

OCTOBER 2018

Lam Research (LRCX)

Too Cheap To Ignore

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Executive Summary

- A world class business trading at a mouth-watering price level
- Dominant player in an industry with secular tailwinds
- Services business provides a growing annuity type income which should hold company in good stead should the memory downturn accelerate
- Shareholder friendly management team rewards owners with an attractive capital returns program
- Perceived cyclicity in semi-equipment sector is exaggerated relative to reality
- Short fuse: Quarterly earnings out on October 16th could prove to be a catalyst in turning sentiment around

The Company

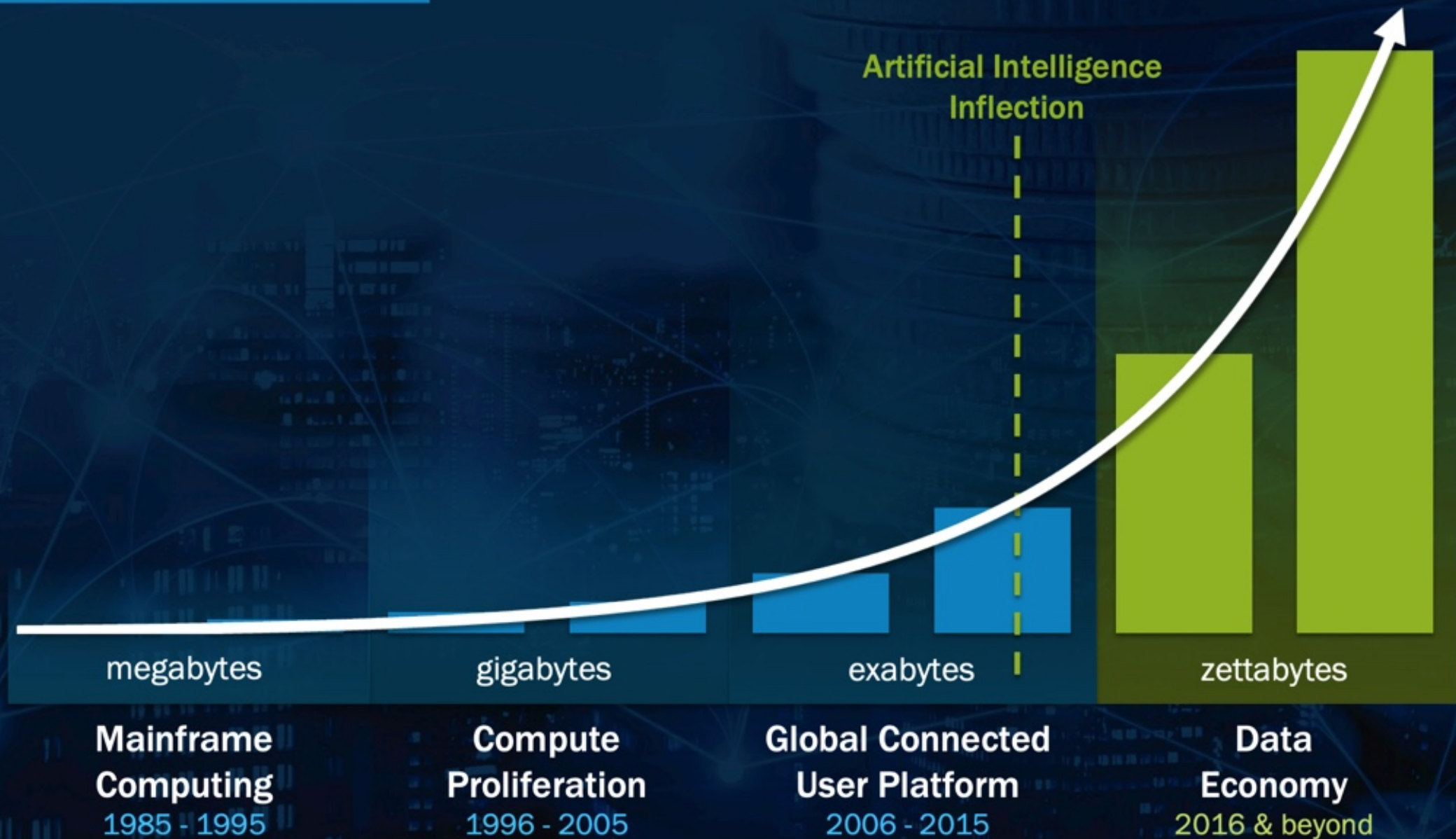
Lam Research (LRCX) was founded in 1980 and went public in May 1984. In 2011, in what was a transformative acquisition, Lam agreed to buy chip equipment manufacturer Novellus Systems, for \$3.3B. The deal was completed in June 2012, the same year that Martin Anstice was appointed as CEO.

Lam engages in the design, manufacture, marketing, and service of semiconductor processing equipment used in the fabrication of integrated circuits, including equipment for thin film deposition, plasma etch, photoresist strip, and wafer cleaning processes. Repeated throughout semiconductor manufacturing, these technologies help create transistors, interconnects, advanced memory, and packaging structures.

Semiconductor Innovation is contributing increased value in a data-driven economy and we believe that trend is quite fundamental, exciting and sustainable.

Martin Anstice, CEO, Lam Research

THE RISING DATA ECONOMY



MORE DATA GENERATED, STORED, ANALYZED



by 2020
67 zettabytes
of data generated



Smart Home



50 billion
connected devices



Smart Industry



1 petabyte
of data per day



Mobile



1 exabyte
of traffic per day



Autonomous Car



4 terabytes
per car per day



Healthcare



35 million
remotely monitored
patients



Robots



43 million
new service robots

Short-term performance is simply not our goal. We have delivered and we aspire to continue to reward our stakeholders with multi-year industry outperformance measured by competing for and winning a greater proportion of our customers' investments; greater in quantity and greater in quality through the degree of codependency and annuity.

Martin Anstice, CEO, Lam Research (July 2018)

Headline Data

- Current Price: \$139.78 (as at close on October 10th)
- Market Cap: \$21.3 B
- Enterprise Value: \$18.8 B
- EV/EBITDA: 5.2x

LRCX: Price Action



In this context, we also concluded the strongest fiscal year in our history by delivering approximately \$11 billion in revenues, representing growth of almost 40%, \$3.4 billion in non-GAAP operating income, and \$2.7 billion in cash from operations.
Martin Anstice, CEO, Lam Research
(July 2018)

Growth

A Diverse Set of Demand Drivers

End-market demand trends for DRAM as well as NAND continue to be strong... Look at data center and cloud applications – AI is in the very, very early innings. And the whole cloud growth is in the very early innings as well.

Sanjay Mehrotra, CEO, Micron Technology (Sept. 2018)

DATA CENTER



2017-2021 CAGR



DRAM
30%



NAND
50%

DRAM



NAND



AUTONOMOUS VEHICLES



2017-2028 CAGR



DRAM
>35%



NAND
>50%

Semiconductor Content Potential



Fully automated car



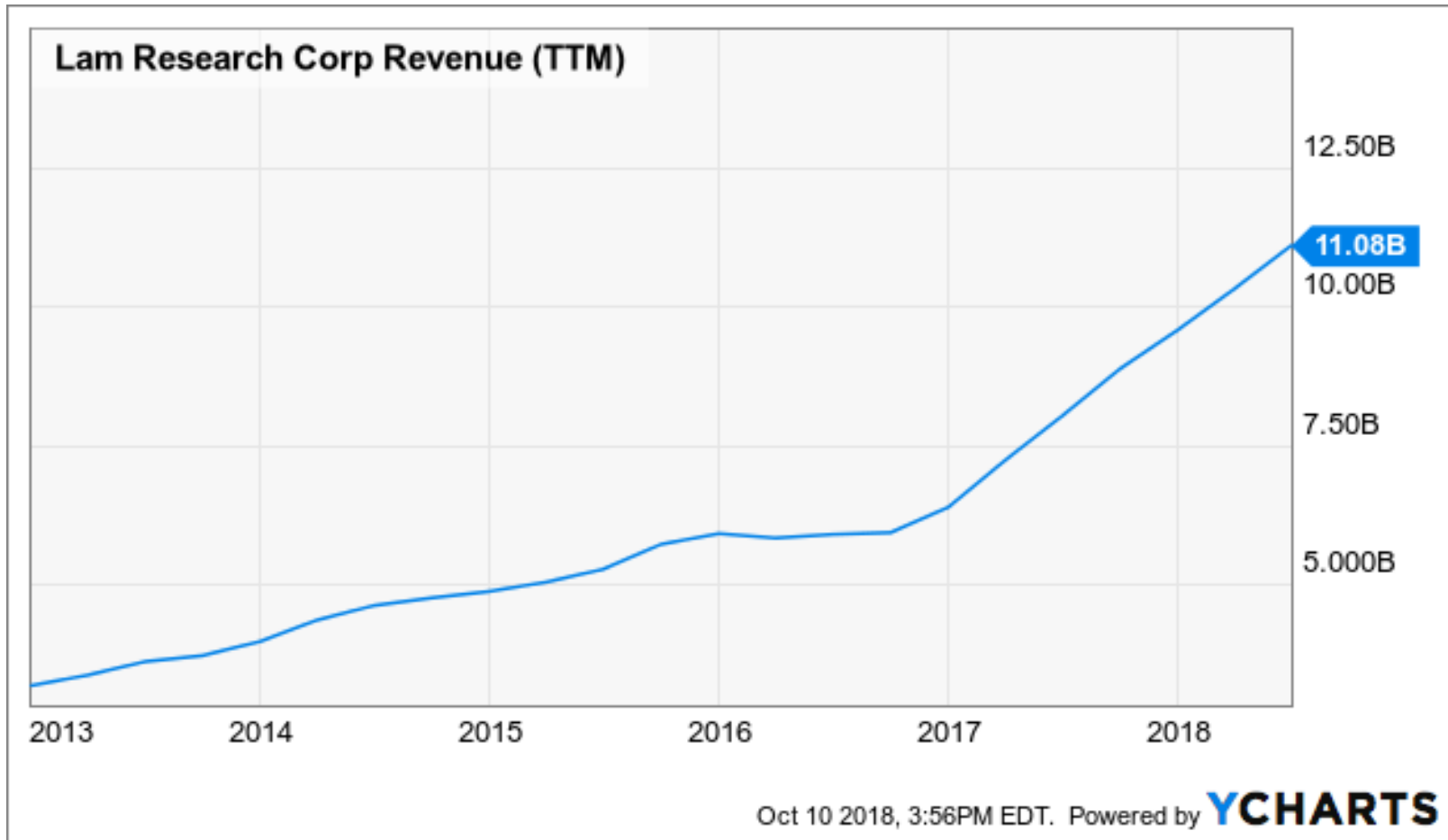
Average server

Units Potential



8x more cars than servers today

LRCX: Revenue



The best reference still is the long-term models that we gave, that's the call out market share references. And the last thing I would say is when you think about the holistic growth opportunities of Lam, let's remember market share is \$1 billion component of a \$3 billion reference. So we're seeking \$1 billion of SAM expansion, we're seeking \$1 billion of growth from market share and we're seeking \$1 billion of growth in the space of the installed base business of the company. So it's kind of one element of three and all are very important and all are being invested in.

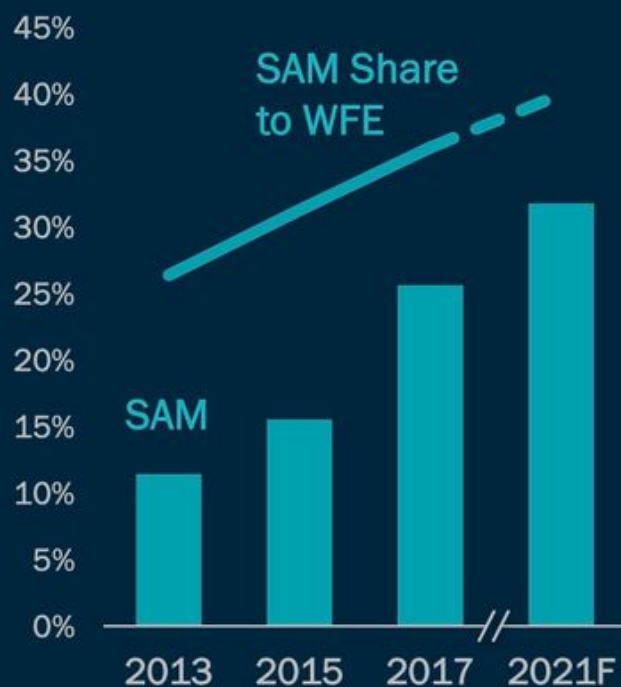
Martin Anstice, CEO, Lam Research (July 2018)

TARGET MODEL

	CY 2017 Actual	CY 2021 Financial Model
WFE Assumption	\$47B	Flat to 2018
Revenue	\$9.6B	\$14.5B – \$15.5B
Non-GAAP Operating Margin	28.7%	32% – 33%
Non-GAAP Diluted Earnings per Share	\$13.70	\$23 – \$25
Free Cash Flow	\$1.8B	28% – 29%

PLAN FOR \$15B OF REVENUE IN 2021 AT FLAT WFE

Technology Growth Drivers



>\$1B incremental revenue

Differentiated Solutions



>\$1B of incremental revenue

Growing Recurring Revenues



>\$1B incremental revenue

Customer Service Business Group

Services Division with a Growing Annuity Like Income Stream

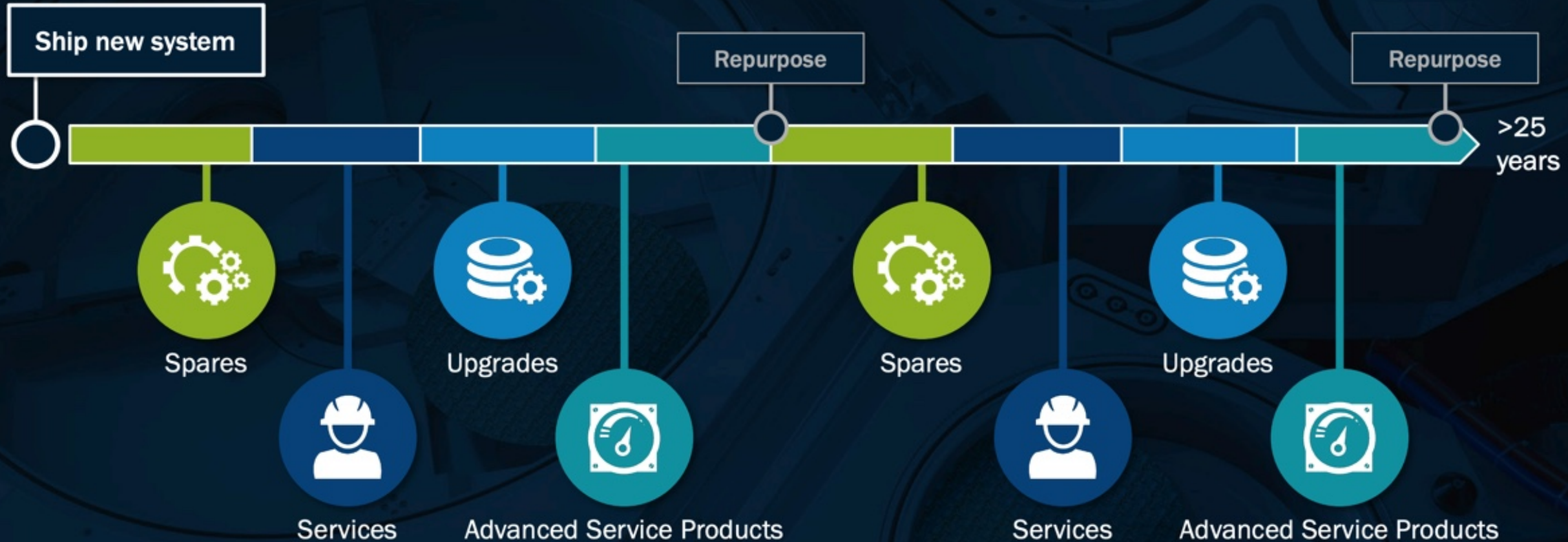
Our Customer Service Business Group grew profitable revenues in 2017 faster than the pace of our installed base growth. So it's definitely an increasingly valuable annuity to the company.

Martin Anstice, CEO, Lam Research

It's my favorite part about the company's business model. It's an annuity that just keeps going, keeps growing, keeps generating enormous amounts of cash. It's a great part of what we do.

