolio serving a wide range of industries, positioning the company weather economic slowdown as demand could remain robust.



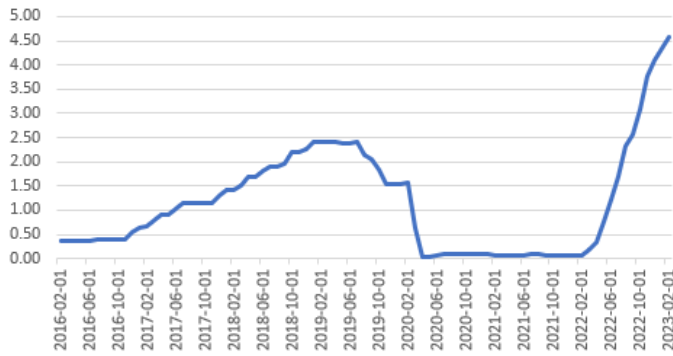
Source: Bureau of Economic Analysis

### Fed Funds Rate & Inflation

The Fed Funds rate has ripple effects throughout the economy, impacting longer-term interest rates, such as mortgages, loans, and savings, which significantly impact consumer wealth and confidence<sup>35</sup>. As for inflation, while the US CPI inflation rate has decreased from its 2022 high of 9.1%, it still remains well above the Fed's 2% target, being at 6.4% as of February 2022<sup>34</sup>. A high rate of inflation can adversely impact NVDA's highly consumer-driven segments, namely Gaming, that is currently NVDA's second-largest source of revenue.

The Fed has been consistently hiking interest rates since early 2022 to bring down inflation to a 2% target. Currently, the Fed Funds rate is at a target rate of 4.50-4.75%, with 60.5% of the market predicting a 25 bps increase in March, and 53.4% predicting a 50 bps increase in May<sup>36</sup>. While we believe these hikes are necessary to reduce inflation, this is expected to result in short-term growth and revenue decline for firms in the semiconductor industry, given the potential of decreased consumer and enterprise spending. This includes NVDA, though with the increased enterprise spending towards AI applications, which NVDA GPU's can power, we do not foresee as strong of a threat from increased interest rates.



**Federal Funds Rate 2016-2023**


Source: FRED

## VALUATION

### Revenue Growth

Our growth assumptions were based on NVDA's individual market segments, with a forecasted CAGR of 22.0% from FY2023-2033, with our largest growth expectations coming from NVDA's Data Center and Automotive markets. By the end of our forecast period, we expect Data Center to be the largest source of revenue for NVDA.

### Earnings Estimates

Compared to the consensus on FactSet, we forecast lower earnings for 2024E, 2025E, and 2026E, which we believe is in large part driven by the difference in our tax rate assumption, with the consensus estimate using a 3yr average of the effective tax rate, or 1%, while we used a higher calculated tax rate of 9.40%. As a result, our earnings estimates may fall below consensus over the forecast horizon, despite optimistic growth assumptions.

### Dividend and Share Repurchase Estimates

We do not anticipate that NVDA will increase their dividend over our forecast horizon. This is driven by NVDA not raising their dividend in the last four fiscal years, and not stating any plan to raise their dividend in the foreseeable future. As NVDA further cements itself in many high-growth industries, we expect them to reinvest their earnings to facilitate future growth, which we expect will remain the case over our 10-year forecast horizon.

As for share repurchases, NVDA has stated that they have \$7 billion remaining under their share repurchase authorization through December 2023. We forecast NVDA

using half of this for share repurchases over this year, but do not expect them to fully utilize this as we expect them to focus on reinvesting into the firm.

### Operating Expenses

NVDA's research and development as a percentage of sales has remained fairly consistent over time, oftentimes ranging from 20-25%. To reflect more recent trends, given NVDA breaking into emerging industries, we forecasted R&D expenses as an average of the previous two fiscal years, which we believe to be reasonable given NVDA's business model.

We use a similar rationale for NVDA's SG&A expenses, with SG&A as a percentage of sales historically ranging from 8-12%. As NVDA continues to grow, we expect this to remain on the lower end, and we took an average of the previous two fiscal years over our forecast horizon.

As NVDA continues to scale, it has experienced lower Cost of Revenue as a percentage of revenue over our historical period, averaging at 4.25%. We expect this trend to continue and apply this downward factor on our figure Cost of revenue assumptions.

### Capital Expenditures

NVDA projected capital expenditures of \$1.1-1.3B in FY2024<sup>2</sup>. Given NVDA's nature as a fabless company, it relies far more on research and development than capital expenditures for future growth. As NVDA has begun to break into new industries, we forecast NVDA's capital expenditures as NVDA's CapEx guidance, which we expect to grow by the inflation rate for each year over our forecast horizon.

### WACC Assumptions

We calculated a weighted average cost of capital of 12.36% for NVDA, above the consensus estimate of 11.7%. For this calculation, we used the following assumptions:

**Risk Free Rate:** We used 3.95%, the 10-year US Treasury Bond yield as of February 25, 2023.<sup>37</sup>

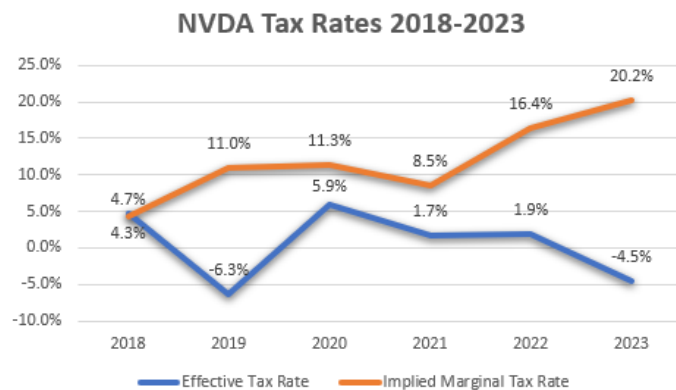
**Beta:** We used the average of the weekly 3-year, 4-year, and 5-year raw betas from Bloomberg.<sup>5</sup>

**Equity Risk Premium:** We used the Henry Fund consensus estimate of 5.50%.

Using the capital asset pricing model (CAPM), we derived a cost of equity of 12.51% for NVDA, above the consensus estimate of 12.18%<sup>4</sup>.

**Pre-tax Cost of Debt:** We used 4.84%, the yield for NVDA's outstanding corporate bond closest to our 10-year forecast horizon. This bond matures on 6/15/2031.<sup>5</sup>

**Tax Rate:** We used 9.50%, our derived tax rate based on NVDA's historical implied marginal and effective tax rates, above the consensus estimate of 1.00% (3-year average effective tax rate)<sup>4</sup>. Historically, there has been a significant difference in these two rates for NVDA, shown in the figure below:



Source: NVDA 10K's

We opted to take a hybrid approach, as the implied marginal tax rate is too high to use for the long term, as we believe that tax breaks will be necessary for US semiconductor companies to remain competitive globally. However, the effective tax rate appears too low, given the expected profitability of the firm paired with a few expected one-time tax credits that bring the effective tax rate lower.

Starting with the federal corporate tax of 21%, we omitted adjustments that we believe will go away in the long-term. We did, however, leave in US federal R&D credit (including through the CHIPS Act), which NVDA is expected to receive in the future. Given NVDA's expected foreign income, we also left in an amount for FDII, though we anticipate it to not be nearly as great in magnitude. Using our pre-tax debt and tax rate, we arrived at an after-tax cost of debt of 4.38%.

We opted to use the book value of debt as a proxy for the market value of debt, given the difficulty of estimating this value for NVDA.

## DCF / Economic Profit (EP)

Our discounted cash flow (DCF) and economic profit (EP) models both yielded an implied price today of \$230.92, representing a downside of 0.8% from the current price. We opt to use this as our primary model driving our recommendation, as we expect NVDA to have strong growth prospects, paired with the DCF model considering more company-specific factors. Our assumption for CV Growth of NOPLAT of 6.50%, below our last forecasted year estimate of 15.76%, and given NVDA's exposure to many different high-growth industries via their AI initiatives and partnerships, and market leadership in dGPUs, we believe this to be sustainable.

Our assumption for CV growth is 6.50%, compared to our last forecasted year estimate of 15.76%, which we believe is sustainable for NVDA's long-term growth.

