

NVIDIA Corporation | North America

Generative AI tide has arrived at the coastline; NVDA is set to take-off, initiate OW

Stock Rating

Over-Weight

Target Price

\$487.50

Key Positive

Generative AI wave has arrived with NVIDIA set to take-off

From the latest Q1'23 disclosure on 24th May 2023, the Q1'23 EPS beats consensus EPS by 18% and the Q2'23 guidance has raised 53% to US\$11bn indicating nearly doubling the revenue size of its Data Center business. The significant beat and guidance are renewable and demonstrate the **faster-than-expected wave from Generative AI boosting NVIDIA's data center segment revenue**, where there have been US\$Tn of installed global data center infrastructure that will transit from **general-purpose to accelerated computing as companies race to apply generative AI into products with mission-critical capabilities**.

In the trend of hyper-scale clients building LLMs, Microsoft, Amazon, and Google are generating strong demand for NVIDIA's latest H100 GPU, since H100 claims **9x faster training and 30x faster inference over the A100**. Meta has also made substantial investments to develop the necessary infrastructure to facilitate its metaverse offering, which we believe will further stimulate demand for NVIDIA's GPUs. NVIDIA indicated that **H100 carries close to 2x the ASP at the card level of Ampere and counts for 10-15% of total revenues**. Hyper-scale clients contributed nearly 50% to NVIDIA's data center revenue, and CSP customers count for up to 40% of NVIDIA's data center revenue and have outpaced data center revenue growth as cloud adoption continues. Other than H11, **the Grace CPU, GH200 Grace Hopper Super Chip, NVLink, Quantum 400 InfiniBand and BlueField-3 DPU** is in production and our team believes the future pipelines will be the further growth driver of its business growth. We see more positive updates from the latest announcements:

On 30th May, Taiwan Computex IT show, NVIDIA's CEO Jensen Huang announced (1) New H100 is in the ramping stage with H100 upgraded expected in 2H24, with **Grace Hopper CPU / GPU (ARM ISA)** now in full production (3) **Spectrum-X** – The Ethernet solution for cloud AI compute (4) Expanding use-case of AI to **heavy industry** including smart/digital factories, digital twins, robotic and AGV (5) Partnerships on **MediaTek Dimensity Auto platform** with cross-sell solutions.

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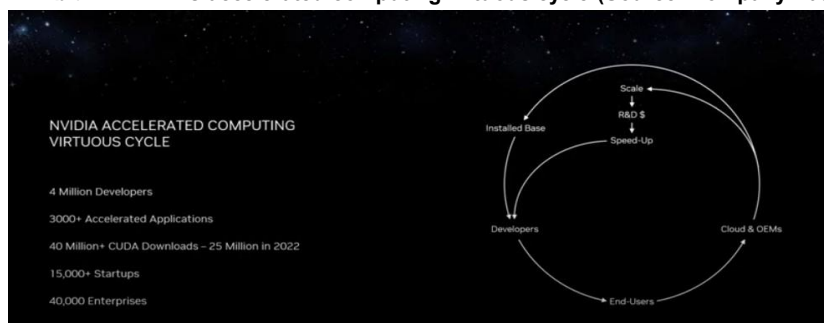
NVIDIA Corp. (NVDA NASDAQ)

Stock Rating	Over-weight
Target Price (\$)	\$487.5
Shr price (2/6/23)	\$393.3
Up/downside (%)	23.8%
52-Week Range (\$)	\$108.1-\$419.4
Shares Out. (mn)	2,482m
Mkt Cap (\$ bn)	\$0.97Tn
EV (\$ bn)	\$0.97Tn
50 Days Mov AVG (\$)	\$293.5
200 Days Mov AVG (\$)	\$192.3

Fiscal year (1/31 End)

(US\$ mn)	2023A	2024E	2025E
Revenue	26,974	42,635	52,015
YoY (%)	0%	58%	22%
Gross Profit	15,356	29,856	36,411
GPM	57%	70%	70%
EBIT	4,224	16,263	20,286
OPM (%)	16%	38%	39%
Pretax Income	4,181	16,689	20,806
Net Income	4,368	17,356	21,638
NPM	16%	41%	42%
Basic EPS	1.8	7.0	8.7

Exhibit 1: NVIDIA's accelerated computing virtuous cycle (Source: Company Data)



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Key Positive (cont.)