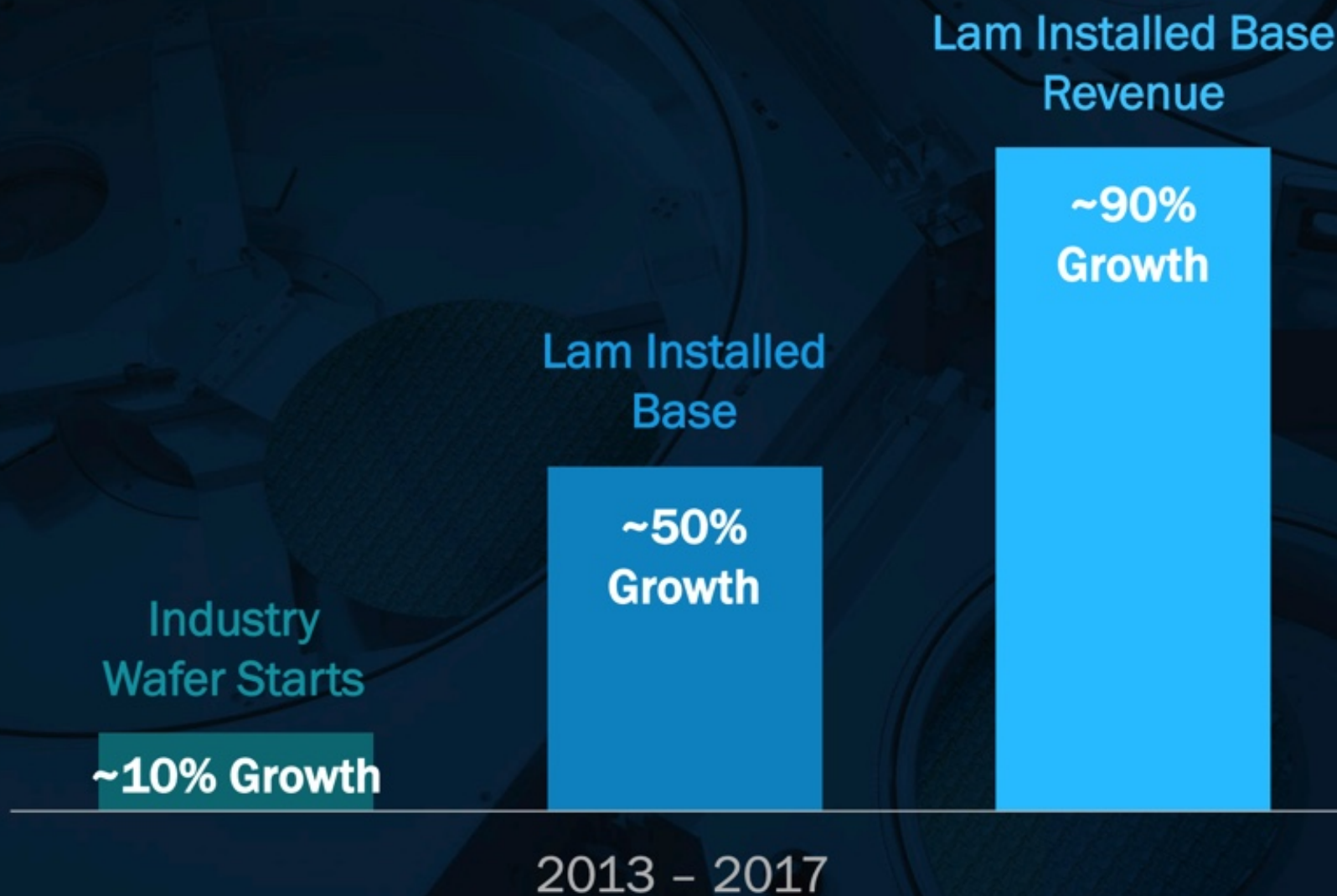
**Doug Bettinger, CFO, Lam
Research**

DELIVERING VALUE TO CUSTOMERS THROUGHOUT THE EQUIPMENT LIFECYCLE



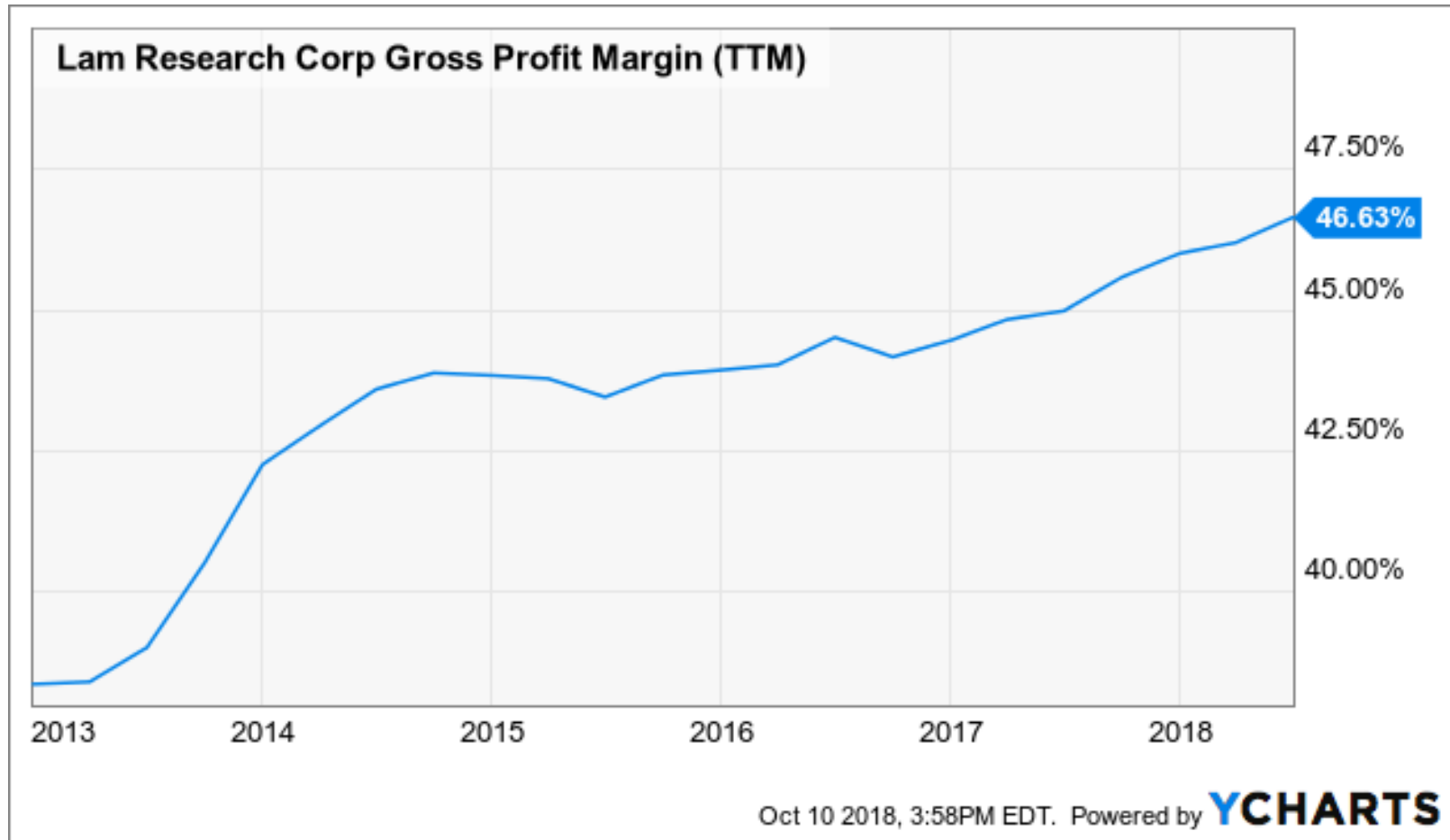
Installed Base Revenue Opportunity > Initial System Revenue

GROWTH AND STABILITY IN THE INSTALLED BASE BUSINESS

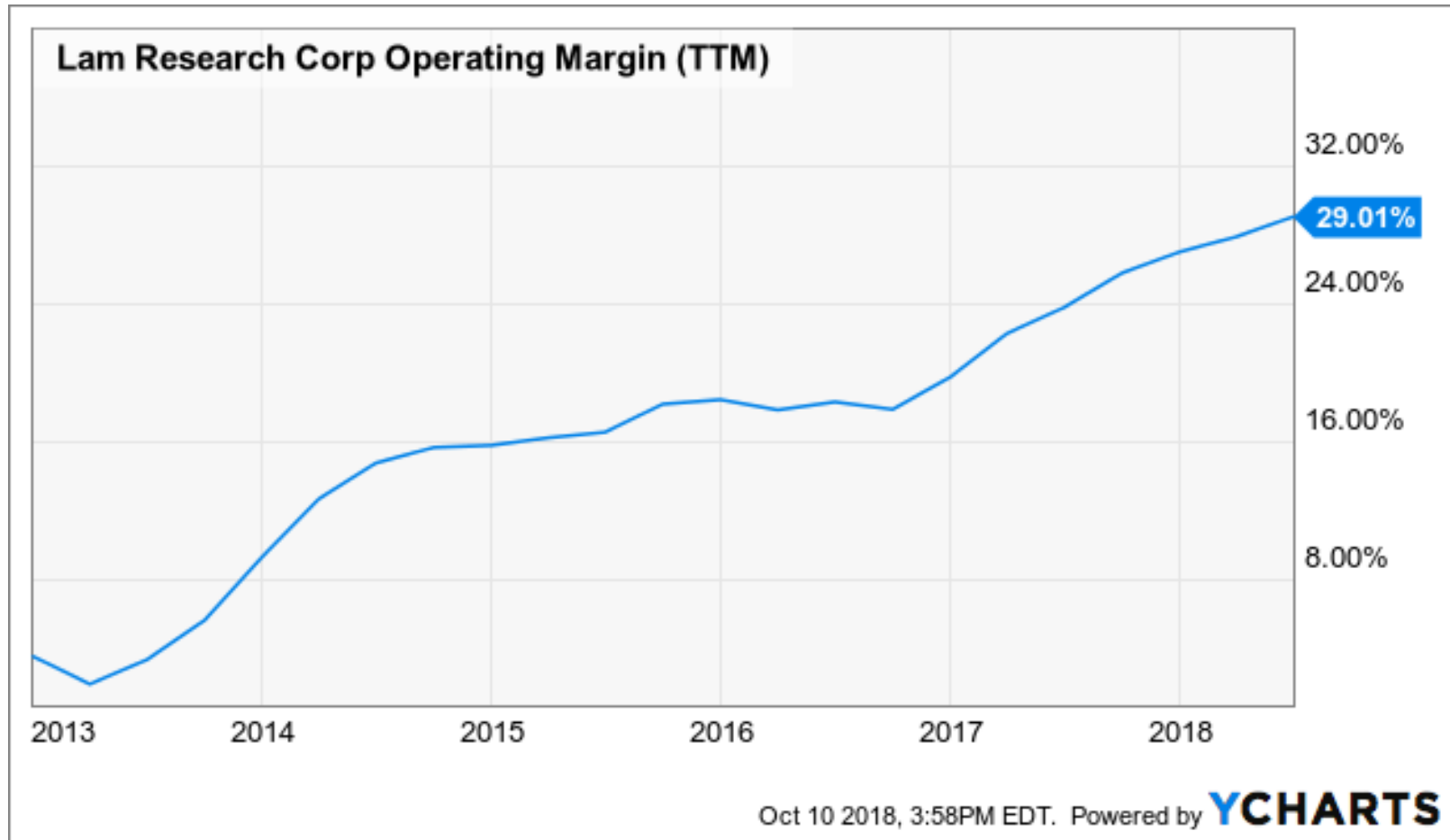


Profitability

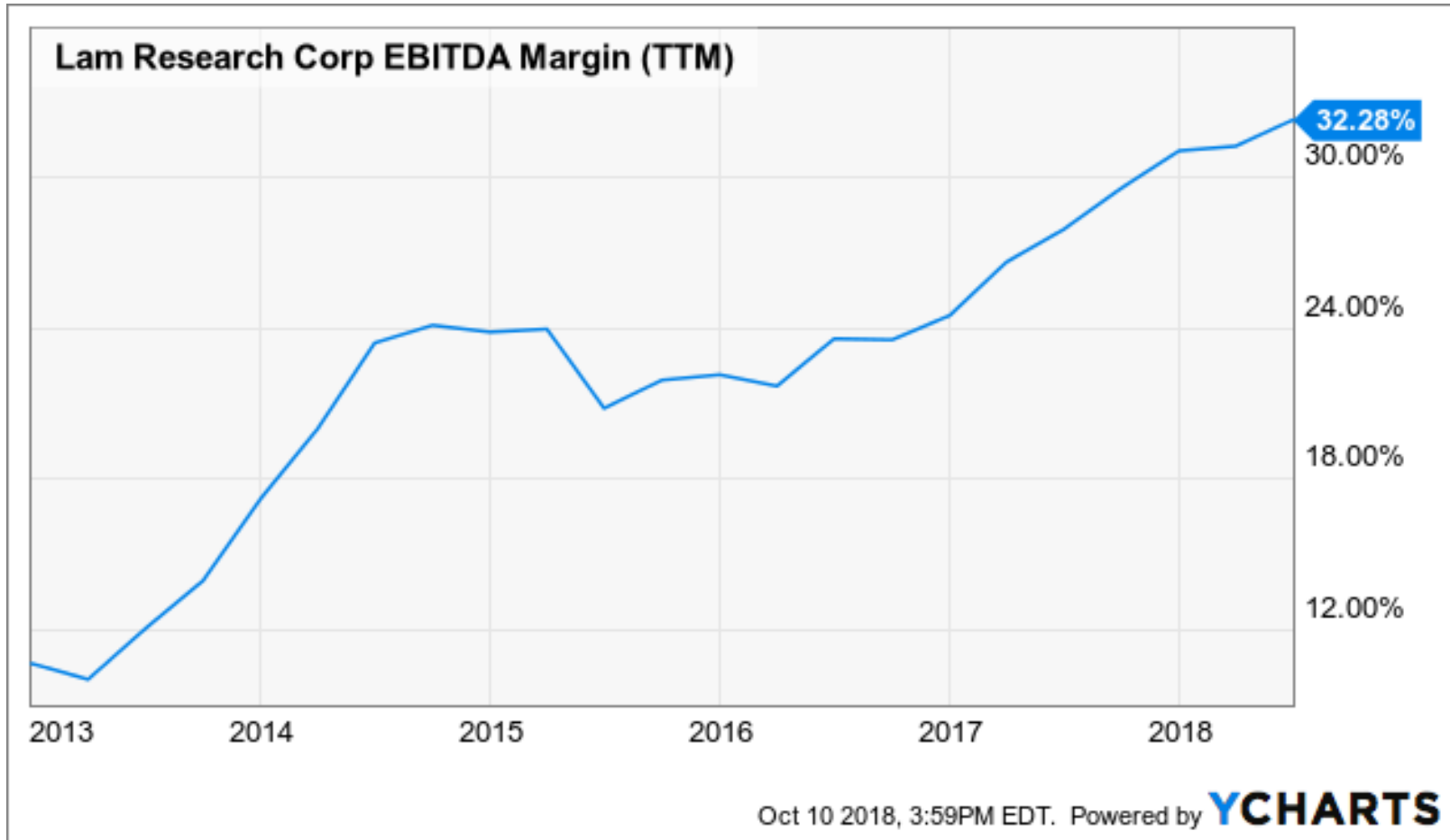
LRCX: Gross Margin



LRCX: Operating Margin



LRCX: EBITDA Margin



Operating Leverage

HISTORICAL OUTPERFORMANCE TRACK RECORD

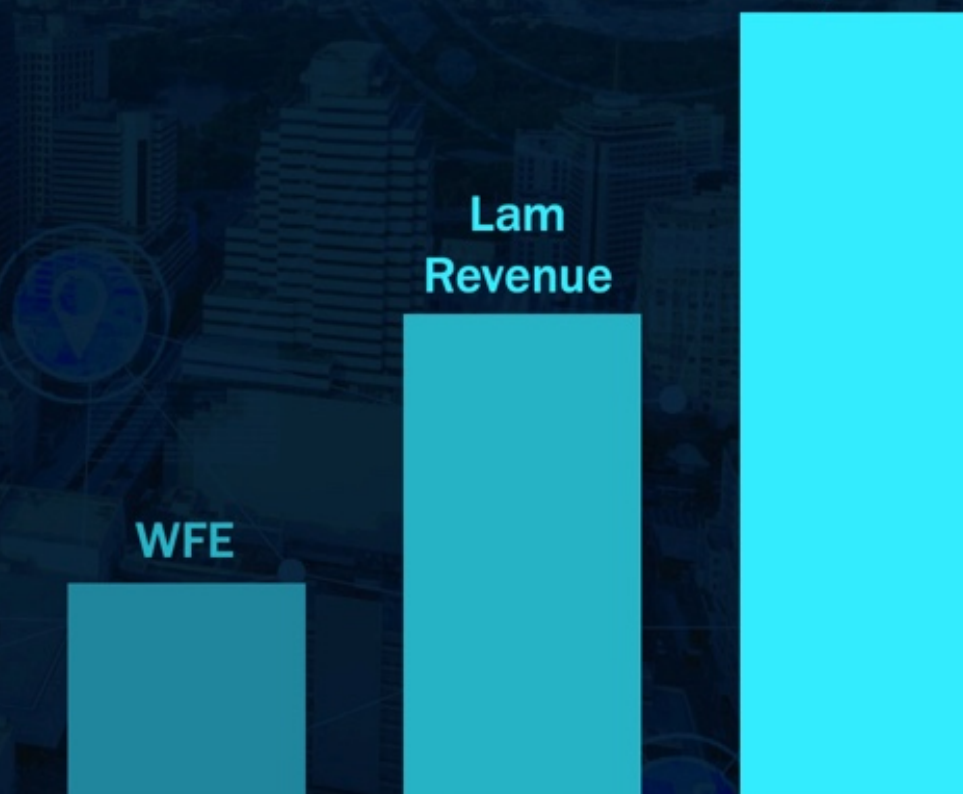
2012 – 2017

- Achieved **>2X** WFE CAGR
- Grew Operating Income at **>1.9X** Revenue CAGR
- Delivered **46%** Non-GAAP EPS CAGR
- Generated **>\$6.7B** in Operating Cash Flow