## Relative Valuation (P/E)

Our relative P/E valuation models yielded an implied price today of \$45-\$89, depending on the peer group used, highlighted in our "Peer Comparisons" section. From these models, NVDA is trading at a very high premium relative to its peers, with a 132.6x P/E multiple in FY2023 and 63.8x multiple in FY2024.

However, a key issue in our 2023 figures used in the model relies on the timing. While NVDA has released its figures for FY2023, many of the comparable firms have not done so, resulting in a potentially inaccurate target price based on 2023 metrics alone. We view expected FY2024 to be more realistic, as it deals entirely with expectations.

We decided to do two separate peer evaluations: one based on a broader semiconductor peer group, as it represents the majority of NVDA's products. The other one compares with Large Cap tech companies, as NVDA has begun to expand its offerings to be comparable with these firms, such as through GeForce NOW and AV solutions.

In general, we expect NVDA to trade at a higher premium relative to its peers, due to its dominance in the dGPU market and its strong leadership in the AI space. However, with a P/E ratio as high as 132.6x, we do view this as a potential point of concern for its current trading price, as this implies a current earnings yield of only 0.75%.

## Dividend Discount Model (DDM)

Our DDM model yielded an implied price of \$129.50. As of this report, NVDA has not stated any plan to raise their dividend in the foreseeable future, nor have they raised dividends since FY2020. We decided to use a continuing growth of EPS of 6%, lower than the consensus long term growth of 21.2%, as we hold that to be more sustainable as an indefinite growth past our forecast horizon given NVDA's growth prospects.

## Sensitivity Analysis - Risks

NVDA is highly sensitive to many of our tested factors, which will be important points to monitor, as they may impact our recommendation, given our downside of 0.8%. Among the largest drivers in price change include our assumptions for Data Center growth rates, NVDA's cost of equity, their expected tax rate, and NVDA's beta. Given the current macroeconomic situation, our deviance from the consensus tax rate, and our beta assumption, the stock price could potentially vary significantly. In addition, NVDA's share price will be much more sensitive to the Data Center and Gaming market segments, as those two make up the majority of NVDA's revenue in our projections.

### KEYS TO MONITOR

For NVDA, key points to monitor will include the growth in key specialized markets, geopolitical events relating to China and Taiwan, as well as NVDA's future product releases that may foreshadow growth in certain market segments.

In our view, we see the automotive, professional visualization, data center markets as having the highest growth potential, given NVDA's current product offerings and the expected growth rates of these industries. However, our assumption is that NVDA is able to successfully break into these industries. If this growth fails to materialize, it could pose a significant threat towards the company. It is important to note, however, that NVDA's primary sources of revenue are expected to come from its Data Center and Gaming market segments. As a result, greater scrutiny should be applied to these segments, as NVDA's share price will be more sensitive to these segments. Specifically, NVDA's GTC conference from March 20-23 is expected to highlight new products, which will have implications for NVDA's AI positioning in the future.

The macroeconomic situation will also be important to monitor, as it impacts factors such as NVDA's WACC and growth in consumer-driven market segments.

Lastly, government regulations and geopolitical tensions with China and Taiwan will be critical to monitor. As NVDA maintains high exposure to the China and Taiwan (consisting of almost half their revenues), as well as partnering with Taiwan Semiconductor to manufacture their products, they remain at heightened risk for geopolitical events affecting this space, including US export controls on advanced chips.

As NVDA expects to branch into several high-growth industries through the use of AI solutions, there may be government regulations that may impact the company. As this industry is still very new, there may be unanticipated government regulations that could impact NVDA.

## Summary

Overall, while we believe NVDA is strongly positioned to capture growth from the popularity of generative AI, has exposure to a wide range of industries, and has great financials, we believe it is overvalued relative to its intrinsic value. This is largely driven by the market having priced in NVDA being the market leader when it comes to powering AI applications, strategic partnerships with firms such as Microsoft, as well as general excitement around generative AI, evidenced to applications such as ChatGPT. However, our target price may increase depending on NVDA product announcements (such as during their upcoming GTC conference) as well as developments in the generative AI space.

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**NVIDIA Corporation (NVDA)**  
Revenue Decomposition

Fiscal Years Ending Jan. 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
<b>Revenue by Specialized Market</b>													
Gaming	7759	12642	9067	9520	11900	14876	17851	20528	23607	25968	28565	29993	31493
Growth Rate (%)	40.61%	62.93%	-46.00%	5.00%	25.00%	25.00%	20.00%	15.00%	15.00%	10.00%	10.00%	5.00%	5.00%
% of Total Revenue	46.53%	46.97%	33.61%	28.72%	25.88%	23.75%	21.69%	19.62%	18.27%	16.89%	15.75%	15.15%	15.05%
Data Center	6696	10613	15005	20257	29372	41121	55514	72168	90210	108252	129902	142892	151466
Growth Rate (%)	124.47%	58.50%	11.00%	35.00%	45.00%	40.00%	35.00%	30.00%	25.00%	20.00%	20.00%	10.00%	6.00%
% of Total Revenue	40.16%	39.43%	55.63%	61.10%	63.88%	65.66%	67.44%	68.98%	69.83%	70.43%	71.64%	72.17%	72.37%
Professional Visualization	1053	2111	1544	1544	2084	2918	3940	5318	6914	8642	9939	10933	11479
Growth Rate (%)	-13.12%	100.47%	-65.00%	0.00%	35.00%	40.00%	35.00%	35.00%	30.00%	25.00%	15.00%	10.00%	5.00%
% of Total Revenue	6.31%	7.84%	5.72%	4.66%	4.53%	4.66%	4.79%	5.08%	5.35%	5.62%	5.48%	5.52%	5.48%
Automotive	536	566	903	1400	2169	3254	4556	6150	7996	10394	12473	13720	14406
Growth Rate (%)	-23.43%	5.60%	135.00%	55.00%	55.00%	50.00%	40.00%	35.00%	30.00%	30.00%	20.00%	10.00%	5.00%
% of Total Revenue	3.21%	2.10%	3.35%	4.22%	4.72%	5.20%	5.53%	5.88%	6.19%	6.76%	6.88%	6.95%	6.88%
OEM & Other	631	1162	455	432	454	454	454	454	454	454	454	454	454
Growth Rate (%)	24.95%	84.15%	-56.00%	-5.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
% of Total Revenue	3.78%	4.32%	1.69%	1.30%	0.99%	0.72%	0.55%	0.43%	0.35%	0.30%	0.25%	0.23%	0.22%
<b>Total Revenue</b>	<b>16675</b>	<b>26914</b>	<b>26974</b>	<b>33153</b>	<b>45980</b>	<b>62623</b>	<b>82314</b>	<b>104619</b>	<b>129180</b>	<b>153710</b>	<b>181333</b>	<b>197992</b>	<b>209298</b>
Growth Rate (%)	52.73%	61.40%	0.22%	22.91%	38.69%	36.19%	31.44%	27.10%	23.48%	18.99%	17.97%	9.19%	5.71%
<b>Revenue by Geographic Region</b>													
Taiwan	4531	8544	7789	10049	13607	18756	24506	31241	38517	45866	54088	59068	62435
Growth Rate (%)	49.79%	88.57%	-8.84%	29.02%	35.41%	37.85%	30.66%	27.48%	23.29%	19.08%	17.93%	9.21%	5.70%
% of Total Revenue	27.17%	31.75%	28.87%	30.31%	29.59%	29.95%	29.77%	29.86%	29.82%	29.84%	29.83%	29.83%	29.83%
China (including Hong Kong)	3886	7111	6720	8509	11629	15955	20895	26606	32822	39073	46084	50323	53194
Growth Rate (%)	42.29%	82.99%	-5.50%	26.63%	36.65%	37.21%	30.96%	27.33%	23.36%	19.04%	17.94%	9.20%	5.70%
% of Total Revenue	23.30%	26.42%	24.91%	25.67%	25.29%	25.48%	25.38%	25.43%	25.41%	25.42%	25.41%	25.42%	25.42%
United States	3214	4349	3916	5085	6863	9476	12371	15777	19448	23161	27311	29827	31527
Growth Rate (%)	262.75%	35.31%	-9.97%	29.86%	34.98%	38.07%	30.55%	27.53%	23.27%	19.09%	17.92%	9.21%	5.70%
% of Total Revenue	19.27%	16.16%	14.52%	15.34%	14.93%	15.13%	15.03%	15.08%	15.06%	15.07%	15.06%	15.06%	15.06%
Other countries	5044	6910	8550	9510	13882	18435	24541	30994	38393	45611	53850	58774	62142
Growth Rate (%)	17.96%	36.99%	23.73%	11.23%	45.97%	32.80%	33.12%	26.30%	23.87%	18.80%	18.06%	9.14%	5.73%
% of Total Revenue	30.25%	25.67%	31.70%	28.69%	30.19%	29.44%	29.81%	29.63%	29.72%	29.67%	29.70%	29.68%	29.69%
<b>Total Revenue</b>	<b>16675</b>	<b>26914</b>	<b>26974</b>	<b>33153</b>	<b>45980</b>	<b>62623</b>	<b>82314</b>	<b>104619</b>	<b>129180</b>	<b>153710</b>	<b>181333</b>	<b>197992</b>	<b>209298</b>
Growth Rate (%)	52.73%	61.40%	0.22%	22.91%	38.69%	36.19%	31.44%	27.10%	23.48%	18.99%	17.97%	9.19%	5.71%
<b>Revenue by Business Segment</b>													
Graphics	9834	15868	16895	-	-	-	-	-	-	-	-	-	-
Growth Rate (%)	28.73%	61.36%	6.47%	-	-	-	-	-	-	-	-	-	-
% of Total Revenue	58.97%	58.96%	62.63%	-	-	-	-	-	-	-	-	-	-
Compute & Networking	6841	11046	10079	-	-	-	-	-	-	-	-	-	-
Growth Rate (%)	108.63%	61.47%	-8.75%	-	-	-	-	-	-	-	-	-	-
% of Total Revenue	41.03%	41.04%	37.37%	-	-	-	-	-	-	-	-	-	-
All Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Growth Rate (%)	-	-	-	-	-	-	-	-	-	-	-	-	-
% of Total Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Revenue</b>	<b>16675</b>	<b>26914</b>	<b>26974</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Growth Rate (%)	52.73%	61.40%	0.22%	-	-	-	-	-	-	-	-	-	-