Visible revenue generation capability within the automotive sector

Self-driving opportunity, culminating in a 47% CAGR in automotive revenue through FY26E, following a soft FY21 and FY22 due to COVID-19 and the chip shortage that hampered auto production. The firm currently boasts an automotive design win pipeline of \$11 billion, though we believe most of **these sales won't be realized until the back half of the current decade considering the penetration stage of the autonomous driving industry.** The automotive's sector Q4'23 operating revenue was +135% YoY/ +17% QoQ; full-year revenue was +60% YoY. **Record revenue reflects strong sales of autonomous driving solutions, computing solutions for electric vehicle manufacturers, and AI smart cockpit solutions.**

DGX Cloud will boost generative AI training with the acquisition of Mellanox

NVIDIA has published DGX Cloud, which is the cloud-hosted version of its popular DGX platform. With NVIDIA DGX Cloud, users can access dedicated clusters of DGX AI supercomputing that are paired with NVIDIA's AI software. This will reduce the constraints of AI training for small and medium-sized enterprises. DGX Cloud is now accessible through Oracle, and Microsoft Azure and Google Cloud will be opened later.

NVIDIA's DGX integrated system for AI employs InfiniBand technology, and together with the two companies' NVIDIA GPUs and Mellanox interconnects, they power **more than half of the world's Top 500 supercomputers.** Mellanox's InfiniBand interconnect products are renowned for their ability to deliver high throughput and low latency, making them an ideal fit for high-performance computing systems, including NVIDIA's DGX AI platform.

Moreover, NVIDIA completed the acquisition of Mellanox in 2020. The primary objective of the deal is to enhance NVIDIA's market share in data center spending. NVIDIA and Mellanox have a common customer base that includes hyper scalers, major cloud vendors, and OEMs that supply enterprises. **Hence, the acquisition is also expected to diversify NVIDIA's end-market exposure, besides facilitating its DGX Cloud operation over the long term.**

Omniverse platform expansion and value-creation

Omniverse is the driving force behind data center capex for the next several years and is also expected to be a significant driver of TAM growth, particularly in the areas of **3D rendering and design**, as the hype surrounding Metaverse build-outs subsides.

Conclusion – HKGET's Initial View on NVIDIA

Multiple sector-wise tailwinds and the rapid budget shifting toward AI from cloud customers, with other businesses recovering cyclically spreading across gaming and professional visualization lead us to a **positive view toward the company's outlook and long-term mission criticality.**

Nevertheless, with NVIDIA currently trading at nearly a **US\$1Tn market cap, 20.1x EV/NTM Revenue, and 43.8x Price/NTM Earning** making it very challenging to justify valuation by current short-term outlook and valuation adjustment, we adopted more forwarding financials by **FY25E EPS US\$8.7 and FY25E P/E 55x** and initiate **TP of US\$487.5**, implicating **+23.8%** upside based on the closing price as of **2nd June 2023.**

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Key Risks

Lack of competency in the potential direction of the gaming sector

Recently, the company has experienced positive effects from the robust growth of PC gaming. However, a significant number of the popular games played by consumers are competitive multiplayer online games (esports), which demand low-end discrete GPUs to minimize latency, rather than high-end GPUs for advanced graphics. Additionally, the company is anticipated to gain advantages from virtual reality and the metaverse. Nevertheless, the potential shift to mobile gaming VR instead of PC VR may limit these prospects, given that NVIDIA's GPUs lack market power in the smartphone market.

Limited room for valuation re-adjustment by multiples expansions

The increasing interest rates may have an impact on NVIDIA's valuation, which has been trading at a higher end if adopting the multiples in LTM / NTM basis, which makes it extremely hard to justify the valuation upside simply by the conviction comes from a near-term quarterly outlook. We still factor in investors' risk appetite as one of the key factors to evaluate high-growth stocks and will closely monitor the broader market sentiment to evaluate NVIDIA and AI-related stocks.

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Revenue Projections

Exhibit 2: NVIDIA's Quarterly IS Projections (CUIRS HKGET)

NVDA Quarterly IS (US\$mn)	Apr-22 FY1Q23	Jul-22 FY2Q23	Oct-22 FY3Q23	Jan-23 FY4Q23	Apr-23 FY1Q24	Jul-23 FY2Q24E	Oct-23 FY3Q24E	Jan-24 FY4Q24E
Data Center	3,750	3,806	3,833	3,616	4,284	8,183	9,583	10,125
QoQ	15%	1%	1%	-6%	18%	91%	17%	6%
YoY	83%	61%	31%	11%	14%	115%	150%	180%
Gaming	3,620	2,042	1,574	1,831	2,240	2083	1574	1739
QoQ	6%	(44%)	(23%)	16%	22%	(7%)	(24%)	11%
YoY	31%	(33%)	(51%)	(46%)	(38%)	2%	0%	(5%)
Professional Visualization	622	496	200	226	295	298	200	226
QoQ	(3%)	(20%)	(60%)	13%	31%	1%	(33%)	13%
YoY	67%	(4%)	(65%)	(65%)	(53%)	(40%)	0%	0%
Automotive	138	220	251	294	296	385	402	456
QoQ	10%	59%	14%	17%	1%	30%	4%	13%
YoY	(10%)	45%	86%	135%	114%	75%	60%	55%
OEM & Others	156	140	75	85	77	91	47	53
QoQ	(19%)	(10%)	(47%)	14%	(9%)	19%	(48%)	12%
YoY	(52%)	(66%)	(68%)	(56%)	(51%)	(35%)	(37%)	(38%)
Total Revenue	8,288	6,704	5,931	6,051	7,192	11,040	11,805	12599
QoQ	8%	(19%)	(12%)	2%	19%	53%	15%	12%
YoY	46%	3%	(17%)	(21%)	(13%)	65%	99%	108%
Gross Profit	5,431	2,915	3,177	3,833	4,802	7,728	8,382	8,945
Gross Margin (%)	66%	43%	54%	63%	67%	70%	71%	71%
R&D Expense	(1,618)	(1,824)	(1,945)	(1,951)	(1,863)	(2,650)	(2,715)	(2,772)
R&D / Sales (%)	(20%)	(27%)	(33%)	(32%)	(26%)	(24%)	(23%)	(22%)
SG&A Expense	(592)	(592)	(631)	(625)	(633)	(883)	(944)	(1,134)
SG&A / Sales (%)	(7%)	(9%)	(11%)	(10%)	(9%)	(8%)	(8%)	(9%)

