



U.S. Semiconductor Capital Equipment

Water a Little Choppy but We Would Still Jump in; Prefer NAND Recovery

This is a choppy time for the semi cap group as we've seen the latest iteration of trade talks, which has weighed on the semiconductors for almost two years. We believe this is more noise than structural change; long term we still see a consolidated market that should grow at a slightly faster rate than the GDP+ semi market. We are introducing the Semiconductor Capital Equipment Industry with a Neutral view, as we like the Industry's characteristics driven by increasing spend per unit of capacity, but we don't see a clear near-term catalyst; near-term risk to estimates (elevated Logic spend and timing of Memory recovery) and the latest trade disruption need to be accounted for.

Company Ratings: We are initiating on **LCRX (OW, PT \$315)** given our preference for NAND vs Foundry/Logic, **AMAT (EW, PT \$60)** and **KLAC (EW, PT \$170)** with company-specific thoughts starting on p. 21. The key industry thoughts/debates are:

WFE in 2020 – Flat, Up, or Down? Six months ago WFE spend was expected up double digits on the back of robust Foundry/Logic and recovery in Memory. Fast forward to today, expectations are really across the board with Gartner/VLSI down 15%/7%, respectively, while companies are somewhere in between flat to still up double digits. We are modeling WFE +5% and do see some downside to company estimates, but valuations are much more reasonable here vs. semis even on those lower numbers.

Foundry Run-rate Seems Hot, Likely Down in 2H: We see a strong demand cycle given 1) China 5G basestation buildout, 2) AMD and NVDA at 7nm and a handset recovery led by Huawei and AAPL, but spending has likely gotten ahead of these drivers. TSMC capex spend was \$5.6B (+49% Y/Y) in Q4 and \$6.4B (+159%) in Q1, but is likely down 30-40% Q/Q in Q2 and down another 40% into 2H based upon their annual guidance of \$15-16B. Samsung (5nm) and SMIC help offset a little but we still see downside to Foundry spend in the 2H. Huawei block further complicates this but any shift to QCOM/MTK/Samsung should offset those lost volumes at TSMC and/or Samsung.

Better Growth Profile/Industry Dynamics Than Multiples Imply: WFE grew at 7% over the last five years vs growth in the Analog semi market at 2%, yet semi cap trades at a sharp discount. We understand customer concentration, end market exposure, and lower margins, but this market is consolidated with stable share (top 5 ~80%), strong capital returns, and significant barriers to entry (increasing R&D costs), which should warrant better multiples.

Less Concerned on Memory Recovery led by NAND: The Memory market had great '17/'18 but was down sharply in 2019. We are comfortable after a down 40%+ year that Memory spend should accelerate at some point led by NAND with DRAM improving later in the year. Spending per wafer continues to rise (128L underway) and DRAM moves to more advanced nodes. We understand spot pricing has been declining leading to concerns but we look for Mobile volumes in the 2H to help fill in the demand and expect equipment spend to continue as planned.

Barclays Capital Inc. and/or one of its affiliates does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

PLEASE SEE ANALYST CERTIFICATION(S) AND IMPORTANT DISCLOSURES BEGINNING ON PAGE 50.

INITIATING COVERAGE

U.S. Semiconductor Capital Equipment NEUTRAL

from N/A

For a full list of our ratings, price targets and earnings in this report, please see table on page 2

U.S. Semiconductor Capital Equipment

Blayne Curtis

+1 617 342 4101

blayne.curtis@barclays.com

BCI, US

Thomas O'Malley

+1 212 526 0692

thomas.o'malley@barclays.com

BCI, US

Baylie Harris

+1 212 526 2604

baylie.harris@barclays.com

BCI, US

每日免费获取报告

1. 每日微信群内分享**7+**最新重磅报告；
2. 定期分享**华尔街日报、金融时报、经济学人**；
3. 和群成员切磋交流，对接**优质合作资源**；
4. 累计解锁**8万+行业报告/案例，7000+工具/模板**

申明：行业报告均为公开整理，权利归原作者所有，
小编整理自互联网，仅分发做内部学习。

限时领取【行业资料大礼包】，回复“2020”获取

手机用户建议先截屏本页，微信扫一扫

或搜索公众号**“有点报告”**

回复<进群>，加入每日报告分享微信群



(此页只为需要行业资料的朋友提供便利，如果影响您的阅读体验，请多多理解)

Summary of our Ratings, Price Targets and Earnings Estimates in this Report

| Company | Rating | | Price | | Price Target | | | EPS FY1 (E) | | | EPS FY2 (E) | | |
|---|--------|-----------|-----------|-----|---------------|------|-----|--------------|------|-----|--------------|------|--|
| | Old | New | 22-May-20 | Old | New | %Chg | Old | New | %Chg | Old | New | %Chg | |
| U.S. Semiconductor Capital Equipment | | NR | Neu | | | | | | | | | | |
| Applied Materials Inc. (AMAT) | N/A | EW | 54.39 | N/A | 60.00 | - | N/A | 3.71 | - | N/A | 3.94 | - | |
| KLA Corporation (KLAC) | N/A | EW | 173.00 | N/A | 170.00 | - | N/A | 9.99 | - | N/A | 9.86 | - | |
| Lam Research Corporation (LRCX) | N/A | OW | 261.14 | N/A | 315.00 | - | N/A | 15.23 | - | N/A | 17.03 | - | |

Source: Barclays Research. Share prices and target prices are shown in the primary listing currency and EPS estimates are shown in the reporting currency.

FY1(E): Current fiscal year estimates by Barclays Research. FY2(E): Next fiscal year estimates by Barclays Research.

Stock Rating: OW: Overweight; EW: Equal Weight; UW: Underweight; RS: Rating Suspended

Industry View: Pos: Positive; Neu: Neutral; Neg: Negative

CONTENTS

| | |
|---|----|
| Semiconductor Capital Equipment – Investment Highlights | 4 |
| Jump Right in the Water's... Well a Bit Choppy; Group Lacking a Catalyst as Huawei Restriction Adds to Complications but We Still Like the Long-term Growth/Profile | 4 |
| What We Like..... | 5 |
| Key Debates..... | 6 |
| Trade War and Export Restrictions – Overhang Yes but Impact May Not be as Severe | 6 |
| WFE in 2020 – Flat, Up, or Down? We Believe Estimates Still Need to Come Down | 7 |
| Foundry Run-rate Seems Hot, Likely Down in 2H..... | 8 |
| What We Like..... | 11 |
| Better Growth Profile Than Multiples Imply | 11 |
| Less Concerned on Memory as It Should Return to Growth led by NAND..... | 16 |
| Services Businesses Contribute to Less Cyclical Industry | 19 |
| Key Investment Points by Company..... | 21 |
| Applied Materials Inc. (AMAT)..... | 21 |
| Positives | 21 |
| Negatives | 21 |
| KLA Corporation (KLAC) | 22 |
| Positives | 22 |
| Negatives | 23 |
| Lam Research (LRCX) | 24 |
| Positives | 24 |
| Negatives | 24 |
| Semi Cap Background | 25 |
| The Semiconductor Manufacturing Process Overview..... | 25 |
| Deposition | 26 |
| Lithography..... | 28 |
| Material Removal & Cleaning..... | 29 |
| Process Control..... | 31 |
| Photoresist Processing | 32 |
| Operating Metrics..... | 34 |
| Valuation Methodology | 35 |
| Investment Risks & Risk to Our Thesis | 36 |

U.S. Semiconductor Capital Equipment – Investment Highlights

Jump Right in the Water's... Well a Bit Choppy; Group Lacking a Catalyst as Huawei Restriction Adds to Complications but We Still Like the Long-term Growth/Profile

This is a choppy time for the semi cap group as we've seen the latest iteration of the trade drama that has weighed on the semiconductor group for almost two years. Clearly, we are not going to fully discount the implications of the recent crackdown on equipment sales to China, and suppliers to Huawei, but we do believe this is more noise than a structural change. Long term, we still see a consolidated market that should grow at a slightly faster rate than the GDP+ semi market. The key here is that U.S. semi cap equipment companies maintain a dominant share in several critical categories and we don't see how it's possible that leading edge Logic or Memory is produced in the foreseeable future without US equipment. Wherein prior trade iterations, we saw Huawei navigate the semi block with a combination of non-US and domestic components. Longer term, yes, these continued trade escalations will likely further invigorate efforts to create alternatives to US components. But from here, we have a hard time handicapping which administration will oversee the trade policy next year and what the outcome will be. We assign a Neutral view to the Semiconductor Capital Equipment Industry to account for this latest trade disruption as well as some near-term risk to estimates (elevated Logic spend and slower Memory recovery) but we do like the long-term industry characteristics, driven by increasing spend per unit of capacity. We ultimately settled on the Industry EW as we just don't see a clear catalyst for the group. **We initiate on Lam Research (LRCX) as Overweight given our preference for NAND vs. Foundry/Logic and Applied Materials (AMAT) and KLA (KLAC) as Equal Weight.**

Key Debates

- **Trade War and Export Restrictions – Overhang Yes but Impact May Not Be as Severe:** The U.S. has tightened military export restrictions to China, requiring U.S. companies to attain licenses to sell certain products and mentions semiconductor capital equipment. This comes on the back of a year that has seen a global trade war, tariffs, and bans on sales to ZTE and Huawei. Semi cap companies can still ship to China from non-US subsidiaries under this latest restriction, but any further tightening would materially impact WFE spend as China has grown to 25-30% revenue (majority of which are domestic customers). The second act of this was the tightening of restrictions on Huawei wherein equipment is not allowed to be sold outside of the U.S. if it will be used to produce Huawei designed chips. On May 18, 2020, the Nikkei reported that TSMC will stop building custom chips for Huawei. We understand that this is all part of a negotiation so it's hard to take this one action at face value. If true, we would expect to see orders from alternate suppliers (i.e., QCOM, MTK, Samsung) to increase as competitors try to take share from Huawei but one would have to think that such a drastic move does have some impact on overall demand in the interim. We don't see the announcement from last week that TSMC plans to build a new U.S. fab (N5 node starting in 2021 for production in 2024) as some sea change in Foundry spend and you have to figure the latest Huawei action only a day later further complicated TSMC's thinking. Net net, a scarier perceived cloud than reality but one nonetheless.
- **WFE in 2020 – Flat, Up, or Down? We Believe Estimates Still Need to Come Down:** Six months ago, the signal was that WFE spend would be up double digits on the back of robust Foundry/Logic and a recovery in Memory. Fast forward to today, expectations are really across the board with Gartner/VLSI down 15%/7%, respectively, while companies are somewhere in between flat to still up that double digits. In Figure 3, we

show implied WFE (semi systems only ex-services) at \$51.7B, up 13% Y/Y. We believe the Industry estimates are too low, but do believe consensus estimates need to come down (Figure 4). As we highlight below, Foundry entered the year at very high levels and has yet to moderate for some vendors (pre this TSMC issue). We actually have more confidence in Memory recovering given the soft 2019 but acknowledge there is some risk as Data Center spend transitions to Mobile. We model WFE (semi only ex-services) at \$48B (+5%) assuming Foundry/Logic +9% and Memory -2%.

- **Foundry Run-rate Seems Hot, Likely Down in 2H:** Foundry saw significant growth in 2019 (Foundry/Logic +54% Y/Y with Foundry alone +70%+) as you saw spend on both the leading edge (5/7nm) to support 5G (Mobile and Infrastructure), Compute, and AI. We still see a strong demand cycle given 1) China 5G basestation buildout, 2) AMD and NVDA at 7nm and a handset recovery led by Huawei and AAPL, but spending has likely gotten ahead of these drivers. TSMC capex spend (Figure 7) was \$5.6B (+49% Y/Y) in Q4 and \$6.4B (+159%) in Q1 but is likely down 30–40% Q/Q in Q2 and down another 40% into 2H based upon their annual guidance of \$15–16B. Samsung and SMIC help offset a little in the 1H but we still see downside to Foundry spend in the 2H.

What We Like

- **Better Growth Profile Than Multiples Imply:** The WFE (wafer front-end) market grew at a 7% CAGR over the last 5 years ('14-'19) as Memory spend (9% CAGR) outpaced Foundry/Logic (6% CAGR). Looking at a longer horizon, these growth rates should be structurally better than the Analog semi market (~4% over last 10 years), but the semi cap group trades at a sharp discount. We understand customer concentration concerns and lower margin profile, but this market is consolidated with stable share and strong capital returns, which should warrant better long-term multiples (if the market is really sustainable at these levels - read below). There is some debate on the direction of 2020 given the COVID disruption and high Foundry spend to end the year, but we do believe the semi cap market should still see sustained long-term growth.
- **Consolidated Industry with Consistent Share and Less Cyclical:** In Figure 3, we show the top 5 semi cap companies (AMAT, ASML, LRCX, TEL, KLAC) have ~80% aggregate share. The Industry has significant barriers to entry given the increasing R&D costs and long-lived lifecycles (~3.5 years moving longer towards 5-7 years) with share within a particular product category driven more by end markets (DRAM vs. NAND etc) than share gains vs. a competitor. This translates into a stable margin profile with GMs of the top 5 companies up 1% on average during 2007–2019. We are the newbies so won't pitch too much of a GM fit on GMs but we do find it curious that AMAT and LRCX GMs are in the mid-40s while many of their customers have superior margins (TSMC, INTC, even Memory in good years). We did witness semi companies move away from growth at all costs to focus more on profitability and capital returns and wonder if this group can make the same transition. If the risk of charging more is that the customer moves away to alternate suppliers, then maybe the current 12–15x multiple is correct but we believe these franchises are more critical to their customers than they are getting compensated for... time will tell.
- **Less Concerned on Memory as It Should Return to Growth Led by NAND:** The Memory market drove WFE expansion with 69% Y/Y growth in 2017 and 36% in 2018 but was down sharply in 2019. The Memory market can be hard to predict, but we are comfortable after a down 40%+ year that Memory spend should accelerate at some point led by NAND with DRAM improving later in the year. Clearly the high Data Center spending levels should slow into the 2H, but we do believe the Mobile market is improving to help offset. On the technology front, spending per wafer continues to rise as it becomes more difficult to stack vertically in NAND (128L underway) and DRAM

moves to more advanced nodes. We forecast the Memory WFE market to decline 2% in '20 and grow 25% in '21.

- **Services Businesses Contribute to Less Cyclical Industry:** Industry cyclical also becomes less of a concern, as market swings are largely partially offset by revenue streams from Services businesses (now 25-30%+ of mix). After a period of strong equipment growth (when most corrections happen), increasing services revenue tends to grow and helps offset the equipment fall-off.

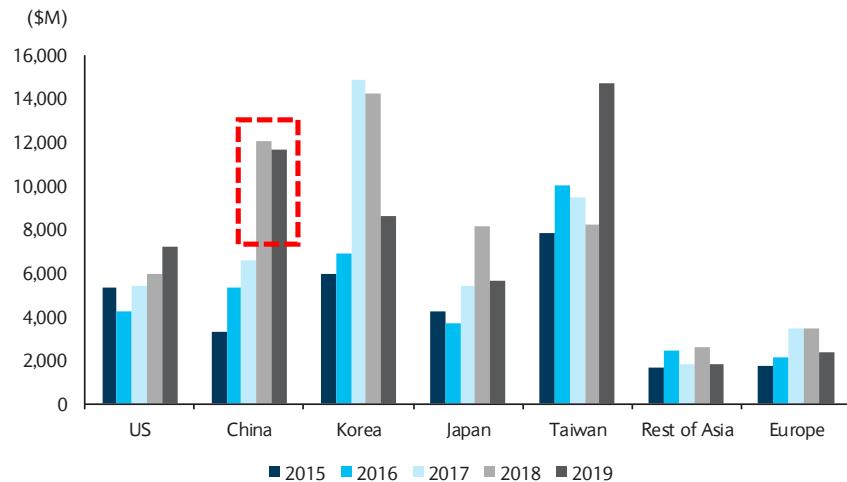
Key Debates

Trade War and Export Restrictions – Overhang Yes but Impact May Not be as Severe

The U.S. has tightened military export restrictions to China, requiring U.S. companies to attain licenses to sell certain products and mentions semiconductor capital equipment. This comes on the back of a year that has seen a global trade war, tariffs, and bans on sales to ZTE and Huawei. Semi cap companies can still ship to China from non-US subsidiaries under this latest restriction, but any further tightening would materially impact WFE spend as China has grown to 25–30% revenue (majority of which are domestic customers). The second act of this was the tightening of restrictions on Huawei wherein equipment is not allowed to be sold outside of the U.S. if it will be used to produce Huawei designed chips. On May 18, 2020, the Nikkei reported that TSMC will stop building custom chips for Huawei. We understand that this is all part of a negotiation so it's hard to take this one action at face value. If true, we would expect to see orders from alternate suppliers (i.e., QCOM, MTK) to increase as competitors try to take share from Huawei but one would have to think that such a drastic move does have some impact on overall demand in the interim. We don't see the announcement from last week that TSMC plans to build a new U.S. fab (N5 node starting in 2021 for production in 2024) as some sea change in foundry spend and you have to figure the latest Huawei action only a day later further complicated TSMC's thinking. Net net, probably a scary perceived cloud than reality but one nonetheless.

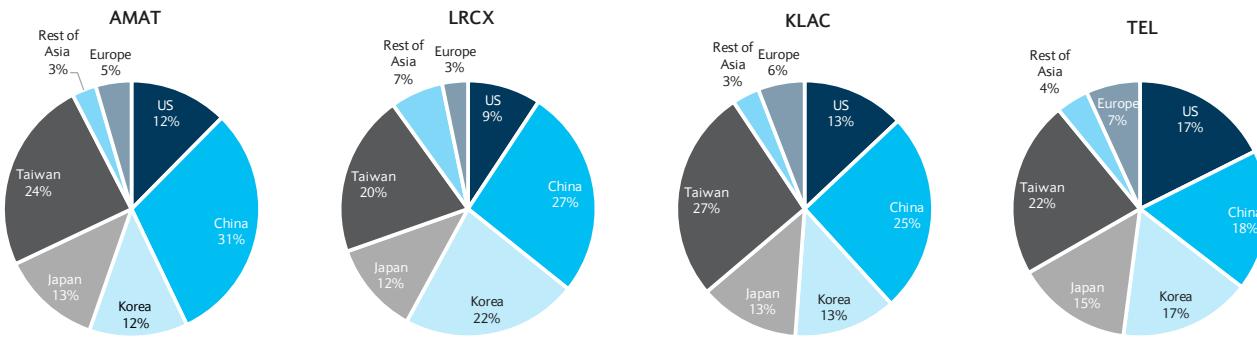
China exposure jumped significantly for the top 5 players in 2018 and remains at the same high percentage (22%) in 2019 (Figure 1). Excluding ASML (higher ASP EUV mostly outside China) that number is 26% while AMAT and LRCX have the highest China exposure comprising 31% and 26% of sales in 2019, respectively. China reached ~\$6B of total WFE spend in 2019 and the region was expected to contribute an additional \$2-3B in 2020. The majority of the China spend (60%+) comes from domestic China, across both Memory and Foundry. YMTC (a Chinese memory company) is likely a large contributor of the domestic spend as it builds out 128L products this year but Foundry is also a contributor, in fact, SMIC recently upped its annual capex by \$1B.

FIGURE 1
Top 5 China Revenue Spikes in 2018/2019



Source: Company Reports, Barclays Research

FIGURE 2
China Has Become the Largest Exposure



Source: Company Reports, Barclays Research

WFE in 2020 – Flat, Up, or Down? We Believe Estimates Still Need to Come Down

Six months ago the signal was that WFE spend would be up double digits on the back of robust Foundry/Logic and a recovery in Memory. Fast forward to today, expectations are really across the board with Gartner/VLSI down 15%/7%, respectively, while companies are somewhere in between flat to still up that double digits. In Figure 3, we show implied WFE (semi systems only ex-services) at \$51.7B, up 13% Y/Y. We believe the Industry estimates are too low, but do believe consensus estimates need to come down (Figure 4). As we highlight below, Foundry entered the year at very high levels and has yet to moderate for some vendors (pre this TSMC issue). We actually have more confidence in Memory recovering given the soft 2019 but acknowledge there is some risk as Data Center spend transitions to Mobile. We model WFE at \$48B (+5%) assuming Foundry/Logic +9% and Memory -2%.

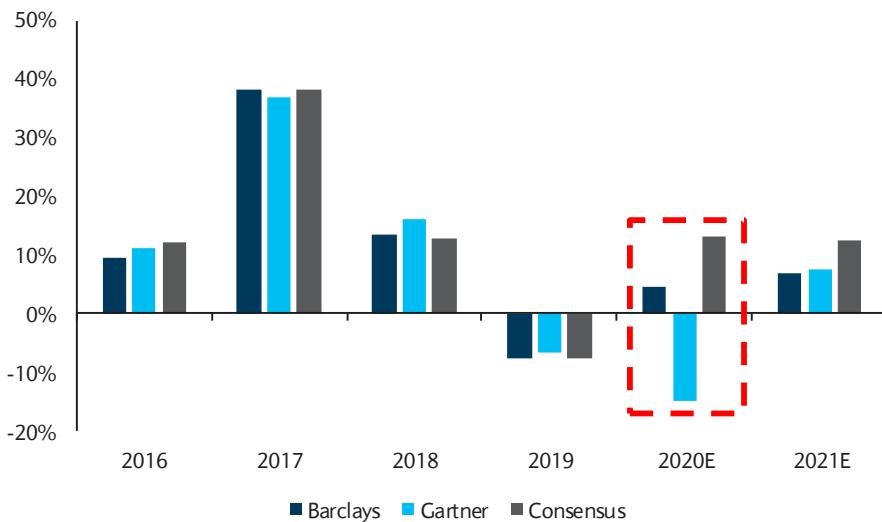
FIGURE 3

Consensus WFE Still up 13% in 2020

| Semi Cap Companies: Top 20 | Consensus Estimates for WFE Revenue (\$M) | | | | | | Y/Y Change | | | | % of Total | | | |
|---------------------------------------|---|-----------------|-----------------|-----------------|-----------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|--|
| | 2017 | 2018 | 2019 | 2020E | 2021E | 2018 | 2019 | 2020E | 2021E | 2018 | 2019 | 2020E | 2021E | |
| Applied Materials (pro forma Kokusai) | \$11,186 | \$11,511 | \$10,573 | \$12,684 | \$13,986 | 3% | -8% | 20% | 10% | 23% | 23% | 25% | 24% | |
| ASML | 6,374 | 8,259 | 8,996 | 9,523 | 11,232 | 30% | 9% | 6% | 18% | 17% | 20% | 18% | 19% | |
| Lam Research | 7,168 | 7,782 | 6,284 | 7,527 | 8,704 | 9% | -19% | 20% | 16% | 16% | 14% | 15% | 15% | |
| Tokyo Electron | 6,608 | 8,458 | 6,912 | 7,723 | 8,606 | 28% | -18% | 12% | 11% | 17% | 15% | 15% | 15% | |
| KLA | 3,080 | 3,269 | 3,169 | 4,114 | 4,477 | 6% | -3% | 30% | 9% | 7% | 7% | 8% | 8% | |
| Screen | 1,389 | 1,801 | 1,728 | 1,721 | 1,771 | 30% | -4% | 0% | 3% | 4% | 4% | 3% | 3% | |
| Hitachi High-Technologies | 1,031 | 1,166 | 1,204 | 1,219 | 1,320 | 13% | 3% | 1% | 8% | 2% | 3% | 2% | 2% | |
| ASM International | 666 | 742 | 1,015 | 910 | 1,014 | 11% | 37% | -10% | 11% | 2% | 2% | 2% | 2% | |
| Canon | 497 | 695 | 551 | 531 | 543 | 40% | -21% | -4% | 2% | 1% | 1% | 1% | 1% | |
| SEMES | 831 | 676 | 370 | 500 | 600 | -19% | -45% | 35% | 20% | 1% | 1% | 1% | 1% | |
| Wonik IPS | 371 | 384 | 274 | 414 | 526 | 3% | -29% | 51% | 27% | 1% | 1% | 1% | 1% | |
| Ebara | 877 | 490 | 424 | 422 | 451 | -44% | -13% | 0% | 7% | 1% | 1% | 1% | 1% | |
| Nikon | 617 | 618 | 827 | 808 | 730 | 0% | 34% | -2% | -10% | 1% | 2% | 2% | 1% | |
| Onto Innovation (pro forma Rudolph) | 430 | 493 | 230 | 392 | 444 | 15% | -53% | 71% | 13% | 1% | 1% | 1% | 1% | |
| NuFlare Technology | 296 | 363 | 371 | 284 | 261 | 23% | 2% | -24% | -8% | 1% | 1% | 1% | 0% | |
| Axcelis Technologies | 280 | 292 | 222 | 292 | 309 | 4% | -24% | 32% | 6% | 1% | 0% | 1% | 1% | |
| Lasertec | 106 | 135 | 223 | 348 | 673 | 27% | 65% | 56% | 93% | 0% | 0% | 1% | 1% | |
| Ulvac | 189 | 287 | 218 | 201 | 220 | 52% | -24% | -8% | 10% | 1% | 0% | 0% | 0% | |
| Nova Instruments | 174 | 192 | 167 | 183 | 214 | 11% | -13% | 10% | 17% | 0% | 0% | 0% | 0% | |
| Eugene Technology | 100 | 174 | 153 | 142 | 256 | 75% | -13% | -7% | 81% | 0% | 0% | 0% | 0% | |
| Top 20 WFE Revenue | 42,271 | 47,788 | 43,912 | 49,937 | 56,338 | 13% | -8% | 14% | 13% | 97% | 96% | 97% | 97% | |
| Others (Estimated) | 1,518 | 1,573 | 1,702 | 1,702 | 1,821 | 4% | 8% | 0% | 7% | 3% | 4% | 3% | 3% | |
| Consensus WFE Revenue | \$43,788 | \$49,361 | \$45,614 | \$51,639 | \$58,160 | 13% | -8% | 13% | 13% | 100% | 100% | 100% | 100% | |
| Top 5 % of WFE | 79% | 80% | 79% | 81% | 81% | | | | | | | | | |

Source: Gartner, Company Reports, Bloomberg, Barclays Research

FIGURE 4

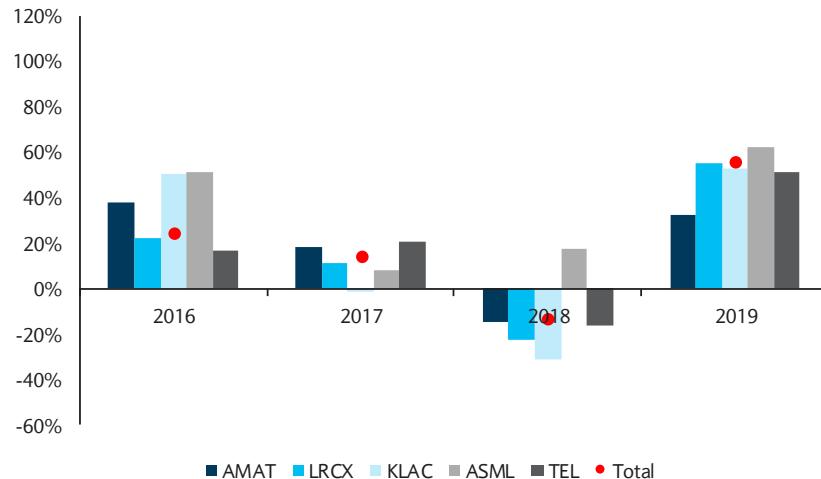
Industry Market Estimates Too Low While Consensus Still Needs to Come Down

Source: Gartner, Bloomberg, Barclays Research

Foundry Run-rate Seems Strong, Likely Down in 2H

Foundry saw significant growth in 2019 (Foundry/Logic +54% Y/Y with Foundry alone +70%) as you saw spend on both the leading edge (5/7nm) to support 5G (Mobile and Infrastructure), Compute, and AI (Figure 5). We still see a strong demand cycle given 1) China 5G basestation buildout, 2) AMD and NVDA at 7nm, and a handset recovery led by Huawei and AAPL, but spending has likely gotten ahead of these drivers. This recent Huawei block is the swing factor as any shifts in suppliers away from TSMC to Samsung (Samsung 5G modem or QCOM) may cause a near-term spike in Foundry spending.

FIGURE 5
Significant Recovery in Foundry/Logic in 2019 After Weak 2018



Source: Company Reports, Barclays Research

On the Logic side, there is a reversion to the mean on Logic capital intensity as Intel returns to more normalized levels. Intel's Logic spend is still below normalized levels (total may not go up but logic spend within should increase) as they have been at 14nm since 2014, and need to spend more on 7/10nm. Intel plans to get back to a more normal 2-year cadence between nodes and the increased competition from AMD/TSMC should only accelerate the urgency.

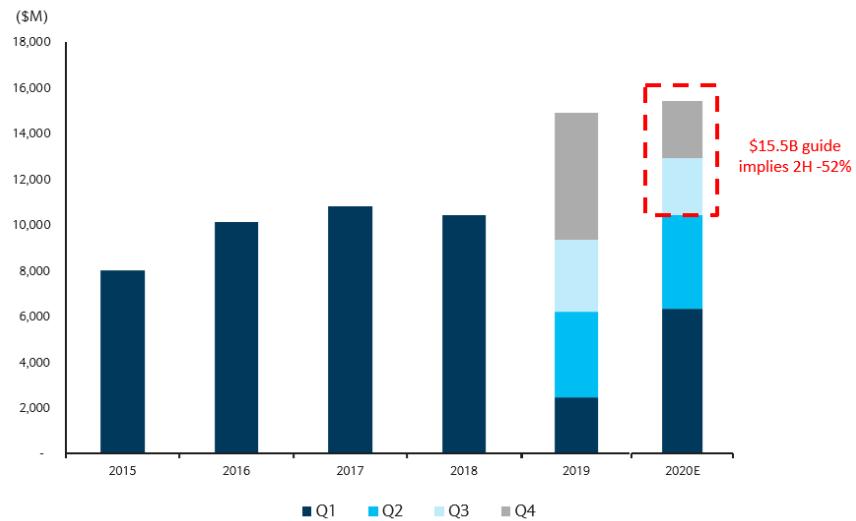
FIGURE 6
INTC Increasing CapEx Intensity and TSMC Returning to 15Y Average



Source: Company Reports, Barclays Research

TSMC capex spend (Figure 7) was \$5.6B (+49% Y/Y) in Q4 and \$6.4B (+159%) in Q1 but is likely down 30-40% Q/Q in Q2 and down another 40% into 2H based upon their annual guidance of \$15-16B. Samsung and SMIC help offset a little in the 1H but we still see downside to Foundry spend in the 2H.

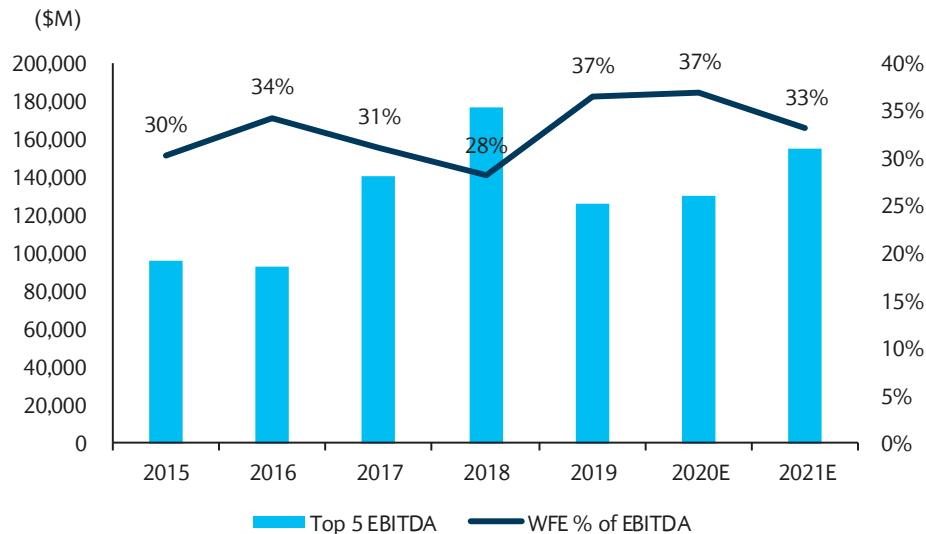
FIGURE 7
TSMC Capex Likely Declines in 2H20



Source: Company Reports, Barclays Research

Along with capex, another useful way to look at WFE market is WFE spend as % of customer EBITDA. Customers have increasingly invested in WFE over the last several years (particularly 2017/2018), which directly translates into their ability to pay for the spend as well as overall profitability. Figure 8, demonstrates the fact that while companies are spending a lot on WFE, they are also earning a healthy return. WFE intensity is expected to remain at the same high levels in 2020 (assuming WFE still up) as customers increase investments ahead of a strong Memory/5G deployment year, and things likely soften in 2021 as customers operate with new investments and profitability improves.

FIGURE 8
WFE Spend as % of Top 5 Customers' EBITDA Flat in '20, Pull-Back in '21



Source: Company Reports, Bloomberg, Barclays Research

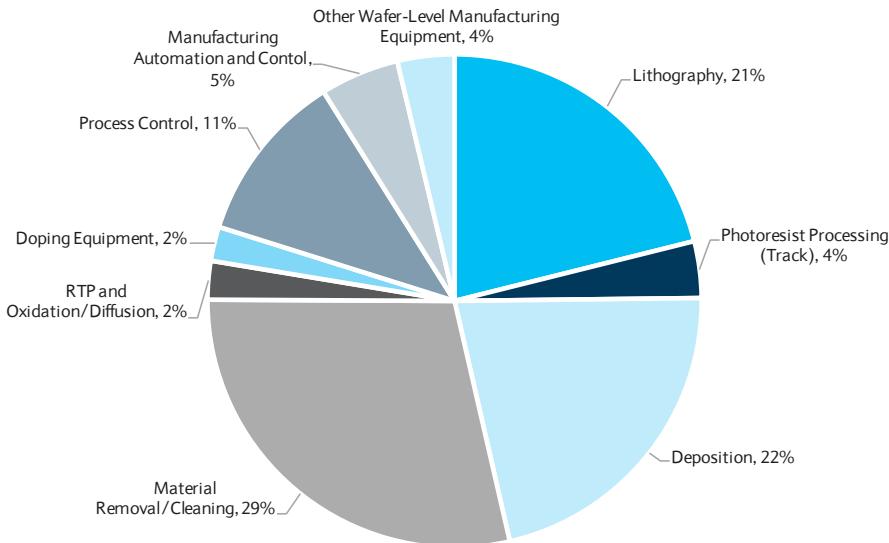
*Top 5 Customers include Intel, Samsung, SK Hynix, Micron, TSMC

What We Like

Better Growth Profile Than Multiples Imply

The WFE (wafer front-end) market grew at 4-6% over the last 10-15 years and at a 7% CAGR over the last 5 years ('14-'19) as Memory spend (9% CAGR) outpaced Foundry/Logic (6% CAGR). Looking at a longer horizon, these growth rates are not much different than the overall Analog semi market (~4% over last 10 years), but the semi cap group trades at a sharp discount. We understand customer concentration concerns and lower margin profile but this market is consolidated with stable share, which should warrant better long-term multiples (if the market is really sustainable at these levels - read below). There is some debate on the direction of 2020 given the COVID-19 disruption and high Foundry spend to end the year, but we do believe the semi cap market should still see sustained long-term growth.