NVIDIA Corporation (NVDA)  
Income Statement

Fiscal Years Ending Jan. 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Revenue	16675	26914	26974	33153	45980	62623	82314	104619	129180	153710	181333	197992	209298
Cost of revenue (excluding D&A)	5181	8265	10074	10802	15394	19807	25659	31456	37875	43704	50139	53163	54613
Depreciation & Amortization Expense	1098	1174	1544	1611	1608	1356	1282	1198	1288	1301	1310	1316	1321
Depreciation Expense	495	611	844	1009	1067	1109	1140	1163	1179	1192	1201	1207	1212
Amortization Expense	612	563	699	602	541	247	142	35	109	109	109	109	109
Gross profit (loss)	10396	17475	15356	20740	28978	41460	55373	71965	90017	108706	129884	143513	153364
Research & development expenses	3924	5268	7339	7755	11633	15245	20432	25719	31911	37879	44740	48821	51624
Sales, general & administrative expenses	1940	2168	2440	2999	4159	5665	7446	9464	11685	13904	16403	17910	18933
Restructuring & other charges	-	-	-	-	-	-	-	-	-	-	-	-	-
Acquisition Termination Cost	-	-	1353	-	-	-	-	-	-	-	-	-	-
Total operating expenses	5864	7434	11132	10754	15792	20910	27878	35182	43596	51783	61143	66731	70557
Income (loss) from operations	4532	10041	4224	9986	13186	20550	27495	36782	46420	56922	68741	76783	82807
Interest income	57	29	267	671	962	1563	2520	3847	5633	7945	10839	14392	18473
Interest expense	184	236	262	530	538	624	745	854	1003	1160	1310	1485	1593
Other income (expense), net	4	107	-48	16	16	20	23	6	17	17	17	17	16
Income (loss) before income tax	4409	9941	4181	10144	13626	21508	29294	39781	51067	63725	78288	89707	99703
Income tax expense (benefit)	77	189	-187	953	1281	2022	2754	3739	4800	5990	7359	8432	9372
Net income (loss)	4332	9752	4368	9190	12345	19486	26540	36042	46267	57735	70929	81274	90331
Weighted average shares outstanding - basic	2488	2496	2487	2516	2589	2634	2679	2724	2769	2814	2859	2904	2949
Year end shares outstanding	2480	2506	2486	2568	2611	2656	2701	2746	2791	2836	2881	2926	2971
Net income (loss) per share - basic	1.755	3.91	1.76	3.65	4.77	7.40	9.91	13.23	16.71	20.52	24.81	27.99	30.64
Cash dividends declared & paid per common share	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16

NVIDIA Corporation (NVDA)  
Balance Sheet

Fiscal Years Ending Jan. 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2029E
Cash & cash equivalents	847	1990	3389	8638	20010	38421	64116	98872	144022	200649	270304	350373	439387
Marketable securities	10714	19218	9907	10407	10933	11485	12065	12674	13314	13987	14693	15435	16214
Accounts receivable, net	2429	4650	3827	5087	7174	9422	12619	16034	19679	23513	27718	30238	31991
Inventories	1828	2805	5159	4393	6446	9685	11726	15250	19070	22331	26515	28981	30549
Prepaid expenses & other current assets	239	385	791	633	950	1442	1723	2254	2820	3295	3917	4281	4511
<b>Total current assets</b>	<b>16055</b>	<b>28829</b>	<b>23073</b>	<b>29159</b>	<b>45513</b>	<b>70454</b>	<b>102248</b>	<b>145084</b>	<b>198906</b>	<b>263774</b>	<b>343147</b>	<b>429308</b>	<b>522653</b>
Total property & equipment, gross	3557	4681	6501	7729	8954	10180	11405	12631	13856	15082	16308	17533	18759
Accumulated depreciation & amortization - property & equipment	1408	1903	2694	3703	4770	5879	7019	8181	9360	10552	11752	12960	14172
Property & equipment, net	2149	2778	3807	4026	4184	4301	4387	4450	4496	4530	4555	4574	4587
Operating lease assets	707	829	1038	1098	1141	1173	1196	1213	1226	1235	1242	1247	1251
Goodwill	4193	4349	4372	4372	4372	4372	4372	4372	4372	4372	4372	4372	4372
Intangible assets, net	2737	2339	1676	1406	1000	956	836	861	739	691	606	539	464
Deferred income tax assets	808	1222	3396	3484	3571	3656	3742	3828	3914	4000	4086	4172	4172
Other assets	2144	3841	3820	4013	4216	4428	4652	4887	5134	5393	5665	5952	6252
<b>Total assets</b>	<b>28791</b>	<b>44187</b>	<b>41182</b>	<b>47557</b>	<b>63997</b>	<b>89340</b>	<b>121433</b>	<b>164695</b>	<b>218787</b>	<b>283995</b>	<b>363674</b>	<b>450164</b>	<b>543751</b>
Accounts payable	1201	1783	1193	2017	2626	3385	4719	5876	7215	8677	10182	11117	11773
Accrued & other current liabilities	1725	2552	4120	3879	5588	8167	10123	13075	16293	19167	22715	24821	26185
Short-term debt	999	0	1250	0	0	0	0	0	0	0	0	0	0
<b>Total current liabilities</b>	<b>3925</b>	<b>4335</b>	<b>6563</b>	<b>5896</b>	<b>8213</b>	<b>11552</b>	<b>14842</b>	<b>18950</b>	<b>23508</b>	<b>27843</b>	<b>32897</b>	<b>35938</b>	<b>37958</b>
Long-term debt	5984	10946	9703	11129	12902	15392	17664	20746	23986	27073	30710	32927	34407
Long-term operating lease liabilities	834	741	902	954	991	1019	1039	1054	1065	1073	1079	1084	1087
Other long-term liabilities (excl. Deferred income tax, deferred rev)	971	1108	1695	1781	1871	1965	2064	2168	2278	2393	2514	2641	2774
Deferred income tax - liabilities	241	245	0	0	0	0	0	0	0	0	0	0	0
Deferred Revenue	163	202	218	231	348	500	627	799	975	1179	1395	1511	1598
<b>Total liabilities</b>	<b>11898</b>	<b>17575</b>	<b>19081</b>	<b>19990</b>	<b>24325</b>	<b>30428</b>	<b>36236</b>	<b>43718</b>	<b>51812</b>	<b>59562</b>	<b>68595</b>	<b>74100</b>	<b>77824</b>
Convertible debt conversion obligation													
Common Stock & APIC	8722	10388	11973	12144	12314	12485	12655	12826	12998	13187	13337	13508	13508
Treasury stock, at cost	-10756	0	0	0	0	0	0	0	0	0	0	0	0
Accumulated other comprehensive income (loss)	19	-11	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43	-43
Retained earnings (accumulated deficit)	18908	16235	10171	15467	27401	46470	72585	108194	154021	211310	281785	362598	452461
<b>Total shareholders' equity</b>	<b>16893</b>	<b>26612</b>	<b>22101</b>	<b>27567</b>	<b>39672</b>	<b>58911</b>	<b>85197</b>	<b>120977</b>	<b>166975</b>	<b>224433</b>	<b>295080</b>	<b>376063</b>	<b>465926</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>28791</b>	<b>44187</b>	<b>41182</b>	<b>47557</b>	<b>63997</b>	<b>89340</b>	<b>121433</b>	<b>164695</b>	<b>218787</b>	<b>283995</b>	<b>363674</b>	<b>450164</b>	<b>543751</b>