Business Segment Outlook

- **The data center revenue** of FY1Q24 was a record US\$4.28 bn, +18% QoQ/ +14% YoY. The increment is primarily due to enterprises' growing demand for generative AI and LLMs using GPUs based on NVIDIA's Hopper and Ampere architectures, which reflects strong demand from Internet companies and cloud services providers. Moreover, SaaS subscriptions for data center and edge computing will likely continue to boost revenue and margins for the company's data center business with expanding TAM.
- **The gaming segment revenue** of FY1Q24 was US\$2.24bn, +22% QoQ/ -38% YoY, counting for over 31% of total revenue. The YoY decline was mainly due to the macroeconomic slowdown and lower shipments to normalize downstream inventories, but higher demand for the latest RTX40 series GPUs drove higher QoQ results. However, it's hard for the CAGR of the gaming business to return to the epidemic period (when it benefited from the home office and Crypto) in the long term. Hence, we model the modest contraction of revenue with seasonality adjustment to forecast the gaming revenue in FY24E.
- **The professional visualization revenue** of FY1Q24 was US\$295mn, +31% QoQ/ -53% YoY. At GTC2023, the company unveiled Omniverse Cloud where customers can design, develop, deploy, and manage the industrial metaverse. The company believes that the current inventory adjustment is over and that Omniverse, which may serve as a desktop workstation, will be the more long-term revenue driver of the professional visualization segment which our team project the quarterly revenue more modestly.
- **The automotive revenue** of FY1Q24 was US\$296mn, +1% QoQ/ 114% YoY, which mainly owing to the growth of autonomous driving platforms and artificial driving intelligent cabin solutions. AI is becoming increasingly integrated into automating and accelerating the process of coding and testing software for various purposes, such as autonomous driving, infotainment systems, or cybersecurity. We remain positive on the automotive segment with nearly 55% to 77% YoY throughout 2024E.
- **The revenue of OEM & Others** of FY1Q24 is US\$77mn, -9% QoQ/ -51% YoY which was primarily due to a significant decline in sales of the mining CMP series. Since there's not an obvious recovery trend within the segment, we estimate this wouldn't be a strong revenue pool in 24E.

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Financials and Valuation

Income Statement Projections and Valuation

Combining our above-stated thesis, we modeled NVIDIA's revenue growth at 56% 23A-24E and 22% 24E-25E, coupled with a revised Gross Margin of 70% from the company's latest guidance, and assuming similar operating leverage, we expect the 24E EPS US\$7.0 and 25E EPS US\$8.7, with net margin at 41% and 42% in the next two years.

Applying **55x FY25E P/E** (Nearly mean + 1 s.d. NTM P/E), **we initiate NVIDIA at a 12-month target price of US\$487.5** with major catalysts coming from earning announcements in the coming quarters.