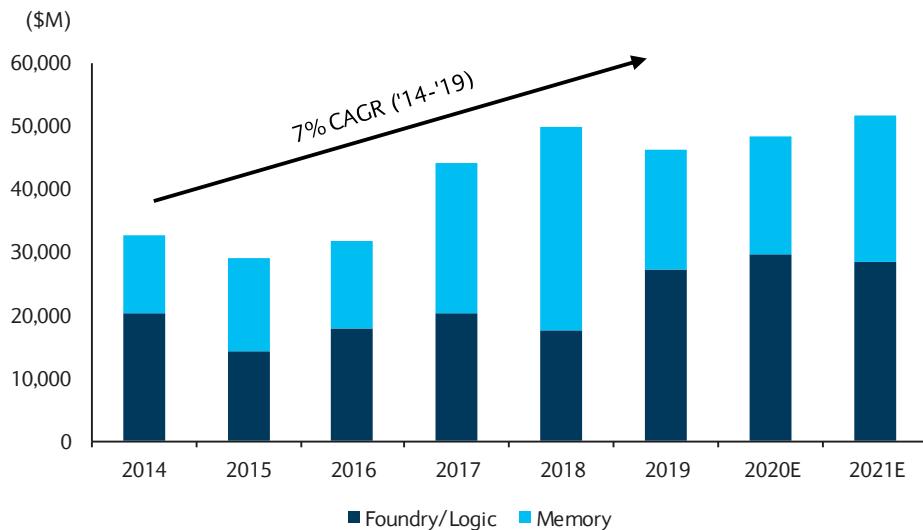
FIGURE 9
WFE by End Market Equipment Type (2019)



Source: Gartner, Barclays Research

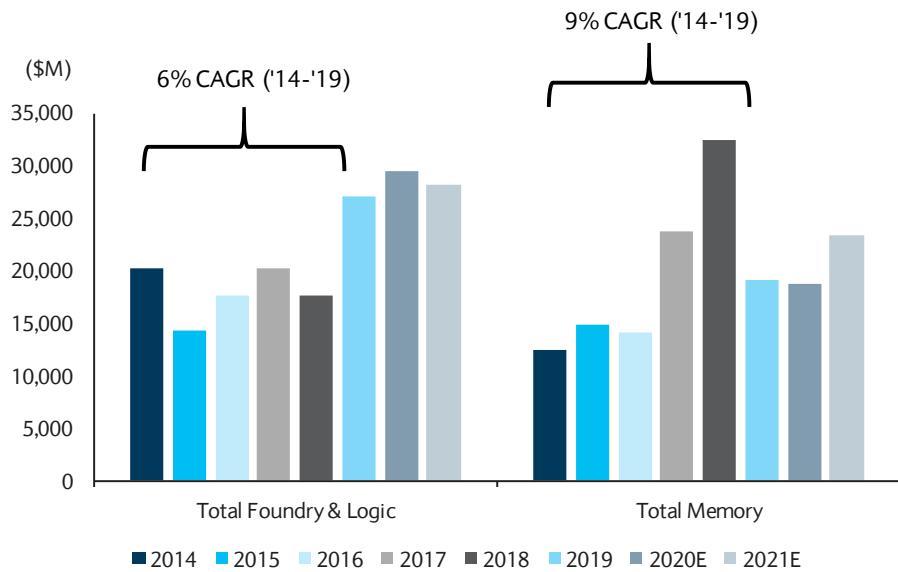
The overall WFE market grew at 7% CAGR over the last 5 years (Figure 10) and likely returns to that rate long-term. Similarly, Figure 11 highlights growth of the two main segments within the WFE market – Foundry/Logic and Memory, which grew at 6% CAGR and 9% CAGR from 2014-2019, respectively. As shown, Foundry/Logic saw pronounced growth in 2019 while Memory saw strongest growth in 2017/2018.

FIGURE 10
WFE Market Grew 7% Over Last Five Years



Source: Gartner, Company Reports, Barclays Research

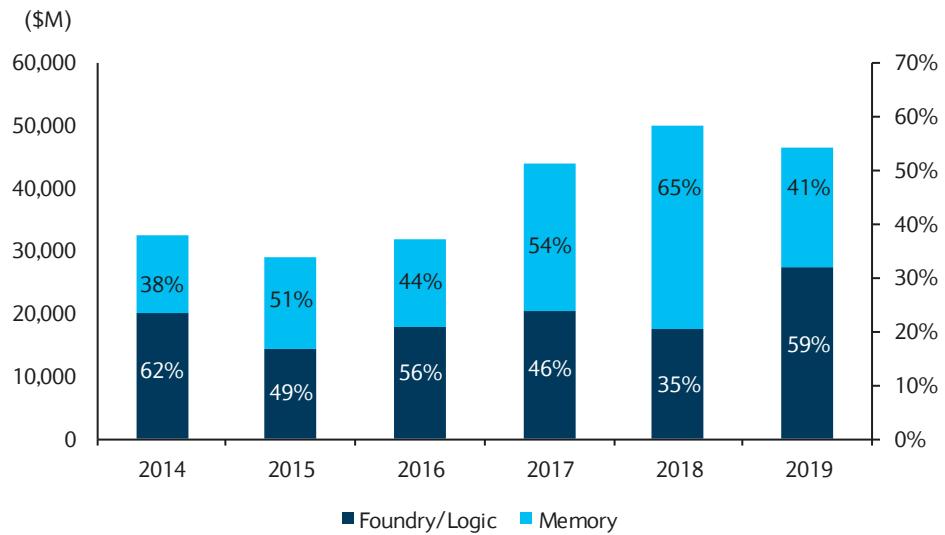
FIGURE 11
WFE Market Driven by Growth in Both Foundry/Logic and Memory



Source: Gartner, Company Reports, Barclays Research

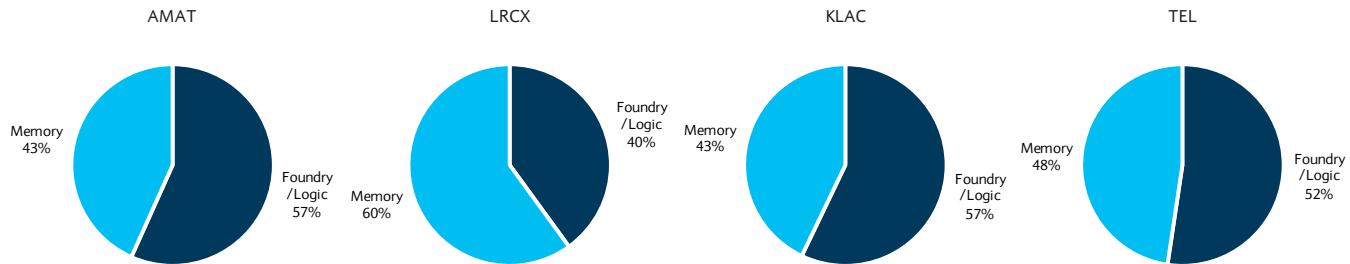
As mentioned above, 2019 was a strong year for Foundry/Logic while the Memory environment was quite weak, which explains the shift in spend from Memory to Foundry/Logic as well as the lower overall spend (Figure 12). Companies with higher exposure to Foundry/Logic, such as AMAT and KLAC, saw benefit from this shift while LRCX, which is more levered to Memory, saw less growth given the declining memory market (Figure 13).

FIGURE 12
WFE Declined in 2019 Given Weak Memory Market, Spend Shifts to Foundry/Logic



Source: Gartner, Company Reports, Barclays Research

FIGURE 13
Top 4 Product Revenue Exposure (2019): LRCX Levered to Memory, AMAT/KLAC Levered to Foundry/Logic



Source: Company Reports, Barclays Research

Figure 14 highlights 2017 as a strong year for LRCX as it grew faster than the market due to its high exposure to NAND memory, which was +70% Y/Y. In 2018, TEL was the clear outperformer given DRAM growth reached 89%, and the company is more disposed to DRAM vs. peers. KLAC and AMAT exceeded the market in 2019 as Foundry and Logic both saw a big spike (70% and 35% growth, respectively), and the companies had less exposure to the declining Memory market.

FIGURE 14
Memory Exposure Benefit LRCX in '17/TEL in '18, Foundry/Logic Help KLAC/AMAT in '19

| Top 4 Total (Y/Y Change %) | 2016 | 2017 | 2018 | 2019 |
|----------------------------|-------|-------|--------|--------|
| AMAT | 37.7% | 18.4% | -14.8% | 32.8% |
| LRCX | 22.7% | 11.1% | -22.4% | 55.1% |
| KLAC | 50.4% | -1.6% | -30.8% | 53.3% |
| TEL | 16.9% | 20.8% | -15.8% | 51.5% |
| Foundry/Logic | 30.9% | 14.3% | -18.7% | 44.1% |
| AMAT | 6.8% | 54.4% | 23.3% | -37.5% |
| LRCX | 7.3% | 72.1% | 16.8% | -41.2% |
| KLAC | -7.8% | 56.3% | 45.8% | -41.3% |
| TEL | 7.6% | 90.3% | 60.9% | -45.7% |
| Memory | 5.5% | 68.0% | 32.0% | -41.4% |
| AMAT | 21.4% | 35.0% | 5.4% | -10.7% |
| LRCX | 12.6% | 49.5% | 6.0% | -21.8% |
| KLAC | 21.9% | 19.8% | 6.2% | -9.4% |
| TEL | 12.4% | 52.6% | 28.0% | -18.3% |
| Total | 17.0% | 40.7% | 11.1% | -15.6% |

Source: Company Reports, Barclays Research

Consolidated Industry with Consistent Share and Less Cyclical

In Figure 3, we show the top 5 semi cap companies (AMAT, ASML, LRCX, TEL, KLAC) have ~80% aggregate share. The Semi Cap Equipment Industry has significant barriers to entry given the increasing R&D costs and long-lived lifecycles with share within a particular product category driven more by end markets (DRAM vs. NAND etc) than share gains vs. a competitor. This translates into a stable margin profile with GMs of the top 5 companies up 1% on average from '07-19. Industry cyclical also becomes less of a concern, as market swings are largely partially offset by revenue streams from Services businesses (now 25-30%+ of mix). After a period of strong equipment growth (when most corrections happen), increasing services revenue tends to grow and helps offset the equipment fall-off.

Figure 15 shows a snapshot of share by tool type. From a high level, you can see that share hasn't moved around that much. AMAT is the leader in Deposition, LRCX in Material Removal and Cleaning (really Etch), and KLAC in Process Control. Tokyo Electron is a number 2 or 3 player in all markets other than Track.

FIGURE 15

Top 5 Share Consolidation by Different Equipment Types Continued from 2017 to 2019

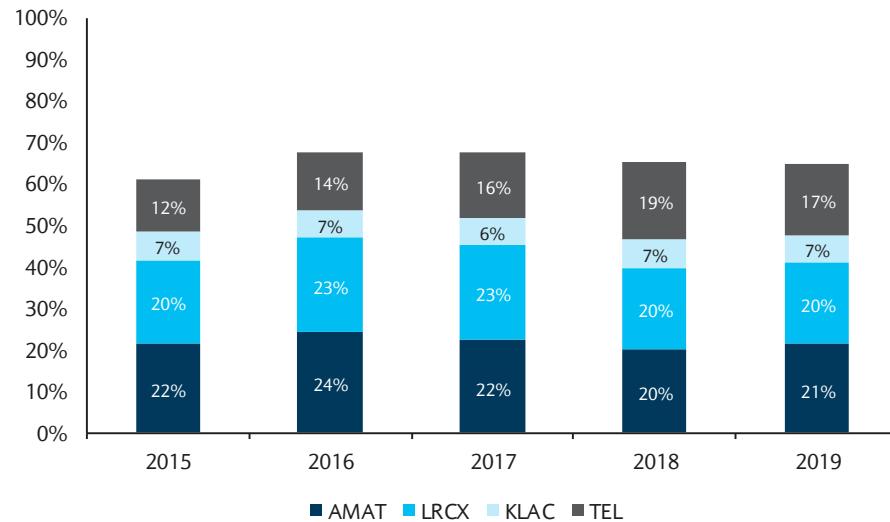
| Equipment | 2019 TAM (\$MM) | CAGR, 2019-2024 | Company Market Share (%) | | | | | | | | | | | | | | | | | |
|------------------------------------|-----------------|-----------------|--------------------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|------------|------------|------------|----------------|------------|------------|------------|------------|------------|
| | | | AMAT | | | ASML | | | KLA | | | LRCX | | | Tokyo Electron | | | Other | | |
| | | | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 |
| Deposition | \$11,982 | 1.2% | 44% | 38% | 41% | -- | -- | -- | 1% | -- | -- | 19% | 21% | 21% | 10% | 13% | 12% | 26% | 29% | 26% |
| CVD | \$7,280 | 1.2% | 30% | 28% | 30% | -- | -- | -- | -- | -- | -- | 26% | 27% | 17% | 18% | 18% | 27% | 26% | 26% | |
| Sputtering | \$2,677 | 1.3% | 85% | 74% | 79% | -- | -- | -- | 3% | -- | -- | -- | -- | -- | -- | 1% | 1% | 12% | 24% | 20% |
| Epitaxy | \$988 | 1.3% | 74% | 74% | 83% | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 26% | 26% | 17% |
| ECD | \$493 | 0.5% | 14% | 16% | 13% | -- | -- | -- | -- | -- | -- | 81% | 76% | 77% | -- | 4% | 7% | 5% | 4% | 3% |
| Other | \$543 | 1.4% | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 100% | 100% | 100% |
| Material Removal & Cleaning | \$15,910 | 1.1% | 18% | 19% | 20% | -- | -- | -- | 1% | -- | -- | 34% | 35% | 35% | 24% | 25% | 23% | 23% | 21% | 22% |
| Dry Etch | \$10,806 | 1.1% | 18% | 18% | 19% | -- | -- | -- | 1% | -- | -- | 45% | 46% | 48% | 28% | 30% | 27% | 8% | 6% | 7% |
| Spray Processors | \$2,289 | 0.9% | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16% | 16% | 13% | 29% | 25% | 24% | 55% | 59% | 63% |
| CMP and Post-CMP Clean | \$1,447 | 1.2% | 66% | 70% | 71% | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 34% | 30% | 29% |
| Dry Strip | \$469 | 0.9% | -- | -- | -- | -- | -- | -- | -- | -- | -- | 18% | 21% | 17% | -- | -- | -- | 82% | 79% | 83% |
| Other | \$898 | 0.9% | -- | -- | -- | -- | -- | -- | -- | -- | -- | 15% | 14% | 13% | 16% | 21% | 26% | 68% | 65% | 60% |
| Process Control | \$6,243 | 2.2% | 11% | 11% | 12% | 5% | 6% | 6% | 54% | 51% | 51% | -- | -- | -- | -- | -- | -- | 30% | 32% | 31% |
| Wafer Inspection and Defect Review | \$3,094 | 2.3% | 16% | 15% | 17% | 5% | 6% | 6% | 65% | 63% | 63% | -- | -- | -- | -- | -- | -- | 15% | 16% | 15% |
| Lithography Metrology | \$1,840 | 1.9% | 11% | 14% | 13% | 9% | 11% | 10% | 44% | 37% | 39% | -- | -- | -- | -- | -- | -- | 36% | 38% | 37% |
| Thin-Film Metrology | \$970 | 2.5% | -- | -- | -- | -- | -- | -- | 42% | 41% | 43% | -- | -- | -- | -- | -- | -- | 58% | 59% | 57% |
| Other | \$339 | 1.8% | -- | -- | -- | -- | -- | -- | 40% | 42% | 38% | -- | -- | -- | -- | -- | -- | 60% | 58% | 62% |
| Lithography | \$11,705 | 3.0% | -- | -- | -- | 83% | 83% | 81% | -- | -- | -- | -- | -- | -- | -- | -- | -- | 16% | 17% | 19% |
| Photoresist Processing (Track) | \$2,060 | 2.6% | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 91% | 88% | 87% | 9% | 12% | 13% |
| Other Equipment | \$7,580 | 0.7% | 19% | 22% | 24% | -- | -- | -- | -- | -- | -- | -- | -- | -- | 7% | 9% | 7% | 73% | 69% | 69% |
| Total | \$55,480 | 1.7% | 19% | 18% | 21% | 18% | 16% | 14% | 7% | 5% | 5% | 14% | 15% | 16% | 14% | 15% | 14% | 29% | 29% | 30% |

Market share

Source: Gartner, Barclays Research

Looking at the overall market (Figure 16), share shifts are more a function of whether NAND or DRAM is strong in a given year. Over a longer horizon, share hasn't changed that much. Figure 16 highlights share by end market. You can see the strong performance by LRCX as 3D NAND was ramping and outperformance by TEL when DRAM was strong.

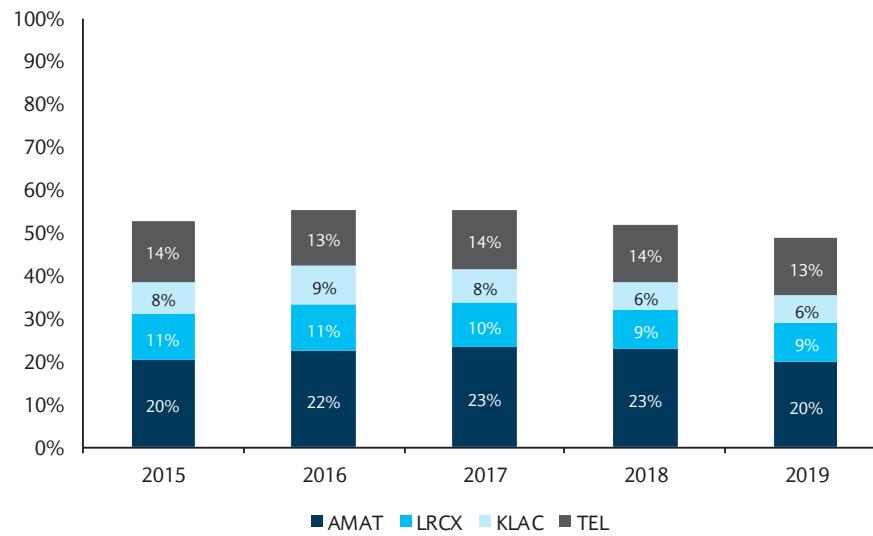
FIGURE 16
Modest Share Shifts in Memory Since 2015



Source: Company Reports, Barclays Research

Figure 17 shows the same breakout for Foundry/Logic. Overall, the top 4 players remained roughly the same in aggregate market share.

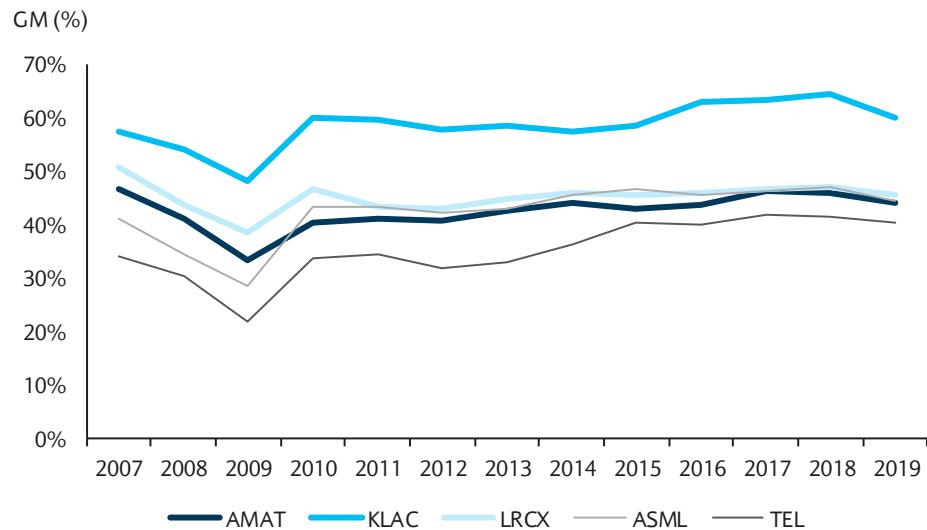
FIGURE 17
Top 4 Maintain Roughly Consistent Share of Total Foundry/Logic Market



Source: Company Reports, Barclays Research

Altogether, the top 5 players continued to consolidate through both organic and inorganic growth. The market consolidation has led to sticky margins for the top 5 companies, with little fluctuation over several years. In combination, the top 5 margins grew 1% since 2007, and likely continue to remain stable with the ongoing market consolidation.

FIGURE 18
Consolidation Reinforces LT Margin Stability, Overall Average GM Grew 1% from '07-'19



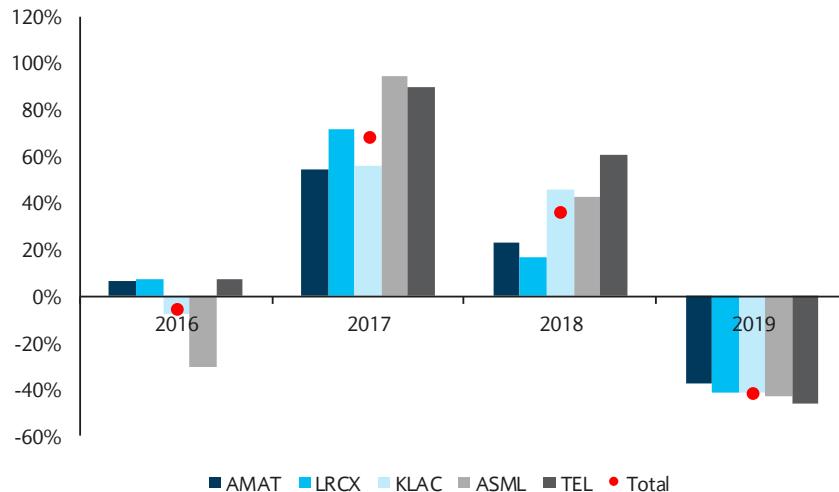
Source: Company Reports, Barclays Research

Less Concerned on Memory as It Should Return to Growth led by NAND

The Memory market drove WFE expansion with 69% Y/Y growth in 2017 and 36% in 2018 but was down sharply in 2019. The memory market can be hard to predict but we are comfortable after a down 40%+ year that Memory spend should accelerate at some point led by NAND with DRAM improving later in the year. Clearly, the high Data Center spending levels should slow into the 2H, but we do believe the Mobile market is improving to help offset. On the technology front, spending per wafer continues to rise as it becomes more difficult to stack vertically in NAND (128L underway) and DRAM moves to more advanced nodes. We forecast the Memory WFE market to decline 2% in '20 and grow 25% in '21.

While all major players did see memory growth in 2017 and 2018 (Figure 19), TEL stands out for having particular strength over the past few years while others have only more recently come back.

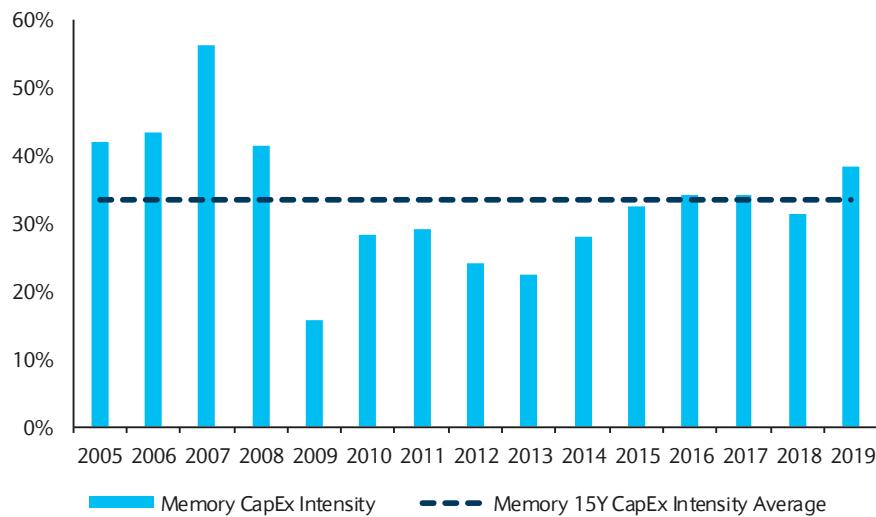
FIGURE 19
Strong Memory Revenue Growth in 2017/2018, Declines in 2019



Source: Company Reports, Barclays Research

Figure 20 shows the Memory capital intensity levels since 2005 and highlights levels reverting (and actually surpassing) toward the historical mean in 2019. We expect the intensity levels to continue on this trajectory as the need for more storage rises and companies must invest in the more complex technology transitions that are taking place (128L 3D stacking). Spending per wafer continues to rise as it becomes more difficult to stack vertically in NAND and DRAM moves to more advanced nodes, which in combination drive Memory capital intensity higher.

FIGURE 20
Memory Capex Intensity Reverting Towards Historical Mean

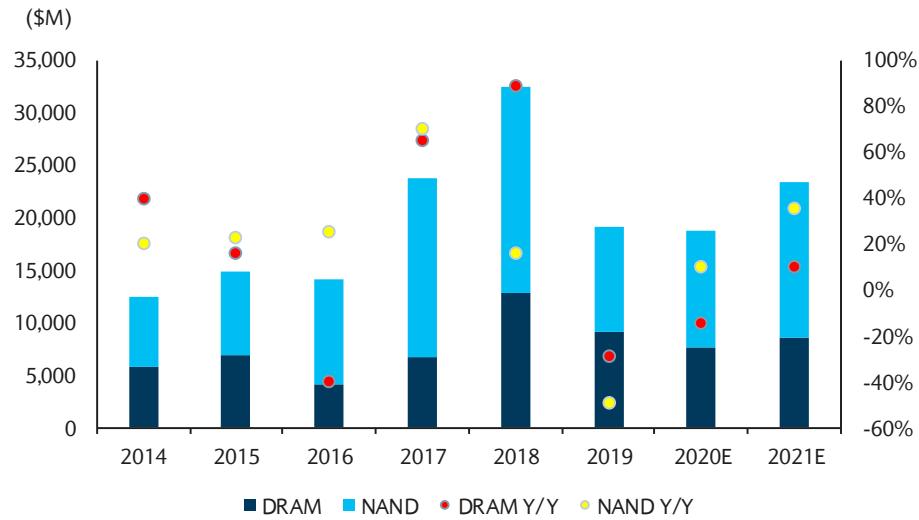


Source: IC Insights, Company Reports, Bloomberg, Barclays Research

Figure 21 shows Memory is expected to see some recovery in 2020 with growth following in 2021 after coming off a down year in 2019. Companies with high Memory exposure should benefit from stronger Memory trends going into 2020 and 2021, such as LRCX and TEL. As shown below, NAND returns to growth in 2020 and 2021 while DRAM grows to a

lesser extent. Given this trend, we would expect LRCX (more levered to NAND) to benefit more than TEL (more levered to DRAM).

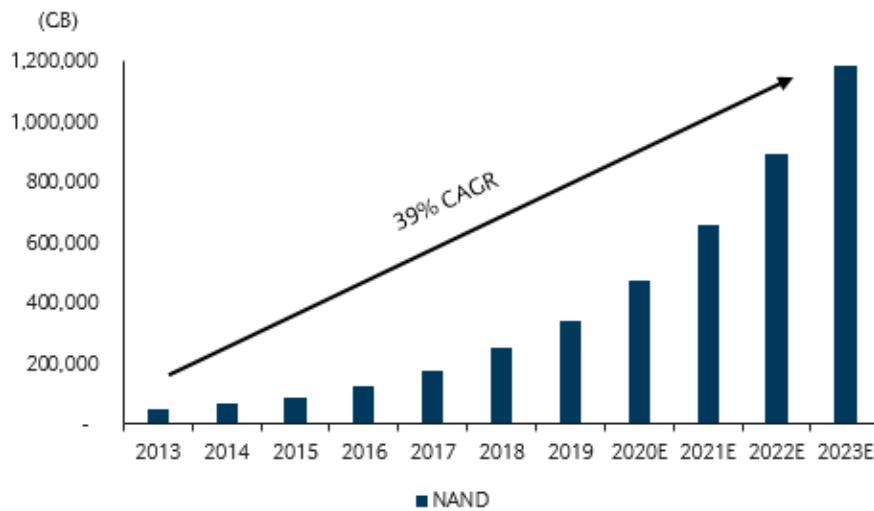
FIGURE 21
NAND Drives Recovery in 2H20 After Weak 2019, Growth in NAND/DRAM in 2021



Source: Gartner, Company Reports, Barclays Research

Long-term bit growth is a good gauge for the memory market as it indicates market demand sentiment. As a result, a strong forecast for bit growth may help indicate a healthy supply/demand environment. Figure 22 shows NAND bit growth at 39% CAGR (2013-2023), signalling an improving market and likely increased capex on Memory by vendors. LRCX directly benefits from the stronger NAND market as it is most exposed to NAND out of the top players.

FIGURE 22
NAND Annual Bit Growth at Strong 39% CAGR ('13-'23E)

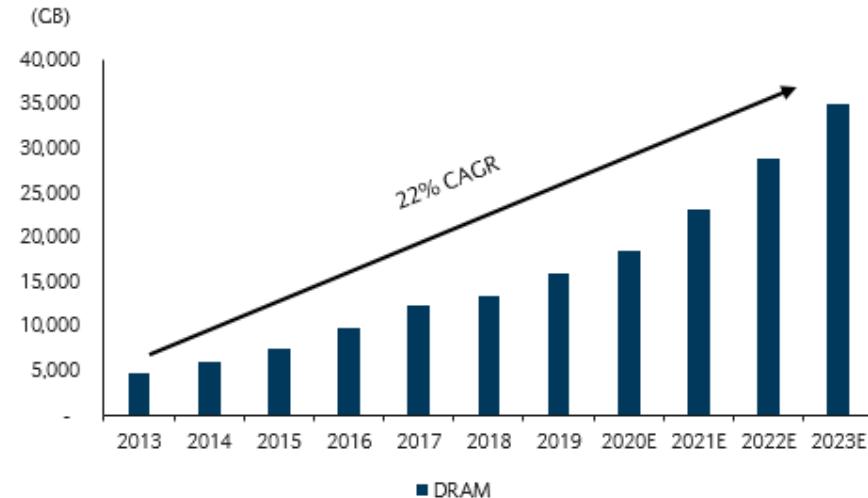


Source: Gartner, Barclays Research

DRAM bit growth is also on a robust growth trajectory at a 22% CAGR (2013-2023), although not as strong as NAND (Figure 23). TEL is actually more levered to DRAM vs. NAND (26% vs. 21% in 2019, respectively), which likely lessens revenue growth and share

gains vs. peers more highly levered to NAND (LRCX). However, TEL should still see some overall benefit with DRAM growth later this year and next year.

FIGURE 23
DRAM Annual Bit Growth at 22% CAGR, Lower in 2020



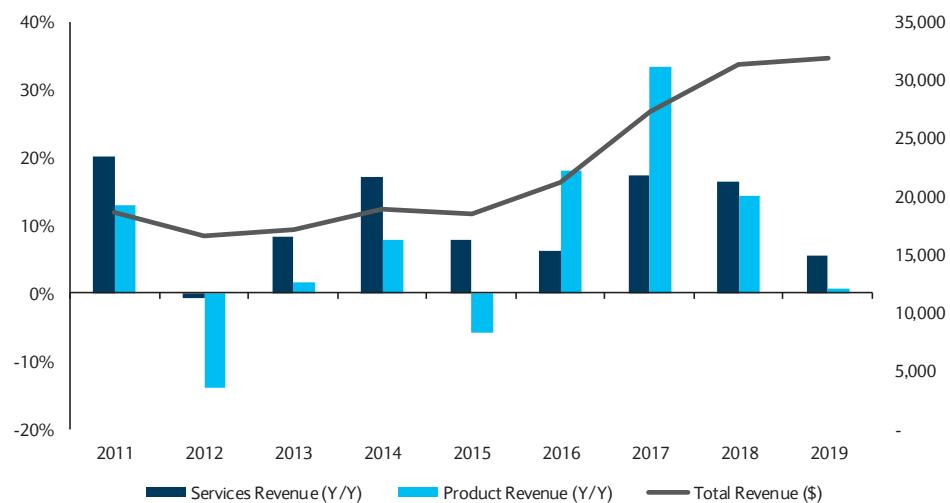
Source: Gartner, Barclays Research

Services Businesses Contribute to Less Cyclical Industry

Services revenue functions as a stabilizing buffer against volatility in equipment sales caused by unpredictable industry cycles. The underlying drivers of Services businesses are mainly the size of the installed base and growing complexity of leading node technologies. In other words, the more advanced equipment a semi-cap company has sold to a customer, the more likely the customer also needs a service agreement to operate the equipment at its highest capacity possible. These service agreements could be structured as subscription-based in nature and could provide stable recurring revenues for semi cap companies.

As shown in Figure 24, the top 5 companies' services revenues have steadily grown during the last 4 years and outgrown the product revenue CAGR by 2% (14% vs. 12%) while maintaining a similar percentage of the total revenues. For example, in 2019 when the overall WFE spending dropped, services revenues provide muting effects against the industry cyclical as new equipment adds from 2018 turned into more re-occurring services revenue. Services represents 25-30% of revenue and should continue to buoy these names during weaker equipment demand periods.

FIGURE 24
Services Revenue Helps Mute Product Cyclicality



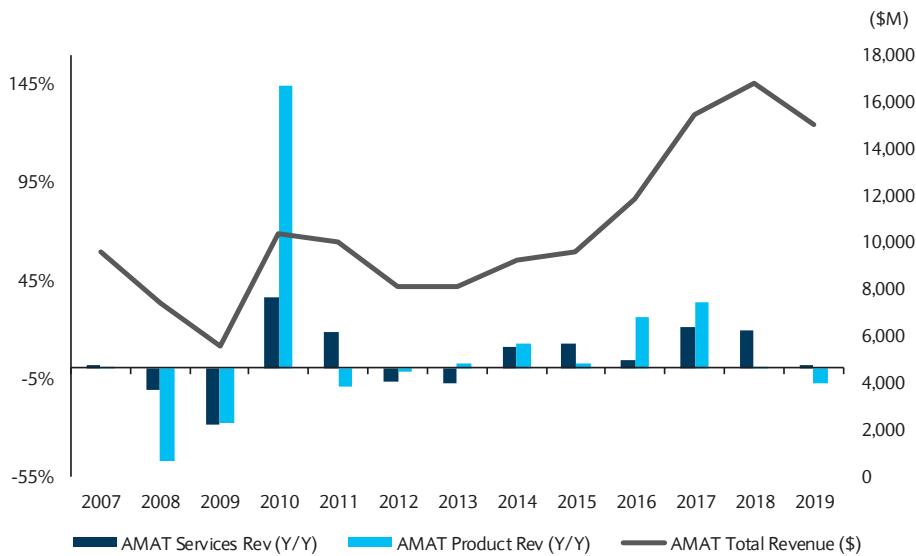
Source: Company Reports, Barclays Research

*Services revenue represents combination of AMAT, ASML, KLAC reported Services revenue

AMAT's Applied Global Services (AGS) segment is a case study that demonstrates the stabilization effects of a Services business. AGS has provided a wide range of services like helping customers improve equipment/fab performances, upgrade/refurbish spares, and utilize AMAT's automation software to achieve greater efficiency. This business has grown every year since 2013 when AMAT made a strategic shift to focus more on long-term subscription-type service agreements over transactional services because of significantly higher ROI on service agreements. AMAT has been adding about 1,000 service agreements per year, and the agreements now take up more than half of the total Services revenue. As a result, AGS recently generated its record Services revenue of about \$1 billion in Q1 FY2020 with more room to grow.

As shown in Figure 25, AGS outgrew the Semiconductor Systems segment's 9-year CAGR by 2% (8% vs. 6%) while consistently maintaining a stable percentage of the total revenue. In general, the Services business helps offset weak product years, such as in 2011 and 2018/2019, which came after strong years of Product business in 2010 and 2016/2017, ultimately stabilizing the total revenue and muting cyclicality.

FIGURE 25
AMAT's Services Stabilize Total Revenue During Weak Periods



Source: Company Reports, Barclays Research

Key Investment Points by Company

Applied Materials Inc. (AMAT)

Positives

- **Cheapest of the Bunch:** At face value, AMAT currently trades at a 2-turn discount to LRCX and a 4-turn discount to KLAC. The company is the largest and most diversified name, which eases some cyclical risk and should give them some valuation credit. We are below the Street and on those numbers, the stock trades at ~14x. Net net, still some room in the multiple even on our numbers and if the company is in fact right on its growth prospects, this would be the best value in the group.
- **See More Upside than Downside in Memory:** We are comfortable with the trajectory of Memory after a down 40%+ year and Memory spend should accelerate at some point led by NAND with DRAM improving later in the year. AMAT has the largest Memory business and we are comfortable with where the bar is set for the 2H (model DRAM/NAND in tandem +4.8% 2H/1H) as slowing Data Center spending level is offset by an improving Mobile market.
- **Display Accelerates in the 2H with Exposures We Like:** Display is another area where we are biased more positively as Mobile will make up almost 40% of the business this year (vs. prior 30%) and is driven by OLED in handsets. The company gets about 2-3.8x times equipment spend in OLED devices vs. standard LCD models. In the long run we think the transition to OLED smartphones continues to accelerate and we think this offsets any potential headwinds in the TV segment of the business.