Compound Growth Rate

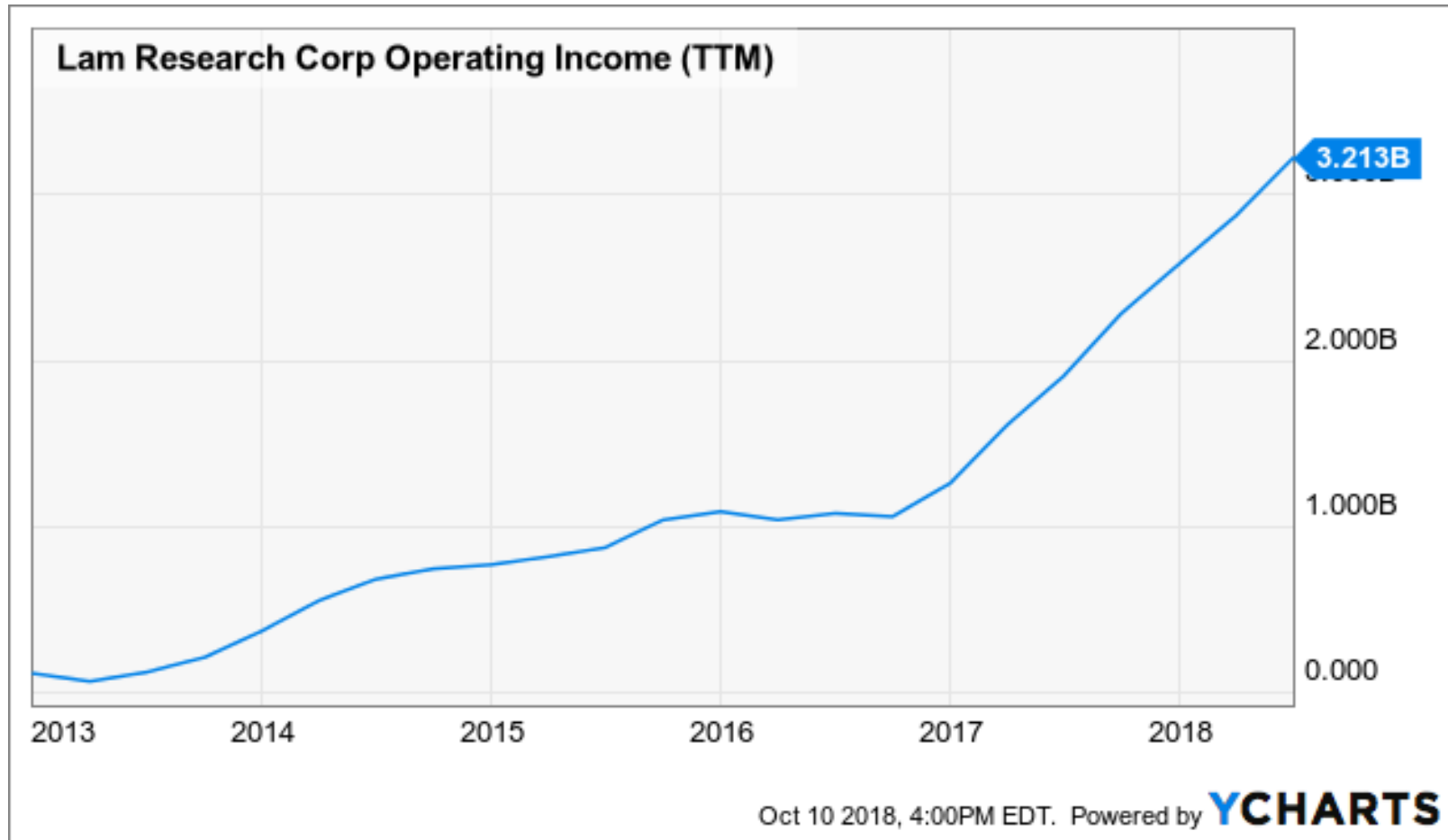
CY 2012 to CY 2017

Lam
Op Inc

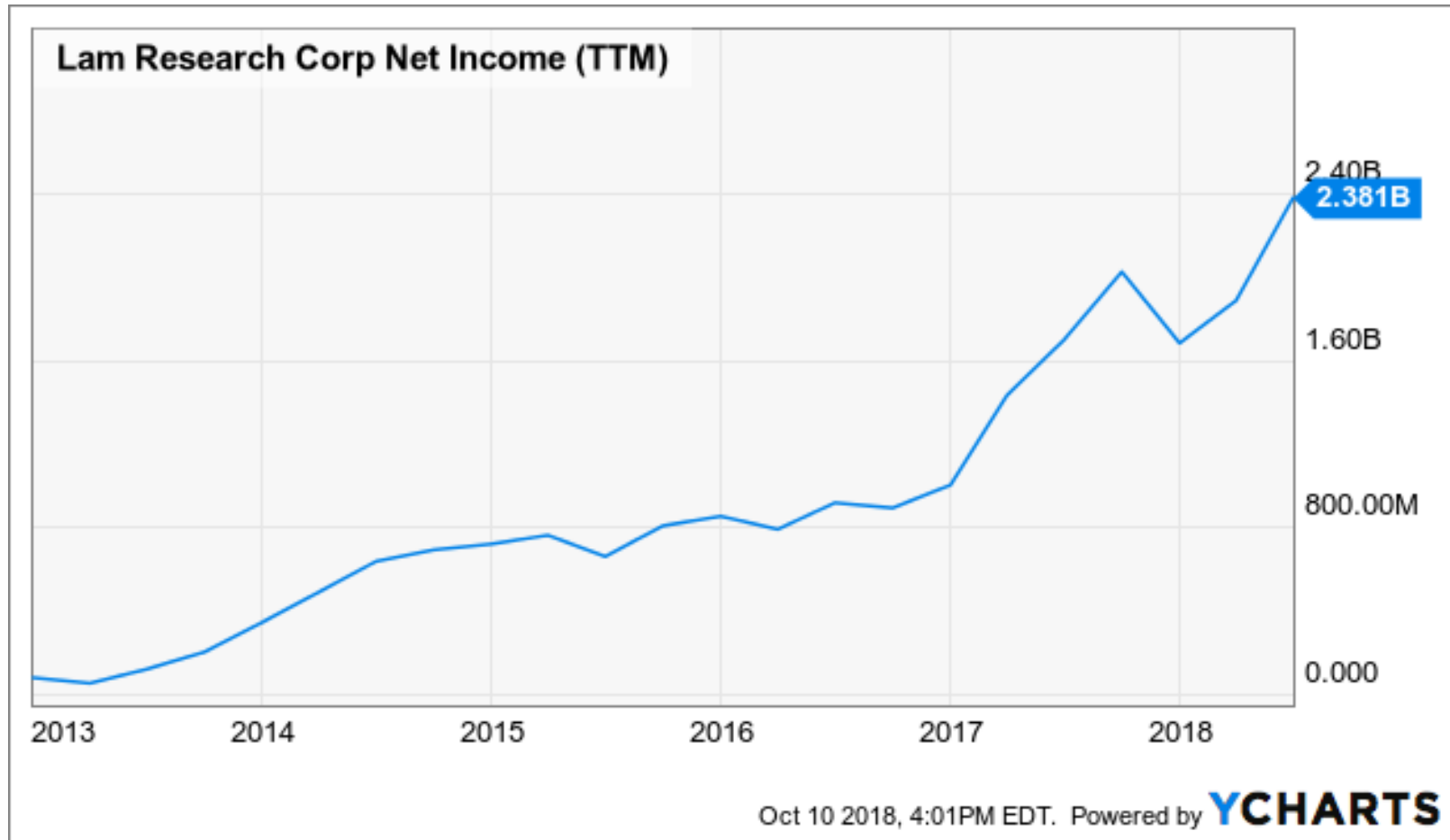


Financial outperformance metrics shown for CY 2017 relative to CY 2012 and are presented on a non-GAAP basis. Data reflect financial contribution from Novellus Systems following Lam's acquisition on June 4, 2012. A reconciliation of U.S. GAAP results to non-GAAP results can be found at the end of this presentation.