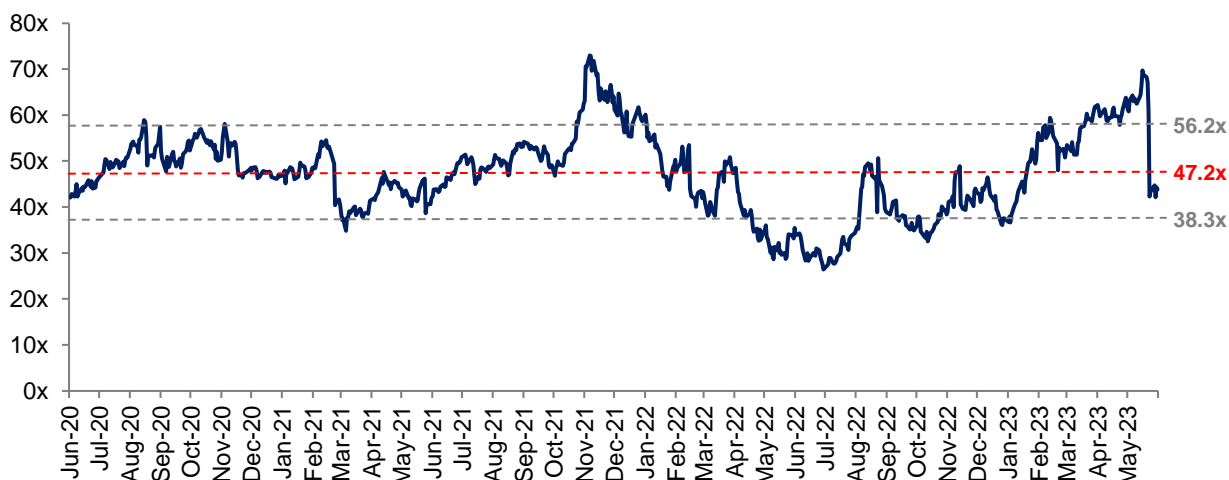
Exhibit 3: NVIDIA's Income Statement Projections (19A – 25E)

Income Statement (US\$mn)	2019A	2020A	2021A	2022A	2023A	2024E	2025E
Period Ended	27/1/2019	26/1/2020	31/1/2021	30/1/2022	29/1/2023	30/1/2024	31/1/2025
Total Revenue	11,716	10,918	16,675	26,914	26,974	42,635	52,015
Cost of Revenues	(4,545)	(4,150)	(6,279)	(9,439)	(11,618)	(12,779)	(15,605)
Gross Profit	7,171	6,768	10,396	17,475	15,356	29,856	36,411
Sales and General and Administrative	(991)	(1,093)	(1,940)	(2,166)	(2,440)	(3,594)	(4,681)
Research and Development	(2,376)	(2,829)	(3,924)	(5,268)	(7,339)	(9,999)	(11,443)
Acquisition Termi-tion Cost	-	-	-	-	(1,353)	-	-
Operating Income (Loss)	3,804	2,846	4,532	10,041	4,224	16,263	20,286
Interest Expense	(58)	(52)	(184)	(236)	(262)	213	260
Interest Income	136	178	57	29	267	213	260
Other Income/expense-net	14	(2)	4	107	(48)	-	-
Earnings before Taxes	3,896	2,970	4,409	9,941	4,181	16,689	20,806
Provision for Income Tax	245	(174)	(77)	(189)	187	668	832
Net Income (Loss)	4,141	2,796	4,332	9,752	4,368	17,356	21,638
Shares Out.	608	2,431	2,461	2,494	2,482	2,482	2,482
Basic EPS (GAAP)	6.8	1.2	1.8	3.9	1.8	7.0	8.7

Assumptions (%)

Total Revenue Growth	21%	-7%	53%	61%	0%	58%	22%
Gross Margin	61%	62%	62%	65%	57%	70%	70%
Sales and General and Administrative	-8%	-10%	-12%	-8%	-9%	-8%	-9%
Research and Development	-20%	-26%	-24%	-20%	-27%	-23%	-22%
Operating Income (Loss)	32%	26%	27%	37%	16%	38%	39%
Interest Expense	0%	0%	-1%	-1%	-1%	1%	1%
Interest Income	1%	2%	0%	0%	1%	1%	1%
Other Income/expense-net	0%	0%	0%	0%	0%	0%	0%
Effective Tax Rate	6%	-6%	-2%	-2%	4%	4%	4%
Net Margin	35%	26%	26%	36%	16%	41%	42%

Exhibit 4: NVIDIA Past 3 Years NTM P/E Price Band (Source: CapitalIQ)



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Industry Introduction

Graphics Processing Unit (“GPU”) Industry

Industry Summary

A graphics processing unit (GPU) is an electronic circuit designed to rapidly manipulate and alter memory to accelerate the creation of images in a frame buffer intended for output to a display device. It can also be recognized as a programmable logic chip used for rendering images, animations, and videos and, for general computing purposes, is deployed in almost all computing devices.

The conventional usage of GPUs involves high-end visualization software, such as computer-aided design, video editing, and special effects, where realistic rendering is necessary. NVIDIA has achieved significant accomplishments by concentrating its GPU technology on emerging areas like deep learning for artificial intelligence and self-driving vehicles. In addition, hyper-scale cloud providers have made use of GPUs in training neural networks for applications like image and speech recognition.