Negatives

- **Most Potential Downside to 2H Estimates:** AMAT took the most bullish approach to guiding the 2H indicating strong double digit growth in the Semi Systems business for the FY. As we've highlighted, we still believe the water is a bit choppy and despite the strong bookings, customers' spend (like TSMC's) is down significantly in the 2H and

Samsung already saw some robust growth (Korea +48% in April). We acknowledge smaller players may add capacity but the setup looks a bit too rosy.

- **Biggest China Exposure:** China was 31% of sales in 2019. In all fairness, this number is 23% ex Display but even Display has some long-term risks if this trade war continues to escalate. Total WFE spend for the China market was \$6B in 2019 moving to \$8-9B fed by domestic Memory and Foundry. The concern is that the country still has no viable Memory product and the recent Huawei block puts SMIC's expansion in question.

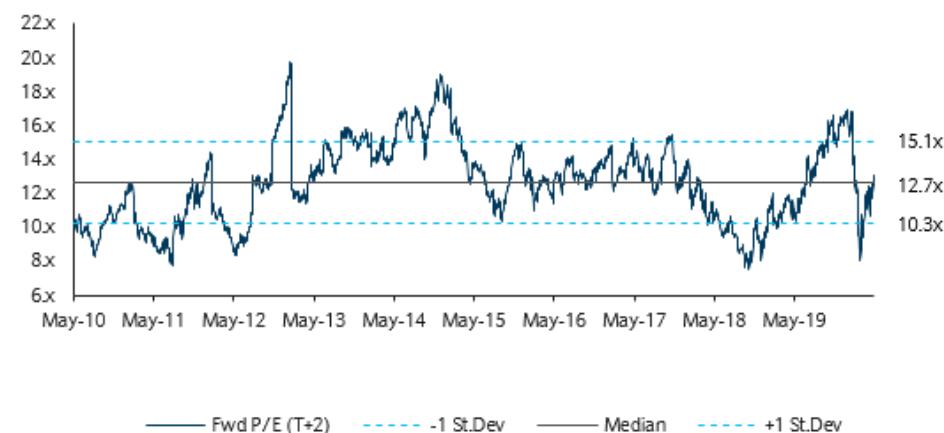
We initiate on AMAT with EW rating. Our price target of \$60 is based on 15x our CY21E EPS of \$4.06. Our CY20 revenue/EPS are \$16.38B/\$3.65 and CY21 are \$17.39B/\$4.06.

FIGURE 26
Barclays Estimates

| Revenue and EPS Estimates - Barclays vs. Consensus | | | | | |
|--|------|---------|---------|----------|----------|
| | | Jul Q | Oct Q | CY20 | CY21 |
| BARCLAYS | Revs | \$4,100 | \$4,221 | \$16,385 | \$17,386 |
| | EPS | \$0.90 | \$0.96 | \$3.65 | \$4.06 |
| CONSENSUS | Revs | \$4,167 | \$4,327 | \$16,697 | \$18,494 |
| | EPS | \$0.95 | \$1.01 | \$3.80 | \$4.43 |

Source: Company Reports, Bloomberg and Barclays Research \$ millions except EPS

FIGURE 27
AMAT Trading Roughly in Line with 10-Yr Median Fwd P/E at 12.7x



Source: Bloomberg, Barclays Research

KLA Corporation (KLAC)

Positives

- **Numbers Most Realistic for the 2H:** KLAC is reiterating a more cautious outlook vs. peers in the 2H with expectations for WFE flat Y/Y. The material change vs. expectations to begin the year is the view that the DRAM ramp may push into '21. In

our view, this outlook could prove conservative and leaves estimates in a better place vs. peers.

- **EUV and Advanced Memory Driving Process Control SAM:** KLAC's Process Control TAM is moving to \$7.5B in 2023 from \$6B today as EUV is critical for the move to 7/5nm and below. Advanced Memory patterning should also help contribute to market growth and we like this exposure in equipment spend as KLAC has 4x the Process Control of the nearest competitor.
- **E-Beam a Secular Trend:** Traditional optical inspection becomes less precise at 7nm and 5nm and e-beam will ultimately be required. The issue facing the industry is that the e-beam inspection is slow and likely needs integration into a current system for high-quality and high-throughput. The Gen-5 EUV extension helps integrate optical inspection with e-beam and should help KLAC take share. This is a \$250M market that KLAC will leverage its existing optical lead to compete with existing leader ASML (HMI acquisition) and is an integration play.
- **Orbotech Expands TAM:** KLAC also has exposure to the broader OLED trend with the acquisition of Orbotech. We think the move to more OLED devices will happen in a matter of time and KLAC will participate in this ramp.

Negatives

- **Process Control Not as Critical in Memory:** Memory patterning is often repetitive, and lines within fabs do not shift from product to product, which limits the amount of testing required. This is inevitably reducing the amount of Memory exposure of KLAC vs. LRCX.
- **Top of Trading Range:** KLAC is trading at the top of its long-term trading range. While the premium margins and higher market share could warrant a premium vs. its peers, they also benefitted from the strong Foundry/Logic spend, which could revert in the 2H.

We initiate on KLAC with EW rating. Our price target of \$170 is based on 15x our CY21E EPS of \$11.29. Our CY20 revenue/EPS are \$5.56B/\$9.41 and CY21 are \$6.02B/\$11.29.

FIGURE 28
Barclays Estimates

| Revenue and EPS Estimates - Barclays vs. Consensus | | | | | |
|---|------|--------------|--------------|-------------|-------------|
| | | Jun Q | Sep Q | CY20 | CY21 |
| BARCLAYS | Revs | \$1,408 | \$1,328 | \$5,563 | \$6,019 |
| | EPS | \$2.37 | \$2.14 | \$9.41 | \$11.29 |
| CONSENSUS | Revs | \$1,404 | \$1,358 | \$5,559 | \$6,050 |
| | EPS | \$2.38 | \$2.21 | \$9.41 | \$11.37 |

Source: Company Reports, Bloomberg and Barclays Research \$ millions except EPS

FIGURE 29
KLAC Approaches High End of 10-Yr Historical Fwd P/E of 15.4x



Source: Bloomberg, Barclays Research

Lam Research (LRCX)

Positives

- **Highly Levered to Memory, NAND Spend Tailwind:** LRCX has the highest exposure to Memory at over 60% of sales with a very high share within NAND specifically. The Memory market drove WFE expansion with 69% Y/Y growth in 2017 and 36% in 2018 but was down sharply in 2019. The Memory market can be hard to predict but we are comfortable after a down 40%+ year that Memory spend should accelerate at some point led by NAND with DRAM improving later in the year.
- **Targeting 4-8% Share Gains Across Etch and Deposition:** LRCX has opportunities to gain share as ALD is used for applications such as critical spacers (vs. Furnace), Gapfill (vs. CVD/SOD), and Metal (PVD/CVD). ALD is well suited for high-aspect-ratio and 3D structures driving opportunities in both Logic (finFET) and 3D NAND. In Etch, the company has a very high share within NAND and should benefit as manufacturers move to 128L and beyond.
- **EUV Photoresist Opportunity:** LRCX's Dry Photoresist technology can disrupt the \$2B Photoresist Processing (Track) market where TEL has 90%+ share. This technology extends the resolution, productivity, and yield of EUV Lithography by creating a more effective barrier to the EUV photons.

Negatives

- **NAND Cyclical:** As we highlight above, the NAND market tends to be more cyclical than Logic as double digit growth in 2017/2018 turned into a 40% decline in 2019. We do like this exposure into 2021 given the most recent reset but the NAND exposure will impact the multiple that investors will ultimately pay in good years.
- **Consensus OW:** We realize we are new to the space but even from the semi guy this seems like the most consensus long of the group. We understand this doesn't mean the stock can't work but it does leave a higher bar for execution.

We initiate on LRCX with OW rating. Our price target of \$315 is based on 15x our CY21E EPS of \$20.77. Our CY20 revenue/EPS are \$10.16B/\$15.87 and CY21 are \$11.52B/\$20.77.

FIGURE 30
Barclays Estimates

| Revenue and EPS Estimates - Barclays vs. Consensus | | | | | |
|--|------|---------|---------|----------|----------|
| | | Jun Q | Sep Q | CY20 | CY21 |
| BARCLAYS | Revs | \$2,602 | \$2,524 | \$10,160 | \$11,525 |
| | EPS | \$4.05 | \$3.86 | \$15.87 | \$20.77 |
| CONSENSUS | Revs | \$2,674 | \$2,658 | \$10,509 | \$12,090 |
| | EPS | \$4.06 | \$4.05 | \$16.05 | \$20.35 |

Source: Company Reports, Bloomberg and Barclays Research \$ millions except EPS

FIGURE 31
LRCX Trades Midpoint of 10-Yr Historical Fwd P/E



Source: Bloomberg, Barclays Research

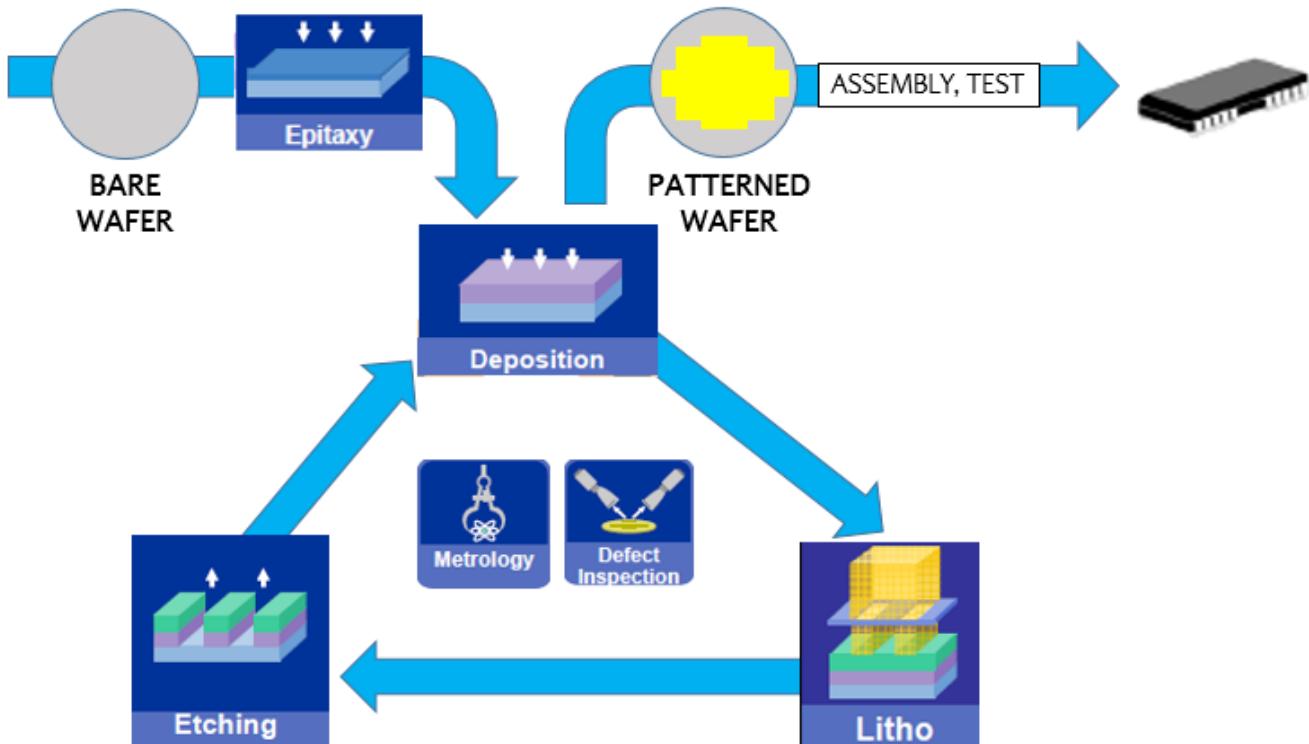
Semi Cap Background

The Semiconductor Manufacturing Process Overview

- **Deposition (\$12B)** – “Layering” process used to grow, coat, or transfer a conducting or insulating material to form thin films onto the wafer. The two main types of Deposition are Chemical Vapor (CVD) and Physical Vapor (PVD).
- **Lithography (\$11.7B)** – Process of printing images of chips onto wafers. This is one of the most critical of the production steps as the projected image represents the required circuit patterns, which are then built up over numerous layers, into the chip. Through the transmission of light via the lithography stepper, parts of the wafer are exposed and parts not. The latter sections can then be removed.
- **Material Removal & Cleaning (\$15.9B)** – Dry Etch involves a vacuum process in which plasma is used to selectively remove material from wafers. Wet Etch involves Lithography in order to create patterns in a material using Photoresist to protecting the layers underneath from the Etch.

- **Process Control (\$6.2B)** – Used for inspection and measurement to remove defects and increase yields.
- **Photoresist Processing (\$2.1B)** – A process that covers specific areas of a wafer with a light sensitive film (photoresist). These layers help create intricate pattern formation and protect wafer from chemical influences during Etch process.

FIGURE 32
Semiconductor Manufacturing Process Overview



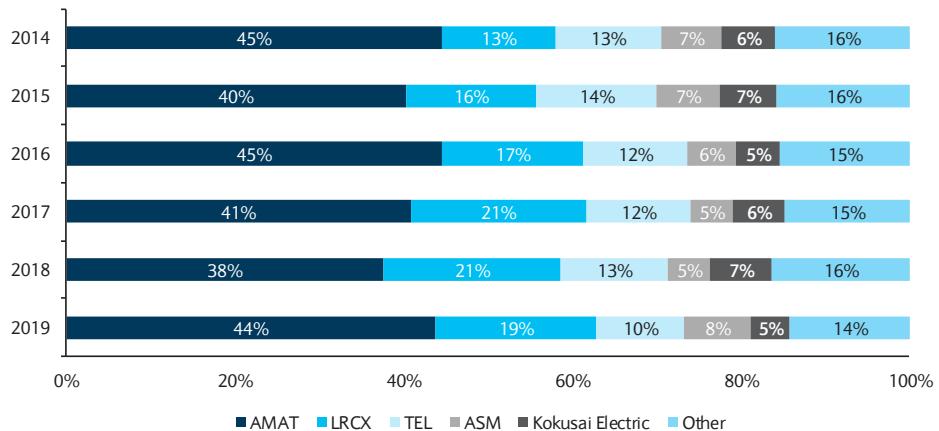
Source: AMAT Company Reports, Barclays Research

Deposition

Deposition is the process of creating layers of insulating (plastic) and conducting (metal) materials on a wafer surface. Physical Vapor Deposition (PVD) and Chemical Vapor Deposition (CVD) are the two main techniques in which material can be deposited on a wafer. PVD is one method used to deposit metal on a wafer, and involves a gas being accelerated towards a metal target in a high vacuum environment and the gas physically knocks-off tiny amounts of metal material, depositing a thin layer of desired material on the wafer. CVD is a technology used to deposit materials on the wafer surface by decomposing gaseous molecules. A gas containing metal/insulator precursors is combined in a reaction chamber with some form of energy. This combination activates a chemical reaction on the wafer surface, forming a thin film of solid material. CVD has several sub categories which vary in temperature and pressure of the process.

AMAT operates in many of the equipment types, but holds the dominant market share in Deposition (Figure 33). The company has also partaken in a lot of M&A transactions that has allowed it to hold market share in a variety of different equipment areas.

FIGURE 33
AMAT Leads in Deposition Market Since 2014



Source: Gartner, Barclays Research

AMAT has maintained 38-45% share of Deposition market since 2014, and regained roughly 6 points of share in 2019 given the upswing in Foundry/Logic vs. Memory (Figure 34). LRCX has also seen share gains over the last 6 years (more stable over last 3), while players such as TEL and Kokusai Electric gave up share.

FIGURE 34
Deposition Segment Competitive Landscape (2014-2019)

| Company Name | Share (%) | | | | | | Revenue (Y/Y%) | | | | |
|--------------------|-----------|--------|--------|--------|--------|--------|----------------|---------|--------|--------|--------|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2019 | 2018 | 2017 | 2016 | 2015 |
| Applied Materials | 43.8% | 37.6% | 40.8% | 44.6% | 40.2% | 44.6% | 5.5% | -1.2% | 42.4% | 19.0% | -10.0% |
| Lam Research | 19.1% | 21.0% | 20.8% | 16.8% | 15.6% | 13.4% | -17.9% | 8.2% | 92.5% | 16.0% | 15.7% |
| Tokyo Electron | 10.4% | 12.7% | 12.4% | 12.2% | 14.2% | 12.6% | -25.7% | 9.6% | 57.5% | -7.4% | 12.8% |
| ASM International | 7.9% | 5.1% | 4.9% | 5.9% | 7.4% | 7.1% | 41.0% | 10.4% | 31.0% | -15.4% | 3.9% |
| Kokusai Electric | 4.7% | 7.3% | 6.3% | 5.2% | 6.9% | 6.5% | -41.1% | 23.5% | 88.3% | -18.8% | 5.9% |
| Wonik IPS | 2.3% | 2.9% | 3.0% | 1.7% | 1.7% | 1.7% | -28.4% | 3.1% | 171.1% | 6.8% | 3.6% |
| Aixtron | 2.0% | 2.0% | 1.7% | 2.2% | 2.3% | 2.6% | -10.0% | 23.7% | 23.1% | 2.9% | -14.7% |
| Ulvac | 1.4% | 2.2% | 1.5% | 1.7% | 1.6% | 1.9% | -43.6% | 51.5% | 42.9% | 10.7% | -14.5% |
| AMEC | 1.1% | 1.0% | 0.7% | NM | NM | NM | 3.2% | 60.0% | NM | NM | NM |
| Veeco | 1.1% | 1.5% | 1.4% | 1.4% | 3.2% | 3.2% | -33.9% | 15.3% | 49.4% | -51.5% | -1.8% |
| Eugene Technology | 1.0% | 1.0% | 0.6% | 0.7% | 0.5% | 0.5% | -7.4% | 74.8% | 48.1% | 35.9% | -2.1% |
| TES | 1.0% | 1.2% | 1.5% | 1.5% | 0.9% | 1.0% | -25.9% | -10.7% | 56.6% | 68.6% | -5.8% |
| Jusung Engineering | 1.0% | 0.9% | 0.8% | 1.1% | 0.9% | 0.7% | -7.3% | 28.7% | 12.0% | 37.7% | 23.7% |
| KLA | 0.9% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | NM | NM | NM | NM | NM |
| NAURA | 0.9% | 0.3% | 0.3% | NM | 0.1% | 0.2% | 135.1% | 12.7% | NM | NM | NM |
| Evatec | 0.7% | 1.3% | 1.4% | 1.5% | 1.2% | 0.0% | -7.1% | 3.7% | 42.2% | 32.2% | NM |
| NuFlare Technology | 0.2% | 0.1% | 0.1% | NM | 0.0% | 0.0% | 29.2% | 53.2% | NM | NM | NM |
| Ebara | 0.1% | 0.1% | 0.1% | 0.7% | 0.2% | 0.1% | -8.6% | -2.3% | -68.0% | 202.0% | 259.4% |
| Orbotech | NM | 1.2% | 1.1% | 1.3% | 1.3% | 0.0% | NM | 18.3% | 28.9% | 4.7% | NM |
| Ultratech | NM | 0.0% | 0.1% | 0.1% | 0.1% | 0.1% | NM | -100.0% | -18.3% | 4.3% | 69.7% |
| Others | 0.5% | 0.5% | 0.5% | 1.6% | 1.6% | 3.9% | -9.8% | 9.7% | -54.3% | 7.8% | -60.2% |
| Total Market | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | -8.7% | 7.1% | 55.4% | 7.5% | -0.3% |

Source: Gartner, Barclays Research

By sub-segment within Deposition, AMAT holds majority share in Epitaxy, CVD, Plasma CVD, and Sputtering (strong share gains in 2019) while LRCX has most share in Nontube LPCVD, and ECD. ASM is strong in ALD Tools, and Kokusai Electric has dominant share of Tube CVD.

FIGURE 35

Deposition Sub-Segment Market Share (2017-2019): AMAT Gains Share in Sputtering and Overall Deposition

| Competitive Landscape | 2019 TAM (\$MM) | AMAT | | | LRCX | | | TEL | | | ASM | | | Kokusai Electric | | | Other | | |
|-----------------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|------------------|------|------|-------|------|------|
| | | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 |
| Epitaxy | \$988 | 74% | 74% | 83% | -- | -- | -- | -- | -- | -- | 20% | 17% | 12% | -- | -- | -- | 7% | 9% | 5% |
| CVD | 7,280 | 30% | 28% | 30% | 26% | 27% | 27% | 17% | 18% | 18% | 10% | 6% | 6% | 8% | 11% | 9% | 9% | 9% | 10% |
| Tube CVD | 1,123 | -- | -- | -- | -- | -- | -- | 46% | 38% | 42% | 4% | 3% | 2% | 50% | 59% | 56% | -- | -- | -- |
| Nontube Reactor CVD | 6,157 | 35% | 35% | 36% | 31% | 33% | 32% | 12% | 14% | 13% | 11% | 7% | 7% | -- | -- | -- | 11% | 11% | 12% |
| ALD Tools | 1,412 | 3% | 3% | 4% | 12% | 20% | 15% | 28% | 27% | 31% | 41% | 29% | 30% | -- | -- | -- | 16% | 21% | 19% |
| Nontube LPCVD | 1,022 | 15% | 13% | 12% | 44% | 40% | 43% | 33% | 41% | 36% | -- | -- | -- | -- | -- | -- | 8% | 5% | 8% |
| Plasma CVD | 3,724 | 53% | 52% | 54% | 34% | 35% | 35% | -- | -- | -- | 3% | 2% | 1% | -- | -- | -- | 9% | 10% | 10% |
| Sputtering | 2,677 | 85% | 74% | 79% | -- | -- | -- | -- | 1% | 1% | -- | -- | -- | -- | -- | -- | 15% | 24% | 20% |
| ECD | 493 | 14% | 16% | 13% | 81% | 76% | 77% | -- | 4% | 7% | -- | -- | -- | -- | -- | -- | 5% | 4% | 3% |
| Other | 543 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 100% | 100% | 100% |
| Total Deposition | \$11,982 | 44% | 38% | 41% | 19% | 21% | 21% | 10% | 13% | 12% | 8% | 5% | 5% | 5% | 7% | 6% | 14% | 16% | 15% |

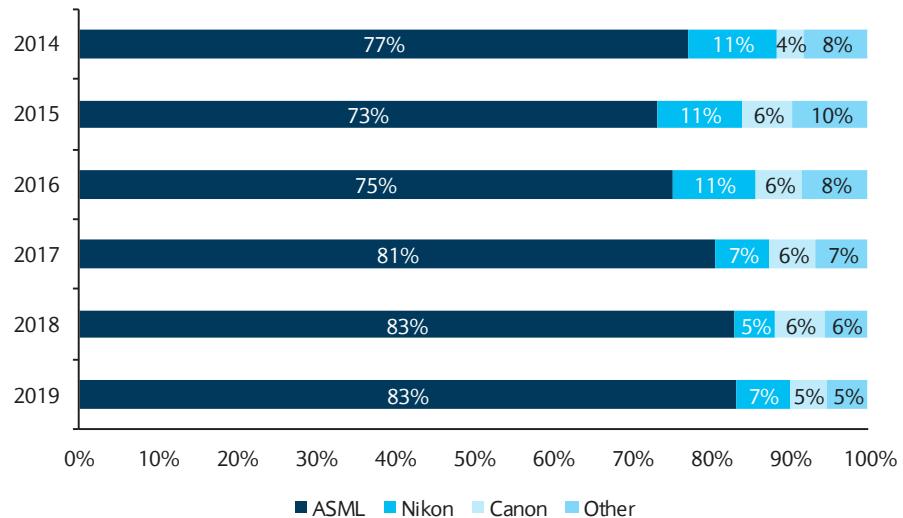
■ ■ ■ Market share

Source: Gartner, Barclays Research

Lithography

Lithography is the process of printing images of chips onto wafers, and it is among the most critical of the production steps given it provides the ability to build finer and finer circuit structures on the wafer. A laser creates light (of different wavelengths) that shines through the reticle (or mask) and a reduction lens, casting an image on the wafer, which presents the desired circuit pattern. ASML is the market share leader in Lithography, and the company is also the sole manufacturer of lithography machines that use extreme ultraviolet light (EUV) (Figure 36), which is today's leading edge tool.

FIGURE 36

ASML Maintains Majority Share of Lithography Market

Source: Gartner, Barclays Research

ASML is the clear share leader in Lithography as it reached 83% of the market in 2019 (Figure 37). Nikon and Canon are the only other two notable players in this market, and they've only retained ~7% and ~5% market shares, respectively. ASML is the sole provider of advanced EUV systems. Nikon still ships DUV ArFi (immersion) systems while Canon is stronger in iLine and KrF.

FIGURE 37

Lithography Segment Competitive Landscape (2014-2019)

| Company Name | Share (%) | | | | | | Revenue (Y/Y%) | | | | |
|----------------------|-----------|--------|--------|--------|--------|--------|----------------|---------|--------|--------|--------|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2019 | 2018 | 2017 | 2016 | 2015 |
| ASML | 83.3% | 83.1% | 80.7% | 75.1% | 73.2% | 77.2% | 4.1% | 36.2% | 39.2% | 7.4% | -16.6% |
| Nikon | 6.8% | 5.1% | 6.8% | 10.6% | 11.0% | 11.2% | 36.3% | -0.6% | -16.2% | 1.2% | -13.6% |
| Canon | 4.7% | 6.2% | 5.8% | 6.0% | 6.4% | 3.6% | -20.7% | 39.8% | 26.8% | -1.7% | 55.9% |
| NuFlare Technology | 3.0% | 3.1% | 3.3% | 4.0% | 5.7% | 4.5% | 0.7% | 21.8% | 7.8% | -25.5% | 10.6% |
| Suss MicroTec | 0.5% | 0.6% | 0.7% | 0.5% | 0.5% | 0.4% | -10.3% | 23.6% | 59.8% | 4.9% | 17.2% |
| Veeco | 0.5% | 0.8% | 0.7% | 0.0% | NM | NM | -32.5% | 51.4% | NM | NM | NM |
| Applied Materials | 0.3% | 0.2% | 0.5% | 0.5% | 0.5% | 0.1% | 52.6% | -39.2% | 14.7% | 23.3% | 265.0% |
| EV Group | 0.3% | 0.3% | 0.4% | 0.5% | 0.5% | 0.4% | 1.6% | 12.0% | 5.2% | -6.1% | 22.2% |
| Rudolph Technologies | 0.1% | 0.1% | 0.2% | 0.2% | 0.2% | 0.1% | 7.2% | -50.7% | 24.6% | -21.4% | 287.7% |
| Ultratech | NM | 0.0% | 0.2% | 1.5% | 1.3% | 0.9% | NM | -100.0% | -78.7% | 16.8% | 30.9% |
| Others | 0.5% | 0.5% | 0.7% | 1.1% | 0.8% | 1.8% | 13.1% | -1.8% | -18.9% | 40.6% | -60.8% |
| Total Market | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 3.9% | 32.3% | 29.7% | 4.6% | -12.0% |

Source: Gartner, Barclays Research

Within Lithography, ASML and Nikon sell steppers for semiconductor patterning, while the rest of the market players focus on Advanced Packaging Lithography (Figure 38), used in the manufacturing of masks and micro-structures.

FIGURE 38

Lithography Sub-Segment Market Share (2017-2019)

| Competitive Landscape | 2019 TAM (\$MM) | ASML | | | Nikon | | | Canon | | | Other | | |
|--------------------------------|-----------------|------|------|------|-------|------|------|-------|------|------|-------|------|------|
| | | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 |
| Steppers (including EUV) | \$11,017 | 88% | 89% | 87% | 7% | 5% | 7% | 4% | 6% | 6% | -- | -- | 0% |
| Advanced Packaging Lithography | 255 | -- | -- | -- | -- | -- | -- | 27% | 24% | 19% | 73% | 76% | 81% |
| Other | 433 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 100% | 100% | 100% |
| Total Lithography | \$11,705 | 83% | 83% | 81% | 7% | 5% | 7% | 5% | 6% | 6% | 5% | 6% | 7% |

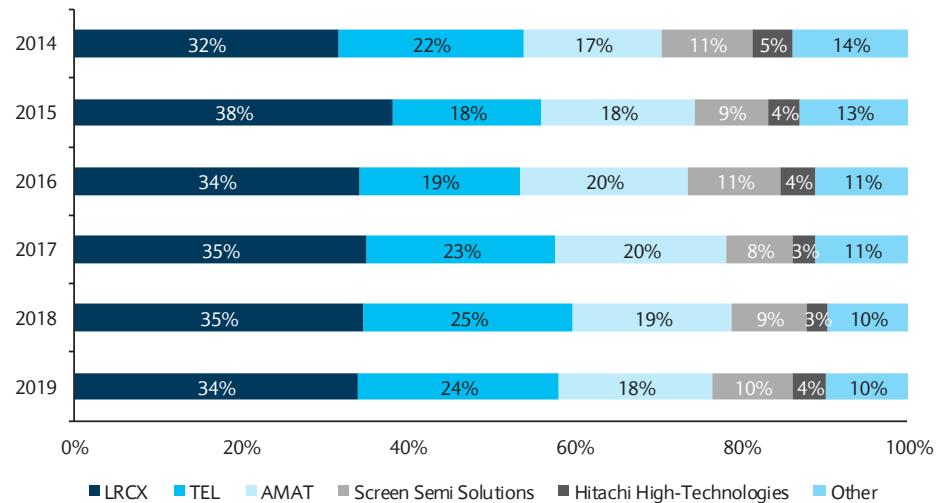


Source: Gartner, Barclays Research

Material Removal & Cleaning

Etch helps remove selected areas from the surface of the wafer in order for other materials to be deposited. Dry Etching is an important step that involves a vacuum process in which plasma is used to selectively remove materials from wafers, and the remaining material forms the circuit patterns on each chip. Wet Etching involves Lithography in order to create patterns in a material using photoresist while also protecting the layers underneath; material is dissolved when immersed in a chemical solution. CMP steps are inserted throughout manufacturing to condition the wafer, remove layers, control thickness, etc. LRCX is the majority share leader in overall Material Removal & Cleaning, followed by TEL as the second largest (Figure 39).

FIGURE 39
Material Removal & Cleaning Segment Dominated by LRCX and TEL



Source: Gartner, Barclays Research

LRCX, Tokyo Electron, and Applied Materials have all seen some degree of share gains in Material Removal and Cleaning since 2014, which reiterates the market consolidation going on as the top 5 players take share from smaller players in the market (Figure 40).

FIGURE 40
Material Removal & Cleaning Segment Competitive Landscape (2014-2019)

| Company Name | Share (%) | | | | | | Revenue (Y/Y%) | | | | |
|--------------------------------|-----------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2019 | 2018 | 2017 | 2016 | 2015 |
| Lam Research | 34.0% | 34.7% | 35.1% | 34.2% | 38.3% | 31.7% | -13.0% | 11.7% | 43.6% | 6.0% | 27.8% |
| Tokyo Electron | 24.1% | 25.2% | 22.7% | 19.2% | 17.8% | 22.3% | -15.1% | 25.4% | 66.0% | 27.7% | -15.3% |
| Applied Materials | 18.3% | 19.0% | 20.5% | 20.3% | 18.4% | 16.5% | -14.6% | 4.8% | 41.3% | 31.1% | 17.6% |
| Screen Semiconductor Solutions | 9.7% | 8.9% | 7.9% | 11.0% | 8.8% | 10.9% | -3.8% | 26.9% | 1.6% | 48.2% | -14.6% |
| Hitachi High-Technologies | 4.0% | 2.5% | 2.8% | 4.2% | 3.8% | 4.8% | 40.4% | 2.0% | -6.9% | 30.5% | -15.0% |
| Ebara | 2.6% | 2.6% | 2.9% | 3.4% | 2.5% | 2.8% | -12.9% | 0.5% | 20.9% | 63.2% | -4.9% |
| SEMES | 1.3% | 3.2% | 4.4% | 2.5% | 5.2% | 5.0% | -60.7% | -18.3% | 144.5% | -42.6% | 11.1% |
| KLA | 1.0% | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM |
| NAURA | 0.8% | 0.3% | 0.2% | NM | NM | NM | 122.5% | 94.8% | NM | NM | NM |
| Mattson Technology | 0.8% | 0.4% | 0.7% | 0.8% | 0.8% | 1.1% | 60.3% | -27.8% | 24.7% | 5.2% | -16.9% |
| AMEC | 0.7% | 0.5% | 0.3% | 0.6% | 0.6% | 0.6% | 38.4% | 96.9% | -32.9% | 8.5% | 11.3% |
| PSK | 0.7% | 1.2% | 1.1% | 0.9% | 0.8% | 1.2% | -44.7% | 17.8% | 83.9% | 22.9% | -24.3% |
| TES | 0.1% | 0.2% | 0.3% | 0.1% | 0.0% | 0.3% | -48.1% | -13.8% | 273.8% | 221.1% | -84.0% |
| Tokyo Seimitsu | 0.1% | 0.1% | 0.1% | 0.2% | 0.1% | 0.1% | -18.9% | 67.6% | -21.8% | 40.4% | 77.8% |
| Kokusai Electric | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 35.1% | 110.1% | -59.1% | NM | NM |
| Orbotech | NM | 0.5% | 0.5% | 0.5% | 0.5% | 0.0% | NM | 22.8% | 38.8% | 5.5% | NM |
| Suss MicroTec | NM | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | NM | 6.1% | 62.3% | 8.9% | 28.6% |
| Others | 1.6% | 0.4% | 0.4% | 2.1% | 2.1% | 2.9% | 1.1% | 12.4% | -70.8% | 16.6% | -22.3% |
| Total Market | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | -12.1% | 12.9% | 40.2% | 18.5% | 5.8% |

Source: Gartner, Barclays Research

By sub-segment within Material Removal & Cleaning, LRCX is specifically known for its Dry Etch (\$10.8B TAM) and Conductor Etch business (Figure 41). Strength in this area is expected to grow as 3D architectures and new materials rely on Etch processes. 3D NAND is the primary driver for Dry Etch as it requires very precise, high aspect ratio Etch capability. TEL is another large player in the space, holding majority share of Dielectric Etch, and also has decent share of Spray Processors. AMAT's strong suit is CMP and Post-CMP Clean.