NVIDIA Corporation (NVDA)  
Historical Cash Flow Statement

Fiscal Years Ending Jan. 30	2016	2017	2018	2019	2020	2021	2022	2023
Net income (loss)	614	1666	3047	4141	2796	4332	9752	4368
Stock-based compensation expense	204	247	391	557	844	1397	2004	2709
Depreciation & amortization	197	187	199	262	381	1098	1174	1544
Acquisition Termination Cost	-	-	-	-	-	-	-	1353
Loss on early debt conversions	-	21	19	-	-	-	-	-
Amortization of debt discount	29	25	3	-	-	-	-	-
Deferred income taxes	134	197	-359	-315	18	-282	-406	-2164
Losses (gains) on investments in non-affiliates, net	-	-	-	-	-	-	-100	45
Net loss (gain) on sale of long-lived assets & investments	-6	-3	-1	-	-	-	-	-
Restructuring & other charges	45	-	-	-	-	-	-	-
Tax benefit (deficit) from stock based compensation	-10	-	-	-	-	-	-	-
Other adjustments	19	11	18	-45	5	-20	47	-7
Accounts receivable	-32	-321	-440	-149	-233	-550	-2215	822
Inventories	66	-375	-	-776	597	-524	-774	-2554
Prepaid expenses & other assets	-16	-18	21	-55	77	-394	-1715	-1517
Accounts payable	-11	184	90	-135	194	363	568	-551
Accrued & other current liabilities	39	-135	33	256	54	239	581	1341
Other long-term liabilities	-97	-14	481	2	28	163	192	252
<b>Net cash flows from operating activities</b>	<b>1175</b>	<b>1672</b>	<b>3502</b>	<b>3743</b>	<b>4761</b>	<b>5822</b>	<b>9108</b>	<b>5641</b>
Proceeds from maturities of marketable securities	1036	969	1078	7232	4744	8792	15197	19425
Proceeds from sales of marketable securities	2102	1546	863	428	3365	527	1023	1806
Proceeds from sale of long-lived assets & investments	7	7	2	-	-	-	-	-
Purchases of marketable securities	-3477	-3134	-36	-11148	-1461	-19308	-24787	-11897
Purchases related to property & equipment & intangible assets	-86	-176	-593	-600	-489	-1128	-976	-1833
Acquisitions, net of cash acquired	-	-	-	-	-	-8524	-263	-49
Investments & other, net	-	-	-	-	-14	-34	-24	-77
Investment in non-affiliates	-	-	-	-9	-	-	-	-
Reimbursement of headquarters building development costs from banks	24	-	-	-	-	-	-	-
Other investing activities	-6	-5	-36	-	-	-	-	-
<b>Net cash flows from (used in) investing activities</b>	<b>-400</b>	<b>-793</b>	<b>1278</b>	<b>-4097</b>	<b>6145</b>	<b>-19675</b>	<b>-9830</b>	<b>7375</b>
Proceeds from issuance of notes, net	-	1988	-	-	-	-	-	-
Issuance of debt, net of issuance costs	-	-	-	-	-	4968	4977	-
Payments related to repurchases of common stock	-587	-739	-909	-1579	-	-	-	-10039
Repayment of convertible notes	-	-673	-812	-16	-	-	-	-
Proceeds related to employee stock plans	-	-	-	137	149	194	281	355
Payments related to tax on restricted stock units	-	-	-612	-1032	-551	-942	-1904	-1475
Repayment of debt	-	-	-	-	-	-	-1000	-
Dividends paid	-213	-261	-341	-371	-390	-395	-399	-398
Principal payments on property & equipment	-	-	-	-	-	-17	-83	-58
Net proceeds (payments) related to employee stock plans	120	-9	139	-	-	-	-	-
Payments for debt issuance costs	-	-8	-	-	-	-	-	-
Tax benefit from stock based compensation	10	-	-	-	-	-	-	-
Payments under capital lease obligations	-3	-	-	-	-	-	-	-
Other financing activities	-3	-7	-9	-5	-	-4	-7	-2
<b>Net cash flows from (used in) financing activities</b>	<b>-676</b>	<b>291</b>	<b>-2544</b>	<b>-2866</b>	<b>-792</b>	<b>3804</b>	<b>1865</b>	<b>-11617</b>
Change in cash & cash equivalents	99	1170	2236	-3220	10114	-10049	1143	1399
Cash & cash equivalents at beginning of period	497	596	1766	4002	782	10896	847	1990
Cash & cash equivalents at end of period	596	1766	4002	782	10896	847	1990	3389



**NVIDIA Corporation (NVDA)**  
Forecasted Cash Flow Statement

<b>Fiscal Years Ending Jan. 30</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>	<b>2027E</b>	<b>2028E</b>	<b>2029E</b>	<b>2030E</b>	<b>2031E</b>	<b>2032E</b>	<b>2033E</b>
<b>Cash &amp; cash equivalents at beginning of period</b>	<b>3389</b>	<b>8638</b>	<b>20010</b>	<b>38421</b>	<b>64116</b>	<b>98872</b>	<b>144022</b>	<b>200649</b>	<b>270304</b>	<b>350373</b>
Net Income	9190	12345	19486	26540	36042	46267	57735	70929	81274	90331
Adjustments to reconcile net income to cash from operating activities:										
Depreciation & Amortization	1611	1608	1356	1282	1198	1288	1301	1310	1316	1321
<b>Changes in operating activities:</b>										
Changes in Accounts Receivables, net	-1260	-2087	-2247	-3198	-3415	-3645	-3834	-4205	-2520	-1753
Changes in Inventories, net	766	-2053	-3239	-2041	-3524	-3820	-3261	-4184	-2466	-1568
Changes in Prepaid Expenses and other current assets	158	-318	-492	-281	-531	-567	-474	-623	-364	-230
Changes in Operating Lease Assets	-60	-43	-32	-23	-17	-13	-9	-7	-5	-4
Changes in Deferred Tax Assets	-88	-87	-84	-87	-86	-86	-86	-86	-86	0
Changes in Accounts Payable	824	609	759	1334	1157	1339	1462	1506	935	656
Changes in Accrued & other current liabilities	-241	1709	2580	1956	2952	3218	2874	3548	2106	1364
Changes in Long-term operating lease liabilities	52	38	28	20	15	11	8	6	4	3
Changes in Deferred Tax Liabilities	0	0	0	0	0	0	0	0	0	0
Changes in Deferred Revenue	13	117	152	127	172	176	203	216	117	87
Changes in Other long-term liabilities (excl. def. tax liabilities & revenue)	86	90	94	99	104	110	115	121	127	133
<b>Net Cash from Operating Activities</b>	<b>11050</b>	<b>11927</b>	<b>18361</b>	<b>25730</b>	<b>34066</b>	<b>44278</b>	<b>56033</b>	<b>68531</b>	<b>80438</b>	<b>90341</b>
<b>Changes in investing activities:</b>										
Changes in marketable securities	-500	-526	-552	-580	-609	-640	-672	-706	-742	-779
Changes in Capital expenditures (Gross PPE)	-1228	-1226	-1226	-1226	-1226	-1226	-1226	-1226	-1226	-1226
Change in Other intangible assets	-332	-135	-203	-22	-60	12	-61	-24	-42	-33
Change in Other assets	-193	-203	-213	-224	-235	-247	-259	-272	-286	-301
<b>Net Cash Used for Investing Activities</b>	<b>-2252</b>	<b>-2089</b>	<b>-2193</b>	<b>-2051</b>	<b>-2130</b>	<b>-2100</b>	<b>-2218</b>	<b>-2228</b>	<b>-2296</b>	<b>-2339</b>
<b>Changes in Financing activities:</b>										
Changes in Long-Term Debt	1426	1774	2490	2271	3082	3241	3087	3637	2217	1481
Changes in Short-Term Debt	-1250	0	0	0	0	0	0	0	0	0
Changes in Common Stock	171	171	171	171	171	171	171	171	171	0
Share Repurchases	-3500	0	0	0	0	0	0	0	0	0
Dividends Paid	-395	-411	-418	-425	-432	-439	-447	-454	-461	-468
Changes in Accumulated other comprehensive income	0	0	0	0	0	0	0	0	0	0
<b>Net cash flows from financing activities</b>	<b>-3548</b>	<b>1533</b>	<b>2243</b>	<b>2017</b>	<b>2820</b>	<b>2972</b>	<b>2811</b>	<b>3353</b>	<b>1926</b>	<b>1012</b>
<b>Cash &amp; cash equivalents at end of period</b>	<b>8638</b>	<b>20010</b>	<b>38421</b>	<b>64116</b>	<b>98872</b>	<b>144022</b>	<b>200649</b>	<b>270304</b>	<b>350373</b>	<b>439387</b>