Especially, GPU technology is expected to play a crucial role in facilitating the training and inference workload of AI and machine learning. To train a computer system to identify verbal language or visual content, it is necessary to provide it with substantial quantities of data to facilitate self-education. Subsequently, the inference phase entails applying the acquired knowledge from the training process to practical applications in order to arrive at informed decisions. The GPU training process is best suited for massively parallel architectures with numerous smaller cores, capable of handling multiple tasks simultaneously, in which the market NVIDIA has a first-mover advantage.

Future Prospect

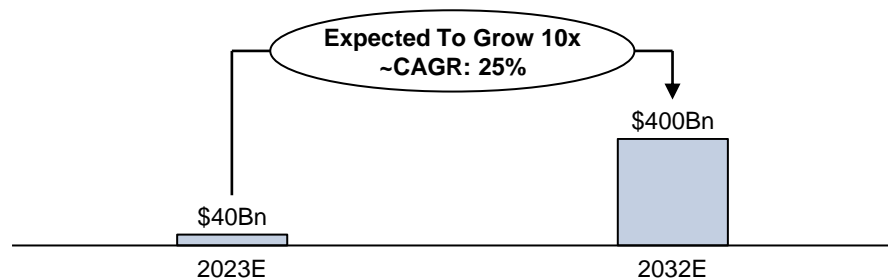
The GPU industry has been mainly driven by the demand from gaming, AI, and machine learning applications as well as cryptocurrency mining previously. While these sectors are expected to continue their rapid development, GPUs, as the hardware foundation that provides high-performance computing capability for these fields, have a high and stable potential for growth.

Meaningful growth opportunities lie in markets such as the data center and automotive in recent years. In order to accelerate computation workloads, GPUs are being employed to train AI systems for intricate tasks like autonomous driving. These tasks involve high computational intensity and are better achieved through collaborative efforts of CPUs and GPUs, rather than relying solely on CPUs. According to industry estimates, the percentage of data center/server GPU attachments remains low, ranging from 5% to 10%, which is anticipated to increase significantly over the next five years.

Total Addressable Market

In 2022, the global graphics processing unit (GPU) market was valued at US\$40bn, with forecasts suggesting that by 2032 this is likely to rise to US\$400bn, growing at a CAGR of 25% from 2023E to 2032E. Especially the data center/server GPU TAM potentially reaching over US\$30bn in the next five years. This projection exceeds the estimates of third-party sources, suggesting a range of \$12bn to \$18bn for the same period.

Exhibit 5: GPU Global Total Addressable Market, 2023E – 2032E (Source: [Thomas Alsop](#))



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Industry Introduction

Competition Landscape

The global GPU industry has entered an oligopoly with a few dominant players. In the traditional GPU market, the top three players, NVIDIA, AMD, and Intel, account for nearly the entire industry's revenue. NVIDIA, Intel, and AMD held market shares of 18%, 62%, and 20%, respectively, in Q2 2022. Intel's dominant market position is attributed to its integrated graphics chips in the desktop segment. We've listed out some comparable peers .

Exhibit 6: Competitor Introduction

Company	Description
AMD	Second large in the discrete GPU market. Best known for making CPUs. AMD is also one of the world's largest suppliers of semi-custom System-on-Chip (SoC) products.
Intel Corp	World's largest contract chip maker. The company produces a range of processors from low-end to high-end while pushing into dedicated machine learning chips.
Qualcomm Inc	Specializes in the design, development, and marketing of CMDA systems and software.

Exhibit 7: Peer Comparisons

Company	AMD	Intel Corp	Qualcomm Inc	Broadcom Inc.
Listed Exchange	Nasdaq	Nasdaq	Nasdaq	Nasdaq
Ticker	AMD	INTC	QCOM	AVGO
Founding Year	1969	1968	1985	1961
Product Range	Provides products for semiconductor systems and the display market. Meanwhile, it also provides services for clients with earlier generation equipment	Focuses on the semiconductor market. It mainly provides products for Memory market occupying 60% of its total revenue, followed by products of Foundry (26%) and logic/integrated data (14%)	Covers the whole semiconductors manufacturing process, ranging from deposition, lithography, etching, cleaning, interconnect formation, testing and packing/inspection.	Mainly focus on Atomic Layer Deposition and Epitaxy technologies

NVIDIA can be considered a leader in the GPU industry, possessing more advanced technology and products. It is also the only company among these three to have a "halo effect" product, which can increase sales by attracting attention to the brand through the display of expensive high-performance products. AMD's Threadripper has reversed the company's situation in the CPU market and provided more opportunities for AMD in the Intel-dominated workstation market, thus gaining a dominant position in the segment market. However, in terms of GPUs, NVIDIA's 4090 RTX GPU has a similar market position as AMD's Threadripper, and no other company's GPU products can match its original performance in the segment market. Although AMD has achieved success in sales of Threadripper, it has not proposed a similar strategy.

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Industry Introduction

Competition Landscape (cont.)

