

## U.S. Semiconductors

# Bernstein Semi Cycle Tearsheet: Reversal?

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**Semis were high-flying through 2020, as pandemic fears gave way to reopenings and accelerated demand in many end markets. But there has been something of a reversal so far this year**, as continued strong demand and tight capacity has raised the spectre of supply chain disruptions and long leadtimes with historic levels of shortages now impacting the industry, creating worries over sustainability and driving semis to underperform YTD.

**We acknowledge the question of sustainability given the current unprecedented shortage situation**, with worries over double ordering as well as some WFH demand upside that at some point will reach a limit.

**But while the economic backdrop remains nebulous, it is clear that economic recovery is on the come** as COVID vaccines deploy, massive stimulus gets unleashed, and potential pent-up demand releases, with some cyclical signs (seasonal to below-seasonal forward estimates, leaner distribution inventories, and a sector back to trading at a market discount) appear somewhat supportive.

**So, what to do from here?** We have advocated for selectivity, looking for names that either 1) possess long term secular growth stories that can stay attractive as we look through the near term, and/or 2) potentially more cyclical, but less expensive names with less WFH exposure. At a minimum we admit some of our secular names have taken a bath so far this year, but resets may be creating more attractive entries. And auto exposure looks particularly promising to us given we believe the auto recovery itself has legs.

**To that end, NXPI looks like a winner**, with auto recovery runway and a long-term structural story that, in our opinion, remains underappreciated on numerous metrics (whether growth, margins, cash generation and return, leverage, or business mix) (**rated OP**).

**We continue to like AVGO as well**, with better than average visibility on record backlog, SW driving lower volatility, strong FCF generation (with a likely return to deployment, either through M&A or buybacks forthcoming) all coupled to a quality, margin, and execution profile unavailable anywhere else in the space at a very attractive valuation (**rated OP**).

**The NVDA and QCOM selloffs appear to be opening up more attractive entry points.** NVDA numbers couldn't be better, with crypto risk (we believe) manageable & with the datacenter story playing out. And while QCOM admittedly had to reset a bit, the 5G & adjacency stories appear well intact, with clean regulatory and (now) a much easier multiple (**both rated OP**).

**We remain Market-Perform on TXN**, and **ADI** primarily on valuation, as well as **AMD** (though their multiple is getting more agreeable given the pullback).

**INTC presents a bit of an enigma here.** We acknowledge the near-term tactical bull case on Gelsinger hope (which has driven solid recent performance in the shares). But we also see a tough trajectory going forward with continued share losses, as well as a PC environment, currently supportive, that is likely to be punishing when it comes to an end (**rated UP**).



Analyst Page



Bernstein Events



Industry Page

## TICKER TABLE

Ticker	Rating		10 Mar 2021 Closing Price	Target Price	TTM Rel. Perf.		EPS Adjusted			P/E Adjusted		
							2020A	2021E	2022E	2020A	2021E	2022E
AMD	M	USD	77.52	90.00	35.6%	USD	1.28	1.95	2.24	60.49	39.83	34.53
ADI	M	USD	147.11	165.00	8.3%	USD	4.91	6.05	6.74	29.99	24.30	21.81
AVGO	O	USD	437.59	500.00	31.2%	USD	22.15	26.90	28.88	19.76	16.26	15.15
INTC	U	USD	62.25	43.00	(20.0)%	USD	5.30	4.68	4.27	11.74	13.30	14.57
NVDA	O	USD	498.73	625.00	55.8%	USD	10.00	13.14	14.53	49.87	37.96	34.32
NXPI	O	USD	180.43	205.00	33.6%	USD	6.12	9.25	10.31	29.49	19.50	17.49
QCOM	O	USD	127.87	175.00	26.8%	USD	4.19	6.94	7.42	30.51	18.44	17.22
TXN	M	USD	169.42	165.00	15.8%	USD	5.96	6.67	6.98	28.43	25.38	24.29
SPX			3,898.81				170.56	196.84	196.84	22.86	19.81	19.81

O - Outperform, M - Market-Perform, U - Underperform, N - Not Rated

NVDA base year is FY2021; TXN EPS is GAAP.

