

EF4313

FINAL PROJECT

GROUP 12



THE WAY
IT'S MEANT
TO BE PLAYED

Group Member
Sai Yat Morris CHOW

AGENDA

1. Background Information

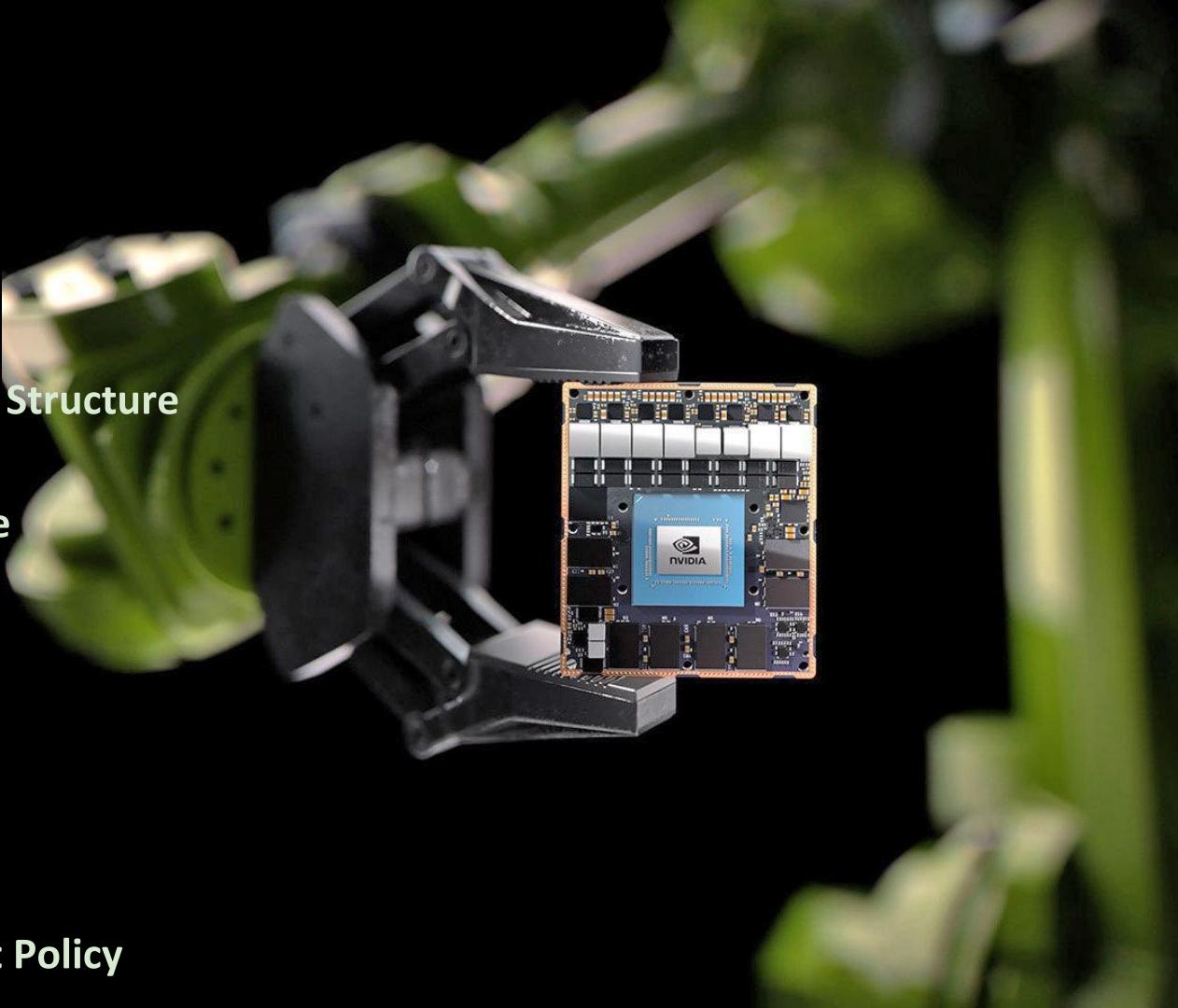
2. Product Market

3. Ownership & Organization Structure

- a. Ownership structure
- b. Organization structure
- c. Managers

4. Financial Policies

- a. Capital Structure
- b. Capital Raising Policy
- c. Distribution Policies
- d. Important Investment Policy