AMD has released two high-performance GPUs but has not pursued the highest level of performance. Intel is a newcomer to the GPU market but faces two major problems: firstly, users have a better understanding and trust in the GPU products of AMD and NVIDIA; secondly, the competition between NVIDIA and AMD in the GPU market is fierce, leaving other companies trailing behind. Intel needs to develop a portion of the GPU market, although its GPU performance is not suitable for high-end products, it can provide most of the functions.

Competitive advantages of NVIDIA

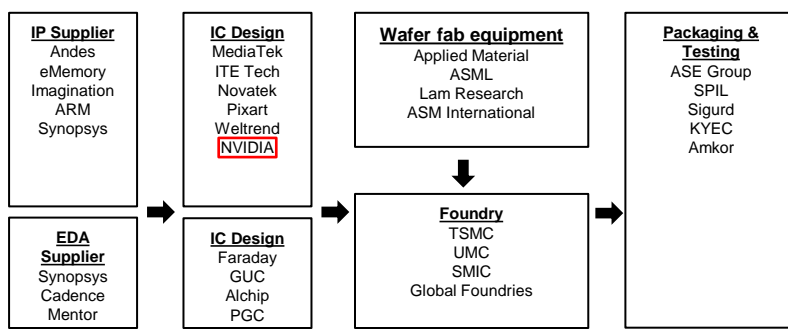
Adequate intangible assets regarding GPUs

To stay at the cutting edge of GPU technology, NVIDIA has a large R&D budget relative to AMD and smaller GPU suppliers that allows it to continuously innovate and fuel a virtuous cycle for its high-margin chips. The market presents substantial obstacles to entry, particularly in the form of sophisticated intellectual property. Notably, even industry leader Intel encountered difficulties developing its own discrete GPUs, despite its ample resources, and was compelled to obtain IP licensing from NVIDIA in order to incorporate GPUs into its PC chipsets. However, Intel is now striving to create its own discrete GPU. NVIDIA, in particular, has established and presently dominates the discrete graphics segment, surpassing its longstanding rival AMD in terms of market share.

First-mover advantage benefits its Drive PX self-driving platform.

NVIDIA is presently established in the automotive industry with its Tegra processors, which are utilized in infotainment systems across numerous vehicles. Through the implementation of its Drive PX autonomous system, NVIDIA aims to attain a dominant standing in the self-driving realm. Should the firm's self-driving platform secure the majority of the self-driving business, NVIDIA's competitive position would be fortified through superior intangible assets and switching costs. This opportunity is in the early stages, but over 370 original equipment manufacturers have conducted research and development tests on Drive PX. It is estimated that NVIDIA will capture a healthy portion of the self-driving opportunity, culminating in a 47% CAGR in automotive revenue through FY2027.

Exhibit 8: Semiconductor Industry Supply Chain



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Company Profile

Company Introduction

NVIDIA is the top designer of discrete graphics processing units that enhance the experience on computing platforms. The firm's chips are used in a variety of end markets, including high-end PCs for gaming, data centers, and automotive infotainment systems. In recent years, the firm has broadened its focus on traditional PC graphics applications such as gaming to more complex and favorable opportunities, including artificial intelligence and autonomous driving, which leverage the high-performance capabilities of the firm's products.

Business Model

NVIDIA reports its business results in two segments.

The graphics segment includes GeForce GPUs for gaming and PCs, the GeForce NOW game streaming service and related infrastructure, and solutions for gaming platforms; Quadro/NVIDIA RTX GPUs for enterprise workstation graphics; virtual GPU, or vGPU, software for cloud-based visual and virtual computing; automotive platforms for infotainment systems; and Omniverse software for building 3D designs and virtual worlds. The linchpin of NVIDIA's business has been gaming.

The Compute & Networking segment includes Data Center platforms and systems for AI, HPC, and accelerated computing; Mellanox networking and interconnect solutions; automotive AI Cockpit, autonomous driving development agreements, and autonomous vehicle solutions; cryptocurrency mining processors, or CMP; Jetson for robotics and other embedded platforms; and NVIDIA AI Enterprise and other software.

Supply Chain Position

NVIDIA's vertically integrated supply chain and strategic partnerships with contract manufacturers enable it to maintain a competitive edge in the GPU market by efficiently delivering high-quality products to customers.

NVIDIA is a leading designer and manufacturer of GPUs and other computer hardware and software technologies. NVIDIA's vertically integrated supply chain enables it to design and manufactures its own GPUs in-house, rather than outsourcing the manufacturing to third-party suppliers. In addition, NVIDIA partners with contract manufacturers, including TSMC and Samsung Electronics Co. providing semiconductor wafers, and bidenCo., Ltd., Nanya Technology Corporation, and Unimicron Technology Corporation. providing substrates. Moreover, NVIDIA's independent subcontractors include Advanced Semiconductor Engineering, Inc., JSI Logistics Ltd., King Yuan Electronics Co., Ltd., and Siliconware Precision Industries Company Ltd. to assemble, test, and pack most of their products.