FIGURE 41

Material Removal & Cleaning Sub-Segment Market Share (2017-2019)

| Competitive Landscape | 2019 TAM (\$MM) | LRCX | | | TEL | | | AMAT | | | Other | | |
|--|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 |
| Spray Processors | \$2,289 | 16% | 16% | 13% | 29% | 25% | 24% | -- | -- | -- | 55% | 59% | 63% |
| Dry Etch | 10,806 | 45% | 46% | 48% | 28% | 30% | 27% | 18% | 18% | 19% | 9% | 6% | 7% |
| Dielectric Etch | 4,216 | 36% | 37% | 41% | 61% | 59% | 54% | -- | -- | -- | 4% | 3% | 4% |
| Conductor Etch | 6,590 | 51% | 53% | 53% | 7% | 6% | 6% | 30% | 33% | 33% | 13% | 8% | 9% |
| CMP and Post-CMP Clean | 1,447 | -- | -- | -- | -- | -- | -- | 66% | 70% | 71% | 34% | 30% | 29% |
| Other | 1,368 | 1% | 1% | 1% | 1% | 1% | 2% | -- | -- | -- | 98% | 97% | 97% |
| Total Material Removal and Cleaning | \$15,910 | 34% | 35% | 35% | 24% | 25% | 23% | 18% | 19% | 20% | 23% | 21% | 22% |

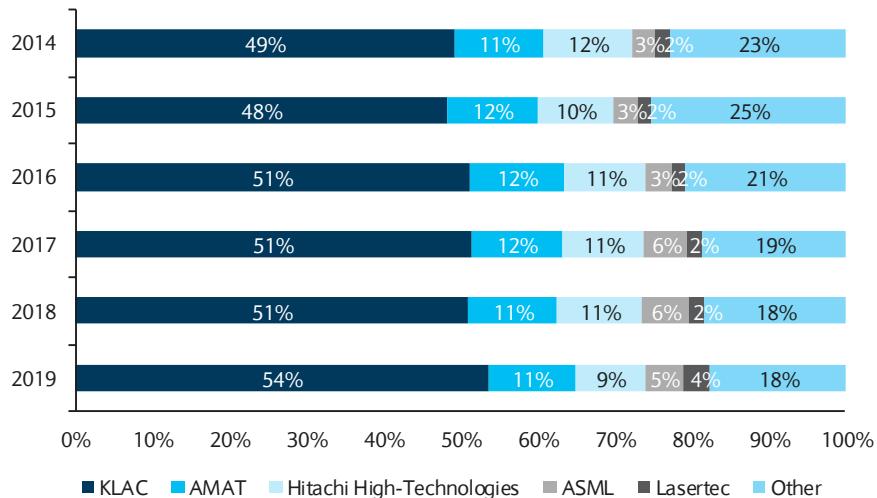

■ Market share

Source: Gartner, Barclays Research

Process Control

Process Control is used for inspection and measurement to identify defects and increase yields. This step is very important as all kinds of processes must be monitored, before and after each step is completed. This market is expected to grow (Gartner estimates 2% CAGR '19-'24) as complexity increases at more complex nodes including adoption of EUV, which brings additional challenges. KLAC has majority share in the Process Control market, ending 2019 with 54% share of the market (Figure 42). In times of high Foundry/Logic demand/growth, KLAC benefits in terms of Process Control intensity.

FIGURE 42

KLAC Maintains Majority Share of Process Control Market

Source: Gartner, Barclays Research

In Process Control market, KLAC has seen pretty stable share gains over the last several years, reaching over half of the total market (~54% share). AMAT has maintained ~11% share while other smaller players slightly ticked up for the most part (Lasertec, Camtek, Zeiss, among others).

FIGURE 43

Process Control Segment Competitive Landscape (2014-2019)

| Company Name | Share (%) | | | | | | Revenue (Y/Y%) | | | | | |
|--------------------------------|-----------|--------|--------|--------|--------|--------|----------------|---------|--------|--------|--------|--|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2019 | 2018 | 2017 | 2016 | 2015 | |
| KLA | 53.6% | 51.1% | 51.3% | 51.2% | 48.3% | 49.2% | 2.6% | 15.9% | 17.1% | 17.8% | -4.0% | |
| Applied Materials | 11.3% | 11.5% | 11.9% | 12.3% | 11.7% | 11.4% | -3.9% | 12.8% | 12.4% | 17.6% | -0.2% | |
| Hitachi High-Technologies | 9.1% | 11.1% | 10.6% | 10.6% | 9.9% | 11.7% | -20.4% | 21.5% | 16.8% | 18.9% | -16.6% | |
| ASML | 4.9% | 5.9% | 5.7% | 3.2% | 3.2% | 2.9% | -19.1% | 21.5% | 104.1% | 13.5% | 9.1% | |
| Lasertec | 3.6% | 2.1% | 2.0% | 1.8% | 1.7% | 2.0% | 64.1% | 27.0% | 23.8% | 17.2% | -14.8% | |
| Zeiss | 2.7% | 2.4% | 3.0% | 2.4% | 2.8% | 2.0% | 9.2% | -6.1% | 47.8% | -5.0% | 35.2% | |
| Nova Instruments | 2.7% | 3.0% | 3.2% | 2.6% | 2.6% | 2.1% | -13.1% | 10.5% | 42.1% | 10.1% | 20.6% | |
| Nanometrics | 2.6% | 4.2% | 3.9% | 3.9% | 3.6% | 3.1% | -39.5% | 24.6% | 16.7% | 20.4% | 14.4% | |
| Rudolph Technologies | 2.1% | 3.3% | 3.3% | 3.4% | 4.0% | 3.1% | -38.3% | 13.2% | 13.4% | -4.2% | 27.0% | |
| Camtek | 2.0% | 1.6% | 1.4% | 1.5% | 1.5% | 1.2% | 8.2% | 30.2% | 10.6% | 16.0% | 21.3% | |
| Semilab | 1.6% | 1.3% | 1.0% | 0.8% | 0.7% | 0.4% | 20.4% | 47.5% | 57.0% | 24.1% | 78.8% | |
| Onto Innovation | 1.4% | NM | NM | NM | NM | NM | NM | NM | NM | NM | NM | |
| Nikon | 0.6% | 0.6% | 0.6% | 0.7% | 0.9% | 0.5% | -2.6% | 11.6% | -1.9% | -2.3% | 66.2% | |
| Screen Semiconductor Solutions | 0.3% | 0.4% | 0.3% | 0.1% | 0.2% | 0.1% | -32.6% | 78.1% | 135.4% | -34.4% | 60.1% | |
| Veeco | 0.2% | 0.3% | 0.1% | 0.0% | NM | NM | -35.6% | 253.4% | NM | NM | NM | |
| Ultratech | NM | 0.0% | 0.2% | 0.2% | 0.2% | 0.0% | NM | -100.0% | -18.3% | 14.9% | 368.4% | |
| Others | 1.4% | 1.3% | 1.5% | 5.1% | 8.7% | 10.3% | 12.5% | -1.2% | -66.0% | -35.6% | -16.8% | |
| Total Market | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | -2.6% | 16.5% | 16.7% | 11.2% | -2.2% | |

Source: Gartner, Barclays Research

By sub-segment within Process Control, KLAC holds majority share in most categories, including Lithography Metrology, Wafer Inspection and Defect Review, and Patterned Wafer Inspection (Figure 44). The company also dominates the Thin-Film Metrology market as a distant individual leader.

FIGURE 44

Process Control Sub-Segment Market Share (2017-2019)

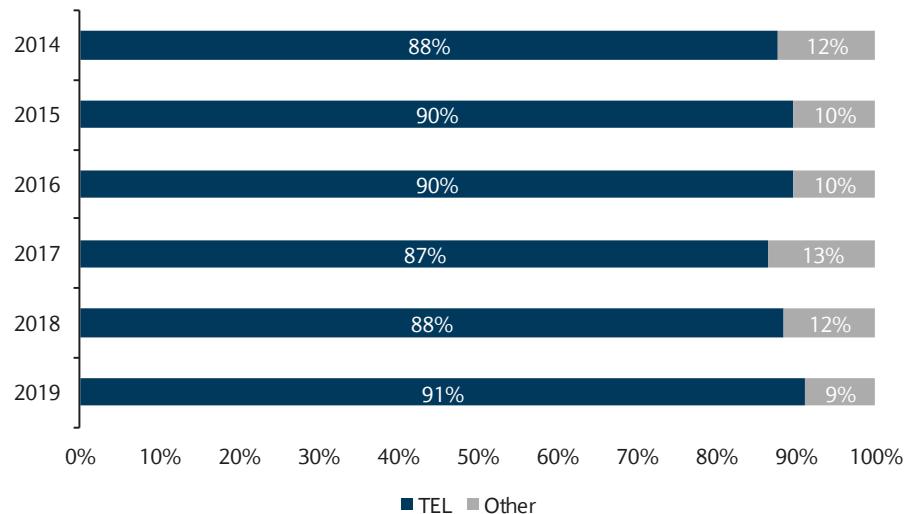
| Competitive Landscape | 2019 TAM (\$MM) | KLAC | | | AMAT | | | ASML | | | Other | | |
|------------------------------------|-----------------|------|------|------|------|------|------|------|------|------|-------|------|------|
| | | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 |
| Lithography Metrology | \$1,840 | 44% | 37% | 39% | 11% | 14% | 13% | 9% | 11% | 10% | 36% | 38% | 37% |
| Thin-Film Metrology | 970 | 42% | 41% | 43% | -- | -- | -- | -- | -- | -- | 58% | 59% | 57% |
| Wafer Inspection and Defect Review | 3,094 | 65% | 63% | 63% | 16% | 15% | 17% | 5% | 6% | 6% | 15% | 16% | 15% |
| Patterned Wafer Inspection | 1,605 | 72% | 68% | 72% | 18% | 16% | 14% | 9% | 11% | 10% | 1% | 5% | 4% |
| Other | 339 | 2% | 2% | 2% | -- | -- | -- | -- | -- | -- | 98% | 98% | 98% |
| Total Process Control | \$6,243 | 54% | 51% | 51% | 11% | 11% | 12% | 5% | 6% | 6% | 30% | 32% | 31% |

Source: Gartner, Barclays Research

Photoresist Processing

Photoresist Processing is one important aspect of Lithography; this process makes sure to cover certain areas of a wafer that either need to be removed or kept with a light sensitive film, known as photoresist. These photoresist layers essentially help create intricate pattern formation, and also protect the wafer substrate from chemical influences during the etch process. Tokyo Electron is the dominant leader that captures most of the total Photoresist Processing market (91% in 2019) followed by several other players (Figure 45, Figure 46, Figure 47).

FIGURE 45
Photoresist Processing Market Dominated by TEL



Source: Gartner, Barclays Research

FIGURE 46
Photoresist Processing Segment Competitive Landscape (2014-2019)

| Company Name | Share (%) | | | | | | Revenue (Y/Y%) | | | | |
|--------------------------------|-----------|--------|--------|--------|--------|--------|----------------|--------|--------|--------|--------|
| | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2019 | 2018 | 2017 | 2016 | 2015 |
| Tokyo Electron | 91.3% | 88.5% | 86.7% | 89.8% | 89.8% | 87.8% | -6.0% | 29.7% | 18.7% | 0.1% | -6.4% |
| Screen Semiconductor Solutions | 5.6% | 6.3% | 5.2% | 6.8% | 6.2% | 6.9% | -19.5% | 52.8% | -5.2% | 9.4% | -18.0% |
| SEMES | 2.2% | 4.4% | 7.2% | 2.8% | 3.4% | 4.5% | -48.1% | -23.3% | 221.4% | -17.5% | -32.3% |
| Suss MicroTec | 1.0% | 0.8% | 0.8% | 0.6% | 0.6% | 0.7% | 11.0% | 34.2% | 54.0% | 2.8% | -18.2% |
| Total Market | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | -8.3% | 27.1% | 22.9% | 0.1% | -8.4% |

Source: Gartner, Barclays Research

FIGURE 47
Photoresist Processing Segment Market Share (2017-2019)

| Competitive Landscape | 2019 TAM (\$MM) | TEL | | | Screen Semi Solutions | | | SEMES | | | Suss MicroTec | | |
|------------------------------|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|
| | | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 | 2019 | 2018 | 2017 |
| Total Photoresist Processing | \$2,060 | 91% | 88% | 87% | 6% | 6% | 5% | 2% | 4% | 7% | 1% | 1% | 1% |
| Market share | | | | | | | | | | | | | |

Source: Gartner, Barclays Research

Operating Metrics

AMAT and LRCX have a very similar GM profile around 45-46% for CY21E that is right inline with the front-end industry peers, while KLAC has the highest GM at 61%. Despite the similar GM profile, LRCX has a higher net margin at 25% for CY21E than AMAT at 21% both of which are above the industry median at 18%. KLAC is at the top of the range at 27%. As previously shown in Figure 18, the GMs for the top industry players have historically remained stable as the industry has continued to consolidate.

FIGURE 48
Operating Metrics

| Operating Metrics | | | | | | | | | | | | |
|---|-----------|-----------|-----------|------------|----------|----------------|--------|--------------|-------------------|--------------|-------------------|-----|
| (\$ in millions) | Revenue | | | Net Income | | Revenue Growth | | CY20E | | CY21E | | |
| | CY19 | CY20E | CY21E | CY20E | CY21E | 20/'19 | 21/'20 | Gross Margin | Net Income Margin | Gross Margin | Net Income Margin | |
| Applied Materials | \$15,017 | \$16,385 | \$17,386 | \$3,365 | \$3,726 | 9% | 6% | 44% | 21% | 45% | 21% | |
| Lam Research | \$9,549 | \$10,160 | \$11,525 | \$2,328 | \$2,885 | 6% | 13% | 45% | 23% | 46% | 25% | |
| KLA-Tencor | \$5,279 | \$5,563 | \$6,019 | \$1,449 | \$1,649 | 5% | 8% | 60% | 26% | 61% | 27% | |
| Front End | | | | | | | | | | | | |
| Comparables* | | | | | | | | | | | | |
| ASML | \$13,232 | \$13,991 | \$16,501 | \$3,270 | \$4,576 | 5.7% | 17.9% | 48% | 23% | 51% | 28% | |
| Tokyo Electron | \$10,302 | \$11,126 | \$12,317 | \$1,914 | \$2,244 | 8.0% | 10.7% | 41% | 17% | 43% | 18% | |
| ASM International | \$1,437 | \$1,309 | \$1,435 | \$266 | \$329 | (8.9%) | 9.6% | 43% | 20% | 43% | 23% | |
| MKS Instruments | \$1,900 | \$1,978 | \$2,212 | \$265 | \$384 | 4.1% | 11.8% | 44% | 13% | 46% | 17% | |
| Onto Innovation | \$306 | \$553 | \$622 | \$56 | \$93 | 80.6% | 12.6% | 51% | 10% | 53% | 15% | |
| Nova Instruments | \$225 | \$246 | \$286 | \$49 | \$67 | 9.5% | 16.2% | 56% | 20% | 57% | 23% | |
| Axcelis Technologies | \$343 | \$452 | \$486 | \$35 | \$49 | 31.9% | 7.4% | 40% | 8% | 42% | 10% | |
| | | | | | | Mean | 19% | 12% | 46% | 16% | 48% | 19% |
| | | | | | | Median | 8% | 12% | 44% | 17% | 46% | 18% |
| Semiconductor Test & Measurement | | | | | | | | | | | | |
| Comparables* | | | | | | | | | | | | |
| Teradyne | \$2,295 | \$2,573 | \$2,719 | \$524 | \$602 | 12.1% | 5.7% | 56% | 20% | 58% | 22% | |
| Advantest | \$2,492 | \$2,637 | \$2,716 | \$477 | \$482 | 5.8% | 3.0% | 56% | 18% | 56% | 18% | |
| FormFactor | \$589 | \$605 | \$645 | \$87 | \$97 | 2.7% | 6.5% | 44% | 14% | 45% | 15% | |
| Kulicke & Soffa Industries | \$527 | \$632 | \$761 | \$40 | \$65 | 19.9% | 20.4% | 46% | 6% | 46% | 9% | |
| Cohu | \$583 | \$552 | \$669 | \$8 | \$52 | (5.4%) | 21.3% | 41% | 2% | 44% | 8% | |
| | | | | | | Mean | 7% | 11% | 49% | 12% | 50% | 14% |
| | | | | | | Median | 6% | 6% | 46% | 14% | 46% | 15% |
| Memory | | | | | | | | | | | | |
| Comparables* | | | | | | | | | | | | |
| Samsung Electronics | \$197,776 | \$185,096 | \$212,489 | \$19,960 | \$29,732 | (6.4%) | 14.8% | 38% | 11% | 42% | 14% | |
| SK Hynix | \$23,169 | \$26,145 | \$32,336 | \$3,787 | \$7,265 | 12.8% | 23.7% | 37% | 14% | 46% | 22% | |
| Micron | \$20,637 | \$20,476 | \$25,912 | \$2,905 | \$6,498 | (0.8%) | 26.5% | 34% | 14% | 39% | 25% | |
| Western Digital | \$15,582 | \$17,276 | \$18,318 | \$1,494 | \$2,296 | 10.9% | 6.0% | 32% | 9% | 35% | 13% | |
| | | | | | | Mean | 4% | 18% | 35% | 12% | 40% | 19% |
| | | | | | | Median | 5% | 19% | 35% | 12% | 41% | 18% |
| Foundry | | | | | | | | | | | | |
| Comparables* | | | | | | | | | | | | |
| TSMC | \$34,635 | \$40,887 | \$44,787 | \$14,095 | \$15,568 | 18.1% | 9.5% | 49% | 34% | 49% | 35% | |
| SMIC | \$3,116 | \$3,648 | \$4,114 | \$249 | \$285 | 17.1% | 12.8% | 23% | 7% | 22% | 7% | |
| UMC | \$4,797 | \$5,625 | \$5,817 | \$421 | \$550 | 17.3% | 3.4% | 19% | 7% | 21% | 9% | |
| Vanguard | \$916 | \$1,091 | \$1,173 | \$190 | \$220 | 19.1% | 7.5% | 32% | 17% | 33% | 19% | |
| HH Grace | \$933 | \$958 | \$1,191 | \$101 | \$132 | 2.7% | 24.4% | 24% | 11% | 24% | 11% | |
| TowerJazz | \$1,234 | \$1,264 | \$1,361 | \$111 | \$164 | 2.4% | 7.7% | 20% | 9% | 23% | 12% | |
| | | | | | | Mean | 13% | 11% | 28% | 14% | 29% | 16% |
| | | | | | | Median | 17% | 9% | 23% | 10% | 24% | 12% |

Source: Company Reports, Bloomberg, and Barclays Research

* Comparable numbers use consensus estimates (as of 5/22/2020)

Comparable Valuation Analysis

FIGURE 49

Trading Metrics

| Trading Metrics | | Stock Price | % of 52 Week High | Market Cap. | Enterprise Value | EV/Revenue | | EV/EBITDA | | P/E | |
|--------------------------|--|----------------|----------------------|----------------|---------------------|------------|-------|-----------|-------|-------|-------|
| | | | | | | CY20E | CY21E | CY20E | CY21E | CY20E | CY21E |
| Applied Materials | | \$55.02 | 78.6% | \$50,008 | \$51,363 | 3.1x | 3.0x | 11.5x | 10.5x | 15.1x | 13.5x |
| Lam Research | | \$262.97 | 76.4% | \$38,189 | \$38,057 | 3.7x | 3.3x | 13.0x | 11.7x | 16.6x | 12.7x |
| KLA-Tencor | | \$177.92 | 93.9% | \$26,868 | \$28,792 | 5.2x | 4.8x | 13.3x | 12.0x | 18.9x | 15.8x |

Front End**Comparables***

| | | | | | | | | | | | |
|----------------------|----------|-------|-----------|-----------|---------------|-------------|-------------|--------------|--------------|--------------|--------------|
| ASML | \$317.75 | 98.6% | \$135,264 | \$134,993 | 9.6x | 8.2x | 31.9x | 23.4x | 40.5x | 28.9x | |
| Tokyo Electron | \$205.16 | 85.5% | \$32,347 | \$29,206 | 2.6x | 2.4x | 11.0x | 9.2x | 16.9x | 16.9x | |
| ASM International | \$110.70 | 85.1% | \$5,895 | \$5,315 | 4.1x | 3.7x | 14.5x | 13.2x | 20.3x | 16.8x | |
| MKS Instruments | \$99.79 | 81.4% | \$5,472 | \$5,933 | 3.0x | 2.7x | 12.2x | 10.1x | 19.8x | 14.3x | |
| Onto Innovation | \$32.08 | 74.2% | \$1,530 | \$1,262 | 2.3x | 2.0x | 12.5x | 8.5x | 20.8x | 14.3x | |
| Nova Instruments | \$45.17 | 99.6% | \$1,319 | \$1,154 | 4.7x | 4.0x | 17.4x | 13.4x | 25.3x | 19.3x | |
| Axcelis Technologies | \$24.84 | 85.9% | \$826 | \$706 | 1.6x | 1.5x | 13.5x | 10.2x | 26.0x | 17.7x | |
| | | | | | Mean | 4.0x | 3.5x | 16.1x | 12.6x | 24.2x | 18.3x |
| | | | | | Median | 3.0x | 2.7x | 13.5x | 10.2x | 20.8x | 16.9x |

Semiconductor Test & Measurement**Comparables***

| | | | | | | | | | | | |
|----------------------------|---------|-------|----------|---------|---------------|-------------|-------------|--------------|--------------|--------------|--------------|
| Teradyne | \$61.74 | 76.4% | \$10,333 | \$9,893 | 3.8x | 3.6x | 13.2x | 11.9x | 20.2x | 17.6x | |
| Advantest | \$48.30 | 79.2% | \$9,762 | \$8,682 | 3.3x | 3.2x | 18.7x | 11.6x | 23.0x | 19.8x | |
| FormFactor | \$24.32 | 85.1% | \$1,853 | \$1,700 | 2.8x | 2.6x | 15.1x | 13.7x | 22.5x | 19.9x | |
| Kulicke & Soffa Industries | \$22.43 | 77.8% | \$1,393 | \$892 | 1.4x | 1.2x | 11.4x | 7.7x | 29.6x | 14.9x | |
| Cohu | \$15.33 | 57.5% | \$634 | \$852 | 1.5x | 1.3x | 20.6x | 8.5x | 83.6x | 13.1x | |
| | | | | | Mean | 2.6x | 2.4x | 15.8x | 10.7x | 35.8x | 17.1x |
| | | | | | Median | 2.8x | 2.6x | 15.1x | 11.6x | 23.0x | 17.6x |

Memory**Comparables***

| | | | | | | | | | | | |
|---------------------|---------|-------|-----------|-----------|---------------|-------------|-------------|-------------|-------------|--------------|-------------|
| Samsung Electronics | \$40.52 | 77.6% | \$234,216 | \$162,684 | 0.9x | 0.8x | 3.3x | 2.6x | 13.5x | 9.1x | |
| SK Hynix | \$67.65 | 76.7% | \$47,633 | \$54,937 | 2.1x | 1.7x | 4.3x | 3.1x | 13.0x | 6.8x | |
| Micron | \$45.22 | 73.2% | \$49,826 | \$47,880 | 2.3x | 1.8x | 5.8x | 4.9x | 17.7x | 8.2x | |
| Western Digital | \$42.69 | 59.0% | \$12,734 | \$19,668 | 1.1x | 1.1x | 5.4x | 4.6x | 8.5x | 6.0x | |
| | | | | | Mean | 1.6x | 1.3x | 4.7x | 3.8x | 13.2x | 7.5x |
| | | | | | Median | 1.6x | 1.4x | 4.9x | 3.9x | 13.2x | 7.5x |

Foundry**Comparables***

| | | | | | | | | | | | |
|-----------|---------|-------|-----------|-----------|---------------|-------------|-------------|-------------|-------------|--------------|--------------|
| TSMC | \$9.94 | 84.4% | \$252,423 | \$241,311 | 5.9x | 5.4x | 9.3x | 8.4x | 18.1x | 16.5x | |
| SMIC | \$2.26 | 81.7% | \$11,872 | \$18,536 | 5.1x | 4.5x | 12.8x | 10.8x | 52.9x | 42.3x | |
| UMC | \$0.51 | 88.0% | \$6,153 | \$5,591 | 1.0x | 1.0x | 2.8x | 2.8x | 14.9x | 11.2x | |
| Vanguard | \$2.34 | 83.4% | \$3,797 | \$3,537 | 3.2x | 3.0x | 10.0x | 9.0x | 20.1x | 17.4x | |
| HH Grace | \$2.04 | 65.0% | \$2,537 | \$2,600 | 2.7x | 2.2x | 14.6x | 7.4x | 23.8x | 21.2x | |
| TowerJazz | \$19.60 | 76.3% | \$2,103 | \$1,665 | 1.3x | 1.2x | 5.1x | 4.3x | 19.2x | 13.0x | |
| | | | | | Mean | 3.2x | 2.9x | 9.1x | 7.1x | 24.8x | 20.3x |
| | | | | | Median | 3.0x | 2.6x | 9.7x | 7.9x | 19.6x | 17.0x |

Source: Company Reports, Bloomberg, and Barclays Research

* Comparable numbers use consensus estimates

Priced as of 5/22/2020

Investment Risks & Risk to Our Thesis

- **Foundry Could Improve with Shift in Capex:** Foundry capex could prove to be stronger than expected in the 2H of this year if Huawei is hampered and competitors ramp to take share. It's unlikely TSMC cuts in this scenario and Foundry capex could actually tick higher if Samsung captures more of the Huawei modem business through Samsung or QUALCOMM. The higher Foundry capex brings upside for the group vs. our expectations.
- **China Issues May Limit Growth Potential:** China restrictions are a hurdle that we believe the group likely works around but any further tightening of the restrictions/rules could materially impact semi cap equipment group. If China sales impacted long term the group could see material downside as names have 20-30% exposure.
- **Slower Than Expected Memory Ramp:** If Memory ramps slower than expected in the 2H or Mobile doesn't offset some Data Center slowdown, our thesis is materially impacted. In this scenario, the group would lack a driver in the 2H and have material downside to numbers.
- **COVID-19 Impact Larger Than Expected:** If the global impact from COVID is more than expected, this could lead to a global economic downturn, which would impact demand for semi units and in turn equipment and capacity.

FIGURE 50

AMAT Income Statement

| Applied Materials Period Ending \$ in millions | Jan-19 1Q | Apr-19 2Q | Jul-19 3Q | Oct-19 4Q | Jan-20 1Q | Apr-20 2Q | Jul-20 3QE | Oct-20 4QE | Jan-21 1QE | Apr-21 2QE | Jul-21 3QE | Oct-21 4QE | Jan-22 1QE | 2019 FY | 2020 FY | 2021 FY | 2019 CY | 2020 CYE | 2021 CYE |
|--|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|------------|------------|------------|-------------|-------------|
| Revenues | \$3,753.0 | \$3,539.0 | \$3,562.0 | \$3,754.0 | \$4,162.0 | \$3,957.0 | \$4,100.1 | \$4,221.4 | \$4,106.3 | \$4,198.2 | \$4,339.0 | \$4,469.1 | \$4,379.4 | \$14,608.0 | \$16,440.5 | \$17,112.5 | \$15,017.0 | \$16,384.8 | \$17,385.6 |
| QoQ | -6.5% | -5.7% | 0.6% | 5.4% | 10.9% | -4.9% | 3.6% | 3.0% | -2.7% | 2.2% | 3.4% | 3.0% | -2.0% | | | | -10.6% | 9.1% | 6.1% |
| YoY | -10.7% | -22.5% | -20.3% | -6.5% | 10.9% | 11.8% | 15.1% | 12.5% | -1.3% | 6.1% | 5.8% | 5.9% | 6.7% | -15.3% | 12.5% | 4.1% | | | |
| Cost of Goods | 2,078.0 | 2,000.0 | 1,996.0 | 2,111.0 | 2,295.0 | 2,192.0 | 2,296.0 | 2,355.6 | 2,283.1 | 2,330.0 | 2,395.1 | 2,458.0 | 2,408.6 | 8,185.0 | 9,138.6 | 9,466.2 | 8,402.0 | 9,126.7 | 9,591.8 |
| Gross Profit | \$1,675.0 | \$1,539.0 | \$1,566.0 | \$1,643.0 | \$1,867.0 | \$1,765.0 | \$1,804.0 | \$1,865.9 | \$1,823.2 | \$1,868.2 | \$1,943.9 | \$2,011.1 | \$1,970.7 | \$6,423.0 | \$7,301.9 | \$7,646.3 | \$6,615.0 | \$7,258.1 | \$7,793.9 |
| R&D | 516.0 | 508.0 | 515.0 | 515.0 | 552.0 | 550.0 | 550.0 | 552.0 | 553.0 | 564.1 | 567.1 | 570.1 | 571.1 | 2,054.0 | 2,204.0 | 2,254.2 | 2,090.0 | 2,205.0 | 2,272.2 |
| SG&A | 234.0 | 237.0 | 231.0 | 240.0 | 247.0 | 239.0 | 239.0 | 240.0 | 239.0 | 243.8 | 244.8 | 245.8 | 246.8 | 942.0 | 965.0 | 973.3 | 955.0 | 957.0 | 981.1 |
| Total Operating Expenses | 750.0 | 745.0 | 746.0 | 755.0 | 799.0 | 789.0 | 789.0 | 792.0 | 792.0 | 807.8 | 811.8 | 815.8 | 817.8 | 2,996.0 | 3,169.0 | 3,227.5 | 3,045.0 | 3,162.0 | 3,253.4 |
| Operating Income | \$925.0 | \$794.0 | \$820.0 | \$888.0 | \$1,068.0 | \$976.0 | \$1,015.0 | \$1,073.9 | \$1,031.2 | \$1,060.4 | \$1,132.0 | \$1,195.2 | \$1,152.9 | \$3,427.0 | \$4,132.9 | \$4,418.8 | \$3,570.0 | \$4,096.1 | \$4,540.5 |
| Interest Income (Exp) | (32.0) | (28.0) | (28.0) | (29.0) | (33.0) | (47.0) | (46.0) | (44.6) | (44.1) | (41.9) | (40.3) | (38.4) | (36.1) | (117.0) | (170.6) | (164.7) | (118.0) | (181.6) | (156.7) |
| Interest Income (Exp) | (60.0) | (60.0) | (58.0) | (59.0) | (59.0) | (61.0) | (61.0) | (58.9) | (60.3) | (60.3) | (60.4) | (60.6) | (60.6) | (237.0) | (239.9) | (241.6) | (236.0) | (241.2) | (241.9) |
| Interest and other income | 28.0 | 32.0 | 30.0 | 30.0 | 26.0 | 14.0 | 15.0 | 14.3 | 16.2 | 18.3 | 20.2 | 22.2 | 24.5 | 120.0 | 69.3 | 76.9 | 118.0 | 59.5 | 85.2 |
| Profit Before Taxes | 893.0 | 766.0 | 792.0 | 859.0 | 1,035.0 | 929.0 | 969.1 | 1,029.3 | 987.1 | 1,018.4 | 1,091.8 | 1,156.8 | 1,116.8 | 3,310.0 | 3,962.3 | 4,254.1 | 3,452.0 | 3,914.5 | 4,383.8 |
| Taxes | 114.0 | 106.0 | 100.0 | 115.0 | 131.0 | 112.0 | 140.5 | 149.2 | 148.1 | 152.8 | 163.8 | 173.5 | 167.5 | 435.0 | 532.8 | 638.1 | 452.0 | 549.8 | 657.6 |
| Net Income - Pro Forma (Incl ESC) | \$779.0 | \$660.0 | \$692.0 | \$744.0 | \$904.0 | \$817.0 | \$828.6 | \$880.0 | \$839.0 | \$865.7 | \$928.0 | \$983.3 | \$949.3 | \$2,875.0 | \$3,429.6 | \$3,616.0 | \$3,000.0 | \$3,364.6 | \$3,726.2 |
| EPS - Pro Forma (inl ESO) | \$0.81 | \$0.70 | \$0.74 | \$0.80 | \$0.98 | \$0.89 | \$0.90 | \$0.96 | \$0.91 | \$0.94 | \$1.01 | \$1.07 | \$1.04 | \$3.04 | \$3.71 | \$3.94 | \$3.21 | \$3.65 | \$4.06 |
| EPS - GAAP | \$0.80 | \$0.70 | \$0.61 | \$0.75 | \$0.96 | \$0.82 | \$0.87 | \$0.93 | \$0.88 | \$0.91 | \$0.98 | \$1.05 | \$0.99 | \$2.86 | \$3.57 | \$3.83 | \$3.02 | \$3.49 | \$3.94 |
| Dividend Per Share | \$0.20 | \$0.21 | \$0.21 | \$0.20 | \$0.22 | \$0.22 | \$0.22 | \$0.22 | \$0.22 | \$0.22 | \$0.22 | \$0.22 | \$0.22 | \$0.82 | \$0.86 | \$0.35 | \$0.82 | \$0.87 | \$0.88 |
| Fully Diluted Shares | 965.0 | 948.0 | 937.0 | 931.0 | 927.0 | 923.0 | 922.0 | 921.0 | 920.0 | 919.0 | 918.0 | 917.0 | 916.0 | 945.4 | 923.3 | 918.4 | 934.9 | 921.5 | 917.5 |
| <i>Percent of Sales</i> | | | | | | | | | | | | | | | | | | | |
| Gross Margin | 44.6% | 43.5% | 44.0% | 43.8% | 44.9% | 44.6% | 44.0% | 44.2% | 44.4% | 44.5% | 44.8% | 45.0% | 45.0% | 44.0% | 44.4% | 44.7% | 44.1% | 44.3% | 44.8% |
| R&D | 13.7% | 14.4% | 14.5% | 13.7% | 13.3% | 13.9% | 13.4% | 13.1% | 13.5% | 13.4% | 13.1% | 12.8% | 13.0% | 14.1% | 13.4% | 13.2% | 13.9% | 13.5% | 13.1% |
| SG&A | 6.2% | 6.7% | 6.5% | 6.4% | 5.9% | 6.0% | 5.8% | 5.7% | 5.8% | 5.8% | 5.6% | 5.5% | 5.6% | 6.4% | 5.9% | 5.7% | 6.4% | 5.8% | 5.6% |
| Operating Margin | 24.6% | 22.4% | 23.0% | 23.7% | 25.7% | 24.7% | 24.8% | 25.4% | 25.1% | 25.3% | 26.1% | 26.7% | 26.3% | 23.5% | 25.1% | 25.8% | 23.8% | 25.0% | 26.1% |
| Taxes | 12.8% | 13.8% | 12.6% | 13.4% | 12.7% | 12.1% | 14.5% | 14.5% | 15.0% | 15.0% | 15.0% | 15.0% | 15.0% | 13.6% | 13.7% | 15.3% | 13.1% | 14.0% | 15.0% |
| Net Income | 20.8% | 18.6% | 19.4% | 19.8% | 21.7% | 20.6% | 20.2% | 20.8% | 20.4% | 20.6% | 21.4% | 22.0% | 21.7% | 19.7% | 20.9% | 21.1% | 20.0% | 20.5% | 21.4% |
| <i>Sequential Change</i> | | | | | | | | | | | | | | | | | | | |
| R&D | -0.4% | -1.6% | 1.4% | 0.0% | 7.2% | -0.4% | 0.0% | 0.4% | 0.2% | 2.0% | 0.5% | 0.5% | 0.2% | 1.7% | 7.3% | 2.3% | 2.1% | 5.5% | 3.0% |
| SG&A | -1.7% | 1.3% | -2.5% | 3.9% | 2.9% | -3.2% | 0.0% | 0.4% | -0.4% | 2.0% | 0.4% | 0.4% | 0.4% | -3.8% | 2.4% | 0.9% | -2.7% | 0.2% | 2.5% |
| <i>Reconciliation of Pro Forma to GAAP</i> | | | | | | | | | | | | | | | | | | | |
| Purchased Intangibles | 14.0 | 14.0 | 13.0 | 14.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 55.0 | 52.0 | 52.0 | 54.0 | 52.0 | 52.0 |
| Other | (6.0) | (20.0) | 108.0 | 32.0 | (1.0) | 49.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 114.0 | 78.0 | 50.0 | 119.0 | 94.0 | 60.0 |
| Net Income - GAAP | \$771.0 | \$666.0 | \$571.0 | \$698.0 | \$892.0 | \$755.0 | \$800.6 | \$852.0 | \$811.0 | \$837.7 | \$900.0 | \$965.3 | \$911.3 | \$2,761.0 | \$3,351.6 | \$3,566.0 | \$2,827.0 | \$3,218.6 | \$3,614.2 |
| GAAP Shares | 965.0 | 948.0 | 937.0 | 931.0 | 927.0 | 923.0 | 922.0 | 921.0 | 920.0 | 919.0 | 918.0 | 917.0 | 916.0 | 965.2 | 937.9 | 932.0 | 934.9 | 921.5 | 917.5 |
| EPS - GAAP | \$0.80 | \$0.70 | \$0.61 | \$0.75 | \$0.96 | \$0.82 | \$0.87 | \$0.93 | \$0.88 | \$0.91 | \$0.98 | \$1.05 | \$0.99 | \$2.86 | \$3.57 | \$3.83 | \$3.02 | \$3.49 | \$3.94 |