Background Information



Background Information

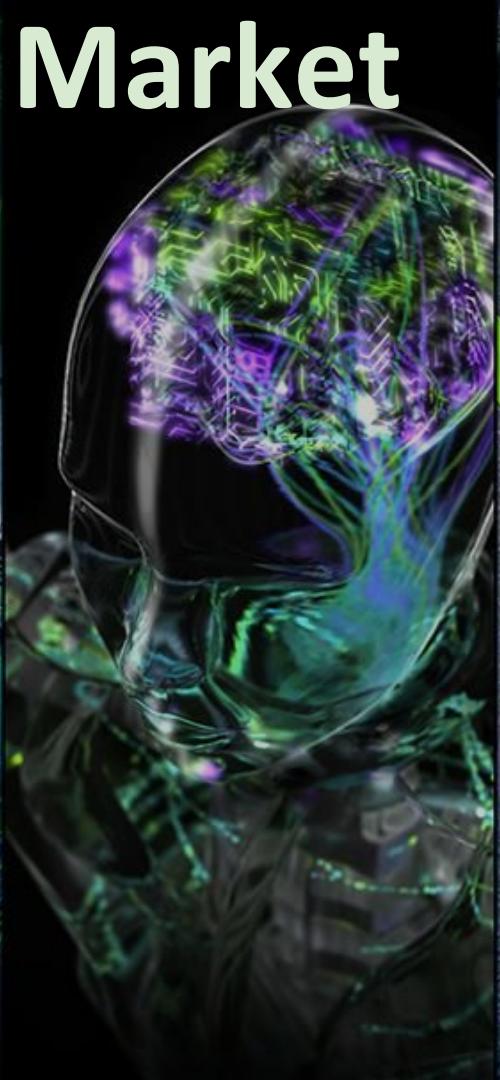
They deal in:

- **Graphics processing units (GPUs)**
 - For the gaming and professional markets
- **System on a chip units (SoCs)**
 - For the mobile computing and automotive market
- **Parallel Processing Capabilities**
 - For researchers and scientists to efficiently run high-performance application
- **Tegra Mobile Processors**
 - For smartphones and tablets as well as vehicle navigation and entertainment systems



American technology company based in Santa Clara, California

Product Market



Background Information

- Jensen Huang (current CEO), Chris Malachowsky, and Curtis Priem started Nvidia in April 1993
- Believed that the next step in computing would be accelerated and graphic based
- Recognised the power of computer gaming and its enormous sales volume

In 2017

- Partnership with Toyota Motor Corp
- Utilising Nvidia's Drive PX-series AI platform for its autonomous vehicles

In 2018

- Google will integrate Nvidia's Tesla P4 graphic cards into Google Cloud service's AI