NVIDIA Corporation (NVDA)  
Common Size Income Statement

Fiscal Years Ending Jan. 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Revenue	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cost of revenue (excluding D&A)	31.07%	30.71%	37.35%	32.58%	33.48%	31.63%	31.17%	30.07%	29.32%	28.43%	27.65%	26.85%	26.09%
Depreciation & Amortization Expense	6.58%	4.36%	5.72%	4.52%	4.09%	3.20%	3.03%	2.87%	2.93%	2.91%	2.90%	2.90%	2.90%
Depreciation Expense	2.91%	2.27%	3.13%	2.70%	2.91%	2.81%	2.86%	2.83%	2.85%	2.84%	2.84%	2.84%	2.84%
Amortization Expense	3.67%	2.09%	2.59%	1.82%	1.18%	0.39%	0.17%	0.03%	0.08%	0.07%	0.06%	0.06%	0.05%
Gross profit (loss)	62.34%	64.93%	56.93%	62.56%	63.02%	66.21%	67.27%	68.79%	69.68%	70.72%	71.63%	72.48%	73.28%
Research & development expenses	23.53%	19.57%	27.21%	23.39%	25.30%	24.34%	24.82%	24.58%	24.70%	24.64%	24.67%	24.66%	24.67%
Sales, general & administrative expenses	11.63%	8.05%	9.05%	8.55%	8.80%	8.67%	8.73%	8.70%	8.72%	8.71%	8.71%	8.71%	8.71%
Restructuring & other charges	-	-	-	-	-	-	-	-	-	-	-	-	-
Acquisition Termination Cost	-	-	5.02%	-	-	-	-	-	-	-	-	-	-
Total operating expenses	35.17%	27.62%	41.27%	32.44%	34.34%	33.39%	33.87%	33.63%	33.75%	33.69%	33.72%	33.70%	33.71%
Income (loss) from operations	27.18%	37.31%	15.66%	30.12%	28.68%	32.82%	33.40%	35.16%	35.93%	37.03%	37.91%	38.78%	39.56%
Interest income	0.34%	0.11%	0.99%	2.03%	2.09%	2.50%	3.06%	3.68%	4.36%	5.17%	5.98%	7.27%	8.83%
Interest expense	1.10%	0.88%	0.97%	1.60%	1.17%	1.00%	0.90%	0.82%	0.78%	0.75%	0.72%	0.75%	0.76%
Other income (expense), net	0.02%	0.40%	-0.18%	0.08%	0.10%	0.00%	0.06%	0.05%	0.04%	0.05%	0.05%	0.05%	0.05%
Income (loss) before income tax	26.44%	36.94%	15.50%	30.60%	29.63%	34.35%	35.59%	38.02%	39.53%	41.46%	43.17%	45.31%	47.64%
Income tax expense (benefit)	0.46%	0.70%	-0.69%	2.88%	2.79%	3.23%	3.35%	3.57%	3.72%	3.90%	4.06%	4.26%	4.48%
Net income (loss)	25.98%	36.23%	16.19%	27.72%	26.85%	31.12%	32.24%	34.45%	35.82%	37.56%	39.12%	41.05%	43.16%

NVIDIA Corporation (NVDA)  
Common Size Balance Sheet

Fiscal Years Ending Jan. 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Cash & cash equivalents	5.08%	7.39%	12.56%	26.06%	43.52%	61.35%	77.89%	94.51%	111.48%	130.54%	149.07%	178.98%	209.93%
Marketable securities	64.25%	71.41%	38.73%	31.39%	23.78%	18.34%	14.66%	12.11%	10.31%	9.10%	8.10%	7.80%	7.75%
Accounts receivable, net	14.57%	17.28%	14.19%	15.34%	15.60%	15.04%	15.33%	15.33%	15.23%	15.30%	15.29%	15.27%	15.28%
Inventories	10.95%	9.88%	19.13%	13.25%	14.02%	15.47%	14.25%	14.58%	14.76%	14.53%	14.62%	14.64%	14.60%
Prepaid expenses & other current assets	1.43%	1.36%	2.93%	1.91%	2.07%	2.30%	2.09%	2.15%	2.18%	2.14%	2.16%	2.16%	2.16%
<b>Total current assets</b>	<b>96.28%</b>	<b>107.12%</b>	<b>85.54%</b>	<b>87.95%</b>	<b>98.98%</b>	<b>112.51%</b>	<b>124.22%</b>	<b>138.68%</b>	<b>153.98%</b>	<b>171.60%</b>	<b>189.24%</b>	<b>216.83%</b>	<b>249.72%</b>
Total property & equipment, gross	21.33%	17.39%	24.10%	23.31%	19.47%	16.26%	13.86%	12.07%	10.73%	9.81%	8.99%	8.86%	8.96%
Accumulated depreciation & amortization - property & equipment	8.44%	7.07%	9.99%	11.17%	10.37%	9.39%	8.53%	7.82%	7.25%	6.86%	6.48%	6.55%	6.77%
Property & equipment, net	12.89%	10.32%	14.11%	12.14%	9.10%	6.87%	5.33%	4.25%	3.48%	2.95%	2.51%	2.31%	2.19%
Operating lease assets	4.24%	3.08%	3.85%	3.31%	2.48%	1.87%	1.45%	1.16%	0.95%	0.80%	0.68%	0.63%	0.60%
Goodwill	25.15%	18.16%	18.21%	13.19%	9.51%	6.98%	5.31%	4.18%	3.38%	2.84%	2.41%	2.21%	2.06%
Intangible assets, net	16.41%	8.89%	6.21%	4.24%	2.17%	1.53%	1.02%	0.82%	0.57%	0.45%	0.33%	0.27%	0.22%
Deferred income tax assets	4.83%	4.54%	12.59%	7.32%	8.15%	9.35%	8.28%	8.59%	8.74%	8.54%	8.62%	8.63%	8.60%
Other assets	12.86%	14.27%	14.16%	12.10%	9.17%	7.07%	5.65%	4.67%	3.97%	3.51%	3.12%	3.01%	2.99%
<b>Total assets</b>	<b>172.66%</b>	<b>164.18%</b>	<b>152.67%</b>	<b>143.45%</b>	<b>139.18%</b>	<b>142.66%</b>	<b>147.53%</b>	<b>157.42%</b>	<b>169.37%</b>	<b>184.76%</b>	<b>200.56%</b>	<b>227.36%</b>	<b>259.80%</b>
Accounts payable	7.20%	6.82%	4.42%	6.08%	5.71%	5.41%	5.73%	5.62%	5.58%	5.64%	5.62%	5.61%	5.63%
Accrued & other current liabilities	10.34%	9.48%	15.27%	11.70%	12.15%	13.04%	12.30%	12.50%	12.61%	12.47%	12.53%	12.54%	12.51%
Short-term debt	5.99%	0.00%	4.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Total current liabilities</b>	<b>23.54%</b>	<b>16.11%</b>	<b>24.33%</b>	<b>17.78%</b>	<b>17.86%</b>	<b>18.45%</b>	<b>18.03%</b>	<b>18.11%</b>	<b>18.20%</b>	<b>18.11%</b>	<b>18.14%</b>	<b>18.15%</b>	<b>18.14%</b>
Long-term debt	35.77%	40.87%	35.97%	33.57%	28.06%	24.58%	21.46%	19.83%	18.57%	17.61%	16.94%	16.63%	16.44%
Long-term operating lease liabilities	3.80%	2.75%	3.34%	2.88%	2.18%	1.83%	1.26%	1.01%	0.82%	0.70%	0.60%	0.55%	0.52%
Other long-term liabilities	5.82%	4.11%	6.28%	5.47%	5.59%	5.46%	5.38%	5.64%	5.51%	5.52%	5.50%	5.51%	5.53%
Deferred income tax - liabilities	1.45%	0.91%	0.00%	0.56%	0.84%	0.71%	0.58%	0.49%	0.59%	0.60%	0.59%	0.57%	0.57%
Deferred revenue	0.98%	0.75%	0.81%	0.70%	0.78%	0.80%	0.78%	0.78%	0.78%	0.77%	0.77%	0.78%	0.78%
<b>Total liabilities</b>	<b>71.35%</b>	<b>65.30%</b>	<b>70.74%</b>	<b>60.30%</b>	<b>52.90%</b>	<b>48.59%</b>	<b>44.02%</b>	<b>41.79%</b>	<b>40.11%</b>	<b>38.75%</b>	<b>37.83%</b>	<b>37.43%</b>	<b>37.18%</b>
Convertible debt conversion obligation	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Common Stock	52.31%	38.80%	44.39%	36.83%	26.78%	19.94%	15.37%	12.28%	10.06%	8.57%	7.36%	6.82%	6.45%
Treasury stock, at cost	-84.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accumulated other comprehensive income (loss)	0.11%	-0.04%	-0.16%	-0.13%	-0.06%	-0.07%	-0.05%	-0.04%	-0.03%	-0.03%	-0.02%	-0.02%	-0.02%
Retained earnings (accumulated deficit)	113.39%	60.32%	37.71%	46.65%	59.59%	74.21%	88.18%	103.42%	119.23%	137.47%	155.40%	183.14%	216.18%
<b>Total shareholders' equity</b>	<b>101.31%</b>	<b>98.88%</b>	<b>81.93%</b>	<b>83.15%</b>	<b>86.28%</b>	<b>94.07%</b>	<b>103.50%</b>	<b>115.64%</b>	<b>129.26%</b>	<b>146.01%</b>	<b>162.73%</b>	<b>189.94%</b>	<b>222.61%</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>172.66%</b>	<b>164.18%</b>	<b>152.67%</b>	<b>143.45%</b>	<b>139.18%</b>	<b>142.66%</b>	<b>147.53%</b>	<b>157.42%</b>	<b>169.37%</b>	<b>184.76%</b>	<b>200.56%</b>	<b>227.36%</b>	<b>259.80%</b>