Source: Company Reports, Barclays Research Estimates

FIGURE 51
AMAT Balance Sheet

| Applied Materials Period Ending \$ in millions | Jan-19 1Q | Apr-19 2Q | Jul-19 3Q | Oct-19 4Q | Jan-20 1Q | Apr-20 2Q | Jul-20 3QE | Oct-20 4QE | Jan-21 1QE | Apr-21 2QE | Jul-21 3QE | Oct-21 4QE | Jan-22 1QE | 2019 FY | 2020 FY | 2021 FY | 2019 CY | 2020 CYE | 2021 CYE | |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----|
| BALANCE SHEET | | | | | | | | | | | | | | | | | | | | |
| Assets | | | | | | | | | | | | | | | | | | | | |
| Cash and cash equivalents | \$3,192.0 | \$3,116.0 | \$3,014.0 | \$3,129.0 | \$3,424.0 | \$5,281.0 | \$4,258.4 | \$4,749.1 | \$5,587.0 | \$6,220.4 | \$6,866.8 | \$7,588.5 | \$8,494.5 | \$3,129.0 | \$4,749.1 | \$7,588.5 | \$3,424.0 | \$5,587.0 | \$8,494.5 | |
| Short-term Investments | 520.0 | 507.0 | 547.0 | 489.0 | 536.0 | 423.0 | 423.0 | 423.0 | 423.0 | 423.0 | 423.0 | 423.0 | 423.0 | 489.0 | 423.0 | 423.0 | 536.0 | 423.0 | 423.0 | |
| Accounts Receivable | 2,444.0 | 2,264.0 | 2,373.0 | 2,533.0 | 2,679.0 | 2,625.0 | 2,703.4 | 2,783.4 | 2,707.4 | 2,768.1 | 2,860.9 | 2,946.6 | 2,887.5 | 2,533.0 | 2,783.4 | 2,946.6 | 2,679.0 | 2,707.4 | 2,887.5 | |
| Inventory | 3,703.0 | 3,677.0 | 3,539.0 | 3,474.0 | 3,472.0 | 3,725.0 | 3,784.7 | 3,882.8 | 3,763.3 | 3,840.7 | 3,948.0 | 4,051.6 | 3,970.3 | 3,474.0 | 3,882.8 | 4,051.6 | 3,472.0 | 3,763.3 | 3,970.3 | |
| Deferred Tax Assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Other current assets | 426.0 | 498.0 | 569.0 | 581.0 | 658.0 | 681.0 | 705.6 | 726.5 | 706.7 | 722.5 | 746.7 | 769.1 | 753.7 | 581.0 | 726.5 | 769.1 | 658.0 | 706.7 | 753.7 | |
| Total Current Assets | \$10,285.0 | \$10,062.0 | \$10,042.0 | \$10,206.0 | \$10,769.0 | \$12,735.0 | \$11,875.1 | \$12,564.7 | \$13,187.5 | \$13,974.7 | \$14,845.4 | \$15,778.9 | \$16,529.0 | \$10,206.0 | \$12,564.7 | \$15,778.9 | \$10,769.0 | \$13,187.5 | \$16,529.0 | |
| Long-term investments | 1,588.0 | 1,609.0 | 1,650.0 | 1,703.0 | 1,713.0 | 1,678.0 | 1,678.0 | 1,678.0 | 1,678.0 | 1,678.0 | 1,678.0 | 1,678.0 | 1,678.0 | 1,703.0 | 1,678.0 | 1,678.0 | 1,713.0 | 1,678.0 | 1,678.0 | |
| Property and Equipment | 1,456.0 | 1,494.0 | 1,513.0 | 1,529.0 | 1,555.0 | 1,534.0 | 1,514.1 | 1,494.3 | 1,474.6 | 1,455.0 | 1,435.5 | 1,416.1 | 1,315.3 | 1,529.0 | 1,494.3 | 1,416.1 | 1,555.0 | 1,474.6 | 1,315.3 | |
| Deferred comp plan investments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Goodwill net | 3,368.0 | 3,399.0 | 3,399.0 | 3,399.0 | 3,399.0 | 3,426.0 | 3,426.0 | 3,426.0 | 3,426.0 | 3,426.0 | 3,426.0 | 3,426.0 | 3,426.0 | 3,399.0 | 3,426.0 | 3,426.0 | 3,399.0 | 3,426.0 | 3,426.0 | |
| Other intangible assets, net | 199.0 | 185.0 | 170.0 | 156.0 | 142.0 | 132.0 | 132.0 | 132.0 | 132.0 | 132.0 | 132.0 | 132.0 | 132.0 | 156.0 | 132.0 | 132.0 | 142.0 | 132.0 | 132.0 | |
| Equity investments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Deferred income taxes and other assets | 2,026.0 | 2,026.0 | 2,031.0 | 2,031.0 | 2,189.0 | 2,310.0 | 2,310.0 | 2,310.0 | 2,310.0 | 2,310.0 | 2,310.0 | 2,310.0 | 2,310.0 | 2,031.0 | 2,310.0 | 2,310.0 | 2,189.0 | 2,310.0 | 2,310.0 | |
| Total Assets | \$18,922.0 | \$18,775.0 | \$18,805.0 | \$19,024.0 | \$19,767.0 | \$21,815.0 | \$20,935.2 | \$21,605.0 | \$22,208.1 | \$22,975.7 | \$23,826.9 | \$24,741.0 | \$25,390.3 | \$19,024.0 | \$21,605.0 | \$24,741.0 | \$19,767.0 | \$22,208.1 | \$25,390.3 | |
| Liabilities | | | | | | | | | | | | | | | | | | | | |
| Accounts Payable and Accrued Expenses | \$2,420.0 | \$2,212.0 | \$2,355.0 | \$2,511.0 | \$2,569.0 | \$2,831.0 | \$2,775.4 | \$2,717.9 | \$2,634.3 | \$2,688.5 | \$2,763.6 | \$2,836.1 | \$2,779.2 | \$2,511.0 | \$2,717.9 | \$2,836.1 | \$2,569.0 | \$2,634.3 | \$2,779.2 | |
| Accrued Liabilities | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Customer Deposits and Deferred Revenue | 1,356.0 | 1,393.0 | 1,430.0 | 1,336.0 | 1,400.0 | 1,334.0 | 1,334.0 | 1,334.0 | 1,334.0 | 1,334.0 | 1,334.0 | 1,334.0 | 1,334.0 | 1,336.0 | 1,334.0 | 1,334.0 | 1,400.0 | 1,334.0 | 1,334.0 | |
| Income Taxes Payable | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Short-term debt | | | | | | | | | | | | | | | | | | | | |
| Current Portion of LT Debt | 0.0 | 0.0 | 0.0 | 0.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | 600.0 | |
| Total Current Liabilities | \$3,776.0 | \$3,605.0 | \$3,785.0 | \$4,447.0 | \$4,569.0 | \$4,765.0 | \$4,709.4 | \$4,651.9 | \$4,568.3 | \$4,622.5 | \$4,697.6 | \$4,770.1 | \$4,713.2 | \$4,447.0 | \$4,651.9 | \$4,770.1 | \$4,569.0 | \$4,568.3 | \$4,713.2 | |
| Income Taxes Payable | 1,303.0 | 1,326.0 | 1,253.0 | 1,275.0 | 1,298.0 | 1,238.0 | 1,238.0 | 1,238.0 | 1,238.0 | 1,238.0 | 1,238.0 | 1,238.0 | 1,238.0 | 1,275.0 | 1,238.0 | 1,238.0 | 1,298.0 | 1,238.0 | 1,238.0 | |
| Long-Term Debt | 5,310.0 | 5,311.0 | 5,312.0 | 4,713.0 | 4,714.0 | 6,215.0 | 6,215.0 | 6,215.0 | 6,215.0 | 6,215.0 | 6,215.0 | 6,215.0 | 6,215.0 | 4,713.0 | 6,215.0 | 6,215.0 | 4,714.0 | 6,215.0 | 6,215.0 | |
| Deferred Compensation Plan Liability | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Other Noncurrent Liabilities | 324.0 | 332.0 | 339.0 | 375.0 | 526.0 | 573.0 | 573.0 | 573.0 | 573.0 | 573.0 | 573.0 | 573.0 | 573.0 | 375.0 | 573.0 | 573.0 | 526.0 | 573.0 | 573.0 | |
| Total Liabilities | \$10,713.0 | \$10,574.0 | \$10,689.0 | \$10,810.0 | \$11,107.0 | \$12,791.0 | \$12,735.4 | \$12,677.9 | \$12,594.3 | \$12,648.5 | \$12,723.6 | \$12,796.1 | \$12,739.2 | \$10,810.0 | \$12,677.9 | \$12,796.1 | \$11,107.0 | \$12,594.3 | \$12,739.2 | |
| Shareholders' Equity | | | | | | | | | | | | | | | | | | | | |
| Common Stock | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9 | \$9.0 | \$9.0 | \$9.0 | \$9.0 | \$9.0 | \$9.0 | |
| Additional Paid-In Capital | 7,265.0 | 7,396.0 | 7,460.0 | 7,595.0 | 7,550.0 | 7,687.0 | 7,687.0 | 7,687.0 | 7,687.0 | 7,687.0 | 7,687.0 | 7,687.0 | 7,687.0 | 7,595.0 | 7,687.0 | 7,687.0 | 7,550.0 | 7,687.0 | 7,687.0 | |
| Retained Earnings | 23,032.0 | 23,502.0 | 23,880.0 | 24,386.0 | 25,085.0 | 25,638.0 | 24,813.7 | 25,541.1 | 26,227.7 | 26,941.2 | 27,717.3 | 28,558.8 | 29,265.1 | 24,386.0 | 25,541.1 | 28,558.8 | 25,085.0 | 26,227.7 | 29,265.1 | |
| Treasury Stock | (21,943.0) | (22,568.0) | (23,096.0) | (23,596.0) | (23,796.0) | (24.0) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Other | (154.0) | (138.0) | (137.0) | (180.0) | (188.0) | (315.0) | (315.0) | (315.0) | (315.0) | (315.0) | (315.0) | (315.0) | (315.0) | (180.0) | (315.0) | (315.0) | (188.0) | (315.0) | (315.0) | |
| Total Shareholder's Equity | \$8,209.0 | \$8,201.0 | \$8,116.0 | \$8,214.0 | \$8,660.0 | \$9,024.0 | \$8,199.7 | \$8,927.1 | \$9,613.7 | \$10,327.2 | \$11,103.3 | \$11,944.8 | \$12,651.1 | \$8,214.0 | \$8,927.1 | \$11,944.8 | \$8,660.0 | \$9,613.7 | \$12,651.1 | |
| Total Liabilities & Equity | \$18,922.0 | \$18,775.0 | \$18,805.0 | \$19,024.0 | \$19,767.0 | \$21,815.0 | \$20,935.2 | \$21,605.0 | \$22,208.1 | \$22,975.7 | \$23,826.9 | \$24,741.0 | \$25,390.3 | \$19,024.0 | \$21,605.0 | \$24,741.0 | \$19,767.0 | \$22,208.1 | \$25,390.3 | |
| CHECK | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| VALUATION RATIOS | | | | | | | | | | | | | | | | | | | | |
| Profitability Ratios | | | | | | | | | | | | | | | | | | | | |
| Return On Invested Capital | 50% | 35% | 30% | 36% | 46% | 39% | 40% | 42% | 39% | 41% | 43% | 45% | 42% | 42% | 45% | 43% | 42% | 37% | 41% | 44% |
| Return On Equity | 45% | 32% | 28% | 34% | 43% | 35% | 35% | 42% | 36% | 35% | 35% | 35% | 31% | 40% | 41% | 40% | 34% | 37% | 38% | |
| Return On Avg Equity * | 19% | 16% | 13% | 12% | 12% | 12% | 13% | 13% | 13% | 13% | 13% | 13% | 13% | 12% | 13% | 12% | 13% | 12% | 13% | |
| Return On Assets | 16% | 14% | 12% | 15% | 18% | 14% | 15% | 16% | 15% | 15% | 15% | 16% | 14% | 15% | 16% | 14% | 14% | 14% | 14% | |
| Return On Net Assets | 43% | 38% | 32% | 39% | 49% | 41% | 42% | 44% | 43% | 43% | 45% | 47% | 45% | 39% | 43% | 44% | 38% | 42% | 45% | |
| Return On Sales | 21% | 19% | 16% | 19% | 21% | 19% | 20% | 20% | 20% | 20% | 21% | 22% | 21% | 19% | 20% | 21% | 19% | 20% | 21% | |

Source: Company Reports, Barclays Research Estimates

FIGURE 52
AMAT Cash Flow Statement

| Applied Materials Period Ending \$ in millions | Jan-19 1Q | Apr-19 2Q | Jul-19 3Q | Oct-19 4Q | Jan-20 1Q | Apr-20 2Q | Jul-20 3QE | Oct-20 4QE | Jan-21 1QE | Apr-21 2QE | Jul-21 3QE | Oct-21 4QE | Jan-22 1QE | 2019 FY | 2020 FYE | 2021 FYE | 2019 CY | 2020 CYE | 2021 CYE |
|--|--------------------|------------------|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| CASH FLOW | | | | | | | | | | | | | | | | | | | |
| Cash Flow from Ops. | | | | | | | | | | | | | | | | | | | |
| Net Income | \$771.0 | \$666.0 | \$571.0 | \$698.0 | \$892.0 | \$755.0 | \$800.6 | \$852.0 | \$811.0 | \$837.7 | \$900.0 | \$965.3 | \$911.3 | \$2,706.0 | \$3,299.6 | \$3,514.0 | \$2,827.0 | \$3,218.6 | \$3,614.2 |
| Depreciation & Amortization | 88.0 | 94.0 | 89.0 | 92.0 | 94.0 | 91.0 | 90.9 | 90.8 | 90.7 | 90.6 | 90.5 | 90.4 | 90.3 | 363.0 | 366.7 | 362.2 | 369.0 | 363.4 | 361.8 |
| Stock Based Compensation expense | 65.0 | 65.0 | 67.0 | 66.0 | 93.0 | 71.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 13.0 | 263.0 | 190.0 | 52.0 | 291.0 | 110.0 | 52.0 |
| Deferred income taxes | 41.0 | 8.0 | 8.0 | (8.0) | 30.0 | (11.0) | | | | | | | | 49.0 | 19.0 | 0.0 | 38.0 | (11.0) | 0.0 |
| Tax Benefit - option exercises | | | | | | | | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other | | | | | | | | | | | | | | (19.0) | 22.0 | 0.0 | (4.0) | 7.0 | 0.0 |
| Changes in Operating Assets and Liabilities | (131.0) | (24.0) | 62.0 | (22.0) | (137.0) | (278.0) | (218.2) | (256.5) | 131.6 | (99.7) | (149.2) | (139.2) | 99.0 | (115.0) | (889.7) | (256.6) | (121.0) | (621.1) | (289.1) |
| Other liabilities | 13.0 | 7.0 | 5.0 | (27.0) | 25.0 | (27.0) | | | | | | | | (2.0) | (2.0) | 0.0 | 10.0 | (27.0) | 0.0 |
| Net Cash from Operations | \$834.0 | \$800.0 | \$787.0 | \$826.0 | \$987.0 | \$635.0 | \$686.2 | \$699.4 | \$1,046.3 | \$841.6 | \$854.3 | \$929.4 | \$1,113.6 | \$3,247.0 | \$3,007.6 | \$3,671.6 | \$3,400.0 | \$3,066.9 | \$3,738.9 |
| Cash Flow from Investing | | | | | | | | | | | | | | | | | | | |
| PP&E | (\$133.0) | (\$118.0) | (\$93.0) | (\$97.0) | (\$102.0) | (\$71.0) | (\$71.0) | (\$71.0) | (\$71.0) | (\$71.0) | (\$71.0) | (\$71.0) | (\$71.0) | (\$441.0) | (\$315.0) | (\$284.0) | (\$410.0) | (\$284.0) | (\$284.0) |
| Proceeds from sale of assets | | | | | | | | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cash paid for acquisitions | 0.0 | (23.0) | (5.0) | 0.0 | 0.0 | (27.0) | | | | | | | | (28.0) | (27.0) | 0.0 | (28.0) | (27.0) | 0.0 |
| Proceeds from sales and maturities of investments | 464.0 | 442.0 | 479.0 | 555.0 | 368.0 | 667.0 | 667.0 | 667.0 | 667.0 | 667.0 | 667.0 | 667.0 | 1,940.0 | 2,369.0 | 2,668.0 | 1,844.0 | 2,668.0 | 2,668.0 | |
| Purchases of investments | (397.0) | (430.0) | (543.0) | (544.0) | (428.0) | (404.0) | (404.0) | (404.0) | (404.0) | (404.0) | (404.0) | (404.0) | (404.0) | (1,914.0) | (1,640.0) | (1,616.0) | (1,945.0) | (1,616.0) | (1,616.0) |
| Net ST Investments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Purchases of IP licenses & Intangible Assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Proceeds from sale of other assets | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Other | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Net Cash from Investing | (\$66.0) | (\$129.0) | (\$162.0) | (\$86.0) | (\$162.0) | \$165.0 | \$192.0 | \$192.0 | \$192.0 | \$192.0 | \$192.0 | \$192.0 | \$192.0 | (\$443.0) | \$387.0 | \$768.0 | (\$539.0) | \$741.0 | \$768.0 |
| Cash Flows from Financing | | | | | | | | | | | | | | | | | | | |
| Repurchase of common stock | (\$750.0) | (\$625.0) | (\$528.0) | (\$500.0) | (\$200.0) | (\$199.0) | (\$199.0) | (\$199.0) | (\$199.0) | (\$199.0) | (\$199.0) | (\$199.0) | (\$199.0) | (\$2,403.0) | (\$797.0) | (\$796.0) | (\$1,853.0) | (\$796.0) | (\$796.0) |
| Proceeds from common stock issuance | 0.0 | 73.0 | 0.0 | 72.0 | 15.0 | 76.0 | | | | | | | | 145.0 | 91.0 | 0.0 | 160.0 | 76.0 | 0.0 |
| Proceeds from debt issuance, net | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1,498.0 | (1,499.0) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.0 | 0.0 | 4.0 | 0.0 | 1.0 | 4.0 |
| Proceeds from ESSP | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Excess Tax Benefit - option exercises | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Dividend to stockholders | (192.0) | (189.0) | (196.0) | (194.0) | (192.0) | (193.0) | (202.8) | (202.6) | (202.4) | (202.2) | (202.0) | (201.7) | (201.5) | (771.0) | (790.5) | (808.3) | (771.0) | (800.9) | (807.4) |
| Tax withholding payments for vested equity awards | (74.0) | (6.0) | (3.0) | (3.0) | (153.0) | (10.0) | | | | | | | | (86.0) | (163.0) | 0.0 | (165.0) | (10.0) | 0.0 |
| Net Cash from Financing | (\$1,016.0) | (\$747.0) | (\$727.0) | (\$625.0) | (\$530.0) | \$1,172.0 | (\$1,900.8) | (\$400.6) | (\$400.4) | (\$400.2) | (\$400.0) | (\$399.7) | (\$399.5) | (\$3,115.0) | (\$1,659.5) | (\$1,600.3) | (\$2,629.0) | (\$1,529.9) | (\$1,599.4) |
| Effect of exchange rates | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Restricted cash | | | | | 0.0 | 115.0 | | | | | | | | 0.0 | 115.0 | 0.0 | 0.0 | 115.0 | 0.0 |
| Cash and Cash eqv at beginning | \$3,440.0 | \$3,192.0 | \$3,116.0 | \$3,014.0 | \$3,129.0 | \$3,424.0 | \$5,281.0 | \$4,258.4 | \$4,749.1 | \$5,587.0 | \$6,220.4 | \$6,866.8 | \$7,588.5 | \$3,440.0 | \$3,129.0 | \$4,749.1 | \$3,192.0 | \$3,424.0 | \$5,587.0 |
| Net increase in cash and cash eqv. | (248.0) | (76.0) | (102.0) | 115.0 | 295.0 | 1,972.0 | (1,022.6) | 490.7 | 837.9 | 633.4 | 646.3 | 721.7 | 906.0 | (311.0) | 1,735.1 | 2,839.4 | 232.0 | 2,278.0 | 2,907.5 |
| Cash and Cash eqv at end | \$3,192.0 | \$3,116.0 | \$3,014.0 | \$3,129.0 | \$3,424.0 | \$5,281.0 | \$4,258.4 | \$4,749.1 | \$5,587.0 | \$6,220.4 | \$6,866.8 | \$7,588.5 | \$8,494.5 | \$3,129.0 | \$4,749.1 | \$7,588.5 | \$3,424.0 | \$5,587.0 | \$8,494.5 |
| CHECK | \$3,192.0 | \$3,116.0 | \$3,014.0 | \$3,129.0 | \$3,424.0 | \$5,281.0 | \$4,258.4 | \$4,749.1 | \$5,587.0 | \$6,220.4 | \$6,866.8 | \$7,588.5 | \$8,494.5 | \$3,129.0 | \$4,749.1 | \$7,588.5 | \$3,424.0 | \$5,587.0 | \$8,494.5 |
| Cash Flow from Operations | \$834.0 | \$800.0 | \$787.0 | \$826.0 | \$987.0 | \$635.0 | \$686.2 | \$699.4 | \$1,046.3 | \$841.6 | \$854.3 | \$929.4 | \$1,113.6 | \$2,347.0 | \$3,007.6 | \$3,671.6 | \$3,400.0 | \$3,066.9 | \$3,738.9 |
| Capex | (133.0) | (118.0) | (93.0) | (97.0) | (102.0) | (71.0) | (71.0) | (71.0) | (71.0) | (71.0) | (71.0) | (71.0) | (71.0) | (441.0) | (315.0) | (284.0) | (410.0) | (284.0) | (284.0) |
| Free Cash Flow | \$701.0 | \$682.0 | \$694.0 | \$729.0 | \$885.0 | \$564.0 | \$615.2 | \$628.4 | \$975.3 | \$770.6 | \$783.3 | \$858.4 | \$1,042.6 | \$2,806.0 | \$2,692.6 | \$3,387.6 | \$2,990.0 | \$2,782.9 | \$3,454.9 |
| Free Cash Flow / Share | 0.73 | 0.72 | 0.74 | 0.78 | 0.95 | 0.61 | 0.67 | 0.68 | 1.06 | 0.84 | 0.85 | 0.94 | 1.14 | 2.97 | 2.92 | 2.24 | 3.20 | 3.02 | 3.77 |
| EBITDA | \$1,013.0 | \$888.0 | \$909.0 | \$980.0 | \$1,162.0 | \$1,067.0 | \$1,105.9 | \$1,164.7 | \$1,121.9 | \$1,151.0 | \$1,222.5 | \$1,285.6 | \$1,243.2 | \$3,790.0 | \$4,499.6 | \$3,027.4 | \$3,939.0 | \$363.4 | \$361.8 |
| Net Borrowing | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | \$1,498.0 | (1,499.0) | \$1.0 | \$1.0 | \$1.0 | \$1.0 | \$1.0 | \$0.0 | \$0.0 | \$4.0 | \$0.0 | \$1.0 | \$4.0 | |
| Free Cash Flow to Equity | \$701.0 | \$682.0 | \$694.0 | \$729.0 | \$885.0 | \$2,062.0 | (\$883.8) | \$629.4 | \$976.3 | \$771.6 | \$784.3 | \$859.4 | \$1,043.6 | \$2,806.0 | \$2,692.6 | \$3,391.6 | \$2,990.0 | \$2,783.9 | \$3,458.9 |

Source: Company Reports, Barclays Research Estimates

FIGURE 53

KLAC Income Statement

| KLA-Tencor Period Ending \$ in millions | Sep-18 1Q | Dec-18 2Q | Mar-19 3Q | Jun-19 4Q | Sep-19 1Q | Dec-19 2Q | Mar-20 3Q | Jun-20 4QE | Sep-20 1QE | Dec-20 2QE | Mar-21 3QE | Jun-21 4QE | Sep-21 1QE | Dec-21 2QE | 2019 FY | 2020 FYE | 2021 FY | 2019 CY | 2020 CYE | 2021 CYE | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|-------------|------------|------------|-------------|-------------|--|
| Revenues | \$1,093.3 | \$1,119.9 | \$1,097.3 | \$1,258.4 | \$1,413.4 | \$1,509.5 | \$1,424.0 | \$1,408.2 | \$1,327.8 | \$1,403.3 | \$1,439.9 | \$1,494.0 | \$1,525.8 | \$1,559.1 | \$4,568.9 | \$5,755.0 | \$5,665.1 | \$5,278.6 | \$5,563.3 | \$6,018.8 | |
| QoQ | 2.2% | 2.4% | -2.0% | 14.7% | 12.3% | 6.8% | -5.7% | -1.1% | -5.7% | 5.7% | 2.6% | 3.8% | 2.1% | 2.2% | | | | 22.6% | 5.4% | 8.2% | |
| YoY | 12.8% | 14.8% | 7.4% | 17.6% | 29.3% | 34.8% | 29.8% | 11.9% | -6.1% | -7.0% | 1.1% | 6.1% | 14.9% | 11.1% | 13.2% | 26.0% | -1.6% | 2.102.7 | 2,204.4 | 2,372.5 | |
| Cost of Goods | 380.5 | 407.3 | 439.3 | 517.0 | 554.2 | 592.2 | 552.8 | 563.3 | 529.8 | 558.5 | 571.6 | 591.6 | 598.1 | 611.2 | 1,744.1 | 2,262.5 | 2,251.6 | | | | |
| Gross Profit | \$712.8 | \$712.6 | \$658.0 | \$741.5 | \$859.2 | \$917.3 | \$871.1 | \$844.9 | \$798.0 | \$844.8 | \$868.3 | \$902.4 | \$927.7 | \$947.9 | \$2,824.8 | \$3,492.5 | \$3,413.5 | \$3,175.9 | \$3,358.9 | \$3,646.3 | |
| R&D | 153.5 | 165.9 | 181.6 | 206.7 | 210.6 | 219.9 | 214.7 | 215.0 | 215.0 | 216.3 | 220.6 | 223.6 | 226.6 | 229.6 | 707.7 | 860.3 | 875.6 | 818.8 | 861.0 | 900.5 | |
| SG&A | 109.8 | 109.1 | 129.4 | 163.0 | 165.0 | 171.3 | 163.3 | 165.0 | 165.0 | 166.3 | 169.6 | 170.6 | 171.6 | 172.6 | 511.4 | 664.6 | 671.6 | 628.7 | 659.6 | 684.5 | |
| Total Operating Expenses | 263.3 | 275.1 | 311.0 | 369.7 | 375.6 | 391.2 | 378.1 | 380.0 | 380.0 | 382.6 | 390.3 | 394.3 | 398.3 | 402.3 | 1,219.1 | 1,524.9 | 1,547.1 | 1,447.5 | 1,520.7 | 1,585.0 | |
| Operating Income | \$449.5 | \$437.6 | \$347.1 | \$371.7 | \$483.6 | \$526.0 | \$493.1 | \$464.9 | \$418.0 | \$462.2 | \$478.0 | \$508.1 | \$529.4 | \$545.7 | \$1,605.8 | \$1,967.6 | \$1,866.4 | \$1,728.4 | \$1,838.2 | \$2,061.2 | |
| Interest Income (Exp) | (16.3) | (17.3) | (21.9) | (37.6) | (38.7) | (37.9) | (38.2) | (40.1) | (40.0) | (39.9) | (39.7) | (39.5) | (39.4) | (39.8) | (93.1) | (155.0) | (159.1) | (136.1) | (158.2) | (158.4) | |
| Interest Expense | (26.4) | (26.5) | (31.2) | (40.5) | (40.4) | (40.5) | (39.2) | (41.3) | (41.3) | (41.3) | (41.3) | (41.3) | (41.3) | (41.3) | (124.6) | (161.4) | (165.2) | (152.5) | (163.1) | (165.2) | |
| Other Expense (Income) | (10.0) | (9.2) | (9.3) | (2.9) | (1.6) | (2.6) | (1.0) | (1.2) | (1.3) | (1.5) | (1.6) | (1.8) | (1.9) | (1.5) | (31.5) | (6.4) | (6.1) | (16.4) | (5.0) | (6.8) | |
| Profit Before Taxes | 433.1 | 420.2 | 325.1 | 334.1 | 444.9 | 488.1 | 454.8 | 424.8 | 378.1 | 422.4 | 438.3 | 468.6 | 490.1 | 505.9 | 1,481.2 | 1,806.2 | 1,701.2 | 1,575.9 | 1,675.1 | 1,896.0 | |
| Taxes | 49.0 | 47.9 | 42.4 | 45.9 | 47.4 | 66.1 | 66.3 | 55.2 | 49.1 | 54.9 | 57.0 | 60.9 | 63.7 | 65.8 | 185.3 | 235.1 | 221.9 | 201.8 | 225.6 | 247.4 | |
| Gain (loss) attributable to non-controlling interest | 0.0 | 0.0 | (0.1) | (0.5) | (0.1) | (0.3) | (0.4) | (0.4) | (0.4) | (0.4) | (0.4) | (0.4) | (0.4) | (0.4) | (0.6) | (1.3) | (1.8) | (1.0) | (1.8) | (1.8) | |
| Net Income - Pro Forma (Incl ESO) | \$384 | \$372.3 | \$282.8 | \$288.7 | \$397.6 | \$422.2 | \$388.9 | \$370.0 | \$329.3 | \$367.9 | \$381.8 | \$408.1 | \$426.8 | \$440.6 | \$1,295.9 | \$1,571.2 | \$1,479.2 | \$1,374.0 | \$1,449.4 | \$1,648.7 | |
| EPS - Pro Forma | \$2.46 | \$2.44 | \$1.80 | \$1.78 | \$2.48 | \$2.66 | \$2.47 | \$2.37 | \$2.14 | \$2.42 | \$2.55 | \$2.76 | \$2.92 | \$3.06 | \$8.48 | \$9.99 | \$9.86 | \$8.73 | \$9.41 | \$11.29 | |
| EPS - GAAP | \$2.54 | \$2.42 | \$1.23 | \$1.35 | \$2.16 | \$2.40 | \$0.50 | \$2.14 | \$1.94 | \$2.23 | \$2.38 | \$2.61 | \$2.79 | \$2.95 | \$7.53 | \$7.20 | \$9.15 | \$7.14 | \$6.81 | \$10.72 | |
| Dividend Per Share | \$0.75 | \$0.75 | \$0.75 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$0.85 | \$3.10 | \$3.40 | \$3.40 | \$3.30 | \$3.40 | \$3.40 | |
| Fully Diluted Shares | 156.1 | 152.6 | 157.2 | 161.9 | 160.1 | 158.6 | 157.2 | 156.0 | 154.0 | 152.0 | 150.0 | 148.0 | 146.0 | 144.0 | 152.8 | 157.3 | 150.0 | 157.4 | 154.1 | 146.1 | |
| Percent of Sales | | | | | | | | | | | | | | | | | | | | | |
| Gross Margin | 65.2% | 63.6% | 60.0% | 58.9% | 60.8% | 60.8% | 61.2% | 60.0% | 60.1% | 60.2% | 60.3% | 60.4% | 60.8% | 60.8% | 61.8% | 60.7% | 60.3% | 60.2% | 60.4% | 60.6% | |
| R&D | 14.0% | 14.8% | 16.5% | 16.4% | 14.9% | 14.6% | 15.1% | 15.3% | 16.2% | 15.4% | 15.3% | 15.0% | 14.9% | 14.7% | 15.5% | 14.9% | 15.5% | 15.5% | 15.5% | 15.0% | |
| SG&A | 10.0% | 9.7% | 11.8% | 13.0% | 11.7% | 11.3% | 11.5% | 11.7% | 12.4% | 11.9% | 11.8% | 11.4% | 11.2% | 11.1% | 11.2% | 11.5% | 11.9% | 11.9% | 11.9% | 11.4% | |
| Operating Margin | 41.1% | 39.1% | 31.6% | 29.5% | 34.2% | 34.8% | 34.6% | 33.0% | 31.5% | 32.9% | 33.2% | 34.0% | 34.7% | 35.0% | 35.1% | 34.2% | 32.9% | 32.7% | 33.0% | 34.2% | |
| Taxes | 11.3% | 11.4% | 13.0% | 13.7% | 10.7% | 13.5% | 14.6% | 13.0% | 13.0% | 13.0% | 13.0% | 13.0% | 13.0% | 13.0% | 12.5% | 13.0% | 13.0% | 12.8% | 13.5% | 13.0% | |
| Net Income | 35.1% | 33.2% | 25.8% | 22.9% | 28.1% | 28.0% | 27.3% | 26.3% | 24.8% | 26.2% | 26.5% | 27.3% | 28.0% | 28.4% | 28.3% | 26.1% | 26.0% | 26.1% | 27.4% | | |
| Sequential Change | | | | | | | | | | | | | | | | | | | | | |
| R&D | 1.0% | 8.1% | 9.4% | 13.9% | 1.9% | 4.4% | -2.4% | 0.1% | 0.0% | 0.6% | 2.0% | 1.4% | 1.3% | 1.3% | 16.5% | 21.6% | 1.8% | 31.1% | 5.2% | 4.6% | |
| SG&A | -3.2% | -0.6% | 18.6% | 26.0% | 1.2% | 3.8% | -4.7% | 1.0% | 0.0% | 0.8% | 2.0% | 0.6% | 0.6% | 18.3% | 30.0% | 1.0% | 43.0% | 4.9% | 3.8% | | |
| Reconciliation of Pro Forma to GAAP | | | | | | | | | | | | | | | | | | | | | |
| Acquisition Related | 5.6 | 4.3 | 103.8 | 102.3 | 73.2 | 60.9 | 55.5 | 51.5 | 46.5 | 41.5 | 36.5 | 31.5 | 26.5 | 21.5 | 216.0 | 241.1 | 156.0 | 340.3 | 195.0 | 116.0 | |
| Restructuring | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 5.4 | 1.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.0 | 0.0 | 2.0 | 7.0 | 0.0 | |
| Tax Impact | (17.4) | (1.0) | (13.6) | (31.9) | (22.3) | (21.5) | (23.6) | (17.2) | (15.2) | (13.2) | (11.2) | (9.2) | (7.2) | (5.2) | (64.0) | (84.6) | (48.8) | (89.4) | (69.2) | (32.8) | |
| Debt Related | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 22.5 | 0.0 | 0.0 | 22.5 | 0.0 | |
| Other | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 251.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 251.1 | 0.0 | 0.0 | 251.1 | 0.0 | |
| Net Income - GAAP | \$395.9 | \$369.1 | \$192.6 | \$218.4 | \$346.7 | \$380.8 | \$78.0 | \$334.1 | \$298.0 | \$339.6 | \$356.5 | \$385.8 | \$407.5 | \$424.3 | \$1,144.0 | \$1,131.9 | \$1,372.0 | \$1,138.4 | \$1,049.8 | \$1,574.1 | |
| GAAP Shares | 156.1 | 152.6 | 157.2 | 161.9 | 160.1 | 158.6 | 157.2 | 156.0 | 154.0 | 152.0 | 150.0 | 148.0 | 146.0 | 144.0 | 152.0 | 157.1 | 149.9 | 159.5 | 154.2 | 146.8 | |
| EPS - GAAP | \$2.54 | \$2.42 | \$1.23 | \$1.35 | \$2.16 | \$2.40 | \$0.50 | \$2.14 | \$1.94 | \$2.23 | \$2.38 | \$2.61 | \$2.79 | \$2.95 | \$7.53 | \$7.20 | \$9.15 | \$7.14 | \$6.81 | \$10.72 | |

