



## NVIDIA Corporation (NASDAQ: NVDA)

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We recommend a marketweight position on Nvidia Corporation's (NVDA) 3.200% 2026 senior unsecured notes. NVDA is the leading manufacturer of computer Graphics Processing Units (GPUs) controlling roughly 60% of the market. We believe the 2026 notes are appropriately priced at \$104.89 for the following reasons. 1) Record unit shipments of T4 Inference and Volta 100 Training AI-focused GPUs in Q320A on a y/y decline in Data Center revenue indicates a decrease in ASPs which went unmentioned by management. Also CSPs using proprietary Inference applications instead of the native CUDA software stack in the light of increased T4 GPU adoption poses new high-level challenges for NVDA. Lastly growing preference for INTC's Neuromorphic CPUs and NNPs over NVDA's DGX platform highlight increased competitive dynamics in Data Center. 2) GeForce GTX to RTX GPU transitions will prove difficult to upgrade as AMD captures 10% of GPU market share from NVDA based on low ASP strategy. NVDA must successfully complete normalization of shifting core GPU market from discrete PC to indiscrete notebook on 2nd Gen Max-Q launches. 3) Secular trends continue to erode OEM GPU sales with no stern game plan to offset losses going forward. Additionally, expectations for DRIVE AGX AV-focused SoCs built on Tegra processors are falling short on lack of demand, raising skepticism in NVDA's role in AV.

Figure 1: Capitalization Table

NVIDIA Corporation						
LTM EBITDA	3,465					
Outstanding Debt and Leverage Metrics						
Type	Rate	Maturity	Debt Outstanding	Leverage	Price	Yield
Senior Unsecured Bond	2.200%	9/16/21	1,000		100.38	1.97%
Senior Unsecured Bond	3.200%	9/16/26	1,000		104.89	2.39%
<b>Total Senior Debt</b>			<b>2,000</b>	<b>0.58x</b>		
<b>Total Debt</b>			<b>2,000</b>	<b>0.58x</b>		
Market Capitalization			129,848			
Less: Cash			9,769			
Enterprise Value			122,079	<b>35.23x</b>		

Source: Company Filings, Bloomberg

### Security Data

Bond Maturity: 9/16/2026

Rating: A3/BBB+

Rank: Sr. Unsecured

Price: \$104.89

YTW: 2.39%

Call Date: 6/16/2026

Coupon: 3.200%

Spread: 71.6 bps

## Contents

- Investment Thesis & Capitalization Table
- Increased Competitive Dynamics in Data Center
- RTX Induced Higher ASP Upgrade Cycle
- Secular OEM Erosion & Lagging SoC AV Roll-Out
- Relative Value & Comparable Companies
- Summary Model

**Company & Management Description**

NVDA, headquartered in Santa Clara, CA was founded in 1993. Since inventing the GPU in 1999, the company’s core business has been supplying GPUs for PCs. However, NVDA has since been able to diversify their efforts into other end-markets such as Professional Visualization, Data Center and Automotive; revenue by end-market is illustrated in Figure 2. NVDA brings together hardware, system software, programmable algorithms and libraries to create unique value for a variety of customers. To help developers build fundamental blocks to utilize NVDA GPUs, the company created Compute Unified Device Architecture (CUDA) which expanded parallel GPU processing capabilities. Jensen Huang is the Founder, President and CEO of NVDA.

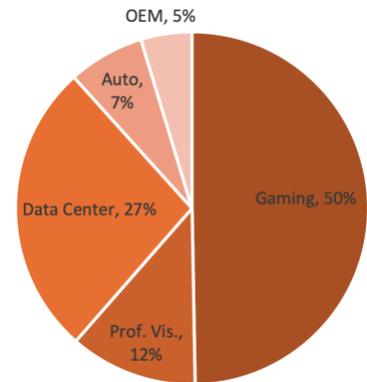
**Increased Competitive Dynamics in Data Center**