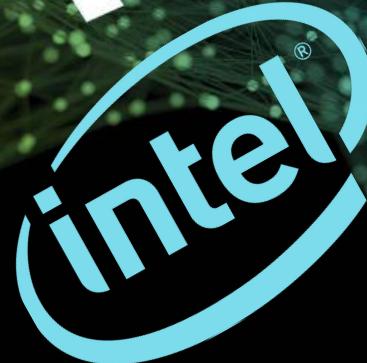
THE WORLD'S MOST ADVANCED GPU



Competitions

Quantum

arm



On

- Semiconductor Chip Manufacturing
- Softwares



AMD
RADEON

On

- GPU

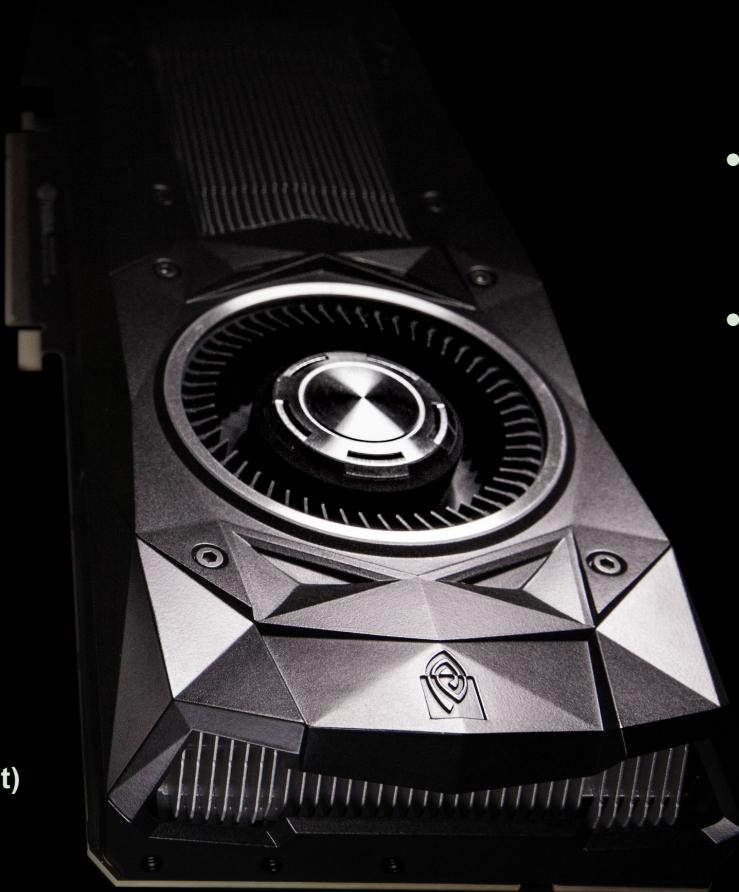
SWOT Analysis

Strength

- Good product mix in graphical processing units (e.g. GeForce, Quadro, Tegra, Tesla, nForce)
- Strong market position and wisely known for the high-end performance

Opportunities

- Growing demand for new mobile technologies
- Emerging markets (e.g. China – the largest PC market)



Weakness

- Absence of a top selling device (e.g. The Tegra mobile does not support iPhone)
- Limited scope for capturing huge market share

Threats

- Intense competition from major brands (e.g. AMD)
- Other market would be lost (e.g. AMD is currently dominating the budget-to-mid-range product stack with cards like the AMD Radeon RX 580)