Source: Company Reports, Barclays Research Estimates

FIGURE 54
KLAC Balance Sheet

| KLA-Tencor Period Ending \$ in millions | Sep-18 1Q | Dec-18 2Q | Mar-19 3Q | Jun-19 4Q | Sep-19 1Q | Dec-19 2Q | Mar-20 3Q | Jun-20 4QE | Sep-20 1QE | Dec-20 2QE | Mar-21 3QE | Jun-21 4QE | Sep-21 1QE | Dec-21 2QE | 2019 FY | 2020 FYE | 2021 FY | 2019 CY | 2020 CYE | 2021 CYE |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| BALANCE SHEET | | | | | | | | | | | | | | | | | | | | |
| Assets | | | | | | | | | | | | | | | | | | | | |
| Cash and cash equivalents | \$1,649.5 | \$1,794.0 | \$1,092.2 | \$1,016.0 | \$988.3 | \$939.9 | \$946.2 | \$1,275.9 | \$1,586.5 | \$1,781.7 | \$2,036.5 | \$2,302.2 | \$2,622.6 | \$2,948.2 | \$1,016.0 | \$1,275.9 | \$2,302.2 | \$939.9 | \$1,781.7 | \$2,948.2 |
| Marketable securities | 1,130.8 | 900.1 | 805.1 | 723.4 | 763.2 | 737.7 | 688.4 | 688.4 | 688.4 | 688.4 | 688.4 | 688.4 | 688.4 | 688.4 | 723.4 | 688.4 | 688.4 | 737.7 | 688.4 | 688.4 |
| Accounts Receivable | 602.2 | 658.1 | 958.0 | 990.1 | 1,066.2 | 1,191.0 | 1,119.3 | 1,083.2 | 1,021.4 | 1,079.5 | 1,107.6 | 1,149.2 | 1,173.7 | 1,199.3 | 990.1 | 1,083.2 | 1,149.2 | 1,191.0 | 1,079.5 | 1,199.3 |
| Inventories | 993.5 | 1,006.0 | 1,317.3 | 1,262.5 | 1,254.2 | 1,251.4 | 1,264.1 | 1,238.0 | 1,164.4 | 1,227.5 | 1,256.4 | 1,300.3 | 1,314.5 | 1,343.2 | 1,262.5 | 1,238.0 | 1,300.3 | 1,251.4 | 1,227.5 | 1,343.2 |
| Deferred income taxes | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <u>Prepaid Expenses and Other</u> | <u>145.0</u> | <u>127.4</u> | <u>270.1</u> | <u>323.1</u> | <u>283.8</u> | <u>257.5</u> | <u>300.5</u> | <u>297.2</u> | <u>280.3</u> | <u>296.2</u> | <u>303.9</u> | <u>315.3</u> | <u>322.0</u> | <u>329.1</u> | <u>323.1</u> | <u>297.2</u> | <u>315.3</u> | <u>257.5</u> | <u>296.2</u> | <u>329.1</u> |
| Total Current Assets | \$4,521.0 | \$4,485.5 | \$4,442.6 | \$4,315.1 | \$4,355.7 | \$4,377.4 | \$4,318.5 | \$4,582.6 | \$4,740.9 | \$5,073.3 | \$5,392.7 | \$5,755.4 | \$6,121.2 | \$6,508.1 | \$4,315.1 | \$4,582.6 | \$5,755.4 | \$4,377.4 | \$5,073.3 | \$6,508.1 |
| Property and Equipment | 291.2 | 306.4 | 411.9 | 448.8 | 475.2 | 490.0 | 497.7 | 415.3 | 332.3 | 248.8 | 164.8 | 80.3 | (4.7) | (90.2) | 448.8 | 415.3 | 80.3 | 490.0 | 248.8 | (90.2) |
| Restricted Cash, Other Investments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Goodwill, net | 360.4 | 360.5 | 2,172.9 | 2,211.9 | 2,263.7 | 2,299.8 | 2,043.1 | 2,043.1 | 2,043.1 | 2,043.1 | 2,043.1 | 2,043.1 | 2,043.1 | 2,043.1 | 2,211.9 | 2,043.1 | 2,299.8 | 2,043.1 | 2,211.9 | 2,043.1 |
| Deferred income taxes | 222.1 | 225.1 | 205.8 | 206.1 | 216.6 | 213.3 | 208.0 | 208.0 | 208.0 | 208.0 | 208.0 | 208.0 | 208.0 | 208.0 | 206.1 | 208.0 | 213.3 | 208.0 | 213.3 | 208.0 |
| Purchased intangibles, net | 25.1 | 23.8 | 1,694.3 | 1,560.7 | 1,549.2 | 1,492.5 | 1,437.8 | 1,437.8 | 1,437.8 | 1,437.8 | 1,437.8 | 1,437.8 | 1,437.8 | 1,437.8 | 1,560.7 | 1,437.8 | 1,492.5 | 1,437.8 | 1,492.5 | 1,437.8 |
| <u>Other Assets</u> | <u>252.5</u> | <u>204.0</u> | <u>260.1</u> | <u>266.0</u> | <u>368.9</u> | <u>377.8</u> | <u>340.8</u> | <u>340.8</u> | <u>340.8</u> | <u>340.8</u> | <u>340.8</u> | <u>340.8</u> | <u>340.8</u> | |
| Total Assets | \$5,645.1 | \$5,605.3 | \$9,187.6 | \$9,008.5 | \$9,229.4 | \$9,250.7 | \$8,845.9 | \$9,027.6 | \$9,102.9 | \$9,351.8 | \$9,587.3 | \$9,865.4 | \$10,146.2 | \$10,447.7 | \$9,008.5 | \$9,027.6 | \$9,865.4 | \$9,250.7 | \$9,351.8 | \$10,447.7 |
| Liabilities | | | | | | | | | | | | | | | | | | | | |
| Accounts Payable | \$154.9 | \$152.5 | \$206.2 | \$202.4 | \$221.4 | \$256.6 | \$243.2 | \$247.6 | \$221.2 | \$233.2 | \$238.7 | \$247.1 | \$249.8 | \$255.2 | \$202.4 | \$247.6 | \$247.1 | \$256.6 | \$233.2 | \$255.2 |
| Deferred system revenue | 216.4 | 196.2 | 228.7 | 282.3 | 277.5 | 247.1 | 336.4 | 336.4 | 336.4 | 336.4 | 336.4 | 336.4 | 336.4 | 336.4 | 282.3 | 336.4 | 336.4 | 247.1 | 336.4 | 336.4 |
| Deferred service revenue | 166.3 | 168.9 | 182.1 | 206.7 | 201.2 | 204.3 | 214.2 | 214.2 | 214.2 | 214.2 | 214.2 | 214.2 | 214.2 | 214.2 | 206.7 | 214.2 | 204.3 | 214.2 | 214.2 | 214.2 |
| Current portion of long-term debt | 0.0 | 250.0 | 250.0 | 250.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 250.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <u>Other current liabilities</u> | <u>773.3</u> | <u>714.9</u> | <u>833.7</u> | <u>827.1</u> | <u>993.3</u> | <u>1,010.2</u> | <u>859.4</u> | <u>849.9</u> | <u>801.4</u> | <u>847.0</u> | <u>869.0</u> | <u>901.7</u> | <u>920.9</u> | <u>941.0</u> | <u>827.1</u> | <u>849.9</u> | <u>901.7</u> | <u>1,010.2</u> | <u>847.0</u> | <u>941.0</u> |
| Total Current Liabilities | \$1,310.9 | \$1,482.5 | \$1,700.9 | \$1,768.5 | \$1,943.4 | \$1,718.2 | \$1,653.3 | \$1,648.1 | \$1,573.3 | \$1,630.8 | \$1,658.4 | \$1,699.4 | \$1,721.2 | \$1,746.8 | \$1,768.5 | \$1,648.1 | \$1,699.4 | \$1,718.2 | \$1,630.8 | \$1,746.8 |
| Long-Term Debt | \$2,237.9 | \$1,988.4 | \$3,172.6 | \$3,173.4 | \$3,174.1 | \$3,399.9 | \$3,443.9 | \$3,443.9 | \$3,443.9 | \$3,443.9 | \$3,443.9 | \$3,443.9 | \$3,443.9 | \$3,443.9 | \$3,173.4 | \$3,443.9 | \$3,443.9 | \$3,399.9 | \$3,443.9 | \$3,443.9 |
| Unearned revenue | 80.9 | 90.5 | 90.6 | 98.8 | 101.0 | 100.0 | 100.4 | 100.4 | 100.4 | 100.4 | 100.4 | 100.4 | 100.4 | 100.4 | \$98.8 | \$100.4 | \$100.4 | \$100.0 | \$100.4 | \$100.4 |
| Income taxes payable | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Deferred tax liability | | | | | | | | | | | | | | | | | | | | |
| <u>Other long-term liabilities</u> | <u>448.0</u> | <u>446.3</u> | <u>575.6</u> | <u>587.9</u> | <u>643.0</u> | <u>663.7</u> | <u>675.9</u> | <u>675.9</u> | <u>675.9</u> | <u>675.9</u> | <u>663.7</u> | <u>675.9</u> | <u>675.9</u> | |
| Total Liabilities | \$4,077.7 | \$4,007.7 | \$6,302.0 | \$6,330.8 | \$6,549.8 | \$6,562.8 | \$6,520.8 | \$6,515.6 | \$6,440.7 | \$6,498.3 | \$6,525.8 | \$6,566.8 | \$6,588.7 | \$6,614.3 | \$6,330.8 | \$6,515.6 | \$6,566.8 | \$6,562.8 | \$6,498.3 | \$6,614.3 |
| Shareholders' Equity | | | | | | | | | | | | | | | | | | | | |
| Common stock and capital in excess of par value | \$596.2 | \$619.3 | \$1,989.9 | \$2,017.3 | \$1,999.8 | \$2,017.5 | 2,019.1 | \$2,019.1 | \$2,019.1 | \$2,019.1 | \$2,019.1 | \$2,019.1 | \$2,019.1 | \$2,019.1 | \$2,017.3 | \$2,019.1 | \$2,019.1 | \$2,017.5 | \$2,019.1 | \$2,019.1 |
| Retained earnings | 1,027.4 | 1,048.8 | 928.1 | 714.8 | 733.2 | 719.0 | 376.7 | 376.7 | 376.7 | 376.7 | 376.7 | 376.7 | 376.7 | 376.7 | 714.8 | 376.7 | 376.7 | 719.0 | 376.7 | 376.7 |
| Accumulated other comprehensive income (loss) | (56.2) | (70.4) | (68.9) | (73.0) | (71.9) | (66.8) | (88.3) | (88.3) | (88.3) | (88.3) | (88.3) | (88.3) | (88.3) | (88.3) | (73.0) | (88.3) | (88.3) | (66.8) | (88.3) | (88.3) |
| <u>Non-controlling interest in consolidated subsidiaries</u> | <u>36.5</u> | <u>18.6</u> | <u>18.5</u> | <u>18.2</u> | <u>18.2</u> | <u>17.8</u> | <u>17.8</u> | <u>18.6</u> | <u>17.8</u> | <u>17.8</u> | <u>18.2</u> | <u>17.8</u> | <u>17.8</u> |
| Total Shareholder's Equity | \$1,567.4 | \$1,597.6 | \$2,885.6 | \$2,677.7 | \$2,679.6 | \$2,688.0 | \$2,325.2 | \$2,512.0 | \$2,662.2 | \$2,853.5 | \$3,061.4 | \$3,298.6 | \$3,557.5 | \$3,833.4 | \$2,677.7 | \$2,512.0 | \$3,298.6 | \$2,688.0 | \$2,853.5 | \$3,833.4 |
| Total Liabilities & Equity | \$5,645.1 | \$5,605.3 | \$9,187.6 | \$9,008.5 | \$9,229.4 | \$9,250.7 | \$8,845.9 | \$9,027.6 | \$9,102.9 | \$9,351.8 | \$9,587.3 | \$9,865.4 | \$10,146.2 | \$10,447.7 | \$9,008.5 | \$9,027.6 | \$9,865.4 | \$9,250.7 | \$9,351.8 | \$10,447.7 |
| CHECK | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| VALUATION RATIOS | | | | | | | | | | | | | | | | | | | | |
| Profitability Ratios | | | | | | | | | | | | | | | | | | | | |
| Return On Invested Capital | 172% | 153% | 77% | 23% | 35% | 38% | 10% | 36% | 33% | 39% | 41% | 45% | 47% | 50% | 128% | 29% | 38% | 111% | 27% | 45% |
| Return On Equity | 98% | 94% | 48% | 30% | 52% | 57% | 12% | 57% | 47% | 51% | 50% | 50% | 49% | 48% | 71% | 55% | 71% | 39% | 55% | |
| Return on Avg Equity * | 61% | 101% | 61% | 55% | 53% | 53% | 39% | 44% | 41% | 38% | 49% | 47% | 48% | 47% | 53% | 44% | 47% | 53% | 38% | 47% |
| Return On Assets | 28% | 26% | 8% | 10% | 15% | 16% | 4% | 15% | 13% | 15% | 15% | 16% | 16% | 16% | 13% | 13% | 14% | 12% | 11% | 15% |
| Return On Net Assets | 55% | 55% | 23% | 26% | 41% | 44% | 9% | 40% | 38% | 41% | 42% | 45% | 47% | 48% | 35% | 34% | 40% | 33% | 32% | 44% |
| Return On Sales | 36% | 33% | 18% | 17% | 25% | 25% | 5% | 24% | 22% | 24% | 25% | 26% | 27% | 27% | 25% | 20% | 24% | 22% | 19% | 26% |

Source: Company Reports, Barclays Research Estimates

FIGURE 55
KLAC Cash Flow Statement

| KLA-Tencor Period Ending \$ in millions | Sep-18 1Q | Dec-18 2Q | Mar-19 3Q | Jun-19 4Q | Sep-19 1Q | Dec-19 2Q | Mar-20 3Q | Jun-20 4QE | Sep-20 1QE | Dec-20 2QE | Mar-21 3QE | Jun-21 4QE | Sep-21 1QE | Dec-21 2QE | 2019 FY | 2020 FYE | 2021 FYE | 2019 CY | 2020 CYE | 2021 CYE | |
|--|------------------|------------------|--------------------|------------------|------------------|------------------|----------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|------------------|--------------------|--------------------|------------------|-------|
| CASH FLOW | | | | | | | | | | | | | | | | | | | | | |
| Cash Flow from Ops. | | | | | | | | | | | | | | | | | | | | | |
| Net Income | \$395.9 | \$369.1 | \$192.6 | \$217.3 | \$346.4 | \$380.3 | \$78.0 | \$334.1 | \$298.0 | \$339.6 | \$356.5 | \$385.8 | \$407.5 | \$424.3 | \$1,175.0 | \$1,138.8 | \$1,379.9 | \$1,136.7 | \$1,049.8 | \$1,574.1 | |
| Depreciation & Amortization | 16.1 | 15.8 | 73.4 | 127.9 | 98.6 | 88.5 | 82.0 | 82.5 | 83.0 | 83.5 | 84.0 | 84.5 | 85.0 | 85.5 | 233.2 | 351.6 | 335.0 | 388.5 | 331.0 | 339.0 | |
| Stock-based compensation expense | 16.1 | 15.7 | 34.2 | 28.2 | 26.9 | 26.8 | 31.3 | 28.8 | 26.5 | 24.3 | 22.4 | 20.6 | 19.0 | 17.4 | 94.2 | 113.8 | 93.8 | 116.1 | 110.9 | 79.4 | |
| Deferred income taxes | 0.0 | 0.0 | 0.0 | (27.5) | 0.0 | 0.0 | 0.0 | 0.0 | | | | | (27.5) | 0.0 | 0.0 | (27.5) | 0.0 | 0.0 | | | |
| Excess tax benefit from equity awards | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Net gain on sale of marketable securities and other investments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Other gain/loss, net | 3.0 | 1.8 | 0.1 | (0.8) | 12.8 | (5.5) | 16.6 | | | | | | 4.1 | 23.9 | 0.0 | 6.6 | 16.6 | 0.0 | | | |
| Changes in Operating Assets and Liabilities | (49.8) | (120.2) | (136.8) | (19.6) | 11.5 | (102.4) | (22.5) | 60.4 | 77.5 | (79.6) | (37.1) | (55.9) | (23.5) | (35.8) | (326.3) | (53.0) | (95.2) | (247.3) | 35.8 | (152.4) | |
| Net Cash from Operations | \$381.4 | \$282.2 | \$163.6 | \$325.5 | \$496.2 | \$387.7 | \$442.0 | \$505.8 | \$485.0 | \$367.9 | \$425.7 | \$435.0 | \$487.9 | \$491.4 | \$1,152.6 | \$1,831.8 | \$1,713.5 | \$1,373.0 | \$1,800.6 | \$1,840.0 | |
| Cash Flow from Investing | | | | | | | | | | | | | | | | | | | | | |
| Business acquisition | (\$11.8) | \$0.0 | (\$1,806.5) | (\$0.0) | (\$78.5) | \$0.0 | (0.1) | | | | | | | | | (\$1,818.3) | (\$78.6) | \$0.0 | (\$1,885.0) | (\$0.1) | \$0.0 |
| Capital expenditures | (22.3) | (26.4) | (26.0) | (55.8) | (32.6) | (34.9) | (\$43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (130.5) | (154.3) | (173.8) | (149.2) | (173.8) | (173.8) | |
| Proceeds from sale of assets | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | (1.1) | 0.0 | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Purchases of available-for-sale securities | 0.0 | (2.7) | 0.0 | (78.8) | (263.8) | (144.7) | (156.2) | | | | | | | | | (81.5) | (564.7) | 0.0 | (487.3) | (156.2) | 0.0 |
| Sales and maturities of available-for-sale securities | 346.0 | 235.4 | 101.2 | 163.1 | 224.2 | 169.0 | 202.9 | | | | | | | | | 845.7 | 596.0 | 0.0 | 657.5 | 202.9 | 0.0 |
| Purchases of trading securities | (4.6) | (27.5) | (30.3) | (18.6) | (9.0) | (12.9) | (46.8) | | | | | | | | | (81.0) | (68.7) | 0.0 | (70.8) | (46.8) | 0.0 |
| Proceeds from sale of trading securities | 7.6 | 29.7 | 27.3 | 20.6 | 11.9 | 15.3 | 45.4 | | | | | | | | | 85.3 | 72.6 | 0.0 | 75.1 | 45.4 | 0.0 |
| Other, net | 0.0 | 0.0 | (0.6) | 0.0 | 0.0 | 1.1 | 0.0 | | | | | | | | | (0.6) | 1.1 | 0.0 | 0.5 | 0.0 | 0.0 |
| Net Cash from Investing | \$314.9 | \$208.6 | (\$1,734.9) | \$30.4 | (\$146.7) | (\$8.1) | \$1.8 | (\$43.4) | (\$1,181.0) | (\$196.5) | (\$173.8) | (\$1,859) | (\$129) | (\$174) | |
| Cash Flows from Financing | | | | | | | | | | | | | | | | | | | | | |
| Proceeds from debt | \$0.0 | \$0.0 | \$2,086.3 | (\$2.5) | \$0.0 | \$250.0 | \$742.0 | | | | | | | | | \$2,083.8 | \$992.0 | \$0.0 | \$2,333.8 | \$742.0 | \$0.0 |
| Repayment of debt | 0.0 | 0.0 | (902.5) | 0.0 | 0.0 | (275.0) | (572.0) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (902.5) | (996.0) | 0.0 | (1,177.5) | (721.0) | 0.0 | |
| Issuance of common stock | 0.0 | 20.6 | 0.0 | 44.3 | 0.1 | 24.5 | 0.7 | | | | | | | | | 64.8 | 25.3 | 0.0 | 68.9 | 0.7 | 0.0 |
| Tax withholding payments related to vested and released restricted stock | (27.0) | (3.2) | (0.4) | (6.9) | (23.5) | (12.2) | (5.0) | | | | | | | | | (37.5) | (40.7) | 0.0 | (43.1) | (5.0) | 0.0 |
| Common stock repurchases | (300.0) | (250.2) | (200.0) | (345.0) | (228.5) | (284.6) | (316.0) | | | | | | | | | (1,095.2) | (829.1) | 0.0 | (1,058.1) | (316.0) | 0.0 |
| Payment of dividends to stockholders | (122.8) | (114.6) | (113.6) | (121.4) | (121.6) | (134.7) | (133.3) | (132.6) | (130.9) | (129.2) | (127.5) | (125.8) | (124.1) | (122.4) | (472.3) | (522.3) | (513.4) | (491.3) | (526.0) | (499.8) | |
| Excess tax benefit from equity awards | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Proceeds from issuance of common stock | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| Other | 0.0 | 0.0 | (0.5) | (0.6) | (0.1) | (0.0) | 0.0 | | | | | | (1.2) | (0.1) | 0.0 | (1.2) | 0.0 | 0.0 | 0.0 | | |
| Net Cash from Financing | (\$449.7) | (\$347.5) | \$869.3 | (\$432.1) | (\$373.6) | (\$432.0) | \$432.6 | (\$132.6) | (\$130.9) | (\$129.2) | (\$127.5) | (\$125.8) | (\$124.1) | (\$122.4) | (\$360.0) | (\$1,370.9) | (\$513.4) | (\$2,702.3) | (\$1,567.3) | (\$499.8) | |
| Effect of exchange rates | (1.5) | 1.1 | 0.2 | 0.1 | (3.6) | 4.0 | (4.9) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.0) | (4.5) | 0.0 | (10.3) | (4.4) | 0.0 | |
| Cash and Cash eqv at beginning | \$1,404.4 | \$1,649.5 | \$1,794.0 | \$1,092.2 | \$1,016.0 | \$988.3 | \$939.9 | \$946.2 | \$1,275.9 | \$1,586.5 | \$1,781.7 | \$2,036.5 | \$2,302.2 | \$2,622.6 | \$1,404.4 | \$1,016.0 | \$1,275.9 | \$1,794.0 | \$939.9 | \$1,781.7 | |
| Net increase in cash and cash eqv. | 245.1 | 144.5 | (701.8) | (76.2) | (27.6) | (48.5) | 6.3 | 329.7 | 310.6 | 195.2 | 254.8 | 265.7 | 320.4 | 325.5 | (388.4) | 259.9 | 1,026.3 | (854.1) | 841.9 | 1,166.4 | |
| Cash and Cash eqv at end | \$1,649.5 | \$1,794.0 | \$1,092.2 | \$1,016.0 | \$988.3 | \$939.9 | \$946.2 | \$1,275.9 | \$1,586.5 | \$1,781.7 | \$2,036.5 | \$2,302.2 | \$2,622.6 | \$2,948.2 | \$1,016.0 | \$1,275.9 | \$2,302.3 | \$939.9 | \$1,781.7 | \$2,948.2 | |
| CHECK | | | | | | | | | | | | | | | | | | | | | |
| Cash Flow from Operations | \$381.4 | \$282.2 | \$163.6 | \$325.5 | \$496.2 | \$387.7 | \$442.0 | \$505.8 | \$485.0 | \$367.9 | \$425.7 | \$435.0 | \$487.9 | \$491.4 | \$1,152.6 | \$1,831.8 | \$1,713.5 | \$1,373.0 | \$1,800.6 | \$1,840.0 | |
| Capex | (22.3) | (26.4) | (26.0) | (55.8) | (32.6) | (34.9) | (43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (43.4) | (130.5) | (154.3) | (173.8) | (149.2) | (173.8) | (173.8) | |
| Free Cash Flow | \$359.1 | \$255.8 | \$137.6 | \$269.6 | \$463.7 | \$352.9 | \$398.6 | \$462.3 | \$441.5 | \$324.4 | \$382.3 | \$391.5 | \$444.5 | \$447.9 | \$1,022.1 | \$1,677.4 | \$1,539.7 | \$1,223.8 | \$1,626.8 | \$1,666.2 | |
| Free Cash Flow / Share | \$2.30 | \$1.68 | \$0.88 | \$1.66 | \$2.90 | \$2.22 | \$2.54 | \$2.96 | \$2.87 | \$2.13 | \$2.55 | \$2.65 | \$3.04 | \$3.11 | \$6.69 | \$10.67 | \$10.27 | \$7.77 | \$10.56 | \$11.41 | |
| EBITDA | \$465.5 | \$453.4 | \$420.5 | \$499.6 | \$582.2 | \$614.5 | \$575.1 | \$547.4 | \$501.0 | \$545.7 | \$562.0 | \$592.6 | \$614.4 | \$631.2 | \$1,839.0 | \$2,319.2 | \$2,201.3 | \$2,116.8 | \$2,169.2 | \$2,400.2 | |
| Net Borrowing | (\$27.0) | (\$3.2) | (\$0.4) | (\$6.9) | (\$23.5) | (\$12.2) | (\$5.0) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | (\$37.5) | (\$40.7) | \$0.0 | (\$43.1) | (\$5.0) | \$0.0 | |
| Free Cash Flow to Equity | \$332.1 | \$252.6 | \$137.3 | \$262.7 | \$440.1 | \$340.6 | \$393.6 | \$462.3 | \$441.5 | \$324.4 | \$382.3 | \$391.5 | \$444.5 | \$447.9 | \$984.6 | \$1,636.7 | \$1,539.7 | \$1,180.7 | \$1,621.9 | \$1,666.2 | |

Source: Company Reports, Barclays Research Estimates

FIGURE 56

LRCX Income Statement

| Lam Research Period Ending \$ in millions | Sep-18 1Q | Dec-18 2Q | Mar-19 3Q | Jun-19 4Q | Sep-19 1Q | Dec-19 2Q | Mar-20 3Q | Jun-20 4QE | Sep-20 1QE | Dec-20 2QE | Mar-21 3QE | Jun-21 4QE | Sep-21 1QE | Dec-21 2QE | 2019 FY | 2020 FY | 2021 FY | 2019 CY | 2020 CY | 2021 CY |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|------------|------------|------------|------------|------------|
| Revenues | \$2,330.7 | \$2,522.7 | \$2,439.0 | \$2,361.1 | \$2,165.7 | \$2,583.5 | \$2,503.6 | \$2,602.3 | \$2,523.9 | \$2,530.2 | \$2,636.8 | \$2,797.3 | \$2,973.2 | \$3,117.4 | \$9,653.6 | \$9,855.1 | \$10,488.2 | \$9,549.4 | \$10,160.0 | \$11,524.7 |
| QoQ | -25.4% | 8.2% | -3.3% | -3.2% | -8.3% | 19.3% | -3.1% | 3.9% | -3.0% | 0.3% | 4.2% | 6.1% | 6.3% | 4.9% | | | | | | |
| YoY | -5.9% | -2.3% | -15.7% | -24.5% | -7.1% | 2.4% | 2.6% | 10.2% | 16.5% | -2.1% | 5.3% | 7.5% | 17.8% | 23.2% | -12.9% | 2.1% | 6.4% | -12.2% | 6.4% | 13.4% |
| Cost of Goods | 1,250.2 | 1,355.3 | 1,339.5 | 1,276.3 | 1,182.4 | 1,402.2 | 1,343.6 | 1,431.2 | 1,388.1 | 1,384.0 | 1,437.1 | 1,518.9 | 1,611.5 | 1,683.4 | 5,221.2 | 5,359.5 | 5,728.2 | 5,200.4 | 5,547.0 | 6,250.9 |
| Gross Profit | \$1,080.5 | \$1,167.4 | \$1,099.6 | \$1,084.9 | \$983.3 | \$1,181.3 | \$1,160.0 | \$1,171.0 | \$1,135.7 | \$1,146.2 | \$1,199.7 | \$1,278.4 | \$1,361.7 | \$1,434.0 | \$4,432.3 | \$4,495.6 | \$4,760.0 | \$4,349.0 | \$4,612.9 | \$5,273.9 |
| R&D | 291.7 | 285.6 | 313.8 | 295.4 | 286.8 | 318.9 | 323.5 | 323.0 | 325.0 | 327.0 | 335.2 | 337.2 | 339.2 | 341.2 | 1,186.4 | 1,252.2 | 1,324.4 | 1,214.9 | 1,298.5 | 1,352.7 |
| SG&A | 158.9 | 154.3 | 173.6 | 153.6 | 142.8 | 160.8 | 163.0 | 162.0 | 163.0 | 164.0 | 167.3 | 168.3 | 169.3 | 170.3 | 640.3 | 628.6 | 662.6 | 630.8 | 652.0 | 675.1 |
| Total Operating Expenses | 450.5 | 439.8 | 487.4 | 449.0 | 429.6 | 479.6 | 486.5 | 485.0 | 488.0 | 491.0 | 502.5 | 505.5 | 508.5 | 511.5 | 1,826.7 | 1,880.7 | 1,986.9 | 1,845.6 | 1,950.5 | 2,027.8 |
| Operating Income | \$630.0 | \$727.6 | \$612.1 | \$635.9 | \$553.7 | \$701.7 | \$673.5 | \$686.0 | \$647.7 | \$655.2 | \$697.3 | \$772.9 | \$853.3 | \$922.6 | \$2,605.6 | \$2,614.9 | \$2,773.1 | \$2,503.4 | \$2,662.4 | \$3,246.0 |
| Interest Income (Exp) | 0.5 | (29.8) | 20.5 | (7.7) | (12.7) | (13.9) | (29.8) | (31.4) | (32.5) | (30.9) | (29.5) | (26.5) | (23.3) | (21.7) | (16.4) | (87.8) | (119.4) | (13.8) | (124.6) | (101.1) |
| Profit Before Taxes | 630.5 | 697.8 | 632.6 | 628.2 | 541.0 | 687.7 | 643.6 | 654.7 | 615.2 | 624.3 | 667.8 | 746.4 | 829.9 | 900.8 | 2,589.2 | 2,527.0 | 2,653.7 | 2,489.6 | 2,537.9 | 3,144.9 |
| Taxes | 75.1 | 69.6 | 48.3 | 69.4 | 61.4 | 85.9 | 53.3 | 54.2 | 50.9 | 51.7 | 55.3 | 61.8 | 68.7 | 74.6 | 262.4 | 254.8 | 219.7 | 265.1 | 210.1 | 260.4 |
| Net Income - Pro Forma (Incl ESO) | \$555.5 | \$628.2 | \$584.4 | \$558.8 | \$479.6 | \$601.8 | \$590.4 | \$600.5 | \$564.3 | \$572.6 | \$612.5 | \$684.6 | \$761.2 | \$826.2 | \$2,326.8 | \$2,272.2 | \$2,434.0 | \$2,224.5 | \$2,327.7 | \$2,884.5 |
| EPS - Pro Forma | \$3.36 | \$3.87 | \$3.70 | \$3.62 | \$3.18 | \$4.01 | \$3.98 | \$4.05 | \$3.86 | \$3.97 | \$4.31 | \$4.88 | \$5.51 | \$6.07 | \$14.55 | \$15.23 | \$17.03 | \$14.51 | \$15.87 | \$20.77 |
| EPS - GAAP | \$3.23 | \$3.51 | \$3.47 | \$3.51 | \$3.09 | \$3.43 | \$3.88 | \$3.95 | \$3.76 | \$3.83 | \$4.20 | \$4.80 | \$5.60 | \$6.09 | \$13.71 | \$14.35 | \$16.59 | \$13.49 | \$15.42 | \$20.70 |
| Dividend Per Share | \$1.10 | \$1.10 | \$1.10 | \$1.10 | \$1.15 | \$1.15 | \$1.15 | \$1.15 | \$1.15 | \$1.15 | \$1.15 | \$1.15 | \$1.15 | \$1.15 | \$4.40 | \$4.60 | \$4.60 | \$4.50 | \$4.60 | \$4.60 |
| Fully Diluted Shares | 165.3 | 162.2 | 157.8 | 154.5 | 150.7 | 150.1 | 148.2 | 148.2 | 146.2 | 144.2 | 142.2 | 140.2 | 138.2 | 136.2 | 159.9 | 149.2 | 143.0 | 153.3 | 146.7 | 138.9 |
| Percent of Sales | | | | | | | | | | | | | | | | | | | | |
| Gross Margin | 46.4% | 46.3% | 45.1% | 45.9% | 45.4% | 45.7% | 46.3% | 45.0% | 45.0% | 45.3% | 45.5% | 45.7% | 45.8% | 46.0% | 45.9% | 45.6% | 45.4% | 45.5% | 45.4% | 45.8% |
| R&D | 12.5% | 11.3% | 12.9% | 12.5% | 13.2% | 12.3% | 12.9% | 12.4% | 12.9% | 12.9% | 12.7% | 12.1% | 11.4% | 10.9% | 12.3% | 12.7% | 12.6% | 12.7% | 12.8% | 11.7% |
| SG&A | 6.8% | 6.1% | 7.1% | 6.5% | 6.6% | 6.2% | 6.5% | 6.2% | 6.5% | 6.5% | 6.3% | 6.0% | 5.7% | 5.5% | 6.6% | 6.4% | 6.3% | 6.6% | 6.4% | 5.9% |
| Operating Margin | 27.0% | 28.8% | 25.1% | 26.9% | 25.6% | 27.2% | 26.9% | 26.4% | 25.7% | 25.9% | 26.4% | 27.6% | 28.7% | 29.6% | 27.0% | 26.5% | 26.4% | 26.2% | 26.2% | 28.2% |
| Taxes | 11.9% | 10.0% | 7.6% | 11.0% | 11.4% | 12.5% | 8.3% | 8.3% | 8.3% | 8.3% | 8.3% | 8.3% | 8.3% | 8.3% | 10.1% | 10.1% | 8.3% | 10.6% | 8.3% | 8.3% |
| Net Income | 23.8% | 24.9% | 24.0% | 23.7% | 22.1% | 23.3% | 23.6% | 23.1% | 22.4% | 22.6% | 23.2% | 24.5% | 25.6% | 26.5% | 24.1% | 23.1% | 23.2% | 23.3% | 22.9% | 25.0% |
| Sequential Change | | | | | | | | | | | | | | | | | | | | |
| R&D | -11.0% | -2.1% | 9.9% | -5.9% | -2.9% | 11.2% | 1.5% | -0.2% | 0.6% | 0.6% | 2.5% | 0.6% | 0.6% | 0.6% | -0.3% | 5.5% | 5.8% | 0.4% | 6.9% | 4.2% |
| SG&A | -11.6% | -2.9% | 12.6% | -11.5% | -7.0% | 12.6% | 1.4% | -0.6% | 0.6% | 0.6% | 2.0% | 0.6% | 0.6% | 0.6% | -7.3% | -1.8% | 5.4% | -6.3% | 3.4% | 3.5% |
| Reconciliation of Pro Forma to GAAP | | | | | | | | | | | | | | | | | | | | |
| Acquisition Related | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Amortization of Intangibles | 34.8 | 34.8 | 34.8 | 15.7 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 120.2 | 55.9 | 55.9 | 78.5 | 55.9 | 55.9 |
| Stock Based Compensation | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.8) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (0.8) | 0.0 | 0.0 | (0.8) | 0.0 | 0.0 |
| Restructuring | 3.4 | 2.4 | 10.9 | 1.9 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18.5 | 1.0 | 0.0 | 13.8 | 0.0 | 0.0 |
| Tax Impact | (170) | 213 | (9.6) | (18) | (2.5) | 72.2 | 1.4 | 0.0 | 0.0 | 5.0 | 0.0 | (3.0) | (28.0) | (18.0) | (7.2) | 71.1 | 2.0 | 58.2 | 6.4 | (49.0) |
| Debt Related | 0.9 | 0.9 | 1.0 | 1.2 | 1.2 | 1.2 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 3.9 | 4.3 | 3.8 | 4.5 | 3.8 | 3.8 |
| Other | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Net Income - GAAP | \$533.4 | \$568.9 | \$547.4 | \$541.8 | \$465.8 | \$514.5 | \$574.8 | \$585.5 | \$549.3 | \$552.7 | \$597.6 | \$672.7 | \$774.3 | \$829.3 | \$2,191.4 | \$2,140.6 | \$2,372.3 | \$2,069.5 | \$2,262.3 | \$2,873.8 |
| GAAP Shares | 165.3 | 162.2 | 157.8 | 154.5 | 150.7 | 150.1 | 148.2 | 148.2 | 146.2 | 144.2 | 142.2 | 140.2 | 138.2 | 136.2 | 159.9 | 149.2 | 143.0 | 153.4 | 146.7 | 138.9 |
| EPS - GAAP | \$3.23 | \$3.51 | \$3.47 | \$3.51 | \$3.09 | \$3.43 | \$3.88 | \$3.95 | \$3.76 | \$3.83 | \$4.20 | \$4.80 | \$5.60 | \$6.09 | \$13.71 | \$14.35 | \$16.59 | \$13.49 | \$15.42 | \$20.70 |