LRCX: Operating Income

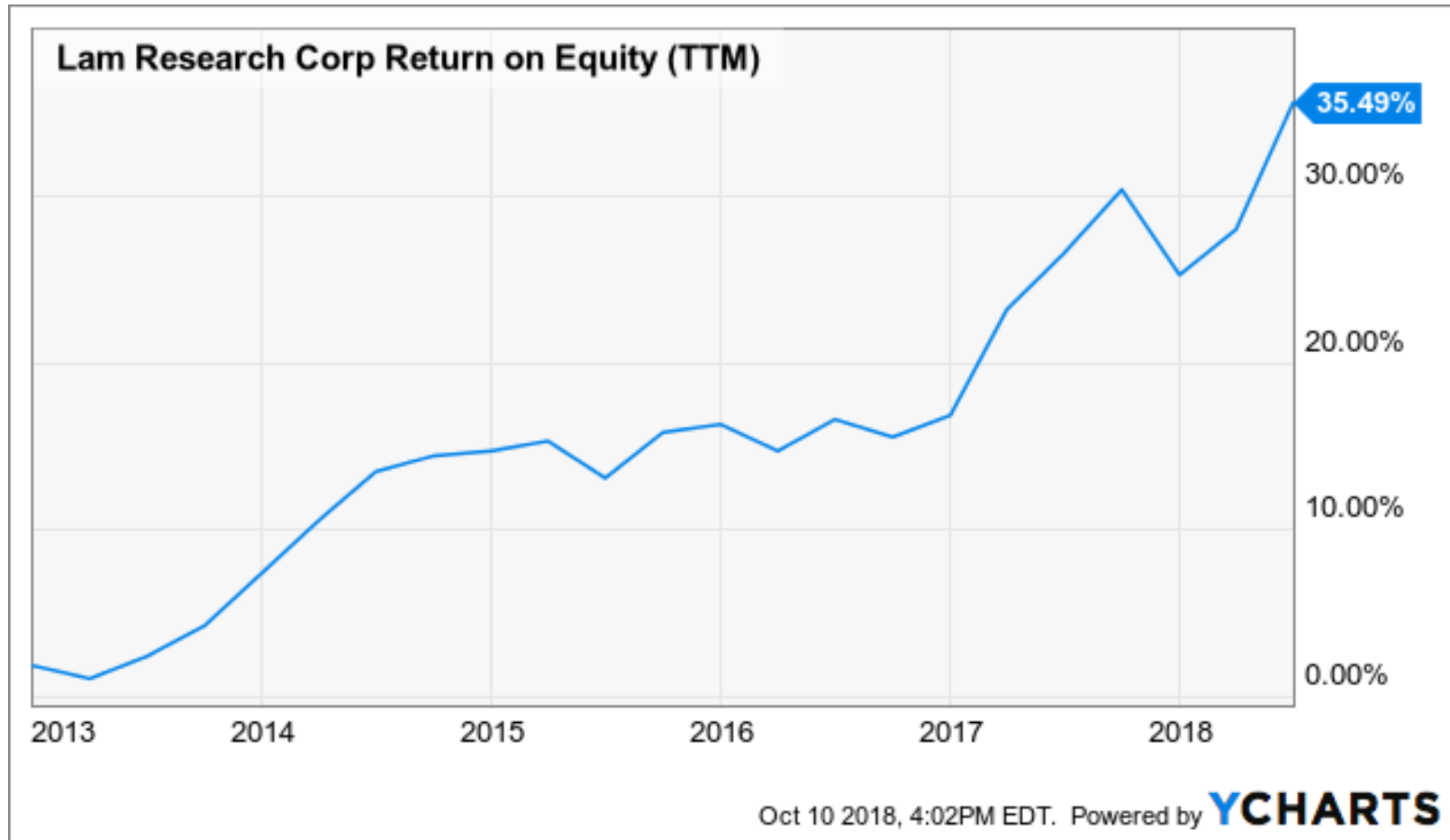


LRCX: Net Income

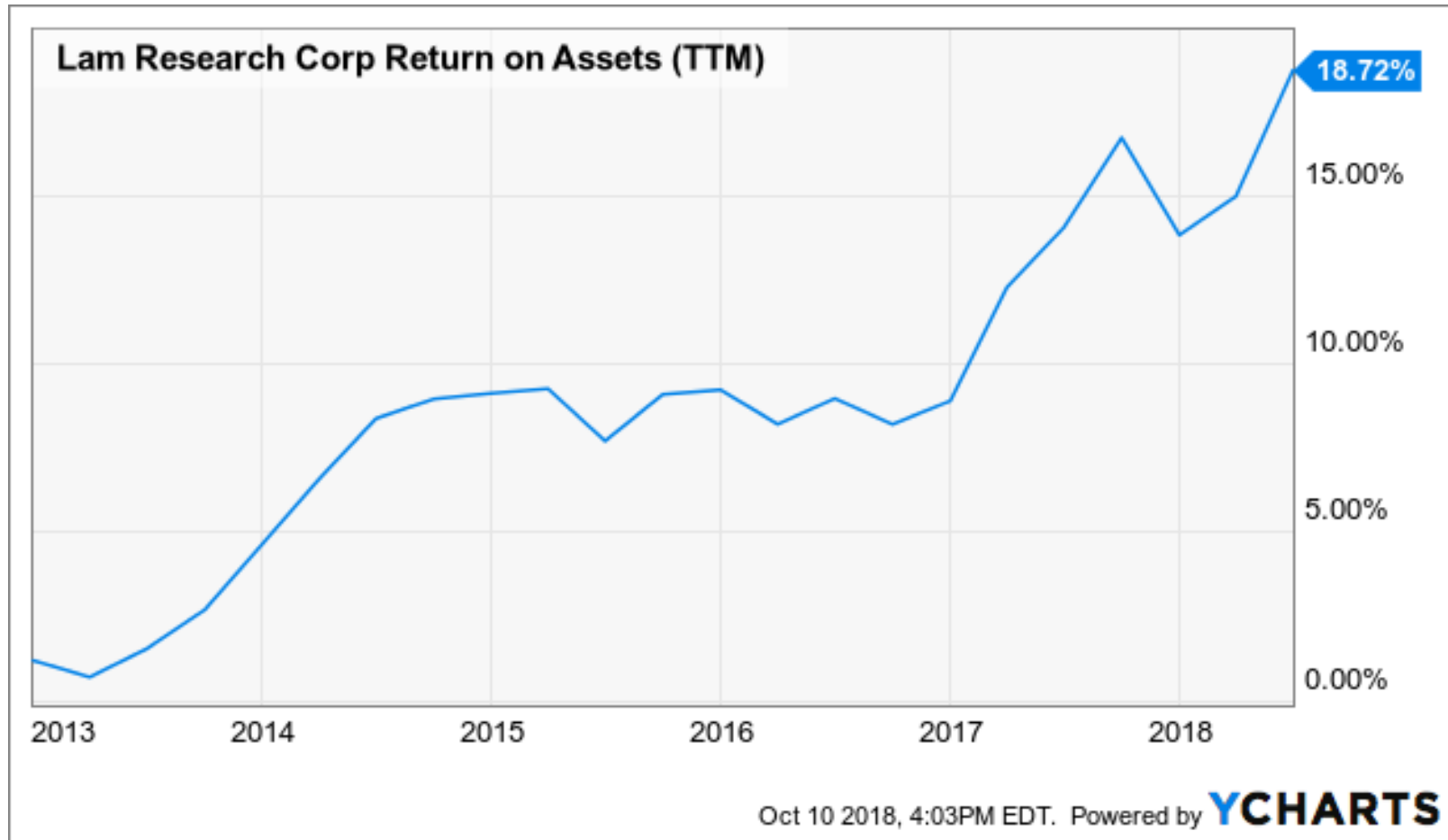


Return on Capital

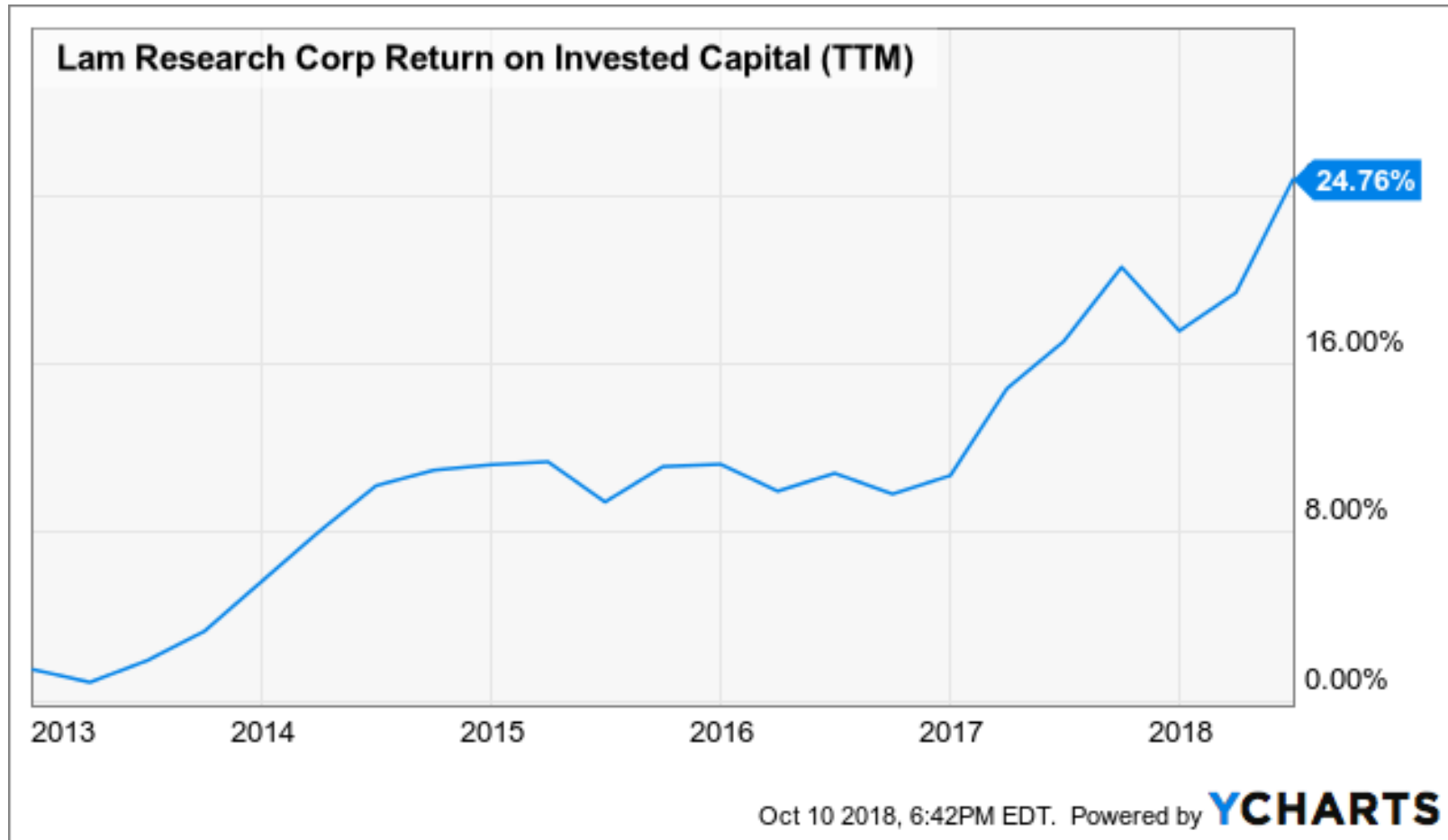
LRCX: Return on Equity



LRCX: Return on Assets

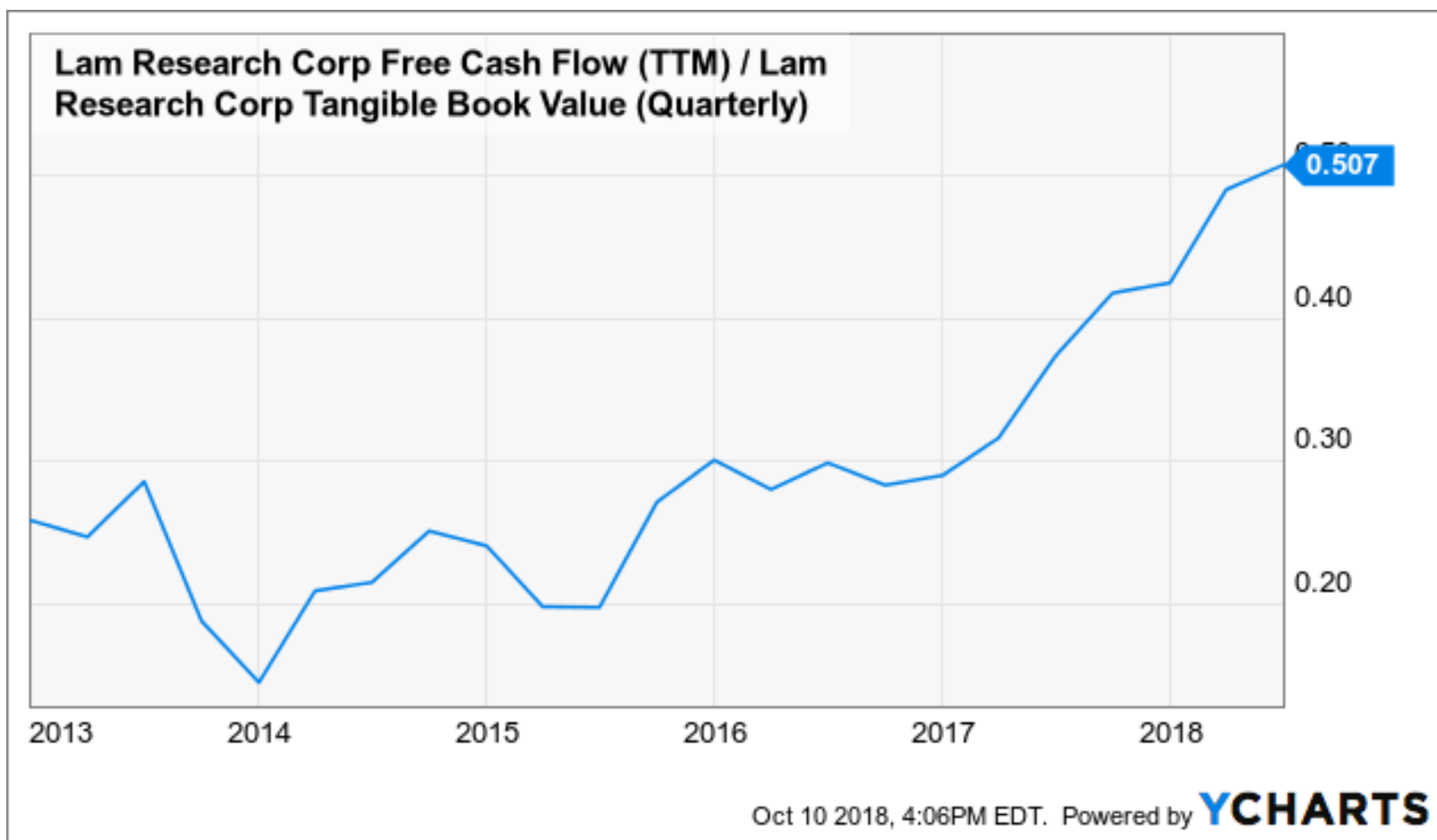


LRCX: Return on Invested Capital

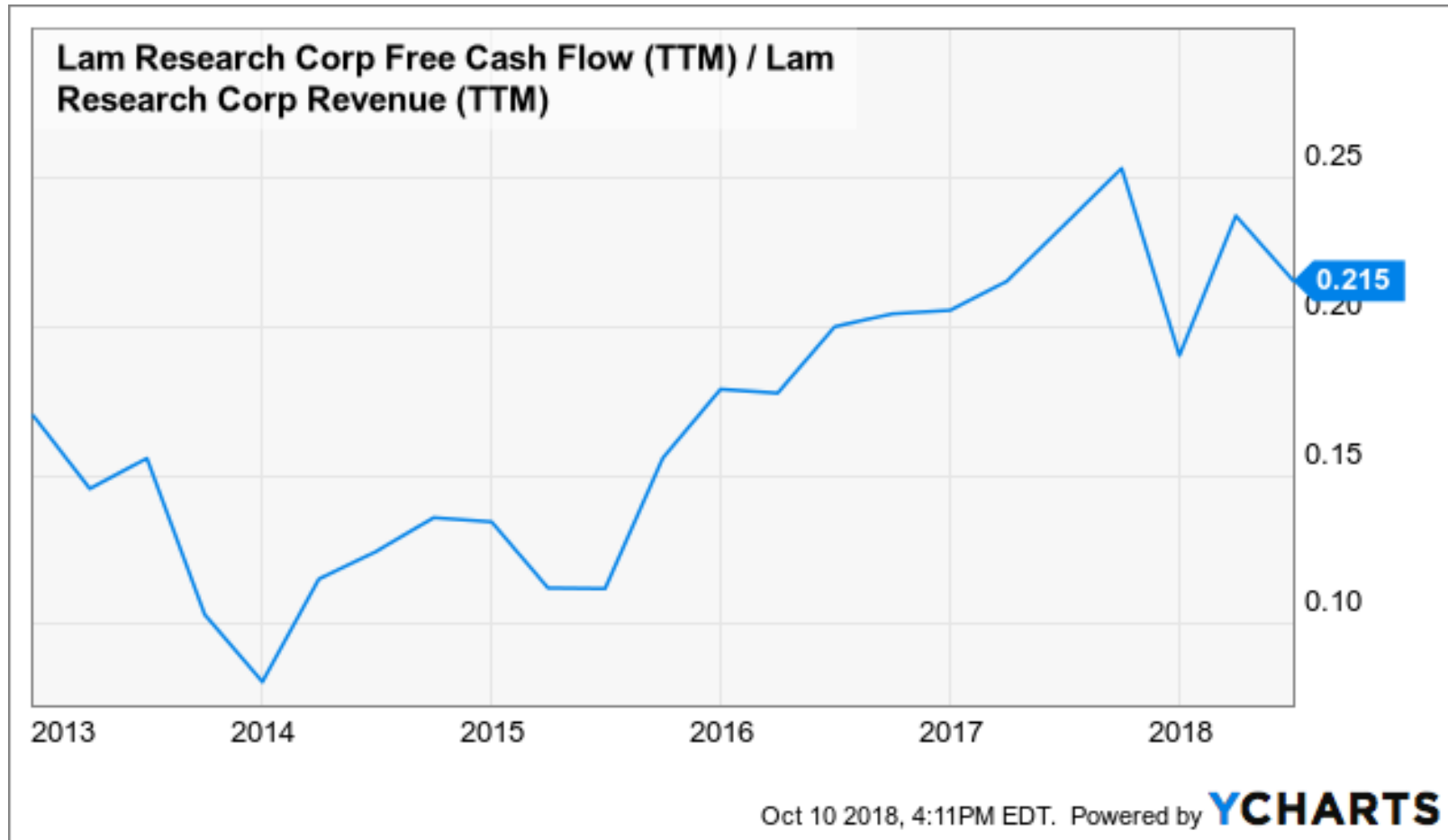


Free Cash-Flow & Capital Efficiency

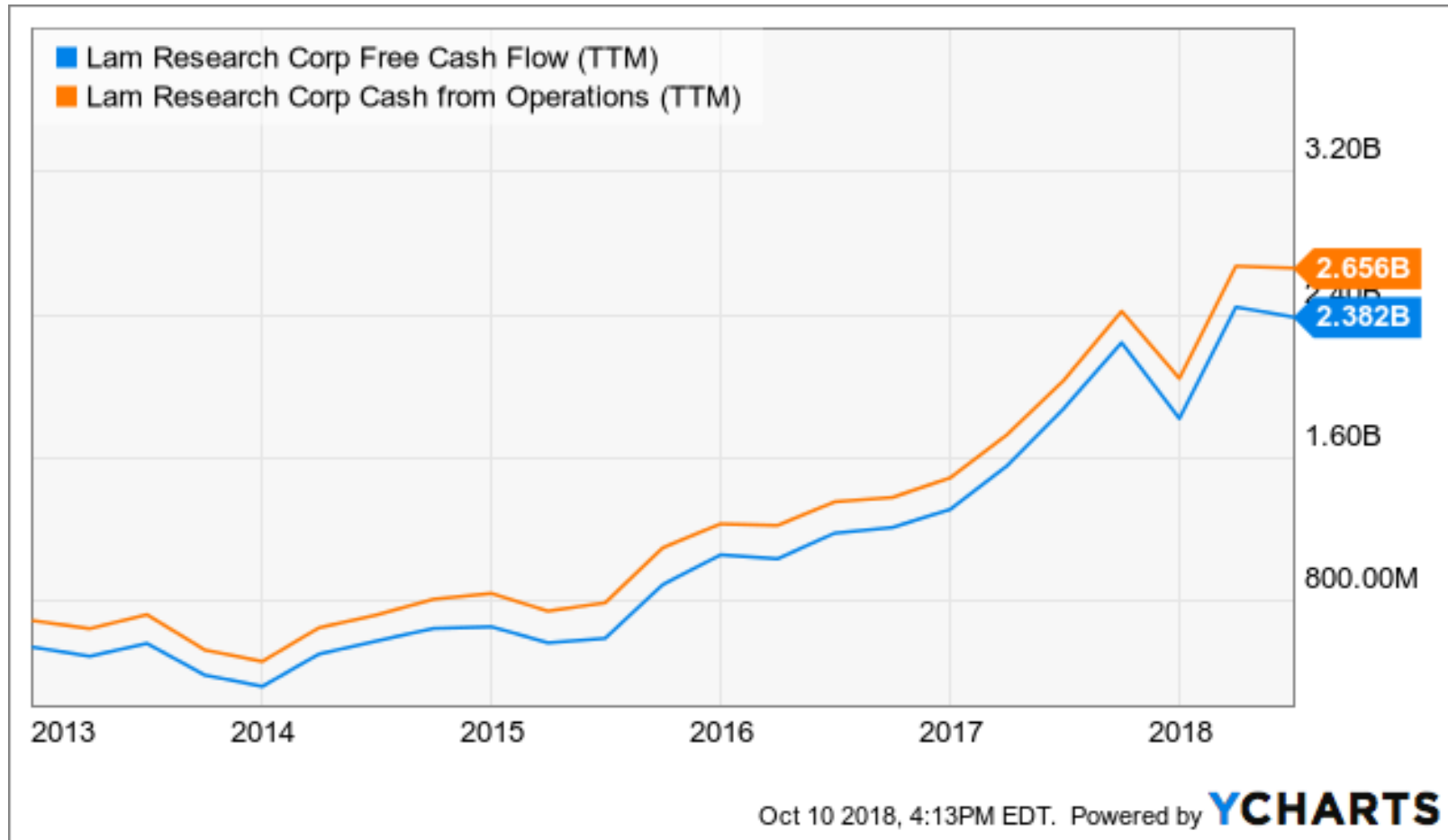
LRCX: Free Cash-Flow Return on Net Tangible Assets