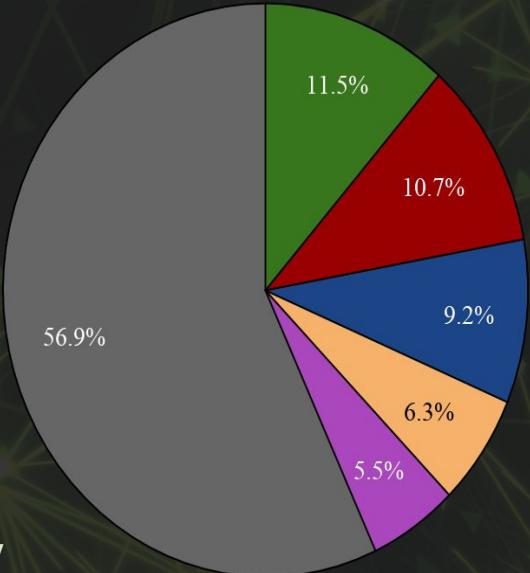


Ownership & Organization Structure

Ownership Structure - Shares of NVIDIA

Major Institutional Shareholders

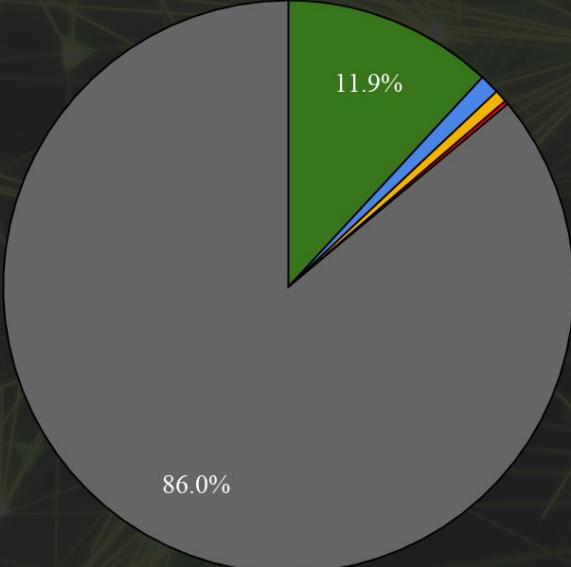
- Fidelity
- Vanguard
- Blackrock
- SB Investments
- State Street
- Other Institutions



70% of the company

Major Individual Shareholders

- Jen-Hsun Huang
- Mark A. Stevens
- Tench Coxe
- Harvey Jones
- Others



30% of the company

- The CEO, founder Mr. Huang owns 3.5% of the total shares
- The directors & executives own about 4.5% of the total shares

Ownership Structure

- Works as an independent firm
- 606M shares are currently outstanding
- Co-founder (Jen-Hsun Huang) is still the ...
 - CEO
 - President
 - Largest individual stockholder

Recent Updates (New owners)

New Institution	Parnassus Investments	Generation Investment Management LLP
Shares Purchased	2,956,329	1,289,246
Purchase Date	31/12/18	31/12/18



Organization

- Branches
 - 27 of its own
 - acquired 12 other companies
- Offices
 - 22 countries - 4 continents
 - Asia, EU, NA, Asia and South America
- Main Source of Revenue
 - 28.7% from Taiwan
 - 23.9% from China
 - 20% from various countries
 - 13% from US

Recent Updates (M&A)

- On March 12 2019
 - NVIDIA acquired Israeli chip makers Mellanox Technologies for \$6.9 billion
 - Making the largest acquisition ever



Management & Governance Structure

Management Body

- Consists of 15 Members
 - 5 NEOs
 - 10 INEDs

Lead Director

- Work closely with the CEO
- Make sure without issues between board members on sensitive issues

BOD is split into 3 committees for different operations

Nominating and Corporate Governance Committee (NCGC)

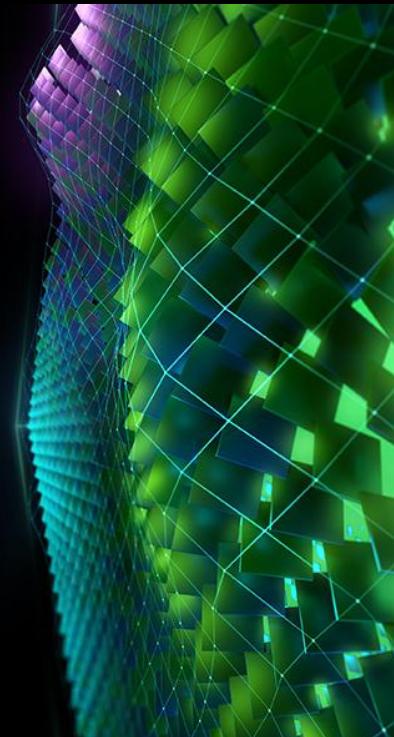
Audit Committee (AC)

Compensation Committee (CC)

Board members

- All are elected annually
- No term limit or retirement age

NVIDIA has appointed 3 new directors in the last 5 years



Management & Governance Compensation

- **Director Compensation**
 - Amended after 2017 FY
 - Annual target - \$300,000
(75,000 cash + 225,000 RSUs)
 - No dividends on non-vested RSUs
- **Executive Compensation**
 - Stockholders advise and approve the NEO compensation
 - Majorly performance based
 - 92% of the total target pay of Mr. Huang
 - 57% of the total target pay of other NEOs



Management & Governance Compensation

- Recent changes
 - Changed Mr. Huang's equity compensation to 100% PSU
 - Increased proportion of PSUs for other NEOs
 - Introducing PSUs that are based on relative TSR
 - Establishing and maintaining separate financial metrics for each type of performance-based compensation





GEFORCE
RTX

A close-up, low-angle shot of a highly reflective, metallic robot head. The head is dark, possibly black or dark blue, with intricate, angular features. Bright, glowing yellow lines and highlights reflect off the polished surfaces, creating a futuristic and high-tech appearance. The background is dark and out of focus.