NVDA is well-positioned to concentrate its efforts on growing trends in the hyperscale Data Center end-market. However, we believe that an increased level of caution must be taken when evaluating the long term competitive position. Data Center is benefitting from trends such as conversational AI, speech recognition, edge computing, and the reacceleration in cloud spending. In Q320 NVDA shipped a record number of T4 Inference GPUs and Volta 100 Training GPUs, with the mix leaning more towards Inference for the first time. However, NVDA generated \$726mm from its Data Center business segment in Q320, representing a -8% y/y change as seen in Figure 3, highlighting especially weak Enterprise Intelligent Edge (DGX) sales. With a decline in revenue and a record number of units being shipped, we believe that Average Selling Prices (ASPs) per unit are decreasing, but management is yet to address this. NVDA’s CUDA stack is also being challenged by proprietary software of Cloud Service Providers (CSPs), specifically their TensorRT Inference application. Google Cloud has rolled out their own Tensor Processing Unit (TPU) which they are now using internally, this poses a threat regarding NVDA’s long term competitiveness in the space. We believe this weakness may be offset in the short term due to the increased adoption of T4 GPUs by CSPs as they accelerate the ramp of new AI use cases and hyperscale cloud spending visibility picks up. Additionally, as the transition to 7nm nodes is beginning to come to an end, NVDA is still yet to release a replacement for the V100 which uses 12nm nodes and was last refreshed over two years ago. This creates further uncertainties due to a 7nm release scheduled by Intel Corporation (INTC) in the 2H of the next fiscal year. Lastly, management has repeatedly stated that “the computational scale for AI training doubles every 3 months” however we wonder who is actually benefiting from this growth. NVDA’s Data Center business segment grew by 11% q/q in Q320A vs INTC’s 28% q/q Data Center growth, due to fast adoption of INTC’s Neuromorphic CPUs and Nervana Neural Network Processors (NNPs) by CSPs. This reaffirms our cautious stance regarding the competitive dynamics in the Data Center end-market.

**Risks**

- Stagnation in GPU market from CSP’s may cause growth rate erosion lowering demand and margins for NVDA’s core products.
- Lower than expected adoption of AI-related hyperscale processing could make CPUs more attractive than GPUs for less parallel computations.
- PC Gaming demand may correlate with macroeconomic weaknesses decreasing GPU unit shipments potentially leading to lower ASPs to offset demand.
- Lack of CUDA usage with T4s and V100s may undermine NVDA’s long term software stack diversification goals

**Figure 2: LTM Revenue By End-Market**



Source: Company Filings

**Figure 3: Data Center Revenue**



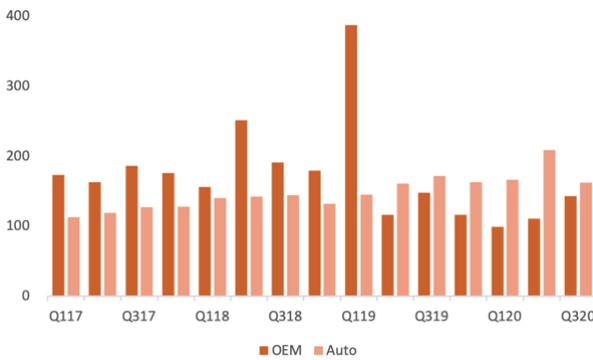
Source: Company Filings

**Figure 4: GPU Market Capture**



Source: Company Filings

**Figure 5: OEM & Auto Revenue**



Source: Company Filings

**Secular OEM Erosion & Lagging AV Roll-Out**

NVDA’s Original Equipment Manufacturer (OEM) GPU sales have been in a secular decline due to their high-end nature. Management has acknowledged this trend and has placed no plan in place to combat ongoing OEM erosion as seen in Figure 5. We believe that OEM sales will continue to decline at 5% y/y going forward until the issue of offering higher average GPU ASPs than AMD is addressed. In addition to weak OEM sales, NVDA’s Automotive sales targeting Autonomous Vehicles (AV) have largely fell short. In FY19 management expected a “hockey stick like growth” for FY20, which illustrated in Figure 5, did not end up happening. NVDA’s System-on-a-Chip (SoC) DRIVE AGX platform built on their Tegra Processor was Tesla’s (TSLA) SoC of choice for earlier AV models, however this fiscal year TSLA began using in-house SoCs raising concerns regarding the value-add of NVDA producing AV-focused SoCs. We believe that accelerated adoption of AV SoCs like DRIVE AGX may happen years into the future but recent guidance by management was extremely far off in our opinion. We see NVDA’s Auto segment growing at 10% y/y going forward but remain uncertain on exponential growth until increased AV-Adoption.