## INVESTMENT IMPLICATIONS

**AMD (MP, \$90):** While expectations remain high, the company is delivering, and Intel's collapse has removed some of the constraints on the narrative.

**ADI (MP, \$165):** ADI is executing well in the current COVID environment, though the shares feel fully valued.

**AVGO (OP, \$500):** Even in an uncertain environment, FCF remain strong, recurring revenues offer some protection, a solid dividend offers support, and valuation is attractive.

**INTC (UP, \$43):** Intel's long-term structural issues have finally broken to the forefront, with competitive pressures increasing amid process outlook that remains uncertain.

**NVDA (OP, \$625):** Continuing product cycles can drive significant growth, furthering upside in the shares

**NXPI (OP, \$205):** The near-term has stabilized and (with auto in recovery) the trajectory into 2021 appears solid, with the shares attractively valued vs peers.

**QCOM (OP, \$175):** The path is clear as multi-year legal headwinds recede, with numerous potential value drivers (5G, RF, AAPL, adjacencies etc.) driving the trajectory from here.

**TXN (MP, \$165):** While high-quality and executing very well, the shares feel fully valued in the current environment.

## DETAILS

What a start to the year...

Semis were high-flying through most of 2020, as initial pandemic fears gave way to reopenings and accelerated demand in many end markets, with the SOX eventually returning 51% through 2020, trouncing the market with the S&P at +16%.

But there has been something of reversal so far this year, as continued strong demand and tight capacity has raised the spectre of supply chain disruptions and extended leadtimes, with historic levels of shortages now impacting the industry. To that end, investors have begun to worry about sustainability amid widespread short supply with concerns that we have seen this movie too many times before.

Hence the sector has underperformed YTD, with almost no companies being rewarded for strong numbers (and in many cases, being punished in spite of them).

We acknowledge the question of sustainability given the current unprecedented shortage situation, with increasing signs of tightness and euphoria bringing the risk that some of the current strong demand could be resulting from potential double ordering in the wake of uncertain supply chains. Some of the current strength undoubtedly remains WFH-driven, with some end markets (PCs, etc.) facing tough compares and uncertain trajectory especially as vaccines become more widespread. And the sector itself is very crowded.

But while the economic backdrop remains nebulous, it is clear that the economy this year will by necessity be (likely much) better than last year as COVID vaccines deploy, massive stimulus gets unleashed, and potential pent-up demand releases; while we don't know how long it will last it seems likely that 2021 will generate another year of growth for the sector on the other side of COVID. And the near-term cyclical signs actually appear reasonably supportive. Forward growth estimates appear mostly seasonal and even a bit below. Distribution inventories appear leaner than they have been in a while. And while valuations are somewhat elevated on an absolute basis, the sector is back to trading at a ~7% discount to the S&P, back into the typical historical range.

So, what to do from here? We have liked a somewhat selective approach in this environment, looking for names that either 1) possess long term secular growth stories that can continue to be attractive as we look through the near term, and/or 2) potentially more cyclical, but less expensive names with less WFH exposure. At a minimum we admit our secular names have taken a bath so far this year, caught up in the current industry dynamics as well as a turn of the cheek against growthier names in general (with NVDA ~19% off its highs on stellar numbers, and with QCOM the worst performer YTD in our coverage), but we believe entry points are getting attractive given the underlying narratives. Anything auto-exposed looks attractive to us given we believe the auto recovery itself has legs (NXPI in particular in our coverage fits this bill). And AVGO looks like a good place to park to us with a solid combination of better visibility, prospect for cash deployment, and valuation.

**NXPI looks like a winner here.** While shortages are most rampant in the auto space given COVID-induced supply chain whipsaws and order cancellations, the auto semi recovery also likely has the longest legs given likely multiple quarters needed to rebalance supply and demand, and with a bone-dry channel likely to run fuller in the future given the industry's just-in-time practices may no longer be viable. And over the long term we like the name as well, with attractive normalized valuation and good FCF generation, and a story that in our opinion remains underappreciated on every metric vs history (whether growth, margins, cash generation and return, leverage, and business mix) (**rated OP**).