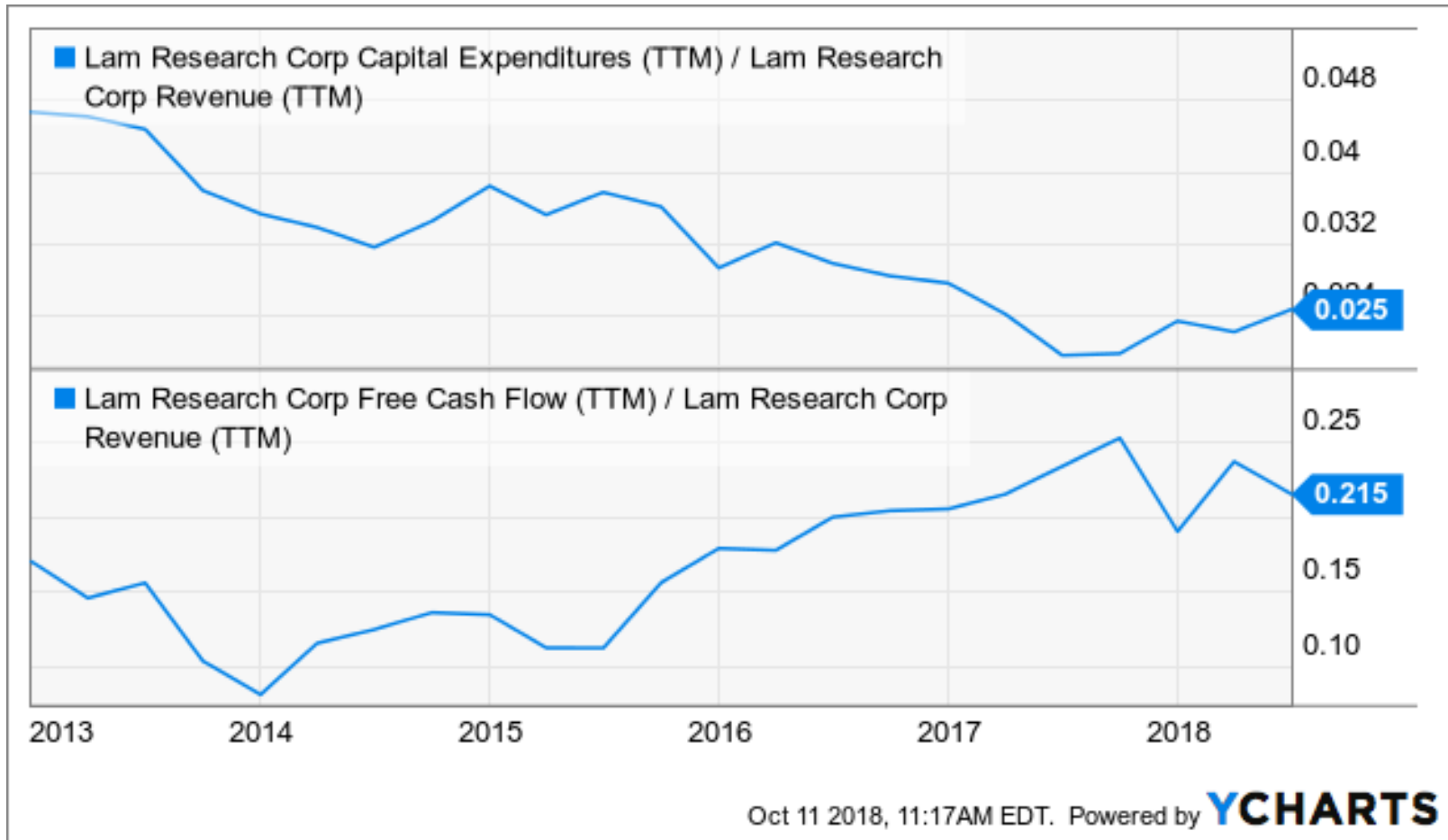
LRCX: Free Cash-Flow Margin



LRCX: Operating Cash-Flow and Free Cash-Flow



LRCX: Free Cash-Flow vs CAPEX



Exaggerated Perception of Cyclicalality

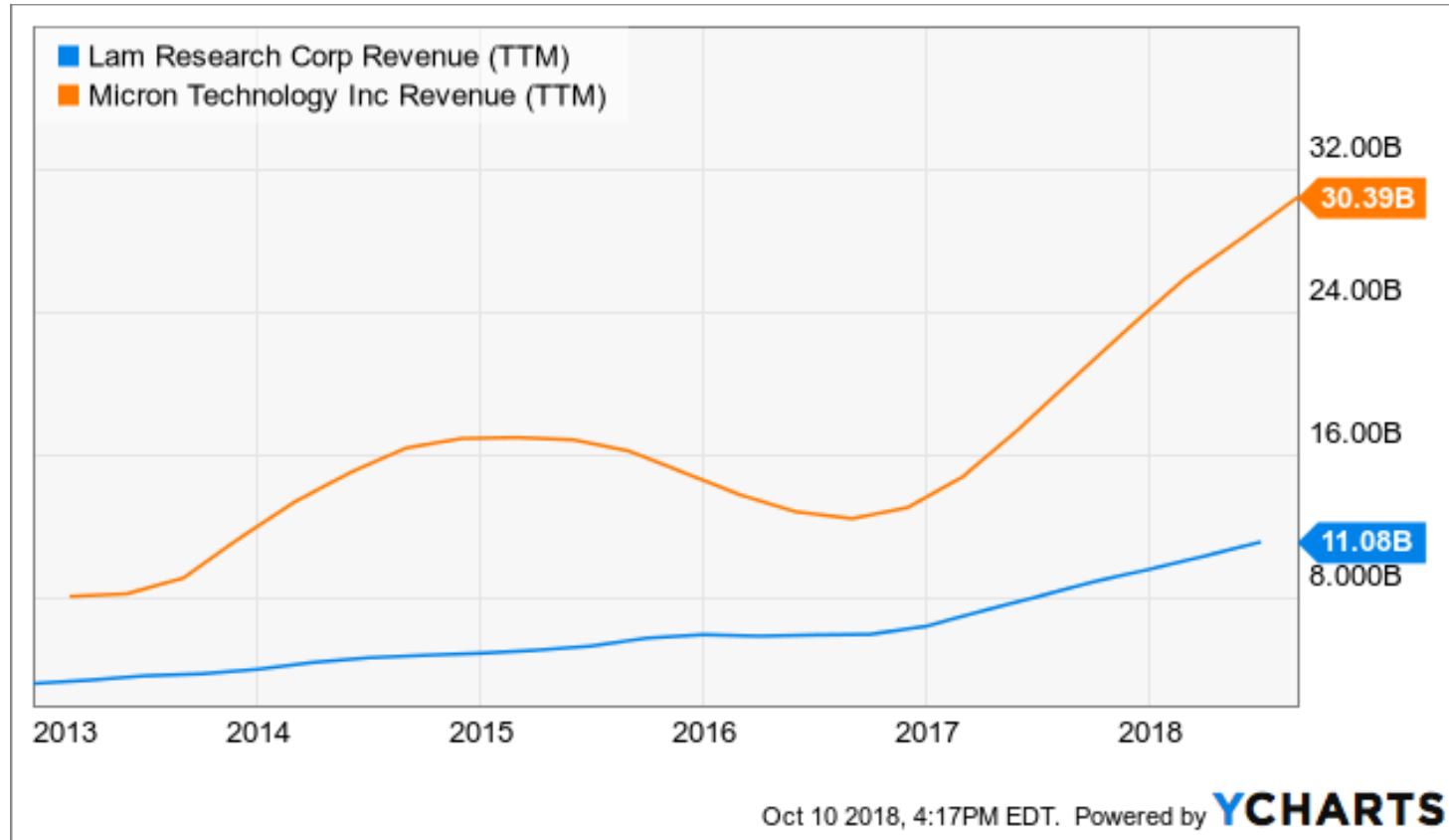
Well-published at this point, customer equipment investment spending has softened near term as industry participants continue to strive for discipline and sustainability in their businesses. While it is true to say that the short-term headlines reflect themselves in lower calendar Q3 guidance than we were anticipating earlier, we consider the change a strong, positive long-term influence.

Martin Anstice, CEO, Lam Research (July 2018)

Lam's business is perceived as being as cyclical as the wider chip manufacturing industry the company serves. I believe this is unfair because the company has not historically exhibited the wild swings in revenues and margins that its customers are associated with.