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Company Profile

Products & Services Summary

The products of NVIDIA. Corp can be categorized into gaming, professional visualization, data center, automotive, OEM, and others.

Gaming: NVIDIA's gaming platforms leverage our GPUs and sophisticated software to enhance the gaming experience with smoother, higher-quality graphics. NVIDIA RTX brings next-generation graphics and AI to games. NVIDIA's products for the gaming market include GeForce RTX and GeForce GTX GPUs for gaming desktop and laptop PCs, GeForce NOW cloud gaming for playing PC games on underpowered devices, SHIELD for high-quality streaming on TV, as well as platforms and development services for specialized console gaming devices.

Professional visualization: NVIDIA serves the Professional Visualization market by working closely with independent software vendors(ISVs), to optimize their offerings for NVIDIA GPUs. Design and manufacturing encompass computer-aided design, architectural design, consumer-products manufacturing, medical instrumentation, and aerospace. Digital content creation includes professional video editing and postproduction, special effects for films, and broadcast television graphics.

Datacenter: The NVIDIA computing platform is focused on accelerating the most compute-intensive workloads, such as AI, data analytics, graphics, and scientific computing, across hyper-scale, cloud, enterprise, public sector, and edge data centers. The platform consists of NVIDIA's energy-efficient GPUs, data processing units, or DPUs, interconnects and systems, CUDA programming model, and a growing body of software libraries, software development kits, or SDKs, which are both integrated and sold standalone, application frameworks and services NVIDIA accelerated computing platform greatly increases the performance and power efficiency of high-performance computers and data centers.

Automotive: NVIDIA's Automotive market is comprised of cockpit AV platforms, AI cockpit and infotainment solutions, and associated development agreements. They also offer a scalable data center-based simulation solution, NVIDIA DRIVE Constellation running DRIVE Sim software, for testing and validating a self-driving platform before commercial deployment.

OEM(original equipment manufacturer) and others: NVIDIA's partner network incorporates each industry's respective OEMs, original device manufacturers, or ODMs, system builders, add-in board manufacturers, or AIBs, retailers/distributors, ISVs, internet and cloud service providers, automotive manufacturers and tier-1 automotive suppliers, mapping companies, start-ups, and other ecosystem participants.

Exhibit 9: FY22A Revenue Breakdown By Segments

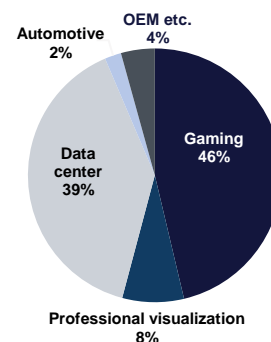


Exhibit : List of Customers (*Major customer)

- Microsoft Corporation
- Cisco Systems Inc
- Dell Technologies Inc
- Canon Inc
- Hp Inc
- Cleartronic Inc
- Adobe Inc
- Juniper Networks Inc

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Company Profile

People – Key Management

Jen-Hsun Huang (President, CEO)

Responsibilities:

Achieve the aims, strategy, policy, performance of the company, managing partnerships and alliances.

Work Experience:

Company	Description	Position
LSI Logic	Semiconductor company	Director of CoreWare
Advanced Micro Devices (AMD)	Semiconductor company	Microprocessor designer

Curtis R. Priem (CFO)

Responsibilities:

Ensure proper financing of the company.

Work Experience:

Company	Description	Position
International Business Machines Corporation (IBM)	American multinational technology corporation	Staff engineer
Sun Microsystems	American technology company that sold computers, computer components, software, etc.	Senior staff engineer (developed the GX graphics chip)

Track Record of Bad Management

NVIDIA was accused of intentionally misleading investors between 2017 and 2018 regarding how the cryptocurrency market was affecting its sales. The U.S. Securities and Exchange Commission (SEC) stated that "NVIDIA failed to disclose information, depriving investors of critical information to evaluate the company's key market business." The SEC ruled that NVIDIA violated Sections 17(a)(2) and (3) of the 1933 Securities Act and disclosure requirements of the 1934 Securities Exchange Act. The order also found that NVIDIA failed to maintain adequate disclosure controls and procedures. NVIDIA neither admitted nor denied the SEC's findings, but agreed to a cease-and-desist order and to pay a \$5.5 million penalty.

After conducting initial screening on potential disclosure issues for NVIDIA, our team concluded that there's no significant risk of major negative events for NVIDIA in the near future.