**We continue to like AVGO,** with better than average visibility on a record backlog, lower volatility due to their SW strategy, strong FCF generation (with a likely return to deployment, either through M&A or buybacks forthcoming) and increased transparency all coupled to a quality, margin, and execution profile unavailable anywhere else in the space at a very attractive valuation (**rated OP**).

**The NVDA story remains attractive, with the recent pullback offering an entry point.** The shares sold off hard after a stellar print amid the re-emergence of crypto and a fear that datacenter isn't "beating by enough." However, we believe dynamics around crypto can be different this time around (with much stronger organic gaming demand in this cycle and a much leaner channel given the current supply situation), and the datacenter trajectory is a function of very long leadtimes (allowing growth but making blowouts harder to come by, but also protecting to the downside with the company navigating a recent industry digestion phase without feeling it at all). The narrative still appears very strong to us, with the recent pullback offering an entry point (**rated OP**).

**And the QCOM sell-off looks a bit overdone to us as well.** While QCOM enjoyed a stellar 2020, 2021 has not been so kind, and the shares (somewhat surprisingly to us) have been the worst YTD performers in our coverage, a function of expectations that

got a bit over-inflated into the last earnings print (and which subsequently required a bit of a reset) and concerns that China handset makers may be a tad overzealous in their pursuit of newly-available Huawei share. However, while resetting numbers isn't fun, it's better to do it now vs later (and it's now done), the 5G cycle continues to play out, and the adjacency story is becoming increasingly real, all against a backdrop where customer and regulatory disputes have (finally) eased. With the pullback the shares now trade at an almost 20% discount to the SOX, reminiscent of much more troubled times; we believe the entry point is attractive here (**rated OP**).

We note that both NVDA and QCOM make an appearance in our quant team's recent screen of high-quality, beaten-down stocks<sup>1</sup>.

**We remain neutral on ADI and TXN, primarily on valuation**, and while both stocks have been decent absolute performers, both underperformed the SOX last year and YTD so far this year, with valuations that remain elevated. TXN's bet on factory loadings and inventory build looks like the right one now given current industry supply constraints, but the very strong near-term trajectory and high availability makes it somewhat difficult to fully dismiss the risk of overorders (though of course the company won't care about it given their long-term perspective, a point of view we are loath to disagree with fundamentally). And ADI may grow more interesting as the MXIM acquisition approaches closure but the general narrative is shifting a bit (with the company backing off their growth targets around comm infrastructure) (**both rated MP**).

**As the Gelsinger Bump has transferred hope back to Intel, some of that hope has come at AMD's expense, and the shares have suffered somewhat YTD after an amazing 2020.** The company is admittedly firing on all cylinders, with a strong 2021 outlook offered in January, but some of the "hope" that has supported the shares seems to be transferring back to Intel as investors there look to Pat Gelsinger for salvation. We do believe however that share gains remain in the cards likely for the next several years regardless of any actions Intel takes, and valuation is getting more agreeable given the pullback (**rated MP**).

**And INTC remains an enigma here. The stock has run on the Gelsinger trade**, and in fact we can see the near-term tactical bull call as we await more color on "The Plan," likely forthcoming relatively soon. That being said, we wonder what happens after that as the next several years appear very challenging, with continued share losses likely guaranteed (AMD, as well as AAPL), ARM gets increasing traction in the datacenter (with even more risk should NVDA manage to close the ARM deal), and current PC strength (at some point) is going to come to an end (with our 2022 numbers well below the Street) (**rated UP**).