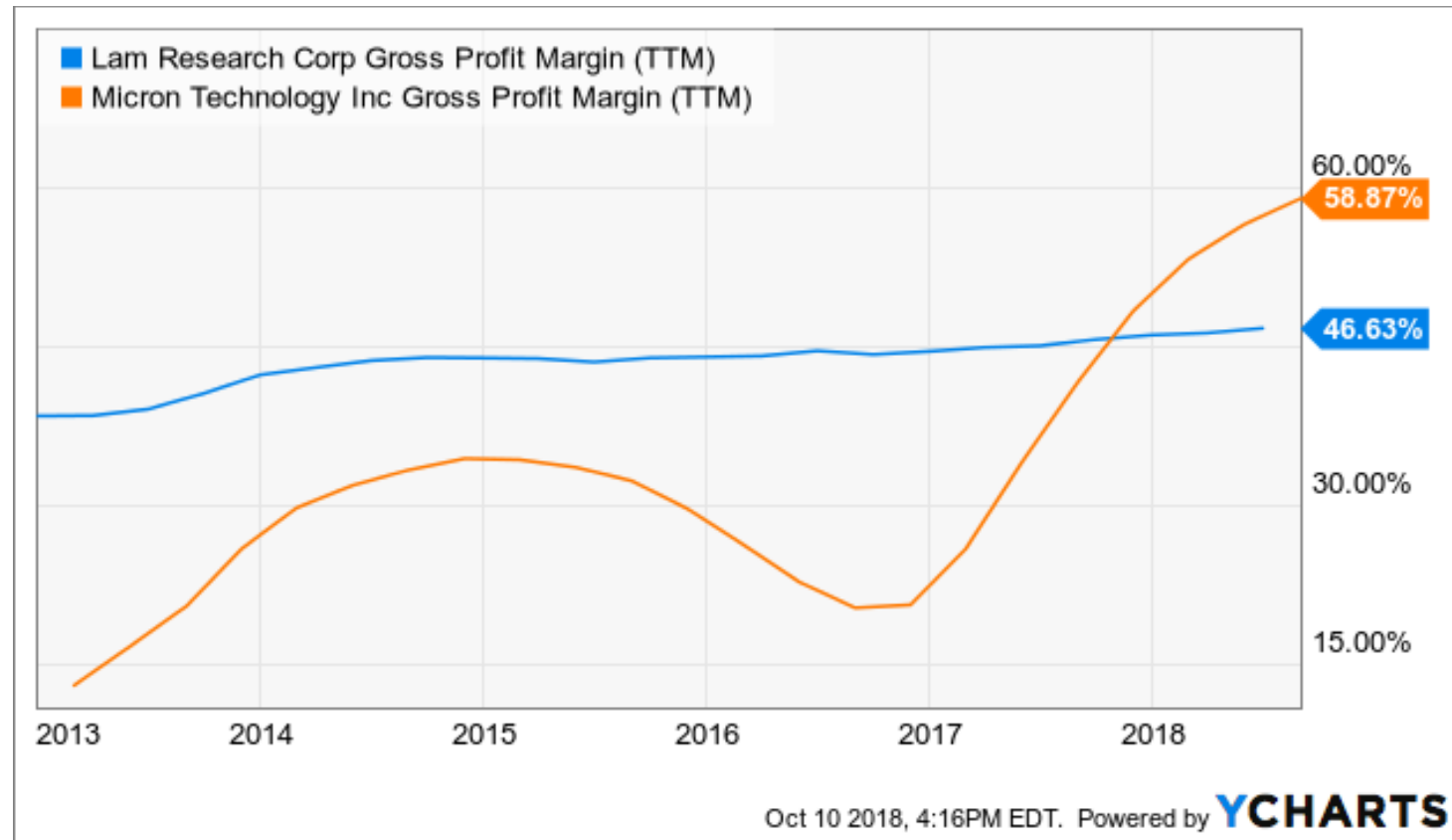
Exaggerated Perception of Cyclicalty

Semiconductor Equipment vs Semiconductor Manufacturing Companies - Lam vs Micron



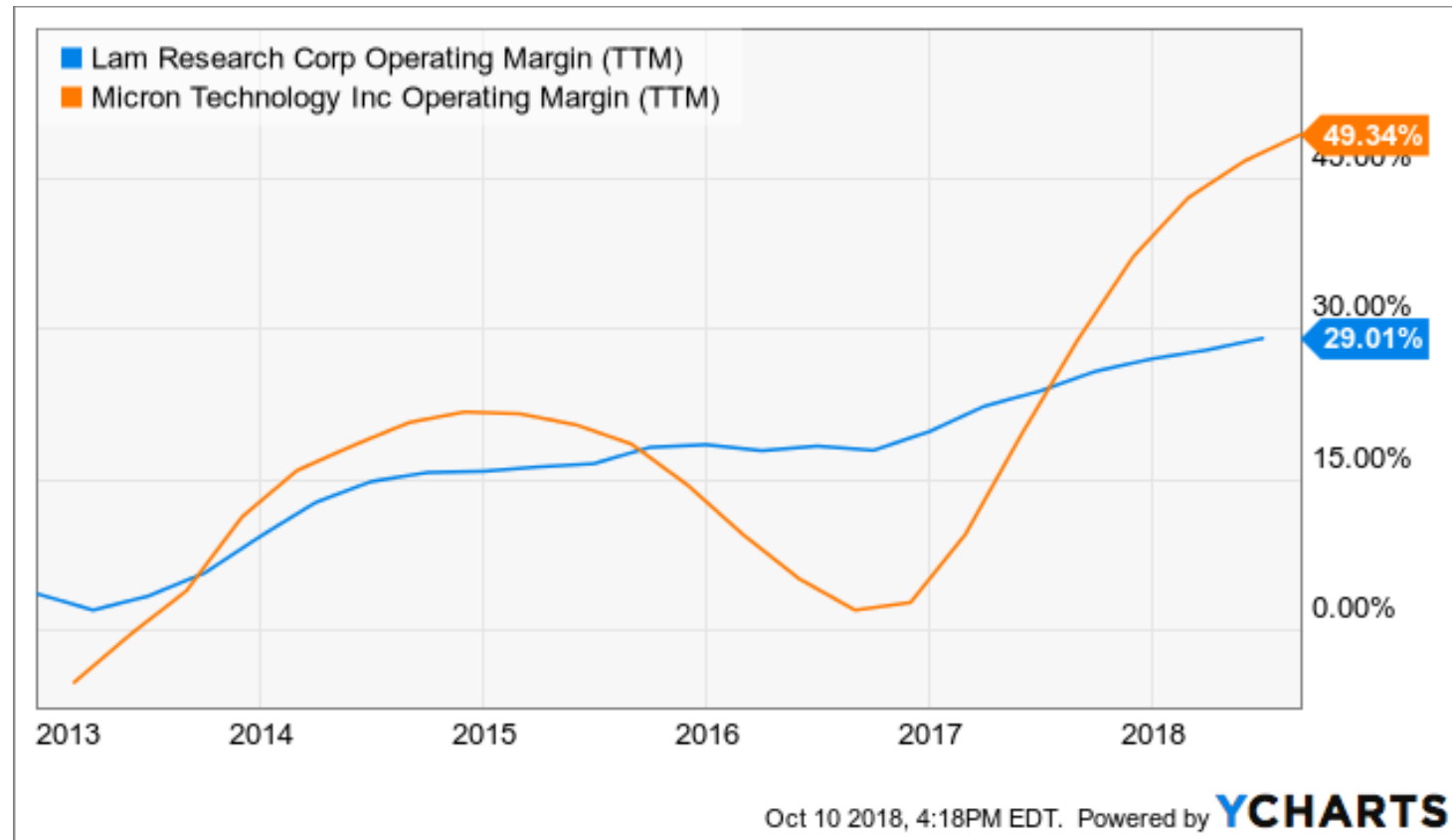
Exaggerated Perception of Cyclicity

Semiconductor Equipment vs Semiconductor Manufacturing Companies - Lam vs Micron



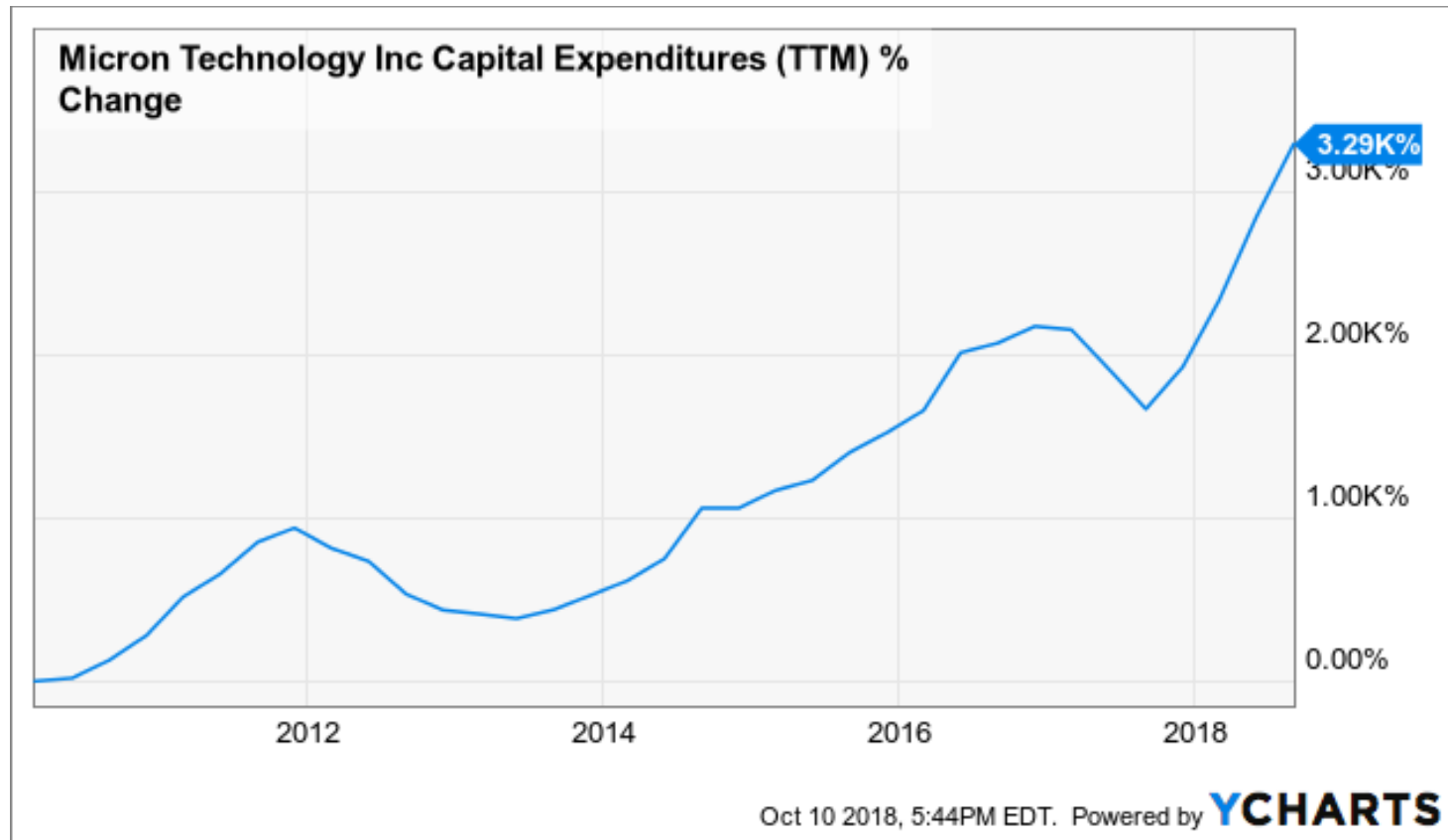
Exaggerated Perception of Cyclicity

Semiconductor Equipment vs Semiconductor Manufacturing Companies - Lam vs Micron



Exaggerated Perception of Cyclicity

Micron CAPEX Translates into Revenue for Lam - Reflective of Customer Demand Trend



We expect industry cyclicalality to be more dampened than in the past as industry supply growth from node transitions slows structurally and supply growth requires higher levels of Capex. In addition, we continue to see robust diversified demand drivers and are confident in the long-term outlook for our business

**Sanjay Mehrotra, CEO, Micron
Technology (September 2018)**

Radically Different Industry Dynamics

Semi Manufacturing CAPEX Translates to Revenue for Lam

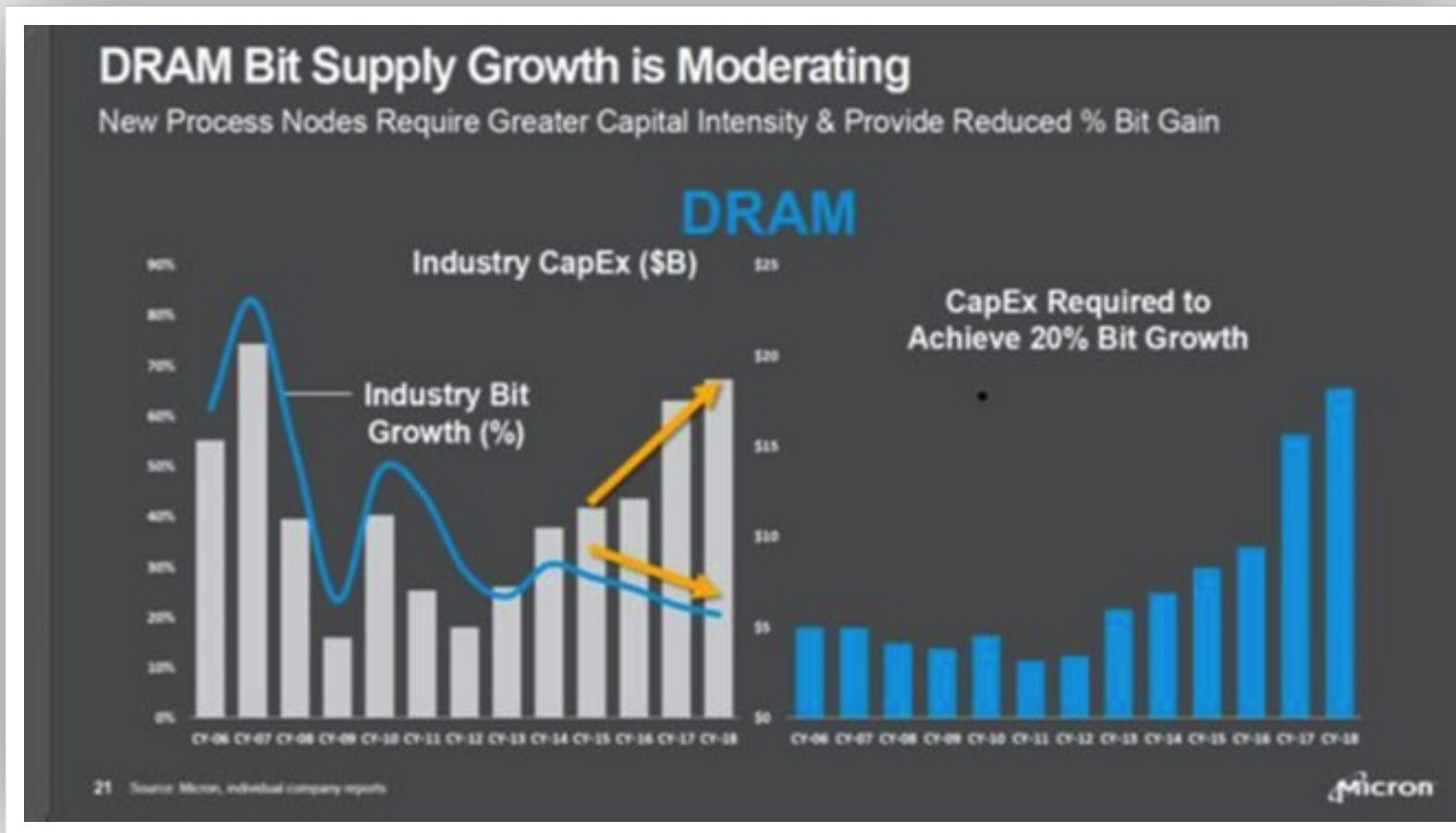
All CAPEX not created equal: As the semi manufacturers like Micron, Samsung and SK Hynix transition to smaller nodes, the processing steps involved increase. Consequently manufacturing equipment and space requirements go up while the overall capacity declines. The rule of thumb is each migration to a smaller node reduces capacity by 5 to 10%. Furthermore capital intensity at each node migration continues to increase, which should continue to make industry participants more disciplined and enhance pricing power over time.

CAPEX to balance out loss of throughput from node transitions

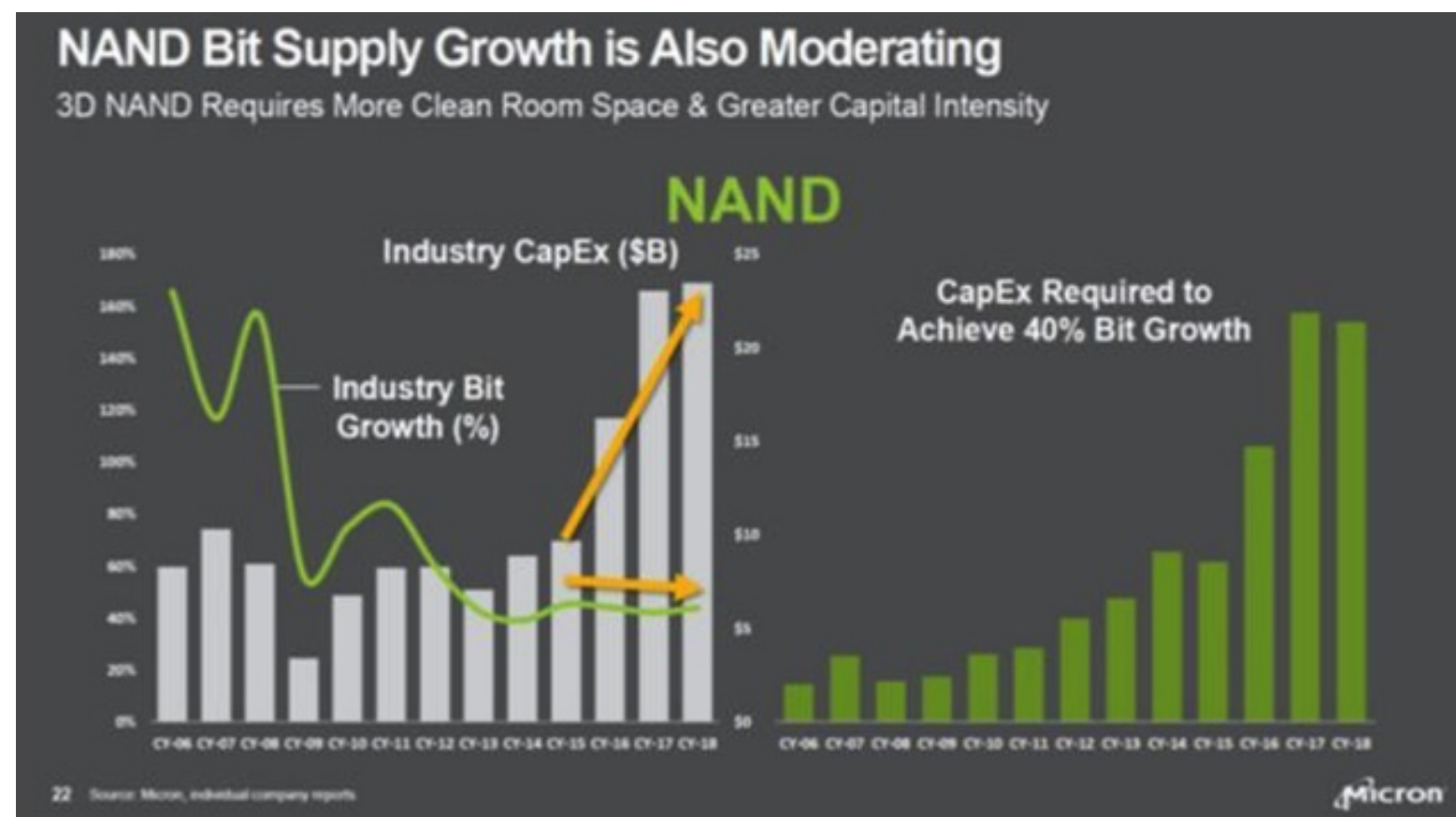
CAPEX to deliver bit growth from node migrations as opposed to incremental wafer throughput

CAPEX to close technology gap with competitors in terms of node migrations i.e. cost per bit reduction

Capital Intensity and Yield of DRAM with Node Shrink



Capital Intensity and Yield of NAND with Node Shrink



COMPELLING UNIT COST ECONOMICS

Economics of DRAM

WFE

Bit Growth

Cost per Bit

2007

\$13B

90%

20x

2018

\$13B

20%

1x

Economics of NAND

WFE

Bit Growth

Cost per Bit

2007

\$6B

125%

50x

2018

\$15B

45%

1x

Wafer Fab Equipment (WFE) Market

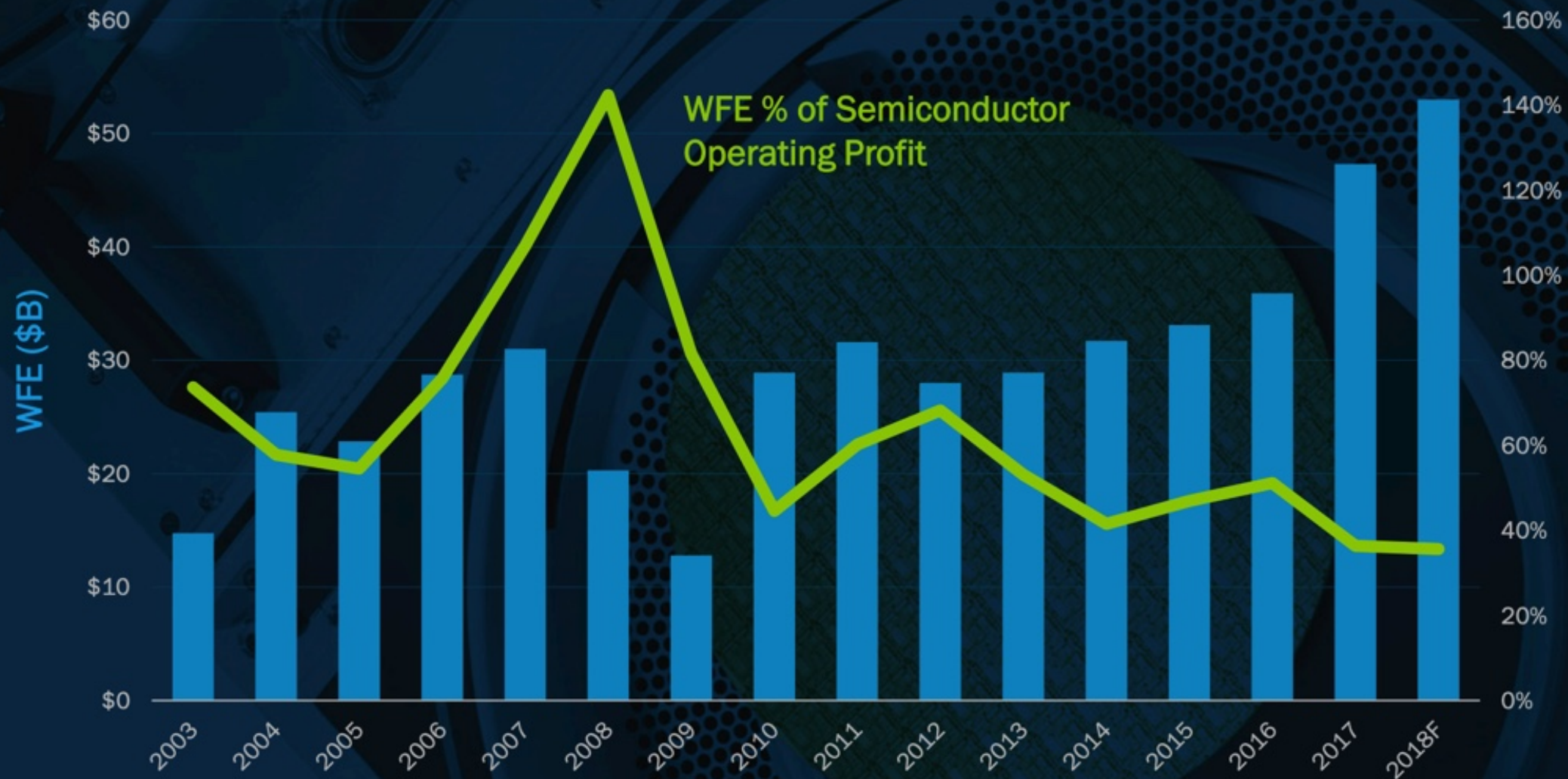
**We now plan overall 2018 WFE up
year-over-year in the single-digit range.
We expect the September quarter to be the
low point of our calendar year. We remain
optimistic about our mid-term and
long-term opportunity and continue to
target Lam's outperformance this year
and long-term.**

**Martin Anstice, CEO, Lam Research (July
2018)**

WFE Dynamics

- Dynamics are changing due to a plethora of end-user demand drivers including PC, Artificial Intelligence, Cloud, Big-Data, IoT, Virtual/Augmented Reality, Smart/Autonomous Vehicles and Robotics
- Demand expectations for DRAM through 2021 are at 20+% CAGR. Annual CAPEX estimates to achieve 20% DRAM bit growth are approaching \$20bn.
- Demand expectations for NAND through 2021 are at 40+% CAGR. Annual CAPEX estimates to achieve 40% NAND bit supply growth are approaching \$23bn.
- Foundry spend is likely to be higher in 2019 given reports of pushouts (into 2019) by industry stalwart TSMC
- Intel's difficulties in meeting demand for high-end PC processors and in its 10nm node migration are well publicized. Both will require significant CAPEX spend
- Micron among others has recently announced increases for both the current year and 2019 CAPEX budgets

CUSTOMER ECONOMICS COMPELLING TO RAMP WFE INVESTMENTS



To fully understand our September business volume trajectory, the following headlines that underpin our belief in the extraordinary value proposition of memory strength long-term are important. We have the confidence in the long-term value and opportunity because memory and storage is increasingly prominent in the computer and systems integration roadmaps of the industry with fundamental and broadening demand drivers.