Financial Policies

Capital Structure



Current Capital Structure

NVIDIA



Nvidia

D/E Ratio

= \$ 2,000M / \$ 116,892M

= 0.017110

Competitors



Advanced Micro Devices Inc (AMD)

D/E Ratio

= \$ 1,458M / \$ 30,100M

= 0.048439



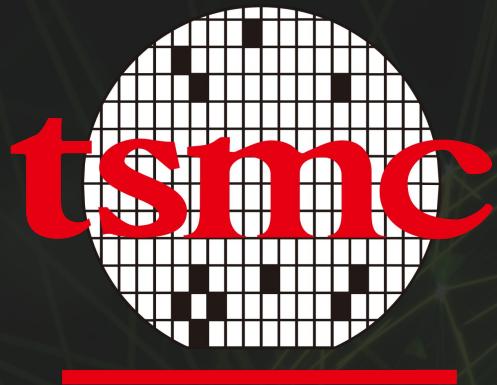
Intel Corp

D/E Ratio

= \$ 26,964M / \$ 250,801M

= 0.107512

Largest Creditors (COGS)



Taiwan Semiconductor
Manufacturing Co Ltd



Hon Hai Precision
Industry Co Ltd



Foxconn Industrial
Internet Co Ltd

Debt Structure

Nvidia 2021

Maturity: **9/16/2021**

Pricing Date: 9/16/2016

Seniority: **Senior Unsecured**

Rating: A3

Coupon: **2.2%**

Issue Volume: \$1T

Covenant: Callable

Nvidia 2026

Maturity: **9/16/2026**

Pricing Date: 9/16/2016

Seniority: **Senior Unsecured**

Rating: A3

Coupon: **3.2%**

Issue Volume: \$1T

Covenant: Callable



Target Debt Ratio

Uncertain → Fluctuating

\$M USD	2012	2013	2014	2015	2016	2017	2018
Assets	6412.25	7250.89	7201	7370	9841	11241	13292
Liabilities	1584.55	2794.5	2783	2901	4079	3770	3950
Debt ratio	0.2471	0.3854	0.3865	0.3936	0.4145	0.3354	0.2972



Financial Policy

\$M USD	2012	2013	2014	2015	2016	2017	2018
Debt	21.41	1376.8	1401.5	1514	2820	2000	1988
Equity	7653.9	8838	11287	15787.3	65385.5	97050.9	116981.8
D/E Ratio	0.0028	0.1558	0.1242	0.0959	0.0431	0.0206	0.0170

11/25/2013 20:00:00 [MWR]

NVIDIA to Offer \$1.3 Billion of Convertible Senior Notes

Net Proceeds to Primarily Fund Capital Return

09/13/2016 21:10:12 [BFW]

NEW DEAL: NVIDIA Corp \$Bench 5Y, 10Y

By Brian Smith

(Bloomberg) -- Expected to price today

- IPT:
 - 5Y (9/16/2021): +137.5a
 - 10Y (9/16/2026): +187.5a
- Issuer: NVIDIA Corp
- Expected Ratings: Baa1/BBB-
- Format: SEC Registered sr unsecured notes
- UOP: To fund, directly or indirectly, cash amounts due upon early conversion of \$429m of aggregate principal amount of our 1.00% convertible senior notes due 2018 (our "convertible notes"), which conversions have not yet settled, and for GCP, which may include funding additional conversions or potential repurchases of our convertible notes, dividend payments, share repurchases, ongoing operations, capital expenditures and possible acquisitions of businesses or assets

Debt Issuance in 2013 & 2016

Conservative financial policies

- Extremely high ROCE
- Operation capacity: Possibly saturated
(Skyrocketing business development)
- E.g. Human capital, Resources, R&D progress
- Economies of scale

	2013	2014	2015	2016	2017	2018
ROCE	0.0948	0.1422	0.1382	0.3257	0.4605	0.4926



Conservative Financial Policies

- Pecking-Order Theory
- Internal Financing → Debt Financing → Capital Financing
- No need to issue debt / equity