**RTX Induced Higher ASP Upgrade Cycle**

Making up a majority of the company’s revenue, providing GPUs for Gaming has been NVDA’s core focus for over 20 years. NVDA’s lineup of industry-standard GeForce Gaming GPUs have been the GPU of choice by professionals in a handful of end-markets due to their paralleling processing capabilities. However, market data indicates that the PC GPU market isn’t significantly growing, therefore NVDA plans on leveraging 2nd Gen Max-Q GeForce Notebook GPUs to offset lack of demand. As of Q320A NVDA shipped +32% Max-Q products y/y at an average ASP of +21% y/y, in addition to giving strong forward looking guidance. Over 90% of GeForce customers have GPUs with less processing power than the GTX 1660Ti, and with a majority of customers making upgrades to new processors with Ray-Tracing functionality (RTX) with performance 50% higher than previous generations, this sets up NVDA for steady future growth in their Gaming segment. NVDA operates in a \$10,000mm GPU duopoly with AMD, and AMD has been steadily gaining market share, taking NVDA’s share down from 70% to just below 60%, as shown in Figure 4, due to their ability to offer similar entry-level products at cheaper prices. We believe there remains large uncertainty over NVDA strategic decision to offer higher ASP RTX GPUs to customers in the light of AMD’s recent market capture from lower ASP GPUs.

**Figure 6: Comparable Company Metrics**

Comps	NVDA	AMD	INTC	AMAT
Market Cap	129,848	44,133	247,124	53,485
Net Debt	-7,769	-337	16,491	1,695
EV	122,079	43,796	263,615	55,180
LTM Revenue	10,018	6,023	70,413	14,608
LTM EBITDA	3,465	476	32,245	4,132
LTM FCF	3,594	-150	14,451	3,402
Debt/EBITDA	0.6x	1.8x	0.9x	1.3x
Debt/FCF	0.6x	-5.8x	2.0x	1.6x
Credit Rating	BBB+	BB-	A+	A-
Bond Maturity	2026	2022	2027	2027
YTW	2.39%	2.39%	0.00%	2.26%
Z-Spread	71.6 bps	75.7 bps	57.9 bps	62.5 bps

Source: Company Filings, Bloomberg

**Figure 7: Ask Z-Spread**



Source: Bloomberg

## Relative Value

In the 2H19 NVDA's 2026s have traded 13bps wide of AMAT's 27s on average, they are currently trading ~9bps wide toward the wider end of said range as shown in Figure 7. We believe that even given NVDA's superior Debt/EBITDA and Debt/FCF than AMAT's 0.6x vs 1.3x respectively, and 0.6x vs 1.6x respectively, that NVDA is trading at an appropriate spread of ~9bps to notes with a turn higher credit rating. Regardless of AMD's recent tightening which we believe may be unjustified, we would recommend a marketweight position on NVDA's 2026 senior unsecured notes.