Martin Anstice, CEO, Lam Research (July 2018)

We do expect September to be the low point and we'll be on a positive trajectory in December. And we'll report, I guess, at that time the magnitude of it but we would not have commented if we didn't think it was material.

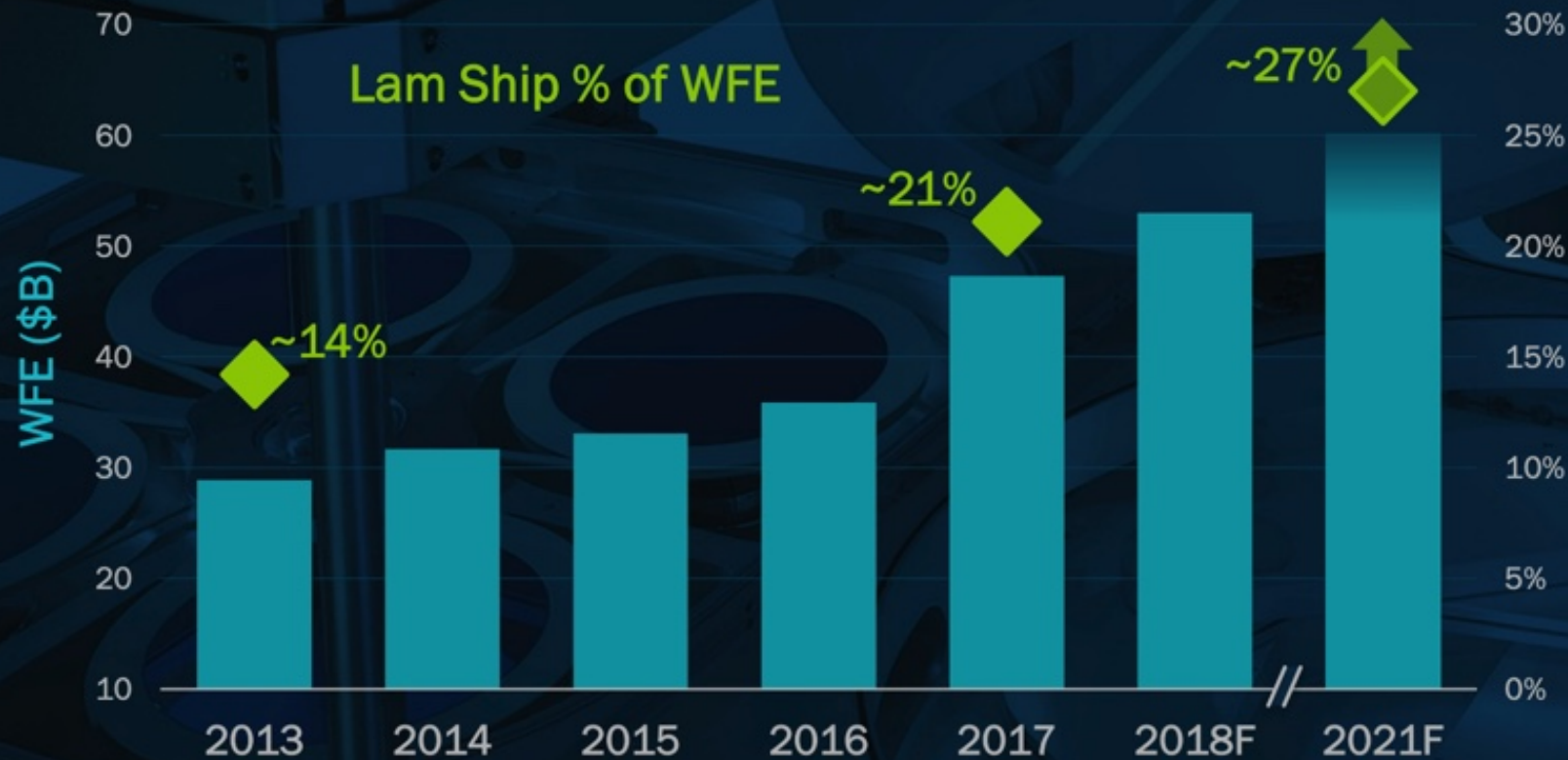
**Martin Anstice, CEO, Lam Research
(July 2018)**

Lam's Share of WFE

In 2017, our reported shipments were approximately 21% of WFE versus 18.5% in the prior year and that compares with 14.2% in the first full-year after the Lam Novellus merger. Lam delivered a remarkable sixth consecutive calendar year of growth and industry outperformance, a by-product of high quality strategies and execution jointly with our customers. Over that period, Lam has grown shipments by a cumulative annual growth rate of 24% approximately three times the rate of WFE growth.

Martin Anstice, CEO, Lam Research

DELIVER GROWTH AND SHAREHOLDER VALUE

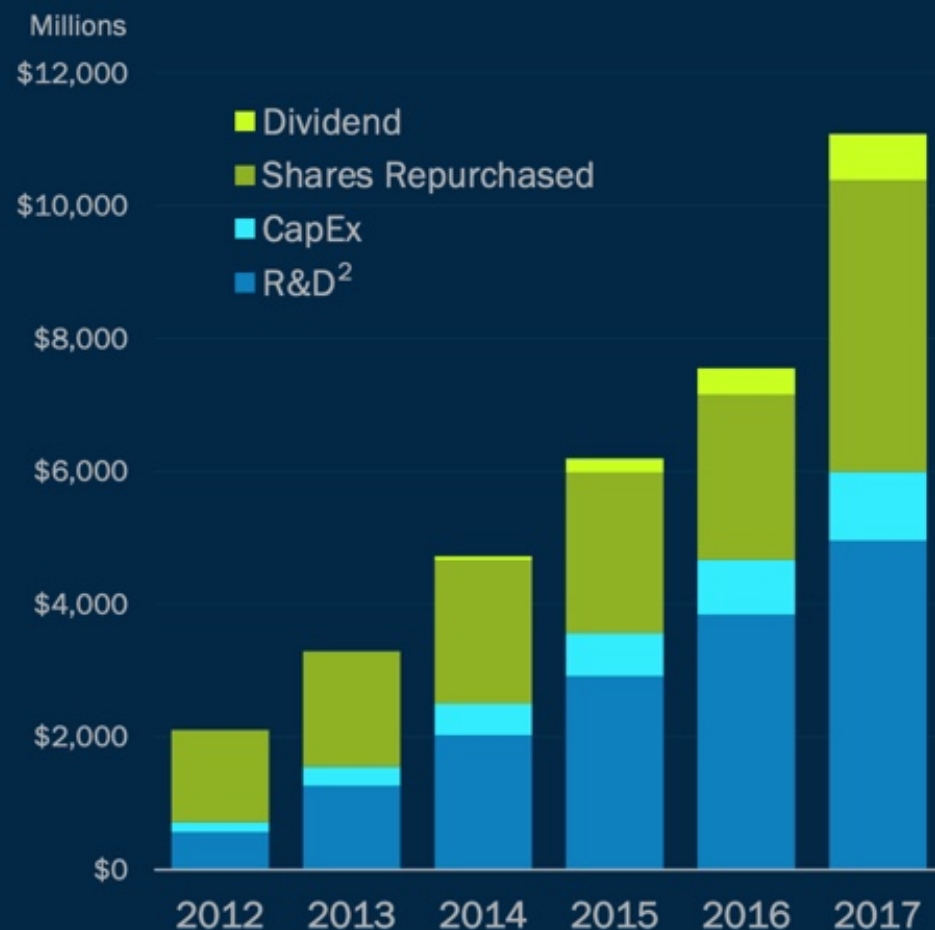


Plan to return at least
50%
of Free Cash Flow
over the next five years

Shareholder Returns and Capital Allocation

RETURNING VALUE TO SHAREHOLDERS

Cumulative Investments and Capital Return¹



- Generated over **\$5.6B** in Free Cash Flow from 2012 to 2017
- Cumulative investment in R&D and CapEx of **~\$6.0B** since 2012
- Initiated quarterly dividend of \$0.18/share in 2014, increasing over time to **\$0.50** in 2017
- Executed **~\$4.4B** in share repurchases from 2012 to 2017
- Returned **~90%** of FCF in dividends and share repurchases from 2012 to 2017

¹ Data reflect financial contribution from Novellus Systems following Lam's acquisition on June 4, 2012.

² Data are presented on a non-GAAP basis. A reconciliation of U.S. GAAP results to non-GAAP results can be found at the end of this presentation.

CAPITAL ALLOCATION STRATEGY

Capital Return

Plan to return at least 50% of Free Cash Flow over the next five years

Dividend

Increase quarterly dividend 120% to \$1.10/share, with a bias to grow over time

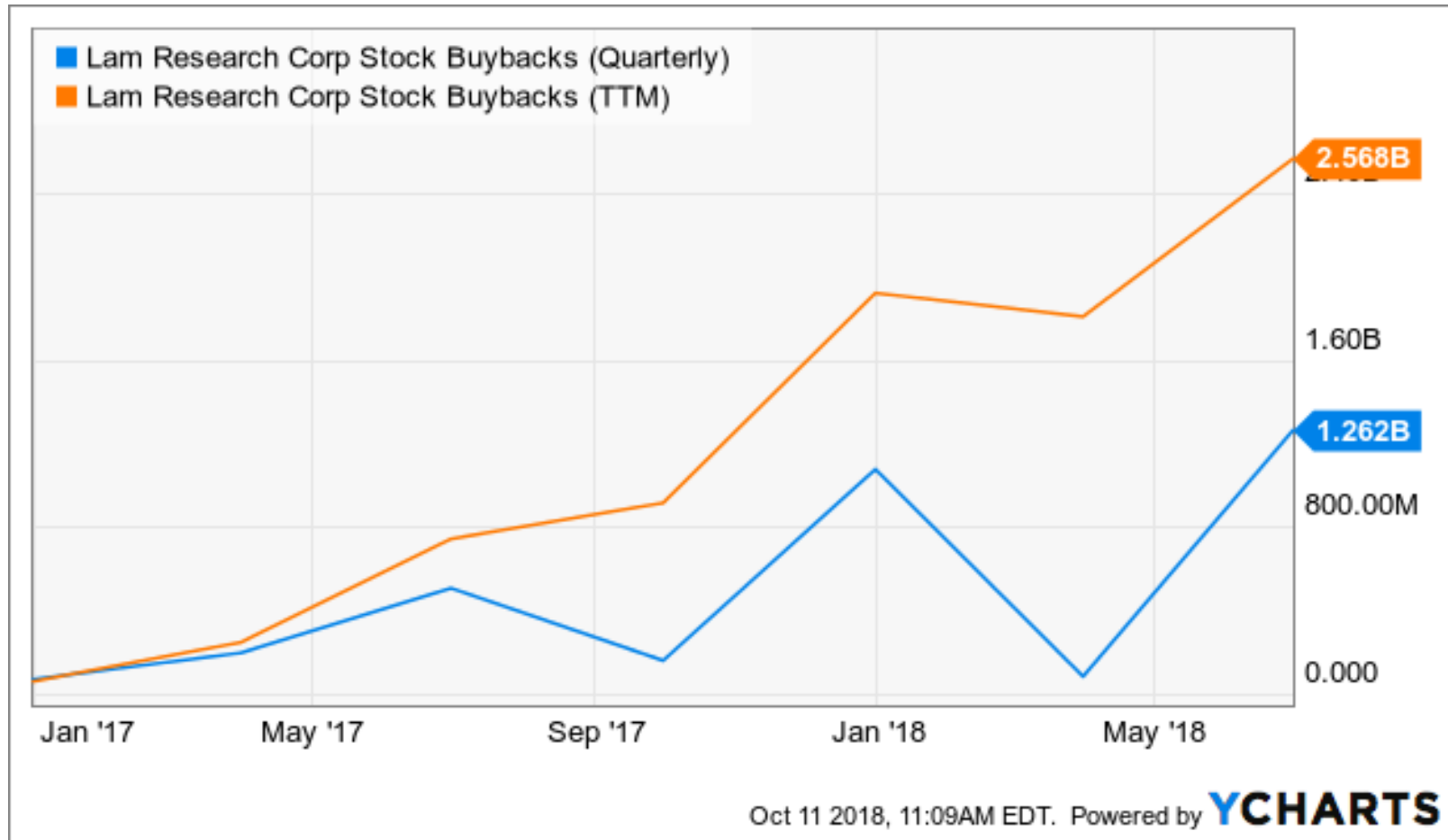
Share Repurchase

\$2B additional share repurchase authorization;
\$4B total share repurchase authorized since Nov 2017