	2012	2013	2014	2015	2016	2017	2018
Net Income	562.54	440	631	614	1666	3047	4141
Cash	536.99	843.69	365.00	553.00	1,445.00	213.00	299.00
Money Market Securities	195.80	307.90	132.00	43.00	321.00	3,789.00	483.00



Capital Raising Policy



Issue Equity in Recent Years

Market Response

NVIDIA Corp	FY 2016	FY 2017	FY 2018	FY 2019
Historical Market Cap	15787.31	65385.45	147457.98	97050.90
Shares Outstanding	539.00	585.00 (+47)	606.00 (+21)	606.00 (+0)
Price	29.29	111.77 (+280%)	243.33 (+117.7%)	160.15 (-34.18%)

Bloomberg - Nvidia Share Outstanding

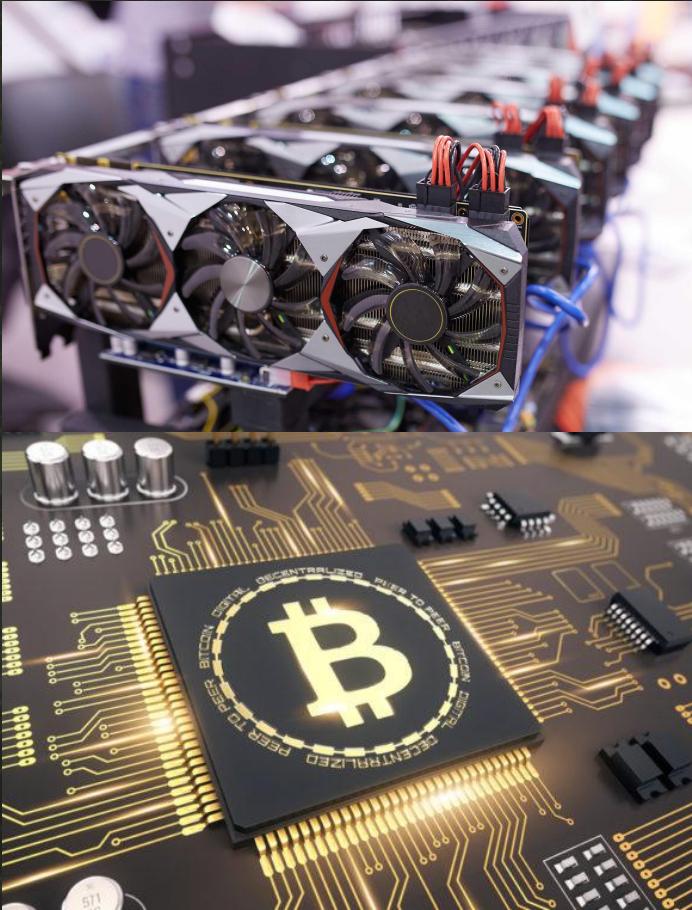


Why Issue Equity?

However sometimes the reality is different from the theory ...

NVIDIA issued equities twice from FY 2016 - FY 2018

- Just resulted in a small decline of stock price
- Unexpected Market Behaviour
 - Strong demand of GPU due to crypto mining
 - Speculation on its stock price



Why Issue Equity?

Until 2018 Q4

- Revenue in Q4 2018 was very disappointed
 - Far short of the \$2.7 billion it had previously forecast
 - Decreased revenue from data centers and GPU sales
- Majority of tech-stocks suffered worth months in a decade
- Huge drop in about 58% of the stock price



Distribution Policies



Dividend policies

In the perfect world

Modigliani and Miller dividend theory assumes:

1. No tax
2. No transactions costs
3. Fixed investment and operating activities

So, the amount of dividends and the way of distribution are irrelevant to the value of a firm

In the reality

Consider corporate tax rate and personal income tax rate:

1. Pay out excess cash, when:
corporate tax rate > income tax rate
2. Retain cash inside firm, when:
corporate tax rate < income tax rate

Tax rate	2017	2018
Corporate	35%	21%
Personal income	39.6%	37%

Why does NVIDIA consistently pay out dividends?