**NVIDIA Corporation (NVDA)**  
Value Driver Estimation

Fiscal Years Ending Jan. 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
<b>NOPLAT:</b>													
<b>EBITA:</b>													
Revenue	16675	26914	26974	33153	45980	62623	82314	104619	129180	153710	181333	197992	209298
Less: Cost of Revenue (excl. D/A)	5181	8266	10074	10802	16394	19807	26669	31466	37875	43704	50139	53163	54613
Less: Depreciation & Amortization	1098	1174	1544	1611	1608	1356	1282	1198	1288	1301	1310	1316	1321
Less: Research & development expenses	3924	5268	7339	7755	11633	15245	20432	25719	31911	37879	44740	48821	51624
Less: SG&A expenses	1940	2166	2440	2999	4159	5665	7446	9464	11685	13904	16403	17910	18933
Plus: Implied Interest on Operating Leases	34.20	40.10	50.21	53.09	55.19	56.72	57.85	58.69	59.30	59.75	60.08	60.32	60.50
<b>EBITA</b>	<b>4566</b>	<b>10081</b>	<b>5627</b>	<b>10039</b>	<b>13241</b>	<b>20606</b>	<b>27553</b>	<b>36841</b>	<b>46480</b>	<b>56982</b>	<b>68801</b>	<b>76843</b>	<b>82868</b>
Implied Marginal Tax Rate	8.50%	16.42%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%	9.40%
<b>Total Adjusted Taxes:</b>													
Income Tax Provision	77	189	-187	953	1281	2022	2754	3739	4800	5990	7359	8432	9372
Plus: Tax Shield on Interest Expense	16	39	25	50	51	59	70	80	94	109	123	140	150
Less: Tax on interest income	5	5	25	63	90	147	237	362	530	747	1019	1353	1736
Plus: Tax Shield on Implied Interest on Operating Leases	2.91	6.59	4.72	4.99	5.19	5.33	5.44	5.52	5.57	5.62	5.65	5.67	5.69
Less: Tax on other income													
<b>Total Adjusted Taxes</b>	<b>91</b>	<b>230</b>	<b>-183</b>	<b>945</b>	<b>1246</b>	<b>1939</b>	<b>2592</b>	<b>3464</b>	<b>4371</b>	<b>5358</b>	<b>6469</b>	<b>7225</b>	<b>7794</b>
<b>Deferred Tax Liabilities</b>	<b>241</b>	<b>245</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Deferred Tax Assets</b>	<b>806</b>	<b>1222</b>	<b>3396</b>	<b>3484</b>	<b>3571</b>	<b>3656</b>	<b>3742</b>	<b>3828</b>	<b>3914</b>	<b>4000</b>	<b>4086</b>	<b>4172</b>	<b>4172</b>
<b>Change in Deferred Taxes</b>	<b>-565</b>	<b>-977</b>	<b>-226</b>	<b>-88</b>	<b>-87</b>	<b>-84</b>	<b>-87</b>	<b>-86</b>	<b>-86</b>	<b>-86</b>	<b>-86</b>	<b>-86</b>	<b>0</b>
<b>NOPLAT</b>	<b>3910</b>	<b>8875</b>	<b>5584</b>	<b>9006</b>	<b>11908</b>	<b>18583</b>	<b>24874</b>	<b>33292</b>	<b>42023</b>	<b>51538</b>	<b>62246</b>	<b>69532</b>	<b>75077</b>
<b>Invested Capital (IC):</b>													
Normal Cash	847	1367	1370	1684	2336	3181	4181	5314	6562	7808	9211	10057	10631
Accounts Receivable, Net	2429	4690	3827	5087	7174	9422	12619	16034	19679	23513	27718	30238	31991
Inventory	1826	2605	5159	4393	6446	9685	11726	15250	19070	22331	26515	28981	30549
Prepaid Expenses & Other Assets	239	366	791	633	950	1442	1723	2254	2820	3295	3917	4281	4511
<b>Operating Current Assets (CA)</b>	<b>5341</b>	<b>8988</b>	<b>11147</b>	<b>11797</b>	<b>16906</b>	<b>23729</b>	<b>30249</b>	<b>38851</b>	<b>48131</b>	<b>56946</b>	<b>67361</b>	<b>73557</b>	<b>77682</b>
Accounts Payable	1201	1783	1193	2017	2626	3385	4719	5876	7215	8677	10182	11117	11773
Accrued & Other Liabilities	1725	2552	4120	3879	5588	8167	10123	13075	16293	19167	22715	24821	26185
Income Tax Payable	836	980	980	980	980	980	980	980	980	980	980	980	981
<b>Non Interest-Bearing Current Liabilities</b>	<b>3762</b>	<b>5315</b>	<b>6293</b>	<b>6876</b>	<b>9193</b>	<b>12532</b>	<b>15822</b>	<b>19930</b>	<b>24483</b>	<b>28823</b>	<b>33877</b>	<b>36913</b>	<b>38939</b>
<b>Net Operating Working Capital</b>	<b>1579</b>	<b>3673</b>	<b>4854</b>	<b>4921</b>	<b>7713</b>	<b>11197</b>	<b>14427</b>	<b>18921</b>	<b>23644</b>	<b>28123</b>	<b>33484</b>	<b>36639</b>	<b>38744</b>
<b>Net Property, Plant, and Equipment</b>	<b>2148</b>	<b>2773</b>	<b>3807</b>	<b>4028</b>	<b>4184</b>	<b>4301</b>	<b>4287</b>	<b>4450</b>	<b>4486</b>	<b>4650</b>	<b>4665</b>	<b>4674</b>	<b>4687</b>
Net Intangible Assets (non-goodwill)	2737	2339	1676	1406	1000	966	836	861	739	691	606	539	464
Operating lease assets (PV of Operating Leases)	707	829	1038	1098	1141	1173	1196	1213	1226	1235	1242	1247	1251
Other operating assets	2144	3841	3820	4013	4216	4428	4652	4887	5134	5393	5665	5952	6252
<b>Net Other Operating Assets (net of D/A)</b>	<b>5588</b>	<b>7009</b>	<b>6534</b>	<b>6516</b>	<b>6356</b>	<b>6557</b>	<b>6684</b>	<b>6961</b>	<b>7099</b>	<b>7319</b>	<b>7513</b>	<b>7738</b>	<b>7967</b>
Deferred Revenue	163	202	218	231	348	500	627	799	975	1179	1395	1511	1598
<b>Other Long-Term Operating Liabilities</b>	<b>163</b>	<b>202</b>	<b>218</b>	<b>231</b>	<b>348</b>	<b>500</b>	<b>627</b>	<b>799</b>	<b>975</b>	<b>1179</b>	<b>1395</b>	<b>1511</b>	<b>1598</b>
<b>Invested Capital (IC)</b>	<b>9153</b>	<b>13258</b>	<b>14977</b>	<b>15232</b>	<b>17906</b>	<b>21555</b>	<b>24870</b>	<b>29533</b>	<b>34263</b>	<b>38793</b>	<b>44158</b>	<b>47439</b>	<b>49699</b>
<b>Free Cash Flow (FCF):</b>													
NOPLAT	3910	8875	5584	9006	11908	18583	24874	33292	42023	51538	62246	69532	75077
Change in IC	5718	4105	1719	255	2673	3649	3315	4662	4731	4530	5365	3281	2260
<b>FCF</b>	<b>-1808</b>	<b>4769</b>	<b>3865</b>	<b>8751</b>	<b>9235</b>	<b>14934</b>	<b>21559</b>	<b>28629</b>	<b>37293</b>	<b>47008</b>	<b>56882</b>	<b>66251</b>	<b>72817</b>
<b>Return on Invested Capital (ROIC):</b>													
NOPLAT	3910	8875	5584	9006	11908	18583	24874	33292	42023	51538	62246	69532	75077
Beginning IC	3435	9153	13258	14977	15232	17906	21555	24870	29533	34263	38793	44158	47439
<b>ROIC</b>	<b>113.86%</b>	<b>96.96%</b>	<b>42.12%</b>	<b>60.13%</b>	<b>78.18%</b>	<b>103.78%</b>	<b>115.40%</b>	<b>133.86%</b>	<b>142.29%</b>	<b>150.42%</b>	<b>160.46%</b>	<b>157.46%</b>	<b>158.26%</b>
<b>Economic Profit (EP):</b>													
Beginning IC	3435	9153	13258	14977	15232	17906	21555	24870	29533	34263	38793	44158	47439
x (ROIC - WACC)	101.52%	84.62%	29.78%	47.79%	65.84%	91.44%	103.06%	121.52%	129.95%	138.08%	148.12%	145.12%	145.92%
<b>EP</b>	<b>3487</b>	<b>7745</b>	<b>3948</b>	<b>7158</b>	<b>10028</b>	<b>16374</b>	<b>22214</b>	<b>30223</b>	<b>38379</b>	<b>47310</b>	<b>57460</b>	<b>64083</b>	<b>69223</b>