Figure 8: Summary Model

NVIDIA Corporation (NASDAQ: NVDA)										
USD, Millions 12 Months Ending	FY17A 1/29/17	FY18A 1/28/18	FY19A 1/27/19	FY20E 1/27/20	FY21E 1/26/21	FY22E 1/26/22	Q120A 4/28/19	Q220A 7/28/19	Q320A 10/27/19	Q420E 1/27/20
<b>Revenues</b>										
Gaming	4,060	5,513	6,246	5,520	6,348	7,300	1,055	1,313	1,659	1,493
Professional Visualization	835	934	1,130	1,221	1,343	1,478	266	291	324	340
Data Center	830	1,932	2,932	2,814	3,095	3,404	634	655	726	799
Automotive	487	558	641	691	760	836	166	209	162	154
OEM & IP	698	777	767	482	458	435	99	111	143	129
<b>Total Revenue</b>	<b>6,910</b>	<b>9,714</b>	<b>11,716</b>	<b>10,728</b>	<b>12,004</b>	<b>13,453</b>	<b>2,220</b>	<b>2,579</b>	<b>3,014</b>	<b>2,915</b>
Cost of Goods Sold	2,847	3,892	4,545	4,109	4,562	5,112	924	1,038	1,098	1,049
Gross Profit	4,063	5,822	7,171	6,618	7,442	8,341	1,296	1,541	1,916	1,865
<b>Operating Expenses</b>										
R&D	1,463	1,797	2,376	2,789	2,401	2,691	674	704	712	699
SG&A	663	815	991	1,069	1,200	1,345	264	266	277	262
Rx	3	0	0	0	0	0	0	0	0	0
<b>Total Operating Expenses</b>	<b>2,129</b>	<b>2,612</b>	<b>3,367</b>	<b>3,859</b>	<b>3,601</b>	<b>4,036</b>	<b>938</b>	<b>970</b>	<b>989</b>	<b>962</b>
<b>Operating Income</b>	<b>1,934</b>	<b>3,210</b>	<b>3,804</b>	<b>2,759</b>	<b>3,841</b>	<b>4,305</b>	<b>358</b>	<b>571</b>	<b>927</b>	<b>903</b>
<b>Other Income</b>										
Interest Income	54	69	136	181	181	181	44	47	45	45
Interest Expense	(58)	(61)	(58)	(52)	(52)	(52)	(13)	(13)	(13)	(13)
Other, net	(25)	(22)	14	1	0	0	0	1	0	0
<b>Total Other Income</b>	<b>(29)</b>	<b>(14)</b>	<b>92</b>	<b>130</b>	<b>129</b>	<b>129</b>	<b>31</b>	<b>35</b>	<b>32</b>	<b>32</b>
Pre-Tax Income	1,905	3,196	3,896	2,889	3,970	4,434	389	606	959	935
Taxes	239	149	(245)	193	357	399	(5)	54	60	84
<b>Net Income</b>	<b>1,666</b>	<b>3,047</b>	<b>4,141</b>	<b>2,696</b>	<b>3,613</b>	<b>4,035</b>	<b>394</b>	<b>552</b>	<b>899</b>	<b>851</b>
<b>Revenue Growth</b>										
Gaming		36%	13%	-12%	15%	15%	11%	24%	26%	-10%
Professional Visualization		12%	21%	8%	10%	10%	-9%	9%	11%	5%
Data Center		133%	52%	-4%	10%	10%	-7%	3%	11%	10%
Automotive		15%	15%	8%	10%	10%	2%	26%	-22%	-5%
OEM		11%	-1%	-37%	-5%	-5%	-15%	12%	29%	-10%
<b>Total Revenue</b>		<b>41%</b>	<b>21%</b>	<b>-8%</b>	<b>12%</b>	<b>12%</b>	<b>1%</b>	<b>16%</b>	<b>17%</b>	<b>-3%</b>
<b>Operating Metrics</b>										
Gross Margin	59%	60%	61%	62%	62%	62%	58%	60%	64%	64%
R&D/Rev	21%	18%	20%	26%	20%	20%	30%	27%	24%	24%
SG&A/Rev	10%	8%	8%	10%	10%	10%	12%	10%	9%	9%
Operating Margin	28%	33%	32%	26%	32%	32%	16%	22%	31%	31%
Tax Rate	13%	5%	-6%	7%	9%	9%	-1%	9%	6%	9%
<b>EBITDA Reconciliation</b>										
(+) Net Income	1,666	3,047	4,141	2,696	3,613	4,035	394	552	899	851
(+) Interest	58	61	58	52	52	52	13	13	13	13
(+) Taxes	239	149	(245)	193	357	399	(5)	54	60	84
(+) D&A	187	199	262	362	360	404	91	92	92	87
(+) SBC	247	391	557	653	840	942	178	223	223	29
(+) Rx	3	0	0	0	0	0	0	0	0	0
<b>EBITDA</b>	<b>2,400</b>	<b>3,847</b>	<b>4,773</b>	<b>3,957</b>	<b>5,223</b>	<b>5,831</b>	<b>671</b>	<b>934</b>	<b>1,287</b>	<b>1,065</b>
<b>FCF Reconciliation</b>										
(+) CFFO	1,672	3,502	3,743	3,827	4,453	4,977	720	936	1,640	531
(-) Cap Ex	(176)	(593)	(600)	(490)	(600)	(673)	(128)	(113)	(103)	(146)
(-) Interest Expense	(58)	(61)	(58)	(52)	(52)	(52)	(13)	(13)	(13)	(13)
<b>FCF</b>	<b>1,438</b>	<b>2,848</b>	<b>3,085</b>	<b>3,285</b>	<b>3,801</b>	<b>4,252</b>	<b>579</b>	<b>810</b>	<b>1,524</b>	<b>372</b>
<b>Credit Metrics</b>										
Debt	2,810	2,000	1,988	2,000	2,000	2,000	1,988	1,989	1,990	2,000
Debt/EBITDA	1.2x	0.5x	0.4x	0.5x	0.4x	0.3x	0.5x	0.6x	0.6x	0.5x
Debt/FCF	2.0x	0.7x	0.6x	0.6x	0.5x	0.5x	0.8x	0.8x	0.6x	0.6x
EBITDA/Interest	41.4x	63.1x	82.3x	76.1x	100.4x	112.1x	70.2x	63.3x	65.4x	76.1x

Source: Company Filings