Investors evaluate a firm value by its ability of:

1. generating distributional cash flows
2. paying out earning to shareholders

By consistently paying out dividends, NVIDIA ensured that their market value could be stabilized



Dividend ratio comparison (1)

- NVIDIA's payout ratio has decreased from 0.42 in 2014 to 0.12 in 2018
- Even though the actual amount of the dividend payments kept growing in the same time horizon.

Year	2014	2015	2016	2017	2018
Cash dividends per share	0.31	0.34	0.395	0.485	0.57
Earning per share (EPS)	0.74	1.12	1.08	2.57	4.82
Payout ratio	0.42	0.30	0.37	0.19	0.12



Dividend ratio comparison (2)

- NVIDIA's payout ratio: relatively low level in the benchmarking of keen competitors (i.e. Intel Corp. and Broadcom Inc.)
- Unfavorable singal: low payout ratio and low dividend yield

Dividend Ratio in the latest quarter	Nvidia	Intel	BroadCom
Payout ratio	17.58%	26.32%	70.46%
Dividend Yield	Lowest: 0.34% Highest: 0.43%	Lowest: 2.25% Highest: 2.39%	Lowest: 3.48% Highest: 3.91%



Silicon Valley's Rumour Mill

- Tech stocks including NVIDIA suffered from the stock market, especially in the fourth quarter of 2018:
 - NVIDIA ↓ 37.1% of the stock price
- Great opportunity for NVIDIA to launch the Repurchase Program:
 - Sharp decline in the market value (market value ↓)
 - Unchanged in the book value (book value -)



Stock Repurchase Program

Until the press conference held in 12th March 2019,
NVIDIA officially:

1. added \$7 billions to their repurchase authorization last until 2022
2. planned to return first \$3 billions to stockholders at the end of 2019





Important Investment Policy

Mellanox Technologies (NASDAQ:MLNX)

- **Leading supplier of InfiniBand and Ethernet network solutions**
- **Industries involved**
 - **High-performance computing** (supercomputer)
 - **Data center, Corporate data storage**
 - **Cloud Computing, Web 2.0**
 - **Financial services and other IT solutions**
 - **Network-related semiconductor products (adapters, cables, switches, ...)**
- **Customers**
 - Microsoft, IBM, HP, Dell, JPMorgan, Chevron, ...



Mellanox: Financial Performance (2018)

- Revenue: \$1,088.7 million (2017: \$863.9 million)
- Operating income: \$112.1 million (2017: -\$17.1 million)
- Net income: \$143.3 million (2017: -\$19.4 million)
 - Reversal of valuation allowance related to **deferred tax assets**
- Improvement
 - Apache Spark with RDMA & RoCE technologies (**Database & Analytics**)
 - Cable, Switch, Adapter (Semiconductor products & IT-security)
 - I/O with ConnectX-4 (**Interconnection**)
 - Socket Direct™ technology (**High performance computing & AI**)

Acquisition (11/3/2019)

- Collaboration and Joint Innovation for a long history
- Friendly merger & consolidation
- Horizontal acquisition
- Advisor
 - Nvidia: Goldman Sachs, Jones Day
 - Mellanox: Credit Suisse, JP Morgan Chase, Latham & Watkins ...
- Total enterprise price: \$6.9 billion
- \$125 per share
 - (14% higher than Friday's closing price)



Reason of Acquisition

- **Less competition**
 - Overlapping target customer groups
 - Supercomputing center, cloud service, IT infrastructure OEMs
 - Cross selling, Improve existing IT solutions
- **Eliminate potential competition**
 - Acquisition competitors: Intel, Xilinx



Reason of Acquisition

- Improvement of computing power
 - Occupy half of the world's top 500 supercomputers
 - Nvidia GPUs: 127 out of TOP 500
 - Mellanox Interconnects: 265 out of TOP 500
- Mature interconnect expertise
 - Facilitate development of AI, parallel computing, datacenter-scale connection
- Talented R&D teams





Thank You



NVIDIA®