**NVIDIA Corporation (NVDA)**
*Weighted Average Cost of Capital (WACC) Estimation*
**Cost of Equity:**

Risk-Free Rate	3.95%
Beta	1.555
Equity Risk Premium	5.50%
<b>Cost of Equity</b>	<b>12.51%</b>

**ASSUMPTIONS:**

10 Yr. US Treasury Bond Yield  
 Bloomberg Average of 3yr, 4yr, 5yr Weekly Betas  
 HF estimate

**Cost of Debt:**

Risk-Free Rate	3.95%
Implied Default Premium	0.88%
Pre-Tax Cost of Debt	4.84%
Marginal Tax Rate	9.40%
<b>After-Tax Cost of Debt</b>	<b>4.38%</b>

10 Yr. US Treasury Bond Yield

Bloomberg: Yield for 6/15/2031 maturity  
 Computed

**Market Value of Common Equity:**

Total Shares Outstanding	2466
Current Stock Price	\$232.86
<b>MV of Equity</b>	<b>574,232.76</b>

**MV Weights**

97.95%

**Market Value of Debt:**

Short-Term Debt	1250
Current Portion of LTD	0
Long-Term Debt	9703
PV of Operating Leases	1038
<b>MV of Total Debt</b>	<b>11,991.00</b>

2.05%

**Market Value of the Firm**

586,223.76

100.00%

Estimated WACC

12.34%

# NVIDIA Corporation (NVDA)

Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

## Key Inputs:

CV Growth of NOPLAT	6.50%
CV Year ROIC	157.46%
WACC	12.34%
Cost of Equity	12.51%

Fiscal Years Ending Jan. 30	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
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## DCF Model:

Free Cash Flow (FCF)	8751	9235	14934	21559	28629	37293	47008	56882	66251	72817
Continuing Value (CV)										1232630
PV of FCF	7790	7317	10533	13536	16001	18554	20818	22424	23249	432559
Value of Operating Assets:	572783									
Non-Operating Adjustments										
Plus: Excess Cash	2019									
Plus: Short-term Investments	9907									
Plus: Other Assets	3820									
Less: Total Debt	-10946									
Less: PV of Operating Leases	-1038									
Less: ESOP	-10308									
Less: Other Liabilities (excl. Def. Rev. & Inc. Tax)	-1695									
Value of Equity	564542									
Shares Outstanding	2466									
Intrinsic Value of Last FYE	\$ 228.93									
Implied Price as of Today	\$ 230.92									

## EP Model:

Economic Profit (EP)	7158	10028	16374	22214	30223	38379	47310	57460	64083	69223
Continuing Value (CV)										1185190
PV of EP	6372	7946	11549	13948	16892	19094	20952	22652	22488	415912
Total PV of EP	557805									
Invested Capital (last FYE)	14977									
Value of Operating Assets:	572783									
Non-Operating Adjustments										
Plus: Excess Cash	2019									
Plus: Short-term Investments	9907									
Plus: Other Assets	3820									
Less: Total Debt	-10946									
Less: PV of Operating Leases	-1038									
Less: ESOP	-10308									
Less: Other Liabilities (excl. Def. Rev. & Inc. Tax)	-1695									
Value of Equity	564542									
Shares Outstanding	2466									
Intrinsic Value of Last FYE	\$ 228.93									
Implied Price as of Today	\$ 230.92									

**NVIDIA Corporation (NVDA)**
*Dividend Discount Model (DDM) or Fundamental P/E Valuation Model*

<b>Fiscal Years Ending Jan. 30</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>	<b>2027E</b>	<b>2028E</b>	<b>2029E</b>	<b>2030E</b>	<b>2031E</b>	<b>2032E</b>	<b>2033E</b>
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EPS	\$ 3.65	\$ 4.77	\$ 7.40	\$ 9.91	\$ 13.23	\$ 16.71	\$ 20.52	\$ 24.81	\$ 27.99	\$ 30.64
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**Key Assumptions**

CV growth of EPS	6.00%
CV Year ROE	27.54%
Cost of Equity	12.51%

**Future Cash Flows**

P/E Multiple (CV Year)												12.02
EPS (CV Year)												\$ 30.64
Future Stock Price												\$ 368.34
Dividends Per Share	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16	\$ 0.16
Discounted Cash Flows	\$ 0.14	\$ 0.13	\$ 0.11	\$ 0.10	\$ 0.09	\$ 0.08	\$ 0.07	\$ 0.06	\$ 0.06	\$ 0.06	\$ 0.06	\$ 127.55