Dividend Yield

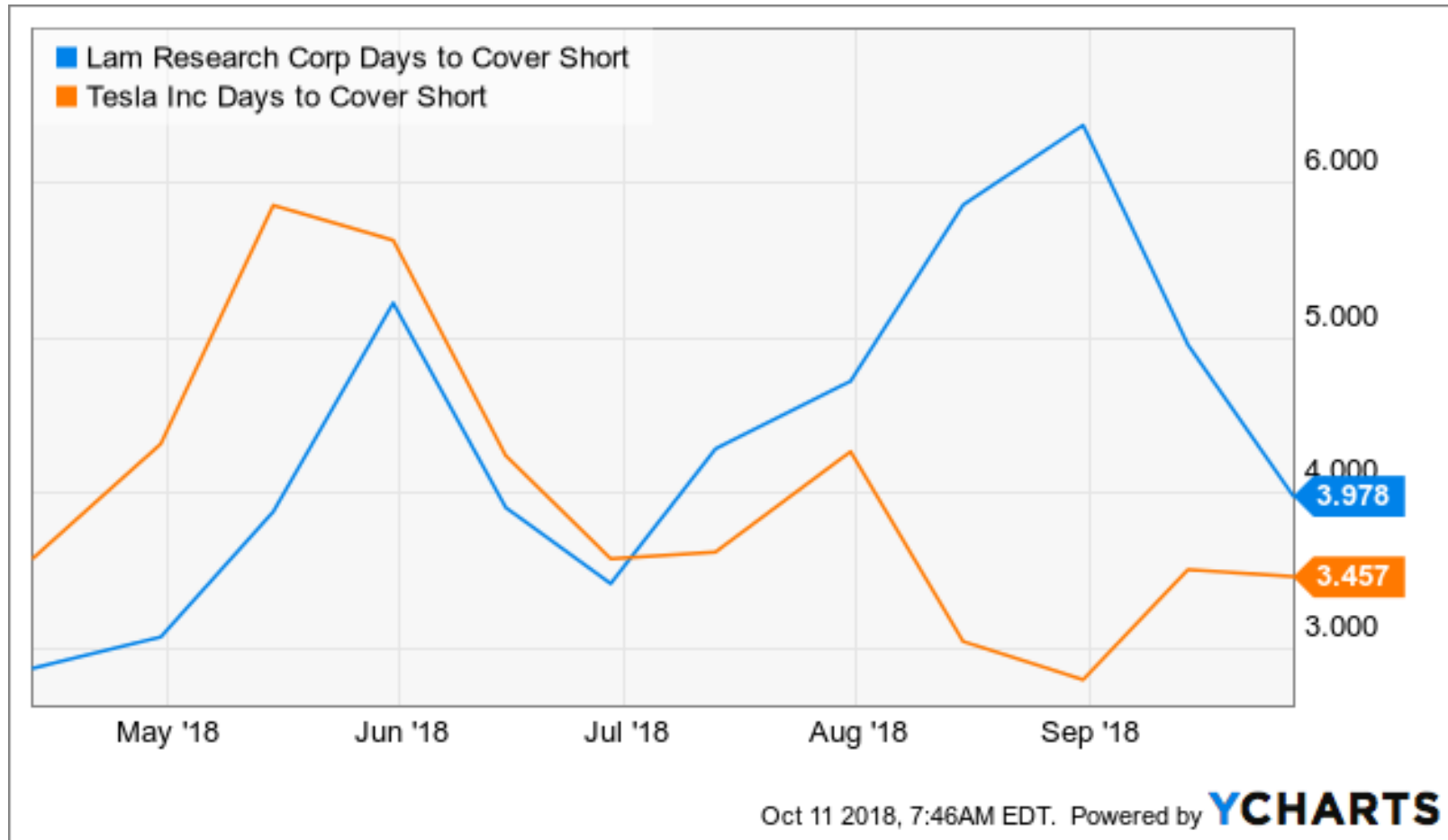


Stock Buybacks



Short Interest

Short Interest

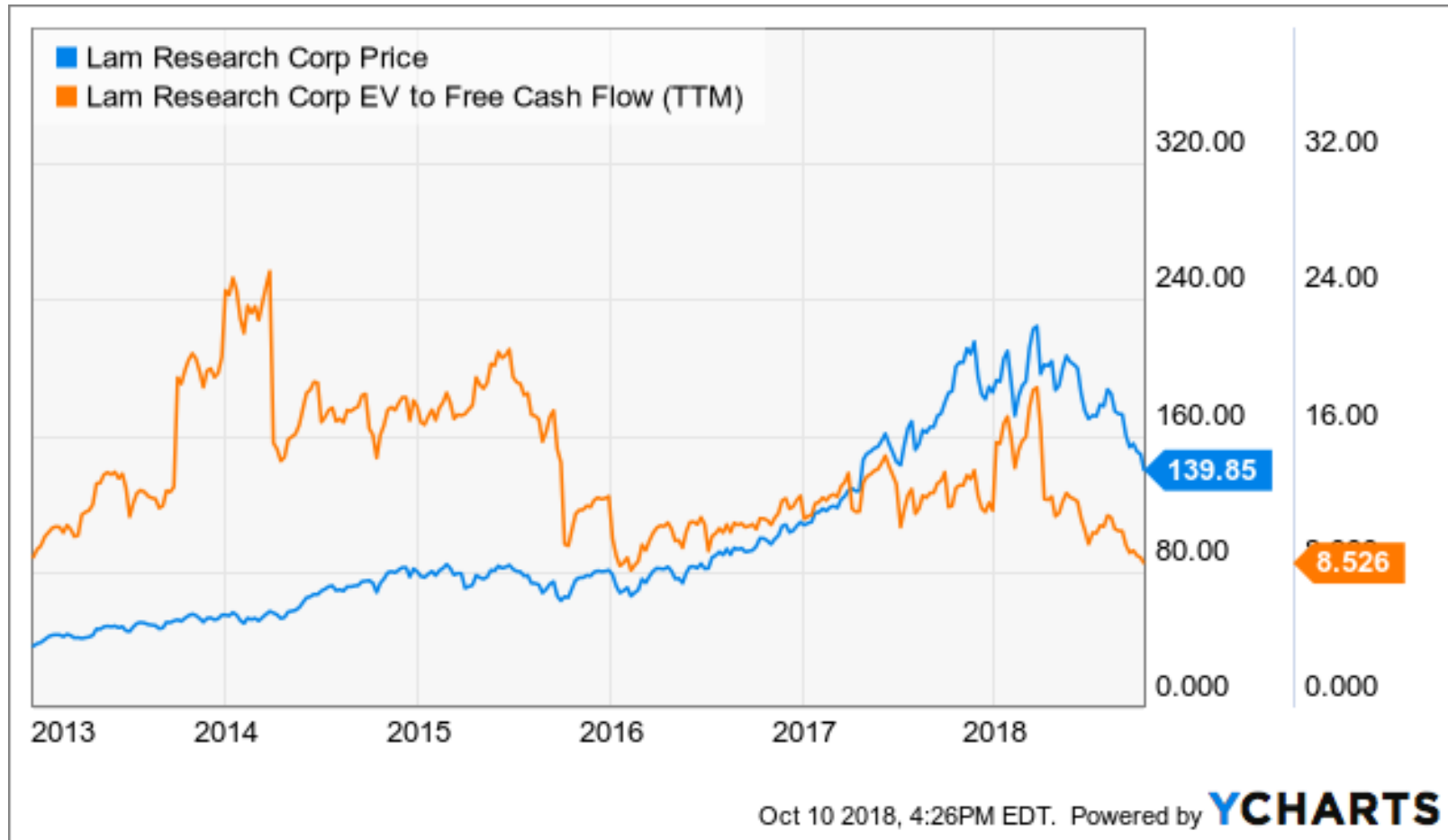


Valuation

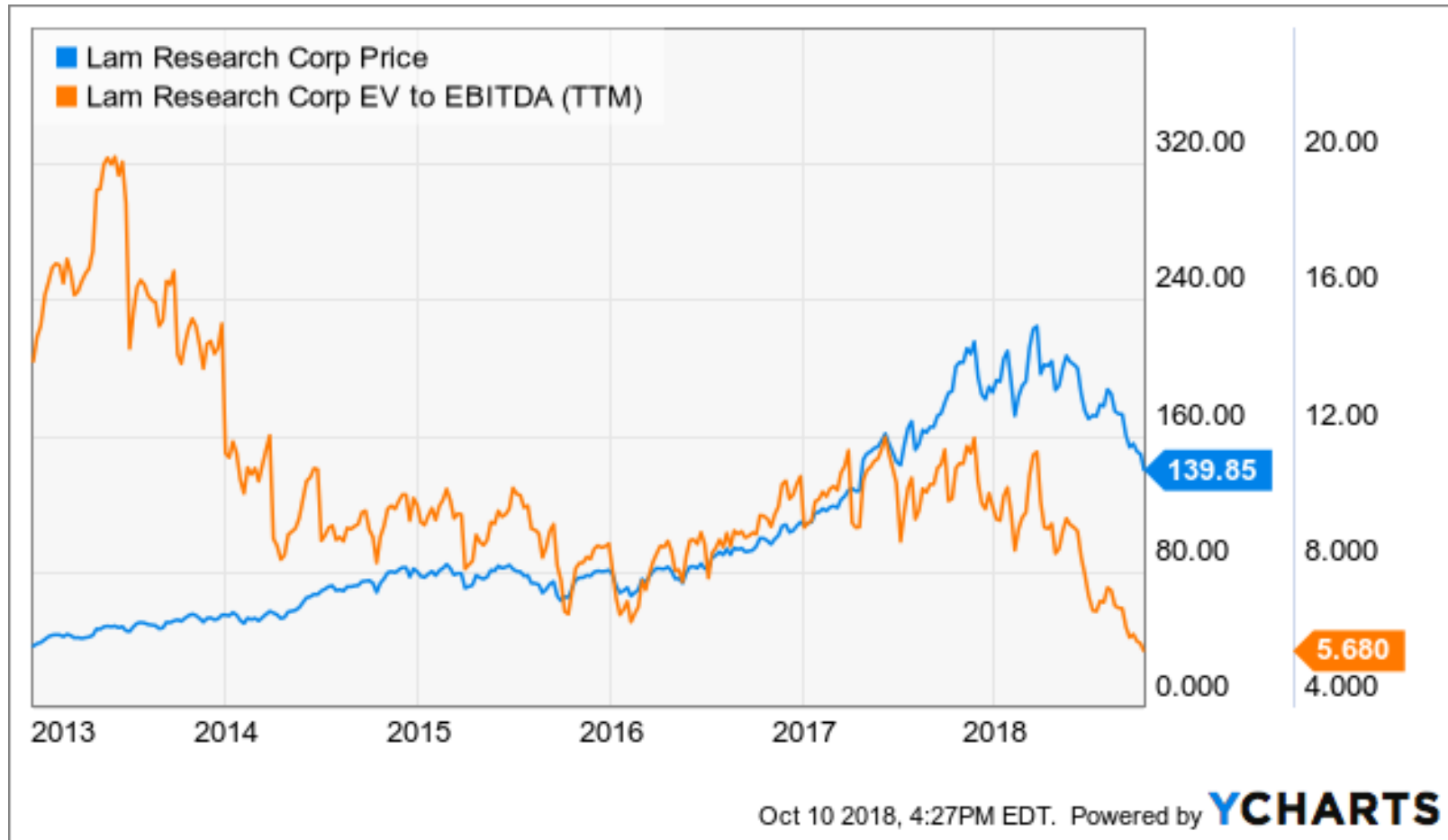
Price Action



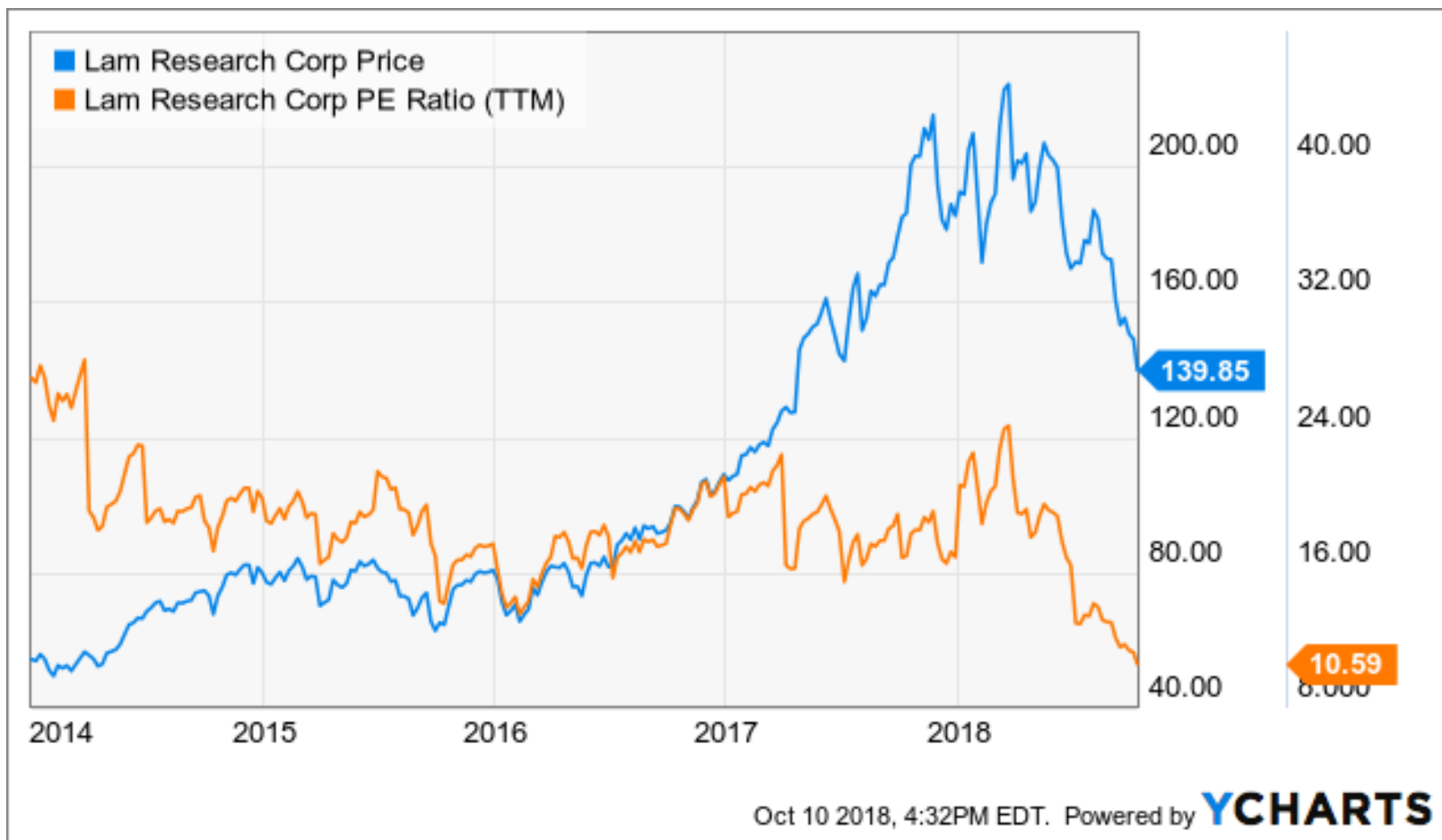
Valuation: EV/FCF



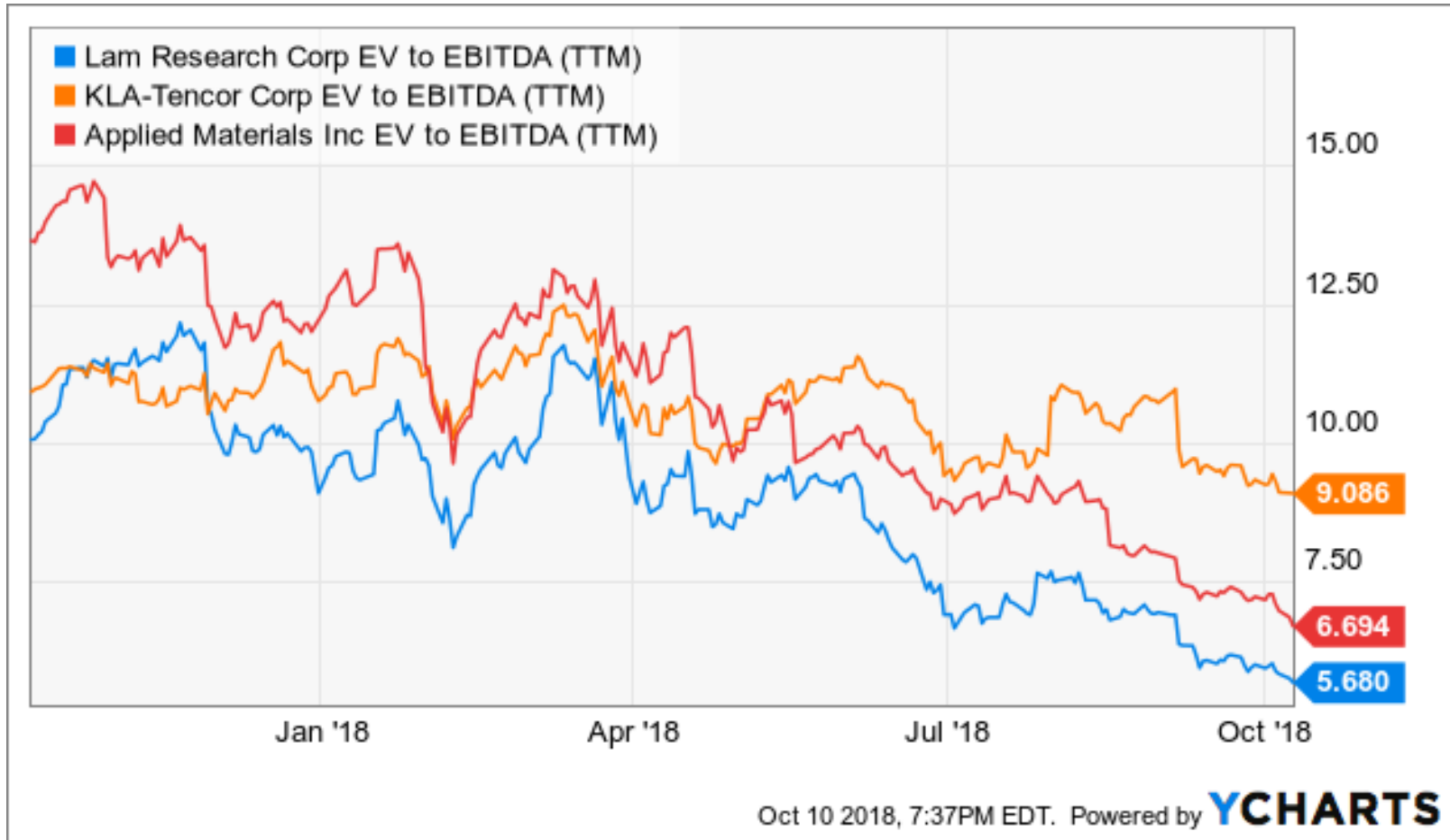
Valuation: EV/EBITDA



Valuation: P/E



Valuation Relative to Peers



This is a year characterized by the following. First, the increased prominence of silicon and in turn, the equipment industry in the creation of value for the global economy. Two, rational, disciplined spending by our customers at the highest level in history, supported by the highest revenues in profits in their industry. Three, unmatched outperformance opportunity, we believe, for Lam.

Martin Anstice, CEO, Lam Research (July 2018)