Source: Company Reports, Barclays Research

FIGURE 57
LRCX Balance Sheet

| Lam Research Period Ending \$ in millions | Sep-18 1Q | Dec-18 2Q | Mar-19 3Q | Jun-19 4Q | Sep-19 1Q | Dec-19 2Q | Mar-20 3Q | Jun-20 4QE | Sep-20 1QE | Dec-20 2QE | Mar-21 3QE | Jun-21 4QE | Sep-21 1QE | Dec-21 2QE | 2019 FY | 2020 FYE | 2021 FYE | 2019 CY | 2020 CYE | 2021 CYE |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| BALANCE SHEET | | | | | | | | | | | | | | | | | | | | |
| Assets | | | | | | | | | | | | | | | | | | | | |
| Cash and cash equivalents | \$2,568.1 | \$3,359.8 | \$4,931.6 | \$3,658.2 | \$4,607.2 | \$3,035.9 | \$3,961.6 | \$6,423.2 | \$7,033.3 | \$7,619.2 | \$7,990.9 | \$7,638.5 | \$8,174.9 | \$8,780.8 | \$3,658.2 | \$6,423.2 | \$7,638.5 | \$3,035.9 | \$7,619.2 | \$8,780.8 |
| Short-term Investments | 1,050.9 | 275.7 | 1,209.3 | 1,773.0 | 983.7 | 1,647.9 | 1,431.6 | 1,431.6 | 1,431.6 | 1,431.6 | 1,431.6 | 1,431.6 | 1,431.6 | 1,431.6 | 1,773.0 | 1,431.6 | 1,431.6 | 1,647.9 | 1,431.6 | 1,431.6 |
| Accounts Receivable | 1,846.8 | 1,868.8 | 1,522.3 | 1,455.5 | 1,635.6 | 2,030.5 | 2,191.1 | 2,144.7 | 2,080.1 | 1,946.3 | 2,028.3 | 2,151.8 | 2,287.1 | 2,398.0 | 1,455.5 | 2,144.7 | 2,151.8 | 2,030.5 | 1,946.3 | 2,398.0 |
| Inventory | 1,874.2 | 1,703.3 | 1,622.2 | 1,540.1 | 1,483.4 | 1,528.6 | 1,674.7 | 1,808.7 | 1,677.9 | 1,673.0 | 1,737.1 | 1,836.1 | 1,947.9 | 2,034.9 | 1,540.1 | 1,808.7 | 1,836.1 | 1,528.6 | 1,673.0 | 2,034.9 |
| Prepaid Expenses and Other | 175.9 | 148.2 | 156.8 | 133.5 | 124.8 | 212.1 | 149.8 | 155.7 | 151.0 | 151.4 | 157.8 | 167.4 | 177.9 | 186.6 | 133.5 | 155.7 | 167.4 | 212.1 | 151.4 | 186.6 |
| Total Current Assets | \$7,515.9 | \$7,355.8 | \$9,442.2 | \$8,560.4 | \$8,834.6 | \$8,455.0 | \$9,408.8 | \$11,964.0 | \$12,373.9 | \$12,821.5 | \$13,345.7 | \$13,225.3 | \$14,019.4 | \$14,831.8 | \$8,560.4 | \$11,964.0 | \$13,225.3 | \$8,455.0 | \$12,821.5 | \$14,831.8 |
| Property and Equipment | 951.4 | 1,013.3 | 1,040.3 | 1,059.1 | 1,030.2 | 1,047.3 | 1,048.6 | 1,032.2 | 1,015.4 | 998.0 | 980.1 | 961.8 | 942.9 | 923.5 | 1,059.1 | 1,032.2 | 961.8 | 1,047.3 | 998.0 | 923.5 |
| Restricted Cash, Other Investments | 255.9 | 255.3 | 255.8 | 255.2 | 254.7 | 253.9 | 254.2 | 254.2 | 254.2 | 254.2 | 254.2 | 254.2 | 254.2 | 254.2 | 255.9 | 254.2 | 254.2 | 255.9 | 254.2 | 254.2 |
| Goodwill, net | 1,484.9 | 1,484.6 | 1,484.9 | 1,484.6 | 1,484.4 | 1,484.8 | 1,484.1 | 1,484.1 | 1,484.1 | 1,484.1 | 1,484.1 | 1,484.1 | 1,484.1 | 1,484.1 | 1,484.6 | 1,484.1 | 1,484.1 | 1,484.8 | 1,484.1 | 1,484.1 |
| Other intangible assets, net | 282.7 | 251.9 | 223.0 | 217.0 | 206.3 | 193.1 | 182.7 | 182.7 | 182.7 | 182.7 | 182.7 | 182.7 | 182.7 | 182.7 | 217.0 | 182.7 | 182.7 | 193.1 | 182.7 | 182.7 |
| Other Assets | 466.8 | 407.5 | 449.0 | 425.1 | 533.4 | 480.1 | 560.3 | 425.1 | 560.3 | 560.3 | 480.1 | 560.3 | 560.3 |
| Total Assets | \$10,957.6 | \$10,768.5 | \$12,895.3 | \$12,001.3 | \$12,343.5 | \$11,914.1 | \$12,938.6 | \$15,477.5 | \$15,870.5 | \$16,300.7 | \$16,807.1 | \$16,668.3 | \$17,443.5 | \$18,236.5 | \$12,001.3 | \$15,477.5 | \$18,236.5 | \$11,914.1 | \$16,300.7 | \$18,236.5 |
| Liabilities | | | | | | | | | | | | | | | | | | | | |
| Accounts Payable | \$384.4 | \$343.9 | \$416.2 | \$376.6 | \$415.8 | \$452.8 | \$498.9 | \$534.8 | \$533.9 | \$532.3 | \$521.1 | \$567.5 | \$619.8 | \$647.5 | \$376.6 | \$534.8 | \$567.5 | \$452.8 | \$532.3 | \$647.5 |
| Accrued Expenses, Other Current Liabilities | 1,347.9 | 1,203.6 | 1,046.9 | 946.6 | 990.0 | 1,114.0 | 1,024.8 | 1,065.2 | 1,033.1 | 1,035.7 | 1,079.3 | 1,145.0 | 1,217.0 | 1,276.0 | 946.6 | 1,065.2 | 1,145.0 | 1,114.0 | 1,035.7 | 1,276.0 |
| Deferred Profit | 542.3 | 432.2 | 378.4 | 381.3 | 406.7 | 366.4 | 539.6 | 539.6 | 539.6 | 539.6 | 539.6 | 539.6 | 539.6 | 539.6 | 381.3 | 539.6 | 539.6 | 366.4 | 539.6 | 539.6 |
| Current portion of convertible notes, and | 550.4 | 187.1 | 964.1 | 667.1 | 645.2 | 632.3 | 424 | 424 | 42.4 | 42.4 | 42.4 | 42.4 | 42.4 | 42.4 | 667.1 | 42.4 | 42.4 | 632.3 | 42.4 | 42.4 |
| Total Current Liabilities | \$2,825.0 | \$2,166.8 | \$2,805.6 | \$2,371.7 | \$2,457.7 | \$2,565.5 | \$2,105.7 | \$2,181.9 | \$2,149.0 | \$2,150.0 | \$2,182.4 | \$2,294.5 | \$2,418.8 | \$2,505.5 | \$2,371.7 | \$2,181.9 | \$2,294.5 | \$2,565.5 | \$2,150.0 | \$2,505.5 |
| Long-Term Debt & Capital Leases, Less Cu | 1,805.1 | 1,813.2 | 3,801.5 | 3,822.8 | 3,788.1 | 3,786.1 | 5,043.9 | 5,043.9 | 5,043.9 | 5,043.9 | 5,043.9 | 5,043.9 | 5,043.9 | 5,043.9 | 3,822.8 | 5,043.9 | 5,043.9 | 3,786.1 | 5,043.9 | 5,043.9 |
| Income taxes payable | 845.7 | 859.2 | 863.2 | 892.8 | 856.9 | 872.8 | 889.3 | 889.3 | 889.3 | 889.3 | 889.3 | 889.3 | 889.3 | 889.3 | 892.8 | 889.3 | 889.3 | 872.8 | 889.3 | 889.3 |
| Other long-term liabilities | 100.1 | 87.8 | 84.0 | 190.8 | 261.9 | 272.0 | 350.6 | 350.6 | 350.6 | 350.6 | 350.6 | 350.6 | 350.6 | 350.6 | 190.8 | 350.6 | 350.6 | 272.0 | 350.6 | 350.6 |
| Total Liabilities | \$5,575.9 | \$4,927.1 | \$7,554.3 | \$7,278.0 | \$7,364.6 | \$7,496.4 | \$8,389.5 | \$8,465.8 | \$8,432.8 | \$8,433.8 | \$8,466.3 | \$8,578.4 | \$8,702.6 | \$8,789.3 | \$7,278.0 | \$8,465.8 | \$8,578.4 | \$7,496.4 | \$8,433.8 | \$8,789.3 |
| Commitments and contingencies | | | | | | | | | | | | | | | | | | | | |
| Temporary Equity, Convertible Notes, Min | 58.8 | 57.0 | 49.8 | 49.4 | 42.6 | 38.3 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 11.5 | 49.4 | 11.5 | 11.5 | 38.3 | 11.5 | 11.5 |
| Shareholders' Equity | | | | | | | | | | | | | | | | | | | | |
| Preferred Stock | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 |
| Common Stock | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Additional Paid-In Capital | 6,195.0 | 6,256.9 | 6,315.5 | 6,409.4 | 6,456.5 | 6,528.8 | 6,577.8 | 6,577.8 | 6,577.8 | 6,577.8 | 6,577.8 | 6,577.8 | 6,577.8 | 6,577.8 | 6,409.4 | 6,577.8 | 6,577.8 | 6,528.8 | 6,577.8 | 6,577.8 |
| Treasury stock, at cost | (9,582.4) | (9,573.5) | (10,509.8) | (11,602.6) | (11,680.7) | (12,673.3) | (12,918.7) | (12,918.7) | (12,918.7) | (12,918.7) | (12,918.7) | (12,918.7) | (12,918.7) | (12,918.7) | (11,602.6) | (12,918.7) | (12,918.7) | (12,673.3) | (12,918.7) | (12,918.7) |
| Accumulated other comprehensive loss | (57.7) | (64.7) | (62.7) | (64.0) | (72.6) | (60.2) | (112.7) | (112.7) | (112.7) | (112.7) | (112.7) | (112.7) | (112.7) | (112.7) | (64.0) | (112.7) | (112.7) | (60.2) | (112.7) | (112.7) |
| Retained Earnings | 8,767.8 | 9,165.4 | 9,548.0 | 9,930.9 | 10,233.0 | 10,584.0 | 10,991.0 | 13,453.6 | 13,879.6 | 14,308.8 | 14,782.7 | 14,531.8 | 15,182.8 | 15,889.1 | 9,930.9 | 13,453.6 | 14,531.8 | 10,584.0 | 14,308.8 | 15,889.1 |
| Total Shareholder's Equity | \$5,322.8 | \$5,784.4 | \$5,291.2 | \$4,673.9 | \$4,936.4 | \$4,379.4 | \$4,537.6 | \$7,000.2 | \$7,426.2 | \$7,855.3 | \$8,329.3 | \$8,078.4 | \$8,729.3 | \$9,435.7 | \$4,673.9 | \$7,000.2 | \$8,078.4 | \$4,379.4 | \$7,855.3 | \$9,435.7 |
| Total Liabilities & Equity | \$10,957.6 | \$10,768.5 | \$12,895.3 | \$12,001.3 | \$12,343.5 | \$11,914.1 | \$12,938.6 | \$15,477.5 | \$15,870.5 | \$16,300.7 | \$16,807.1 | \$16,668.3 | \$17,443.5 | \$18,236.5 | \$12,001.3 | \$15,477.5 | \$18,236.5 | \$11,914.1 | \$16,300.7 | \$18,236.5 |
| CHECK | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| VALUATION RATIOS | | | | | | | | | | | | | | | | | | | | |
| Profitability Ratios | | | | | | | | | | | | | | | | | | | | |
| Return On Invested Capital | 69% | 73% | 57% | 81% | 68% | 73% | 75% | 62% | 59% | 62% | 70% | 75% | 84% | 87% | 71% | 79% | 63% | 56% | 74% | 83% |
| Return On Equity | 33% | 43% | 38% | 41% | 40% | 42% | 52% | 52% | 31% | 30% | 30% | 32% | 38% | 38% | 34% | 46% | 34% | 36% | 52% | 37% |
| Return On Avg Equity * | 30% | 37% | 31% | 24% | 22% | 21% | 20% | 18% | 18% | 18% | 18% | 17% | 18% | 19% | 24% | 18% | 17% | 21% | 18% | 19% |
| Return On Assets | 19% | 21% | 17% | 18% | 15% | 17% | 18% | 15% | 14% | 14% | 14% | 16% | 18% | 18% | 18% | 14% | 14% | 17% | 14% | 16% |
| Return On Net Assets | 43% | 57% | 49% | 44% | 44% | 38% | 42% | 42% | 41% | 42% | 45% | 48% | 53% | 55% | 45% | 39% | 42% | 38% | 43% | 47% |
| Return On Sales | 23% | 23% | 22% | 23% | 22% | 20% | 23% | 23% | 22% | 22% | 23% | 24% | 26% | 27% | 23% | 22% | 23% | 22% | 22% | 25% |

Source: Company Reports, Barclays Research

FIGURE 58
LRCX Cash Flow Statement

| Period Ending \$ in millions | Sep-18 1Q | Dec-18 2Q | Mar-19 3Q | Jun-19 4Q | Sep-19 1Q | Dec-19 2Q | Mar-20 3Q | Jun-20 4QE | Sep-20 1QE | Dec-20 2QE | Mar-21 3QE | Jun-21 4QE | Sep-21 1QE | Dec-21 2QE | 2019 FY | 2020 FYE | 2021 FY | 2019 CY | 2020 CYE | 2021 CYE | |
|---|--------------------|------------------|--------------------|--------------------|------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|------------------|--------------------|--------------------|------------------|--------------------|-----|
| CASH FLOW | | | | | | | | | | | | | | | | | | | | | |
| Cash Flow from Ops. | | | | | | | | | | | | | | | | | | | | | |
| Net Income | \$533.4 | \$568.9 | \$547.4 | \$541.8 | \$465.8 | \$514.5 | \$574.8 | \$585.5 | \$549.3 | \$552.7 | \$597.6 | \$672.7 | \$774.3 | \$829.3 | \$2,191.4 | \$2,140.6 | \$2,372.3 | \$2,069.5 | \$2,262.3 | \$2,873.8 | |
| Depreciation & Amortization | 79.8 | 81.8 | 82.3 | 65.4 | 64.7 | 65.5 | 67.2 | 67.7 | 68.2 | 68.7 | 69.2 | 69.7 | 70.2 | 70.7 | 309.3 | 265.2 | 276.0 | 277.9 | 272.0 | 280.0 | |
| Deferred income taxes | (83.5) | 20.8 | (12.4) | 70.1 | (3.0) | 77.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (5.0) | 74.5 | 0.0 | 132.2 | 0.0 | 0.0 | |
| Equity-based comp expense | 50.3 | 38.8 | 53.2 | 44.8 | 42.9 | 45.7 | 47.4 | 44.6 | 41.9 | 39.4 | 37.0 | 34.8 | 32.7 | 30.7 | 187.2 | 180.6 | 153.1 | 186.7 | 173.3 | 135.3 | |
| Income tax benefit on equity-based compensation plans | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Excess tax benefit on equity-based compensation plans | 0.0 | 0.0 | 0.0 | (0.1) | 0.0 | 0.0 | 0.0 | 0.0 | | | | | (0.1) | 0.0 | 0.0 | (0.1) | 0.0 | 0.0 | 0.0 | 0.0 | |
| Loss on extinguishment of debt | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | | | | | | | | | | |
| Amortization of note discounts and issuance costs | 1.2 | 1.0 | 2.9 | 2.2 | 1.7 | 1.6 | 1.4 | | | | | | | | | 7.3 | 4.6 | 0.0 | 8.3 | 1.4 | 0.0 |
| Other, net | 2.2 | (1.3) | (1.5) | (5.1) | 4.0 | (0.3) | 7.8 | | | | | | | | | (5.7) | 11.5 | 0.0 | (2.9) | 7.8 | 0.0 |
| Changes in Operating Assets and Liabilities | 136.8 | (67.5) | 261.0 | 161.3 | (112.0) | (396.6) | (157.2) | (17.3) | 167.1 | 139.4 | (120.0) | (120.0) | (133.4) | (119.8) | 491.5 | (683.1) | 66.5 | (86.4) | 132.1 | (493.2) | |
| Net Cash from Operations | \$720.3 | \$642.4 | \$932.8 | \$880.5 | \$464.0 | \$307.9 | \$541.4 | \$680.6 | \$826.6 | \$800.2 | \$583.8 | \$657.2 | \$743.9 | \$811.0 | \$3,176.0 | \$1,994.0 | \$2,867.8 | \$2,585.3 | \$2,848.8 | \$2,795.9 | |
| Cash Flow from Investing | | | | | | | | | | | | | | | | | | | | | |
| Capital expenditures | (56.1) | (105.9) | (75.5) | (65.9) | (39.3) | (62.1) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (303.5) | (204.1) | (205.5) | (242.8) | (205.5) | (205.5) | |
| Business acquisition, net of cash acquired | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Purchases of available-for-sale securities | (749.8) | (35.4) | (1,190.5) | (954.4) | (147.6) | (1,472.1) | (270.1) | | | | | | | | (2,930.0) | (1,889.8) | 0.0 | (3,764.6) | (270.1) | 0.0 | |
| Sales and maturities of available-for-sale securities | 137.2 | 808.6 | 259.1 | 398.9 | 938.1 | 809.8 | 481.3 | | | | | | | | 1,603.8 | 2,229.2 | 0.0 | 2,405.9 | 481.3 | 0.0 | |
| Transfers of restricted cash and investments | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Repayment of notes receivable | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Proceeds from sale of business | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Other, net | (3.7) | (0.4) | (1.3) | (2.1) | (0.5) | (10.0) | 10.0 | | | | | | | | (7.4) | (0.5) | 0.0 | (13.9) | 10.0 | 0.0 | |
| Net Cash from Investing | (672.3) | \$666.9 | (\$1,008.2) | (\$623.5) | \$750.7 | (\$734.3) | \$169.8 | (\$51.4) | (\$1,637.1) | \$134.8 | (\$205.5) | (\$1,615.3) | \$15.6 | (\$205.5) | |
| Cash Flows from Financing | | | | | | | | | | | | | | | | | | | | | |
| Principal payments on LT debt, cap. lease obligations & debt is | (79.8) | (6.4) | (30.2) | (1.2) | (29.0) | (18.0) | (617.6) | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | (117.7) | (661.7) | (788.6) | (78.3) | (609.1) | (788.6) | |
| Net proceeds from issuance of long-term debt | 0.0 | 0.0 | 2,476.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2,000.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2,476.7 | 2,000.0 | 0.0 | 2,476.7 | 2,000.0 | 0.0 | |
| Net proceeds from commercial paper | (0.1) | (359.5) | 297.9 | (300.0) | 0.0 | 0.0 | 0.0 | 0.0 | 1,250.0 | | | | | | (361.8) | 0.0 | 0.0 | (2.2) | 0.0 | 0.0 | |
| Proceeds from borrowings on revolving credit facility | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | 0.0 | 1,250.0 | 0.0 | 0.0 | 1,250.0 | 0.0 | |
| Repayments of borrowings on revolving credit facility | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Excess tax benefit on equity-based compensation plans | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Treasury stock purchases | (1,735.9) | (1.5) | (934.6) | (1,108.6) | (78.1) | (1,005.1) | (245.4) | | (168.1) | (165.8) | (163.5) | (161.2) | | | (3,780.6) | (1,328.6) | 0.0 | (3,126.4) | (245.4) | 0.0 | |
| Dividends paid | (174.4) | (167.9) | (171.2) | (164.9) | (158.9) | (166.7) | (163.5) | (170.4) | | | | | | | (678.3) | (659.5) | (658.6) | (661.7) | (667.8) | (640.2) | |
| Reissuance of treasury stock related to employee stock purchase | 0.0 | 32.9 | 0.0 | 45.0 | 0.0 | 38.4 | 0.0 | | | | | | | | 78.0 | 38.4 | 0.0 | 83.5 | 0.0 | 0.0 | |
| Proceeds from issuance of common stock | 0.0 | 0.1 | 5.0 | 1.7 | 3.9 | 0.6 | 1.7 | | | | | | | | 6.8 | 6.2 | 0.0 | 11.2 | 1.7 | 0.0 | |
| Other | (0.0) | (13.2) | 0.0 | (0.0) | 0.0 | 0.0 | 0.3 | | | | | | | | (13.2) | 0.3 | 0.0 | (0.0) | 0.3 | 0.0 | |
| Net Cash from Financing | (\$1,990.2) | (\$515.6) | \$1,643.5 | (\$1,527.9) | (\$262.1) | (\$1,150.7) | \$225.5 | \$1,832.5 | (\$165.2) | (\$162.9) | (\$160.6) | (\$958.3) | (\$156.0) | (\$153.7) | (\$2,390.1) | \$645.1 | (\$1,447.1) | (\$1,297.1) | \$1,729.8 | (\$1,428.7) | |
| Effect of exchange rates | | | | | | | | | | | | | | | | | | | | | |
| Restricted Cash | (2.3) | (2.7) | 4.1 | (3.1) | (4.2) | 5.1 | (10.7) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | (4.0) | (9.9) | 0.0 | (6.5) | (13.0) | 0.0 | |
| Cash and Cash eqv at beginning | \$4,512.3 | \$2,568.1 | \$3,359.8 | \$4,931.6 | \$3,658.2 | \$4,607.2 | \$3,035.9 | \$3,961.6 | \$6,423.2 | \$7,033.3 | \$7,619.2 | \$7,990.9 | \$7,638.5 | \$8,174.9 | \$4,512.3 | \$3,658.2 | \$6,423.3 | \$3,359.8 | \$3,035.9 | \$7,619.2 | |
| Net increase in cash and cash eqv. | (1,944.2) | 791.7 | 1,571.8 | (1,273.4) | 949.0 | (1,571.3) | 925.7 | 2,461.7 | 610.0 | 585.9 | 371.8 | (352.5) | 536.5 | 605.9 | (854.0) | 2,765.1 | 1,215.2 | (323.9) | 4,583.3 | 1,161.6 | |
| Cash and Cash eqv at end | \$2,568.1 | \$3,359.8 | \$4,931.6 | \$3,658.2 | \$4,607.2 | \$3,035.9 | \$3,961.6 | \$6,423.2 | \$7,033.3 | \$7,619.2 | \$7,990.9 | \$7,638.5 | \$8,174.9 | \$8,780.8 | \$3,658.2 | \$6,423.3 | \$7,638.5 | \$3,035.9 | \$7,619.2 | \$8,780.8 | |
| CHECK | | | | | | | | | | | | | | | | | | | | | |
| Cash Flow from Operations | \$720.3 | \$642.4 | \$932.8 | \$880.5 | \$464.0 | \$307.9 | \$541.4 | \$680.6 | \$826.6 | \$800.2 | \$583.8 | \$657.2 | \$743.9 | \$811.0 | \$3,176.0 | \$1,994.0 | \$2,867.8 | \$2,585.3 | \$2,848.8 | \$2,795.9 | |
| Capex | (56.1) | (105.9) | (75.5) | (65.9) | (39.3) | (62.1) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (51.4) | (303.5) | (204.1) | (205.5) | (242.8) | (205.5) | (205.5) | |
| Free Cash Flow | \$664.2 | \$536.5 | \$857.3 | \$814.5 | \$424.8 | \$245.9 | \$490.1 | \$629.2 | \$775.2 | \$748.8 | \$532.4 | \$605.9 | \$692.5 | \$759.6 | \$2,872.5 | \$1,789.9 | \$2,662.3 | \$2,342.5 | \$2,643.3 | \$2,590.4 | |
| Free Cash Flow / Share | \$4.02 | \$3.31 | \$5.43 | \$5.27 | \$2.82 | \$1.64 | \$3.31 | \$4.25 | \$5.30 | \$5.19 | \$3.75 | \$4.32 | \$5.01 | \$5.58 | \$17.97 | \$12.35 | \$21.09 | \$15.28 | \$18.02 | \$18.65 | |
| EBITDA | \$709.8 | \$809.4 | \$694.4 | \$701.3 | \$618.4 | \$767.2 | \$740.7 | \$753.8 | \$716.0 | \$723.9 | \$766.5 | \$842.7 | \$923.5 | \$993.3 | \$2,914.9 | \$924.2 | \$1,057.5 | \$2,781.3 | \$272.0 | \$280.0 | |
| Net Borrowing | (50.1) | (359.5) | \$297.9 | (300.0) | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | \$0.0 | (5361.8) | \$0.0 | \$0.0 | (2.2) | \$0.0 | \$0.0 | |
| Free Cash Flow to Equity | \$664.1 | \$177.0 | \$1,155.1 | \$514.5 | \$424.8 | \$245.9 | \$490.1 | \$629.2 | \$775.2 | \$748.8 | \$532.4 | \$605.9 | \$692.5 | \$759.6 | \$2,510.8 | \$1,789.9 | \$2,662.3 | \$2,340.4 | \$2,643.3 | \$2,590.4 | |

Source: Company Reports, Barclays Research

| U.S. Semiconductor Capital Equipment | | | | | | Industry View: NEUTRAL | |
|--------------------------------------|--------|--------|--------|-------|---------|--|-----------|
| Applied Materials Inc. (AMAT) | | | | | | Stock Rating: EQUAL WEIGHT | |
| Income statement (\$mn) | 2019A | 2020E | 2021E | 2022E | CAGR | Price (22-May-2020) | USD 54.39 |
| Revenue | 14,608 | 16,441 | 17,113 | N/A | N/A | Price Target | USD 60.00 |
| EBITDA (adj) | 3,790 | 4,500 | 4,781 | N/A | N/A | Why Equal Weight? We are EW given higher exposure to Foundry/Logic and see estimates as still too high. | |
| EBIT (adj) | 3,427 | 4,133 | 4,419 | N/A | N/A | Upside case | USD 70.00 |
| Pre-tax income (adj) | 3,310 | 3,962 | 4,254 | N/A | N/A | Our upside case of \$70 is based upon 16x our upside CY21E EPS of \$4.50, which assumes resolution of China trade overhang, outperformance in Foundry/Logic. | |
| Net income (adj) | 2,875 | 3,430 | 3,616 | N/A | N/A | | |
| EPS (adj) (\$) | 3.04 | 3.71 | 3.94 | N/A | N/A | | |
| Diluted shares (mn) | 945.4 | 923.3 | 918.4 | N/A | N/A | | |
| DPS (\$) | 0.82 | 0.86 | 0.35 | N/A | N/A | | |
| Margin and return data | | | | | Average | Downside case | USD 40.00 |
| EBITDA (adj) margin (%) | 25.9 | 27.4 | 27.9 | N/A | 27.1 | Our downside case of \$40 is based upon 11x our downside CY21E EPS of \$3.75, which assumes escalation of China Trade tensions, reduction of Foundry/Logic spend, and/or lack of recovery in Memory. | |
| EBIT (adj) margin (%) | 23.5 | 25.1 | 25.8 | N/A | 24.8 | | |
| Pre-tax (adj) margin (%) | 22.7 | 24.1 | 24.9 | N/A | 23.9 | | |
| Net (adj) margin (%) | 19.7 | 20.9 | 21.1 | N/A | 20.6 | | |
| ROA (%) | 14.5 | 15.5 | 14.4 | N/A | 14.8 | | |
| ROE (%) | 40.4 | 40.8 | 39.9 | N/A | 40.4 | | |
| Balance sheet and cash flow (\$mn) | | | | | CAGR | Upside/Downside scenarios | |
| Tangible fixed assets | 1,529 | 1,494 | 1,416 | N/A | N/A | Price History | |
| Intangible fixed assets | 3,399 | 3,426 | 3,426 | N/A | N/A | Prior 12 months | |
| Cash and equivalents | 3,129 | 4,749 | 7,588 | N/A | N/A | High | |
| Total assets | 19,024 | 21,605 | 24,741 | N/A | N/A | 69.44 | |
| Short and long-term debt | 5,313 | 6,815 | 6,815 | N/A | N/A | Upside | 70.00 |
| Other long-term liabilities | 375 | 573 | 573 | N/A | N/A | | |
| Total liabilities | 10,810 | 12,678 | 12,796 | N/A | N/A | Current | 54.39 |
| Net debt/(funds) | 2,184 | 2,066 | -773 | N/A | N/A | | |
| Shareholders' equity | 8,214 | 8,927 | 11,945 | N/A | N/A | | |
| Change in working capital | -920 | 2,154 | 3,096 | N/A | N/A | Low | 36.64 |
| Cash flow from operations | 3,247 | 3,008 | 3,672 | N/A | N/A | | |
| Capital expenditure | 441 | 315 | 284 | N/A | N/A | | |
| Free cash flow | 2,806 | 2,693 | 3,388 | N/A | N/A | Target | 60.00 |
| Valuation and leverage metrics | | | | | Average | Downside | |
| P/E (adj) (x) | 17.9 | 14.6 | 13.8 | N/A | 15.4 | | |
| EV/sales (x) | 3.6 | 3.2 | 2.9 | N/A | 3.2 | | |
| EV/EBITDA (adj) (x) | 13.8 | 11.6 | 10.3 | N/A | 11.9 | | |
| Equity FCF yield (%) | 5.5 | 5.4 | 2.4 | N/A | 4.4 | | |
| P/Sales (x) | 3.4 | 3.1 | 2.9 | N/A | 3.1 | | |
| P/BV (x) | 6.3 | 5.6 | 6.9 | N/A | 6.3 | | |
| Dividend yield (%) | 1.5 | 1.6 | 0.6 | N/A | 1.2 | | |

Source: Company data, Bloomberg, Barclays Research
Note: FY End Oct

| U.S. Semiconductor Capital Equipment | | | | | | Industry View: NEUTRAL |
|---|-------|-------|-------|---------|------|--|
| KLA Corporation (KLAC) | | | | | | Stock Rating: EQUAL WEIGHT |
| Income statement (\$mn) | 2019A | 2020E | 2021E | 2022E | CAGR | Price (22-May-2020) Price Target |
| Revenue | 4,569 | 5,755 | 5,665 | N/A | N/A | USD 173.00 USD 170.00 |
| EBITDA (adj) | 1,839 | 2,319 | 2,201 | N/A | N/A | Why Equal Weight? We are EW as the company has higher exposure to Foundry/Logic and is under exposed to Memory but has the best set-up for numbers. |
| EBIT (adj) | 1,606 | 1,968 | 1,866 | N/A | N/A | |
| Pre-tax income (adj) | 1,481 | 1,806 | 1,701 | N/A | N/A | |
| Net income (adj) | 1,296 | 1,571 | 1,479 | N/A | N/A | |
| EPS (adj) (\$) | 8.48 | 9.99 | 9.86 | N/A | N/A | |
| Diluted shares (mn) | 152.8 | 157.3 | 150.0 | N/A | N/A | |
| DPS (\$) | 3.10 | 3.40 | 3.40 | N/A | N/A | |
| Margin and return data | | | | Average | | |
| EBITDA (adj) margin (%) | 40.3 | 40.3 | 38.9 | N/A | 39.8 | |
| EBIT (adj) margin (%) | 35.1 | 34.2 | 32.9 | N/A | 34.1 | |
| Pre-tax (adj) margin (%) | 32.4 | 31.4 | 30.0 | N/A | 31.3 | |
| Net (adj) margin (%) | 28.4 | 27.3 | 26.1 | N/A | 27.3 | |
| ROA (%) | 12.7 | 12.5 | 13.9 | N/A | 13.0 | |
| ROE (%) | 70.6 | 42.3 | 54.6 | N/A | 55.8 | |
| Balance sheet and cash flow (\$mn) | | | | CAGR | | |
| Tangible fixed assets | 449 | 415 | 80 | N/A | N/A | |
| Intangible fixed assets | 2,212 | 2,043 | 2,043 | N/A | N/A | |
| Cash and equivalents | 1,016 | 1,276 | 2,302 | N/A | N/A | |
| Total assets | 9,009 | 9,028 | 9,865 | N/A | N/A | |
| Short and long-term debt | 3,423 | 3,444 | 3,444 | N/A | N/A | |
| Other long-term liabilities | N/A | N/A | N/A | N/A | N/A | |
| Total liabilities | 6,331 | 6,516 | 6,567 | N/A | N/A | |
| Net debt/(funds) | 2,407 | 2,168 | 1,142 | N/A | N/A | |
| Shareholders' equity | 2,678 | 2,512 | 3,299 | N/A | N/A | |
| Change in working capital | -784 | N/A | N/A | N/A | N/A | |
| Cash flow from operations | 1,154 | 1,833 | 1,714 | N/A | N/A | |
| Capital expenditure | 130 | 154 | 174 | N/A | N/A | |
| Free cash flow | 1,023 | 1,678 | 1,540 | N/A | N/A | |
| Valuation and leverage metrics | | | | Average | | |
| P/E (adj) (x) | 20.4 | 17.3 | 17.5 | N/A | 18.4 | |
| EV/sales (x) | 6.5 | 5.1 | 5.0 | N/A | 5.5 | |
| EV/EBITDA (adj) (x) | 16.1 | 12.7 | 12.9 | N/A | 13.9 | |
| Equity FCF yield (%) | 3.9 | 6.2 | 1.4 | N/A | 3.8 | |
| P/Sales (x) | 6.0 | 4.7 | 4.8 | N/A | 5.2 | |
| P/BV (x) | 9.9 | 10.8 | 7.9 | N/A | 9.5 | |
| Dividend yield (%) | 1.8 | 2.0 | 2.0 | N/A | 1.9 | |

Source: Company data, Bloomberg, Barclays Research
Note: FY End Jun

U.S. Semiconductor Capital Equipment

Industry View: NEUTRAL

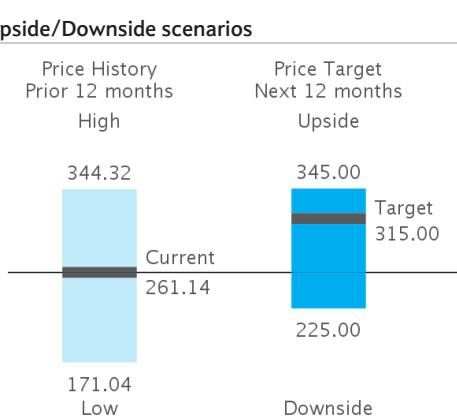
Lam Research Corporation (LRCX)

Stock Rating: OVERWEIGHT

| Income statement (\$mn) | 2019A | 2020E | 2021E | 2022E | CAGR | Price (22-May-2020) | USD 261.14 |
|------------------------------------|--------|--------|--------|-------|---------|---|------------|
| Revenue | 9,654 | 9,855 | 10,488 | N/A | N/A | Price Target | USD 315.00 |
| EBITDA (adj) | 2,915 | 2,660 | 2,855 | N/A | N/A | Why Overweight? We are OW as the company is highly levered to Memory, and should benefit from NAND spend tailwind at some point. | |
| EBIT (adj) | 2,606 | 2,615 | 2,773 | N/A | N/A | | |
| Pre-tax income (adj) | 2,589 | 2,527 | 2,654 | N/A | N/A | | |
| Net income (adj) | 2,327 | 2,272 | 2,434 | N/A | N/A | | |
| EPS (adj) (\$) | 14.55 | 15.23 | 17.03 | N/A | N/A | Upside case | USD 345.00 |
| Diluted shares (mn) | 159.9 | 149.2 | 143.0 | N/A | N/A | Our upside case of \$345 is based upon 15x our upside CY21E EPS of \$23.00, which assumes faster/stronger growth in Memory market, greater than expected share gains in Etch and Deposition, and strength in EUV Photoresist opportunity. | |
| DPS (\$) | 4.40 | 4.60 | 4.60 | N/A | N/A | | |
| Margin and return data | | | | | Average | | |
| EBITDA (adj) margin (%) | 30.2 | 27.0 | 27.2 | N/A | 28.1 | | |
| EBIT (adj) margin (%) | 27.0 | 26.5 | 26.4 | N/A | 26.7 | | |
| Pre-tax (adj) margin (%) | 26.8 | 25.6 | 25.3 | N/A | 25.9 | | |
| Net (adj) margin (%) | 24.1 | 23.1 | 23.2 | N/A | 23.5 | | |
| ROA (%) | 18.3 | 13.8 | 14.2 | N/A | 15.4 | | |
| ROE (%) | 33.7 | 45.8 | 33.9 | N/A | 37.8 | | |
| Balance sheet and cash flow (\$mn) | | | | | CAGR | | |
| Tangible fixed assets | 1,059 | 1,032 | 962 | N/A | N/A | | |
| Intangible fixed assets | 1,485 | 1,484 | 1,484 | N/A | N/A | | |
| Cash and equivalents | 3,658 | 6,423 | 7,638 | N/A | N/A | | |
| Total assets | 12,001 | 15,477 | 16,668 | N/A | N/A | | |
| Short and long-term debt | 3,823 | 5,044 | 5,044 | N/A | N/A | | |
| Other long-term liabilities | N/A | N/A | N/A | N/A | N/A | | |
| Total liabilities | 7,278 | 8,466 | 8,578 | N/A | N/A | | |
| Net debt/(funds) | 165 | -1,379 | -2,595 | N/A | N/A | | |
| Shareholders' equity | 4,674 | 7,000 | 8,078 | N/A | N/A | | |
| Change in working capital | 189 | 3,593 | 1,149 | N/A | N/A | | |
| Cash flow from operations | 3,176 | 1,994 | 2,868 | N/A | N/A | | |
| Capital expenditure | 303 | 204 | 206 | N/A | N/A | | |
| Free cash flow | 2,873 | 1,790 | 2,662 | N/A | N/A | | |
| Valuation and leverage metrics | | | | | Average | | |
| P/E (adj) (x) | 17.9 | 17.1 | 15.3 | N/A | 16.8 | | |
| EV/sales (x) | 4.0 | 3.8 | 3.4 | N/A | 3.8 | | |
| EV/EBITDA (adj) (x) | 13.3 | 14.0 | 12.6 | N/A | 13.3 | | |
| Equity FCF yield (%) | 6.9 | 4.6 | 1.0 | N/A | 4.2 | | |
| P/Sales (x) | 4.0 | 3.9 | 3.7 | N/A | 3.9 | | |
| P/BV (x) | 8.9 | 5.6 | 4.6 | N/A | 6.4 | | |
| Dividend yield (%) | 1.7 | 1.8 | 1.8 | N/A | 1.7 | | |

Source: Company data, Bloomberg, Barclays Research

Note: FY End Jun



Valuation Methodology and Risks

U.S. Semiconductor Capital Equipment

Applied Materials Inc. (AMAT)

Valuation Methodology: Our price target of \$60 is based on 15x our CY21E EPS of \$4.06.

Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target: Escalation of China trade tensions would dampen growth potential, reduced spending in Foundry/Logic, and/or weakness in the Memory market.

KLA Corporation (KLAC)

Valuation Methodology: Our price target of \$170 is based on 15x our CY21E EPS of \$11.29.

Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target: Escalation of China trade tensions would dampen growth potential, reduced spending in Foundry/Logic, and/or weakness in the Memory market.

Lam Research Corporation (LRCX)

Valuation Methodology: Our price target of \$315 is based on 15x our CY21E EPS of \$20.77.

Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target: Weakness in Memory market (particularly NAND), escalation of China trade tensions would dampen growth potential, and/or reduced spending in Foundry/Logic.

Source: Barclays Research.

ANALYST(S) CERTIFICATION(S):

We, Blayne Curtis and Thomas O'Malley, hereby certify (1) that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

IMPORTANT DISCLOSURES

Barclays Research is produced by the Investment Bank of Barclays Bank PLC and its affiliates (collectively and each individually, "Barclays"). All authors contributing to this research report are Research Analysts unless otherwise indicated. The publication date at the top of the report reflects the local time where the report was produced and may differ from the release date provided in GMT.

Availability of Disclosures:

Where any companies are the subject of this research report, for current important disclosures regarding those companies please refer to <https://publicresearch.barclays.com> or alternatively send a written request to: Barclays Research Compliance, 745 Seventh Avenue, 13th Floor, New York, NY 10019 or call +1-212-526-1072.

The analysts responsible for preparing this research report have received compensation based upon various factors including the firm's total revenues, a portion of which is generated by investment banking activities, the profitability and revenues of the Markets business and the potential interest of the firm's investing clients in research with respect to the asset class covered by the analyst.

Analysts regularly conduct site visits to view the material operations of covered companies, but Barclays policy prohibits them from accepting payment or reimbursement by any covered company of their travel expenses for such visits.

Barclays Research Department produces various types of research including, but not limited to, fundamental analysis, equity-linked analysis, quantitative analysis, and trade ideas. Recommendations contained in one type of Barclays Research may differ from those contained in other types of Barclays Research, whether as a result of differing time horizons, methodologies, or otherwise.

In order to access Barclays Statement regarding Research Dissemination Policies and Procedures, please refer to <https://publicresearch.barcap.com/S/RD.htm>. In order to access Barclays Research Conflict Management Policy Statement, please refer to: <https://publicresearch.barcap.com/S/CM.htm>.

Primary Stocks (Ticker, Date, Price)

Applied Materials Inc. (AMAT, 22-May-2020, USD 54.39), Equal Weight/Neutral, CD/CE/J

KLA Corporation (KLAC, 22-May-2020, USD 173.00), Equal Weight/Neutral, CD/CE/J

Lam Research Corporation (LRCX, 22-May-2020, USD 261.14), Overweight/Neutral, A/CD/CE/D/E/J/K/L/M

Unless otherwise indicated, prices are sourced from Bloomberg and reflect the closing price in the relevant trading market, which may not be the last available price at the time of publication.

Disclosure Legend:

A: Barclays Bank PLC and/or an affiliate has been lead manager or co-lead manager of a publicly disclosed offer of securities of the issuer in the previous 12 months.

B: An employee or non-executive director of Barclays PLC is a director of this issuer.

CD: Barclays Bank PLC and/or an affiliate is a market-maker in debt securities issued by this issuer.

CE: Barclays Bank PLC and/or an affiliate is a market-maker in equity securities issued by this issuer.

D: Barclays Bank PLC and/or an affiliate has received compensation for investment banking services from this issuer in the past 12 months.

E: Barclays Bank PLC and/or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer within the next 3 months.

FA: Barclays Bank PLC and/or an affiliate beneficially owns 1% or more of a class of equity securities of this issuer, as calculated in accordance with US regulations.

FB: Barclays Bank PLC and/or an affiliate beneficially owns a long position of more than 0.5% of a class of equity securities of this issuer, as calculated in accordance with EU regulations.

FC: Barclays Bank PLC and/or an affiliate beneficially owns a short position of more than 0.5% of a class of equity securities of this issuer, as calculated in accordance with EU regulations.

FD: Barclays Bank PLC and/or an affiliate beneficially owns 1% or more of a class of equity securities of this issuer, as calculated in accordance with South Korean regulations.

GD: One of the Research Analysts on the fundamental credit coverage team (and/or a member of his or her household) has a long position in the common equity securities of this issuer.

GE: One of the Research Analysts on the fundamental equity coverage team (and/or a member of his or her household) has a long position in the common equity securities of this issuer.

H: This issuer beneficially owns more than 5% of any class of common equity securities of Barclays PLC.

I: Barclays Bank PLC and/or an affiliate is party to an agreement with this issuer for the provision of financial services to Barclays Bank PLC and/or an affiliate.

IMPORTANT DISCLOSURES CONTINUED

J: Barclays Bank PLC and/or an affiliate is a liquidity provider and/or trades regularly in the securities of this issuer and/or in any related derivatives.

K: Barclays Bank PLC and/or an affiliate has received non-investment banking related compensation (including compensation for brokerage services, if applicable) from this issuer within the past 12 months.

L: This issuer is, or during the past 12 months has been, an investment banking client of Barclays Bank PLC and/or an affiliate.

M: This issuer is, or during the past 12 months has been, a non-investment banking client (securities related services) of Barclays Bank PLC and/or an affiliate.

N: This issuer is, or during the past 12 months has been, a non-investment banking client (non-securities related services) of Barclays Bank PLC and/or an affiliate.

O: Not in use.

P: A partner, director or officer of Barclays Capital Canada Inc. has, during the preceding 12 months, provided services to the subject company for remuneration, other than normal course investment advisory or trade execution services.

Q: Barclays Bank PLC and/or an affiliate is a Corporate Broker to this issuer.

R: Barclays Capital Canada Inc. and/or an affiliate has received compensation for investment banking services from this issuer in the past 12 months.

S: This issuer is a Corporate Broker to Barclays PLC.

T: Barclays Bank PLC and/or an affiliate is providing equity advisory services to this issuer.

U: The equity securities of this Canadian issuer include subordinate voting restricted shares.

V: The equity securities of this Canadian issuer include non-voting restricted shares.

Risk Disclosure(s)

Master limited partnerships (MLPs) are pass-through entities structured as publicly listed partnerships. For tax purposes, distributions to MLP unit holders may be treated as a return of principal. Investors should consult their own tax advisors before investing in MLP units.

Disclosure(s) regarding Information Sources

All statements in this report attributable to Gartner represent the authoring research analysts' interpretation of data, research opinion or viewpoints published as part of a syndicated subscription service by Gartner, Inc., and have not been reviewed by Gartner.

Each Gartner publication speaks as of its original publication date (and not as of the date of this presentation). The opinions expressed in Gartner publications are not representations of fact, and are subject to change without notice.

Guide to the Barclays Fundamental Equity Research Rating System:

Our coverage analysts use a relative rating system in which they rate stocks as Overweight, Equal Weight or Underweight (see definitions below) relative to other companies covered by the analyst or a team of analysts that are deemed to be in the same industry (the "industry coverage universe").

In addition to the stock rating, we provide industry views which rate the outlook for the industry coverage universe as Positive, Neutral or Negative (see definitions below). A rating system using terms such as buy, hold and sell is not the equivalent of our rating system. Investors should carefully read the entire research report including the definitions of all ratings and not infer its contents from ratings alone.

Stock Rating

Overweight - The stock is expected to outperform the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

Equal Weight - The stock is expected to perform in line with the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

Underweight - The stock is expected to underperform the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

Rating Suspended - The rating and target price have been suspended temporarily due to market events that made coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity in a merger or strategic transaction involving the company.

Industry View

Positive - industry coverage universe fundamentals/valuations are improving.

Neutral - industry coverage universe fundamentals/valuations are steady, neither improving nor deteriorating.

Negative - industry coverage universe fundamentals/valuations are deteriorating.

Below is the list of companies that constitute the "industry coverage universe":

U.S. Semiconductor Capital Equipment

Applied Materials Inc. (AMAT)

KLA Corporation (KLAC)

Lam Research Corporation (LRCX)

IMPORTANT DISCLOSURES CONTINUED

Distribution of Ratings:

Barclays Equity Research has 1564 companies under coverage.

45% have been assigned an Overweight rating which, for purposes of mandatory regulatory disclosures, is classified as a Buy rating; 49% of companies with this rating are investment banking clients of the Firm; 74% of the issuers with this rating have received financial services from the Firm.

38% have been assigned an Equal Weight rating which, for purposes of mandatory regulatory disclosures, is classified as a Hold rating; 43% of companies with this rating are investment banking clients of the Firm; 69% of the issuers with this rating have received financial services from the Firm.

15% have been assigned an Underweight rating which, for purposes of mandatory regulatory disclosures, is classified as a Sell rating; 32% of companies with this rating are investment banking clients of the Firm; 60% of the issuers with this rating have received financial services from the Firm.

Guide to the Barclays Research Price Target:

Each analyst has a single price target on the stocks that they cover. The price target represents that analyst's expectation of where the stock will trade in the next 12 months. Upside/downside scenarios, where provided, represent potential upside/potential downside to each analyst's price target over the same 12-month period.

Top Picks:

Barclays Equity Research's "Top Picks" represent the single best alpha-generating investment idea within each industry (as defined by the relevant "industry coverage universe"), taken from among the Overweight-rated stocks within that industry. Barclays Equity Research publishes "Top Picks" reports every quarter and analysts may also publish intra-quarter changes to their Top Picks, as necessary. While analysts may highlight other Overweight-rated stocks in their published research in addition to their Top Pick, there can only be one "Top Pick" for each industry. To view the current list of Top Picks, go to the Top Picks page on Barclays Live (<https://live.barcap.com/go/keyword/TopPicks>).

To see a list of companies that comprise a particular industry coverage universe, please go to <https://publicresearch.barclays.com>.

Types of investment recommendations produced by Barclays Equity Research:

In addition to any ratings assigned under Barclays' formal rating systems, this publication may contain investment recommendations in the form of trade ideas, thematic screens, scorecards or portfolio recommendations that have been produced by analysts within Equity Research. Any such investment recommendations shall remain open until they are subsequently amended, rebalanced or closed in a future research report.

Disclosure of other investment recommendations produced by Barclays Equity Research:

Barclays Equity Research may have published other investment recommendations in respect of the same securities/instruments recommended in this research report during the preceding 12 months. To view all investment recommendations published by Barclays Equity Research in the preceding 12 months please refer to <https://live.barcap.com/go/research/Recommendations>.

Legal entities involved in producing Barclays Research:

Barclays Bank PLC (Barclays, UK)

Barclays Capital Inc. (BCI, US)

Barclays Bank Ireland PLC, Frankfurt Branch (BBI, Frankfurt)

Barclays Bank Ireland PLC, Paris Branch (BBI, Paris)

Barclays Bank Ireland PLC, Milan Branch (BBI, Milan)

Barclays Securities Japan Limited (BSJL, Japan)

Barclays Bank PLC, Hong Kong branch (Barclays Bank, Hong Kong)

Barclays Capital Canada Inc. (BCCI, Canada)

Barclays Bank Mexico, S.A. (BBMX, Mexico)

Barclays Securities (India) Private Limited (BSIPL, India)

Barclays Bank PLC, India branch (Barclays Bank, India)

Barclays Bank PLC, Singapore branch (Barclays Bank, Singapore)

Barclays Bank PLC, DIFC Branch (Barclays Bank, DIFC)

IMPORTANT DISCLOSURES CONTINUED

Applied Materials Inc. (AMAT / AMAT)

USD 54.39 (22-May-2020)

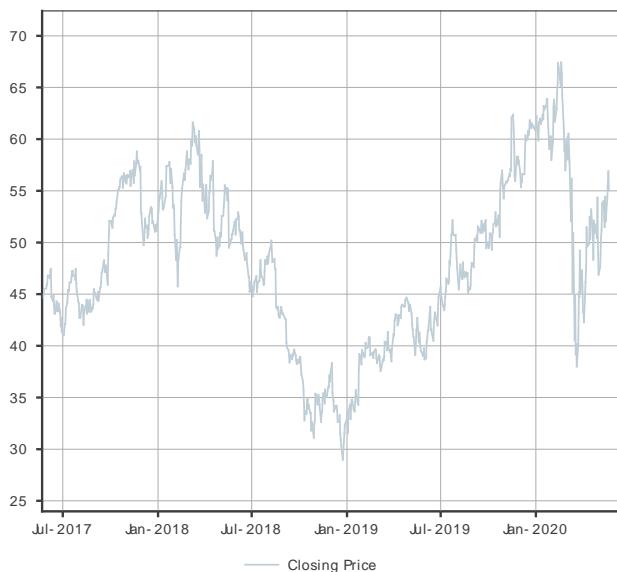
Stock Rating

Industry View

EQUAL WEIGHT**NEUTRAL****Rating and Price Target Chart - USD (as of 22-May-2020)****Currency=USD****Publication Date Closing Price Rating Adjusted Price Target**

Source: Bloomberg, Barclays Research

Historical stock prices and price targets may have been adjusted for stock splits and dividends.



Source: IDC, Barclays Research

[Link to Barclays Live for interactive charting](#)

CD: Barclays Bank PLC and/or an affiliate is a market-maker in debt securities issued by Applied Materials Inc..

CE: Barclays Bank PLC and/or an affiliate is a market-maker in equity securities issued by Applied Materials Inc..

J: Barclays Bank PLC and/or an affiliate is a liquidity provider and/or trades regularly in the securities by Applied Materials Inc. and/or in any related derivatives.

Valuation Methodology: Our price target of \$60 is based on 15x our CY21E EPS of \$4.06.**Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target:** Escalation of China trade tensions would dampen growth potential, reduced spending in Foundry/Logic, and/or weakness in the Memory market.

IMPORTANT DISCLOSURES CONTINUED

KLA Corporation (KLAC / KLAC)

USD 173.00 (22-May-2020)

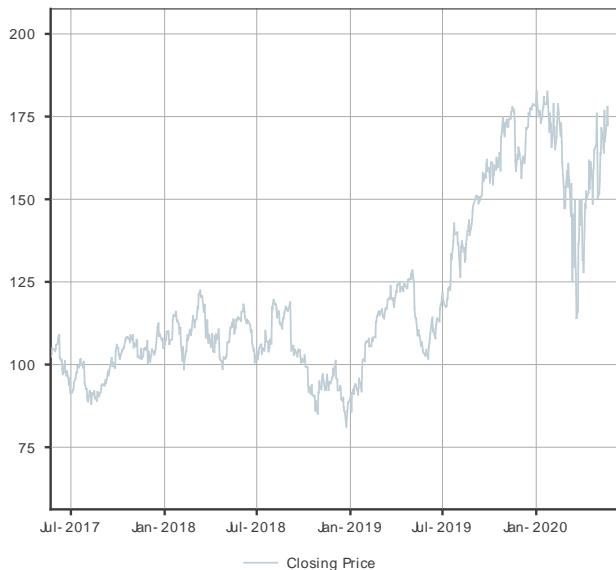
Stock Rating

Industry View

EQUAL WEIGHT**NEUTRAL****Rating and Price Target Chart - USD (as of 22-May-2020)****Currency=USD****Publication Date Closing Price Rating Adjusted Price Target**

Source: Bloomberg, Barclays Research

Historical stock prices and price targets may have been adjusted for stock splits and dividends.

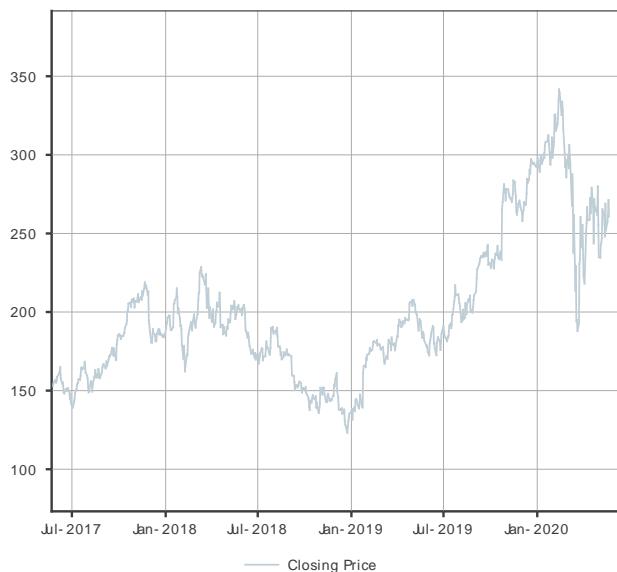


Source: IDC, Barclays Research

*[Link to Barclays Live for interactive charting](#)***CD:** Barclays Bank PLC and/or an affiliate is a market-maker in debt securities issued by KLA Corporation.**CE:** Barclays Bank PLC and/or an affiliate is a market-maker in equity securities issued by KLA Corporation.**J:** Barclays Bank PLC and/or an affiliate is a liquidity provider and/or trades regularly in the securities by KLA Corporation and/or in any related derivatives.**Valuation Methodology:** Our price target of \$170 is based on 15x our CY21E EPS of \$11.29.**Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target:** Escalation of China trade tensions would dampen growth potential, reduced spending in Foundry/Logic, and/or weakness in the Memory market.

IMPORTANT DISCLOSURES CONTINUED**Lam Research Corporation (LRCX / LRCX)**

USD 261.14 (22-May-2020)

Rating and Price Target Chart - USD (as of 22-May-2020)

Stock Rating

OVERWEIGHT

Industry View

NEUTRAL**Currency=USD****Publication Date Closing Price Rating Adjusted Price Target**

Source: Bloomberg, Barclays Research

Historical stock prices and price targets may have been adjusted for stock splits and dividends.

Source: IDC, Barclays Research

[Link to Barclays Live for interactive charting](#)

A: Barclays Bank PLC and/or an affiliate has been lead manager or co-lead manager of a publicly disclosed offer of securities of Lam Research Corporation in the previous 12 months.

CD: Barclays Bank PLC and/or an affiliate is a market-maker in debt securities issued by Lam Research Corporation.

CE: Barclays Bank PLC and/or an affiliate is a market-maker in equity securities issued by Lam Research Corporation.

D: Barclays Bank PLC and/or an affiliate has received compensation for investment banking services from Lam Research Corporation in the past 12 months.

E: Barclays Bank PLC and/or an affiliate expects to receive or intends to seek compensation for investment banking services from Lam Research Corporation within the next 3 months.

J: Barclays Bank PLC and/or an affiliate is a liquidity provider and/or trades regularly in the securities by Lam Research Corporation and/or in any related derivatives.

K: Barclays Bank PLC and/or an affiliate has received non-investment banking related compensation (including compensation for brokerage services, if applicable) from Lam Research Corporation within the past 12 months.

L: Lam Research Corporation is, or during the past 12 months has been, an investment banking client of Barclays Bank PLC and/or an affiliate.

M: Lam Research Corporation is, or during the past 12 months has been, a non-investment banking client (securities related services) of Barclays Bank PLC and/or an affiliate.

Valuation Methodology: Our price target of \$315 is based on 15x our CY21E EPS of \$20.77.

Risks which May Impede the Achievement of the Barclays Research Valuation and Price Target: Weakness in Memory market (particularly NAND), escalation of China trade tensions would dampen growth potential, and/or reduced spending in Foundry/Logic.

DISCLAIMER:

This publication has been produced by Barclays Research Department in the Investment Bank of Barclays Bank PLC and/or one or more of its affiliates (collectively and each individually, "Barclays"). It has been prepared for institutional investors and not for retail investors. It has been distributed by one or more Barclays affiliated legal entities listed below. It is provided to our clients for information purposes only, and Barclays makes no express or implied warranties, and expressly disclaims all warranties of merchantability or fitness for a particular purpose or use with respect to any data included in this publication. To the extent that this publication states on the front page that it is intended for institutional investors and is not subject to all of the independence and disclosure standards applicable to debt research reports prepared for retail investors under U.S. FINRA Rule 2242, it is an "institutional debt research report" and distribution to retail investors is strictly prohibited. Barclays also distributes such institutional debt research reports to various issuers, media, regulatory and academic organisations for their own internal informational news gathering, regulatory or academic purposes and not for the purpose of making investment decisions regarding any debt securities. Media organisations are prohibited from re-publishing any opinion or recommendation concerning a debt issuer or debt security contained in any Barclays institutional debt research report. Any such recipients that do not want to continue receiving Barclays institutional debt research reports should contact debtresearch@barclays.com. Clients that are subscribed to receive equity research reports, will not receive certain cross asset research reports co-authored by equity and FICC research analysts that are distributed as "institutional debt research reports" unless they have agreed to accept such reports. Eligible clients may get access to such cross asset reports by contacting debtresearch@barclays.com. Barclays will not treat unauthorized recipients of this report as its clients and accepts no liability for use by them of the contents which may not be suitable for their personal use. Prices shown are indicative and Barclays is not offering to buy or sell or soliciting offers to buy or sell any financial instrument.

Without limiting any of the foregoing and to the extent permitted by law, in no event shall Barclays, nor any affiliate, nor any of their respective officers, directors, partners, or employees have any liability for (a) any special, punitive, indirect, or consequential damages; or (b) any lost profits, lost revenue, loss of anticipated savings or loss of opportunity or other financial loss, even if notified of the possibility of such damages, arising from any use of this publication or its contents.

Other than disclosures relating to Barclays, the information contained in this publication has been obtained from sources that Barclays Research believes to be reliable, but Barclays does not represent or warrant that it is accurate or complete. Barclays is not responsible for, and makes no warranties whatsoever as to, the information or opinions contained in any written, electronic, audio or video presentations of third parties that are accessible via a direct hyperlink in this publication or via a hyperlink to a third-party web site ('Third-Party Content'). Any such Third-Party Content has not been adopted or endorsed by Barclays, does not represent the views or opinions of Barclays, and is not incorporated by reference into this publication. Third-Party Content is provided for information purposes only and Barclays has not independently verified its accuracy or completeness.

The views in this publication are solely and exclusively those of the authoring analyst(s) and are subject to change, and Barclays Research has no obligation to update its opinions or the information in this publication. Unless otherwise disclosed herein, the analysts who authored this report have not received any compensation from the subject companies in the past 12 months. If this publication contains recommendations, they are general recommendations that were prepared independently of any other interests, including those of Barclays and/or its affiliates, and/or the subject companies. This publication does not contain personal investment recommendations or investment advice or take into account the individual financial circumstances or investment objectives of the clients who receive it. The securities and other investments discussed herein may not be suitable for all investors. Barclays is not a fiduciary to any recipient of this publication. Investors must independently evaluate the merits and risks of the investments discussed herein, consult any independent advisors they believe necessary, and exercise independent judgment with regard to any investment decision. The value of and income from any investment may fluctuate from day to day as a result of changes in relevant economic markets (including changes in market liquidity). The information herein is not intended to predict actual results, which may differ substantially from those reflected. Past performance is not necessarily indicative of future results. The information provided does not constitute a financial benchmark and should not be used as a submission or contribution of input data for the purposes of determining a financial benchmark.

United Kingdom: This document is being distributed (1) only by or with the approval of an authorised person (Barclays Bank PLC) or (2) to, and is directed at (a) persons in the United Kingdom having professional experience in matters relating to investments and who fall within the definition of "investment professionals" in Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"); or (b) high net worth companies, unincorporated associations and partnerships and trustees of high value trusts as described in Article 49(2) of the Order; or (c) other persons to whom it may otherwise lawfully be communicated (all such persons being "Relevant Persons"). Any investment or investment activity to which this communication relates is only available to and will only be engaged in with Relevant Persons. Any other persons who receive this communication should not rely on or act upon it. Barclays Bank PLC is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange.

European Economic Area ("EEA"): This material is being distributed in the EEA by Barclays Bank PLC. Barclays Bank PLC is not registered in France with the Autorité des marchés financiers or the Autorité de contrôle prudentiel.

Americas: The Investment Bank of Barclays Bank PLC undertakes U.S. securities business in the name of its wholly owned subsidiary Barclays Capital Inc., a FINRA and SIPC member. Barclays Capital Inc., a U.S. registered broker/dealer, is distributing this material in the United States and, in connection therewith accepts responsibility for its contents. Any U.S. person wishing to effect a transaction in any security discussed herein should do so only by contacting a representative of Barclays Capital Inc. in the U.S. at 745 Seventh Avenue, New York, New York 10019.

Non-U.S. persons should contact and execute transactions through a Barclays Bank PLC branch or affiliate in their home jurisdiction unless local regulations permit otherwise.

This material is distributed in Canada by Barclays Capital Canada Inc., a registered investment dealer, a Dealer Member of IIROC (www.iroc.ca), and a Member of the Canadian Investor Protection Fund (CIPF).

This material is distributed in Mexico by Barclays Bank Mexico, S.A. This material is distributed in the Cayman Islands and in the Bahamas by Barclays Capital Inc., which it is not licensed or registered to conduct and does not conduct business in, from or within those jurisdictions and has

not filed this material with any regulatory body in those jurisdictions.

Japan: This material is being distributed to institutional investors in Japan by Barclays Securities Japan Limited. Barclays Securities Japan Limited is a joint-stock company incorporated in Japan with registered office of 6-10-1 Roppongi, Minato-ku, Tokyo 106-6131, Japan. It is a subsidiary of Barclays Bank PLC and a registered financial instruments firm regulated by the Financial Services Agency of Japan. Registered Number: Kanto Zaimukyokucho (kinsho) No. 143.

Asia Pacific (excluding Japan): Barclays Bank PLC, Hong Kong Branch is distributing this material in Hong Kong as an authorised institution regulated by the Hong Kong Monetary Authority. Registered Office: 41/F, Cheung Kong Center, 2 Queen's Road Central, Hong Kong.

All Indian securities-related research and other equity research produced by Barclays' Investment Bank are distributed in India by Barclays Securities (India) Private Limited (BSIPL). BSIPL is a company incorporated under the Companies Act, 1956 having CIN U67120MH2006PTC161063. BSIPL is registered and regulated by the Securities and Exchange Board of India (SEBI) as a Research Analyst: INH000001519; Portfolio Manager INP000002585; Stock Broker/Trading and Clearing Member: National Stock Exchange of India Limited (NSE) Capital Market INB231292732, NSE Futures & Options INF231292732, NSE Currency derivatives INE231450334, Bombay Stock Exchange Limited (BSE) Capital Market INB011292738, BSE Futures & Options INF011292738; Depository Participant (DP) with the National Securities & Depositories Limited (NSDL): DP ID: IN-DP-NSDL-299-2008; Investment Adviser: INA000000391. The registered office of BSIPL is at 208, Ceejay House, Shivilsagar Estate, Dr. A. Besant Road, Worli, Mumbai – 400 018, India. Telephone No: +91 22 2267196000. Fax number: +91 22 67196100. Any other reports produced by Barclays' Investment Bank are distributed in India by Barclays Bank PLC, India Branch, an associate of BSIPL in India that is registered with Reserve Bank of India (RBI) as a Banking Company under the provisions of The Banking Regulation Act, 1949 (Regn No BOM43) and registered with SEBI as Merchant Banker (Regn No INM000002129) and also as Banker to the Issue (Regn No INBI00000950). Barclays Investments and Loans (India) Limited, registered with RBI as Non Banking Financial Company (Regn No RBI CoR-07-00258), and Barclays Wealth Trustees (India) Private Limited, registered with Registrar of Companies (CIN U93000MH2008PTC188438), are associates of BSIPL in India that are not authorised to distribute any reports produced by Barclays' Investment Bank.

This material is distributed in Singapore by the Singapore branch of Barclays Bank PLC, a bank licensed in Singapore by the Monetary Authority of Singapore. For matters in connection with this material, recipients in Singapore may contact the Singapore branch of Barclays Bank PLC, whose registered address is 10 Marina Boulevard, #23-01 Marina Bay Financial Centre Tower 2, Singapore 018983.

This material is distributed to persons in Australia by Barclays Bank PLC or one of the Barclays group entities. None of Barclays Bank PLC, nor such Barclays group entity, holds an Australian financial services licence and instead relies on an exemption from the requirement to hold such a licence. This material is intended to only be distributed to "wholesale clients" as defined by the Australian Corporations Act 2001. This material is distributed in New Zealand by Barclays Bank PLC, but it has not been registered, filed or approved by any New Zealand regulatory authority or under or in accordance with the Financial Markets Conduct Act of 2013, and this material is not a disclosure document under New Zealand law.

Middle East: Nothing herein should be considered investment advice as defined in the Israeli Regulation of Investment Advisory, Investment Marketing and Portfolio Management Law, 1995 ("Advisory Law"). This document is being made to eligible clients (as defined under the Advisory Law) only. Barclays Israeli branch previously held an investment marketing license with the Israel Securities Authority but it cancelled such license on 30/11/2014 as it solely provides its services to eligible clients pursuant to available exemptions under the Advisory Law, therefore a license with the Israel Securities Authority is not required. Accordingly, Barclays does not maintain an insurance coverage pursuant to the Advisory Law.

This material is distributed in the United Arab Emirates (including the Dubai International Financial Centre) and Qatar by Barclays Bank PLC. Barclays Bank PLC in the Dubai International Financial Centre (Registered No. 0060) is regulated by the Dubai Financial Services Authority (DFSA). Principal place of business in the Dubai International Financial Centre: The Gate Village, Building 4, Level 4, PO Box 506504, Dubai, United Arab Emirates. Barclays Bank PLC-DIFC Branch, may only undertake the financial services activities that fall within the scope of its existing DFSA licence. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority. Barclays Bank PLC in the UAE is regulated by the Central Bank of the UAE and is licensed to conduct business activities as a branch of a commercial bank incorporated outside the UAE in Dubai (Licence No.: 13/1844/2008, Registered Office: Building No. 6, Burj Dubai Business Hub, Sheikh Zayed Road, Dubai City) and Abu Dhabi (Licence No.: 13/952/2008, Registered Office: Al Jazira Towers, Hamdan Street, PO Box 2734, Abu Dhabi). This material does not constitute or form part of any offer to issue or sell, or any solicitation of any offer to subscribe for or purchase, any securities or investment products in the UAE (including the Dubai International Financial Centre) and accordingly should not be construed as such. Furthermore, this information is being made available on the basis that the recipient acknowledges and understands that the entities and securities to which it may relate have not been approved, licensed by or registered with the UAE Central Bank, the Dubai Financial Services Authority or any other relevant licensing authority or governmental agency in the UAE. The content of this report has not been approved by or filed with the UAE Central Bank or Dubai Financial Services Authority. Barclays Bank PLC in the Qatar Financial Centre (Registered No. 00018) is authorised by the Qatar Financial Centre Regulatory Authority (QFCRA). Barclays Bank PLC-QFC Branch may only undertake the regulated activities that fall within the scope of its existing QFCRA licence. Principal place of business in Qatar: Qatar Financial Centre, Office 1002, 10th Floor, QFC Tower, Diplomatic Area, West Bay, PO Box 15891, Doha, Qatar. Related financial products or services are only available to Business Customers as defined by the Qatar Financial Centre Regulatory Authority.

Russia: This material is not intended for investors who are not Qualified Investors according to the laws of the Russian Federation as it might contain information about or description of the features of financial instruments not admitted for public offering and/or circulation in the Russian Federation and thus not eligible for non-Qualified Investors. If you are not a Qualified Investor according to the laws of the Russian Federation, please dispose of any copy of this material in your possession.

IRS Circular 230 Prepared Materials Disclaimer: Barclays does not provide tax advice and nothing contained herein should be construed to be tax advice. Please be advised that any discussion of U.S. tax matters contained herein (including any attachments) (i) is not intended or written to be used, and cannot be used, by you for the purpose of avoiding U.S. tax-related penalties; and (ii) was written to support the promotion or marketing of the transactions or other matters addressed herein. Accordingly, you should seek advice based on your particular circumstances from an independent tax advisor.

© Copyright Barclays Bank PLC (2020). All rights reserved. No part of this publication may be reproduced or redistributed in any manner without the prior written permission of Barclays. Barclays Bank PLC is registered in England No. 1026167. Registered office 1 Churchill Place, London, E14

5HP. Additional information regarding this publication will be furnished upon request.

有点报告社群

分享8万+行业报告/案例、7000+工具/模版；
精选各行业前沿数据、经典案例、职场干货等。



截屏本页，微信扫一扫或搜索公众号“有点报告”
回复<进群>即刻加入