Intrinsic Value as of Last FYE \$ 128.39

**Implied Price as of Today** **\$ 129.50**

NVIDIA Corporation (NVDA)  
Key Management Ratios

Fiscal Years Ending Jan. 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
<b>Liquidity Ratios:</b>													
Current Ratio (CA/CL)	4.09	6.65	3.52	5.54	6.05	6.50	7.22	7.92	8.68	9.67	10.69	12.19	14.01
Quick Ratio (CA - Inv) / CL	3.63	6.05	2.73	4.79	5.26	5.66	6.43	7.12	7.87	8.87	9.88	11.39	13.21
Cash Ratio (Cash + Mkt. Sec.) / CL	2.95	4.89	2.03	3.82	4.27	4.72	5.46	6.15	6.92	7.90	8.92	10.42	12.24
<b>Asset-Management Ratios:</b>													
Asset Turnover (Net Sales / Avg. Total Assets)	0.72	0.74	0.63	0.72	0.76	0.76	0.74	0.70	0.65	0.60	0.54	0.48	0.41
Inventory Turnover (COGS / Avg. Inv)	3.69	3.73	2.60	2.26	2.81	2.45	2.40	2.33	2.21	2.11	2.04	1.92	1.83
Accounts Receivable Turnover (Sales / Avg. AR)	8.16	7.60	6.36	7.44	7.43	7.51	7.47	7.30	7.23	7.12	7.04	6.83	6.73
<b>Financial Leverage Ratios:</b>													
Debt-to-Equity Ratio (ST debt + LT debt / TSE)	0.41	0.41	0.50	0.36	0.30	0.24	0.20	0.17	0.14	0.12	0.10	0.09	0.07
Interest Coverage Ratio (EBIT / Int. exp)	24.82	42.72	21.48	18.95	23.99	32.22	36.35	42.44	45.68	48.51	51.32	51.03	51.37
Debt-to-Asset Ratio (ST debt + LT debt / Assets)	0.24	0.25	0.27	0.22	0.19	0.17	0.14	0.12	0.11	0.09	0.08	0.07	0.06
<b>Profitability Ratios:</b>													
Return on Equity (NI/Beg TSE)	35.50%	57.73%	16.41%	41.58%	39.30%	44.19%	41.80%	40.06%	36.75%	33.56%	30.56%	26.83%	23.53%
Return on Assets (NI / Total Assets)	15.05%	22.07%	10.61%	18.00%	18.21%	20.76%	21.04%	21.25%	20.67%	19.96%	19.09%	17.74%	16.37%
Operating Profit Margin (Opr. Profit / Sales)	26.44%	36.94%	15.50%	30.60%	29.97%	34.62%	35.81%	38.21%	39.69%	41.59%	43.35%	45.49%	47.81%
Net Profit Margin (Net Income / Sales)	25.98%	36.23%	16.19%	27.72%	27.15%	31.36%	32.44%	34.62%	35.96%	37.68%	39.28%	41.21%	43.32%
<b>Payout Policy Ratios:</b>													
Dividend Payout Ratio (Dividend/EPS)	9.12%	4.09%	9.11%	4.37%	3.37%	2.20%	1.65%	1.32%	1.04%	0.85%	0.71%	0.63%	0.58%
Total Payout Ratio (Total Div + Share Repurchases / NI)	0.09	0.04	2.39	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01

## NVIDIA Corporation (NVDA)

### Relative Valuation Models

Ticker	Company (Semiconductors)	Price	EPS 2023E	EPS 2024E	P/E 23	P/E 24
AMD	Advanced Micro Devices, Inc.	\$80.44	\$3.12	\$4.35	25.78	18.49
AVGO	Broadcom, Inc.	\$598.65	\$41.29	\$44.00	14.50	13.61
INTC	Intel Corporation	\$26.20	\$0.48	\$1.78	54.58	14.72
QCOM	QUALCOMM Incorporated	\$124.78	\$9.46	\$11.47	13.19	10.88
AAPL	Apple, Inc.	\$145.91	\$5.98	\$6.58	24.40	22.17
TXN	Texas Instruments Incorporated	\$169.14	\$7.52	\$8.37	22.49	20.21
Average					<b>25.82</b>	<b>16.68</b>

Ticker	Company (Large Cap Tech)	Price	EPS 2023E	EPS 2024E	P/E 23	P/E 24
AAPL	Apple, Inc.	\$145.91	\$5.98	\$6.58	24.40	22.17
AMZN	Amazon.com, Inc.	\$92.13	\$1.53	\$2.49	60.22	37.00
GOOGL	Alphabet Inc. Class A	\$92.00	\$5.16	\$6.15	17.83	14.96
MSFT	Microsoft Corporation	\$251.11	\$10.04	\$11.64	25.01	21.57
META	Meta Platforms Inc. Class A	\$174.53	\$9.65	\$11.65	18.09	14.98
TSLA	Tesla, Inc.	\$190.90	\$4.16	\$5.62	45.89	33.97
Average					<b>31.91</b>	<b>24.11</b>

NVDA	NVIDIA Corporation (NVDA)	\$232.86	\$1.76	\$3.65	132.6	63.8
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#### Implied Relative Value (Semiconductors):

P/E (EPS23)	\$45.36
P/E (EPS24)	\$60.93

#### Implied Relative Value (Large Cap Tech):

P/E (EPS23)	\$56.04
P/E (EPS24)	\$88.06



**NVIDIA Corporation (NVDA)**
**Key Management Ratios**

<b>Fiscal Years Ending Jan. 30</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>	<b>2027E</b>	<b>2028E</b>	<b>2029E</b>	<b>2030E</b>	<b>2031E</b>	<b>2032E</b>	<b>2033E</b>
<b>Liquidity Ratios:</b>													
Current Ratio (CA/CL)	4.09	6.65	3.52	4.95	5.54	6.10	6.89	7.66	8.46	9.47	10.43	11.95	13.77
Quick Ratio (CA - Inv) / CL	3.63	6.05	2.73	4.20	4.76	5.26	6.10	6.85	7.65	8.67	9.62	11.14	12.96
Cash Ratio (Cash + Mkt. Sec.) / CL	2.95	4.89	2.03	3.23	3.77	4.32	5.13	5.89	6.69	7.71	8.66	10.18	12.00
<b>Asset-Management Ratios:</b>													
Asset Turnover (Net Sales / Avg. Total Assets)	0.72	0.74	0.63	0.75	0.82	0.82	0.78	0.73	0.67	0.61	0.56	0.49	0.42
Inventory Turnover (COGS / Avg. Inv)	3.69	3.73	2.60	2.26	2.84	2.46	2.40	2.33	2.21	2.11	2.05	1.92	1.83
Accounts Receivable Turnover (Sales / Avg. AR)	8.16	7.60	6.36	7.44	7.50	7.55	7.47	7.30	7.23	7.12	7.08	6.83	6.73
<b>Financial Leverage Ratios:</b>													
Debt-to-Equity Ratio (ST debt + LT debt / TSE)	0.41	0.41	0.50	0.40	0.33	0.26	0.21	0.17	0.14	0.12	0.10	0.09	0.07
Interest Coverage Ratio (EBIT / Int. exp)	24.82	42.72	21.48	18.95	24.60	33.02	37.01	43.12	46.32	49.11	52.54	51.73	52.03
Debt-to-Asset Ratio (ST debt + LT debt / Assets)	0.24	0.25	0.27	0.23	0.20	0.17	0.15	0.13	0.11	0.10	0.08	0.07	0.06
<b>Profitability Ratios:</b>													
Return on Equity (NI/Beg TSE)	35.50%	57.73%	16.41%	41.58%	44.78%	49.12%	45.05%	42.30%	38.24%	34.58%	31.60%	27.54%	24.02%
Return on Assets (NI / Total Assets)	15.05%	22.07%	10.61%	19.32%	19.29%	21.81%	21.86%	21.88%	21.15%	20.33%	19.50%	18.05%	16.61%
Operating Profit Margin (Opr. Profit / Sales)	26.44%	36.94%	15.50%	30.60%	29.63%	34.35%	35.59%	38.02%	39.53%	41.46%	43.17%	45.31%	47.64%
Net Profit Margin (Net Income / Sales)	25.98%	36.23%	16.19%	27.72%	26.85%	31.12%	32.24%	34.45%	35.82%	37.56%	39.12%	41.05%	43.16%
<b>Payout Policy Ratios:</b>													
Dividend Payout Ratio (Dividend/EPS)	9.12%	4.09%	9.11%	4.38%	3.35%	2.16%	1.61%	1.21%	0.96%	0.78%	0.64%	0.57%	0.52%
Total Payout Ratio (Total Div + Share Repurchases / NI)	0.09	0.04	2.39	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01