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Appendix – Historical Financials

Exhibit 10: NVIDIA Historical Financial Performance (2016A-2023A)

Performance Analysis	2016A	2017A	2018A	2019A	2020A	2021A	2022A	2023A
Period Ended	Jan'16	Jan'17	Jan'18	Jan'19	Jan'20	Jan'21	Jan'22	Jan'23
Profitability (%)								
Return on Assets	8%	14%	19%	19%	12%	13%	17%	8%
Return on Capital	9%	17%	22%	23%	14%	15%	20%	10%
Return on Equity	14%	33%	46%	49%	26%	30%	45%	18%
Return on Common Equity	14%	33%	46%	49%	26%	30%	45%	18%
Margin Analysis (%)								
Gross Profit Margin	56%	59%	60%	61%	62%	63%	65%	57%
SG&A Margin	12%	10%	8%	8%	10%	11%	8%	9%
EBITDA Margin	21%	31%	35%	35%	30%	35%	42%	26%
EBITA Margin	19%	29%	34%	33%	26%	32%	39%	23%
EBIT Margin	18%	28%	33%	32%	26%	28%	37%	21%
Earnings from Cont Ops Margin	12%	24%	31%	35%	26%	26%	36%	16%
Net Income Margin	12%	24%	31%	35%	26%	26%	36%	16%
Net Inc. Avail. for Common Margin	12%	24%	31%	35%	26%	26%	36%	16%
Normalized Net Income Margin	11%	17%	21%	21%	17%	17%	23%	13%
Levered Free Cash Flow Margin	19%	11%	18%	15%	29%	22%	24%	17%
Unlevered Free Cash Flow Margin	19%	12%	18%	15%	29%	23%	25%	17%
Asset Turnover (x)								
Total Asset Turnover	0.7x	0.8x	0.9x	1.0x	0.7x	0.7x	0.7x	0.6x
Fixed Asset Turnover	9.8x	14.0x	12.8x	9.8x	5.9x	6.5x	8.3x	6.4x
Accounts Receivable Turnover	10.2x	10.4x	9.3x	8.7x	7.1x	8.2x	7.6x	6.4x
Inventory Turnover	4.9x	4.7x	4.9x	3.8x	3.3x	4.4x	4.3x	3.0x
Short Term Liquidity								
Current Ratio (x)	2.6x	4.8x	8.0x	7.9x	7.7x	4.1x	6.7x	3.5x
Quick Ratio (x)	2.4x	4.3x	7.3x	6.7x	7.0x	3.6x	6.0x	2.6x
Cash from Ops. to Curr. Liab. (x)	0.5x	0.9x	3.0x	2.8x	2.7x	1.5x	2.1x	0.9x
Avg. Days Sales Out. (Days)	36	35	39	42	51	45	48	57
Avg. Days Inventory Out.(Days)	76	77	74	95	112	85	85	121
Avg. Days Payable Out. (Days)	51	44	51	38	61	49	52	38
Avg. Cash Conversion Cycle (Days)	61	68	63	99	102	82	81	140
Long Term Solvency (%)								
Total Debt/Equity (%)	32%	48%	27%	21%	22%	45%	44%	54%
Total Debt / Total Capital (%)	24%	33%	21%	18%	18%	31%	31%	35%
LT Debt/Equity (%)	0%	34%	27%	21%	21%	39%	44%	48%
Long-Term Debt / Total Capital (%)	0%	23%	21%	18%	17%	27%	30%	31%
Total Liabilities / Total Assets (%)	39%	41%	34%	30%	30%	41%	40%	46%

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Appendix – Public Comps

Exhibit 11: NVIDIA Trading Comps

Company Name	LTM EV/Revenue (x)	LTM EV/EBITDA (x)	LTM EV/EBIT (x)	LTM P/E (x)	LTM P/B (x)	NTM EV/Revenue (x)	NTM EV/EBITDA (x)	NTM P/E (x)
NVIDIA	37.5x	153.9x	215.6x	205.3x	52.4x	20.06x	49.95x	43.81x
AMD	8.1x	44.7x	NM	NM	26.2x	7.78x	26.40x	37.15x
Micron Technology	3.3x	7.8x	37.0x	47.1x	1.7x	4.39x	13.43x	-
Broadcom Inc.	10.5x	17.9x	22.9x	25.4x	NM	9.95x	15.73x	18.71x
Intel	2.7x	14.6x	NM	NM	2.0x	2.89x	11.65x	41.22x
QUALCOMM	3.4x	9.4x	10.9x	12.3x	17.4x	3.77x	10.25x	13.71x
High	10.5x	44.7x	37.0x	47.1x	26.2x	10.0x	26.4x	41.2x
Low	2.7x	7.8x	10.9x	12.3x	1.7x	2.9x	10.3x	13.7x
Mean	5.6x	18.9x	23.6x	28.3x	11.8x	5.8x	15.5x	27.7x
Median	3.4x	14.6x	22.9x	25.4x	9.7x	4.4x	13.4x	27.9x

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