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<sup>1</sup> March 9, 2021 - [Quantitative Research: Quality On Sale - High quality stocks selling at historic discounts](#) (Larson)

## TEARSHEET

- 1. Near term revenue estimates are roughly seasonal,** Neutral impact, unchanged vs. December.
- 2. Forward revenue estimates are roughly in-line with, to slightly below seasonal.** Neutral to positive impact, slightly better vs December.
- 3. Negative revisions appear to have bottomed.** Recall that one typically wants to buy semi stocks after numbers have come down, but before they trough. Neutral impact, mostly unchanged vs December.
- 4. Channel inventory days have come down, with dollars up slightly QoQ and down YoY on strong sell-out, though with days near the high end of the historical range, but within it.** Neutral impact, slightly better vs December.
- 5. Semiconductor company days down, within the historical range, with inventory \$ down QoQ but up YoY;** Neutral impact, slightly better vs December.
- 6. Relative valuations at a ~7% discount to the S&P, in-line with historical levels, though with absolute valuations at high levels.** Neutral impact, a bit better vs December.
- 7. The sector remains crowded relative to history and vs TMT,** and worsening over the last three months. **Negative Impact,** and a bit worse vs December.

### EXHIBIT 1: Semiconductor cyclical indicators suggest some normalization of growth estimates (though off a high Q3 base) and some improvement on inventories and relative valuation, though the space appears crowded

Indicator	Sept '20	Dec '20	Mar '21	Notes
Current Qtr Revenue Estimates				1Q:21 growth expectations are in line with seasonal (Exhibits 32-33)
Forward Revenue Estimates				1Q:21 through 4Q:21 expectations generally inline to a bit below seasonal (Exhibits 32-33)
Earnings Revisions				Negative revisions appear to have bottomed (Exhibits 34)
Channel Inventories				Inventory days decreased and are within the historical range on strong sell-out. \$ increased QoQ and decreased YoY (Exhibits 36-37, 40)
Semi Inventories				Inventory days decreased and are within the historical range. \$ decreased QoQ and increased YoY (Exhibits 38-39, 41)
Valuation relative to S&P 500				Relative valuation for semis are at 7% discount to the S&P, normal vs history, & high on an absolute basis (Exhibits 42-43)
Crowding				Semis are quite crowded relative to their own history and the overall TMT market (Exhibits 44-45)

Source: Company reports, Bloomberg, Bernstein estimates and analysis

## Reversal?

What a start to the year...

Semis were high-flying through most of 2020, as initial pandemic fears gave way to reopenings and accelerated demand in many end markets, with the SOX eventually returning 51% through 2020, trouncing the market with the S&P at +16% (**Exhibit 2**).

But there has been something of reversal so far this year, as continued strong demand (**Exhibit 3**) and tight capacity (**Exhibit 4**) has raised the spectre of supply chain disruptions and extended leadtimes, with historic levels of shortages now impacting the industry.

To that end, investors have begun to worry about sustainability amid widespread short supply with concerns that we have seen this movie too many times before. Hence the sector has underperformed YTD (**Exhibit 5**), with almost no companies being rewarded for strong numbers (and in many cases, being punished in spite of them) (**Exhibit 6, Exhibit 7**).

But while the economic backdrop remains nebulous, it is clear that the economy this year will by necessity be (likely much) better than last year as COVID vaccines deploy (**Exhibit 8**), massive stimulus gets unleashed, and potential pent-up demand releases; while we don't know how long it will last it seems likely that 2021 will generate another year of growth for the sector on the other side of COVID (**Exhibit 9, Exhibit 10**).

By end market the work-from-home beneficiaries (PCs, etc.) continue to show strength (**Exhibit 11, Exhibit 12**) but are likely the ones to watch for possible reversal at some point on potential pull-forward and digestion concerns; datacenter remains in a modest digestion phase now (**Exhibit 13**) which may ease at some point soon especially as new platforms (Ice Lake, Milan etc.) begin to ramp.

In contrast automotive (one of the select end markets that was quite detrimentally impacted by COVID) has entered strong recovery especially in the US and China (**Exhibit 14, Exhibit 15, Exhibit 16**), but order cancellations last year, coupled to the rapid demand snapback and resulting supply chain disruption is driving significant supply constraints<sup>2</sup>.

And smartphones are returning to growth, up ~4% YoY globally in Q4, and with China shipments up 241% YoY in February (albeit on the easy COVID trough compare) (**Exhibit 17, Exhibit 18, Exhibit 19**) as the sector recovers from COVID and the 5G cycle began in earnest.

GPUs remain in very tight supply on very strong demand, though crypto is beginning to raise its head again<sup>3</sup> (**Exhibit 20**).

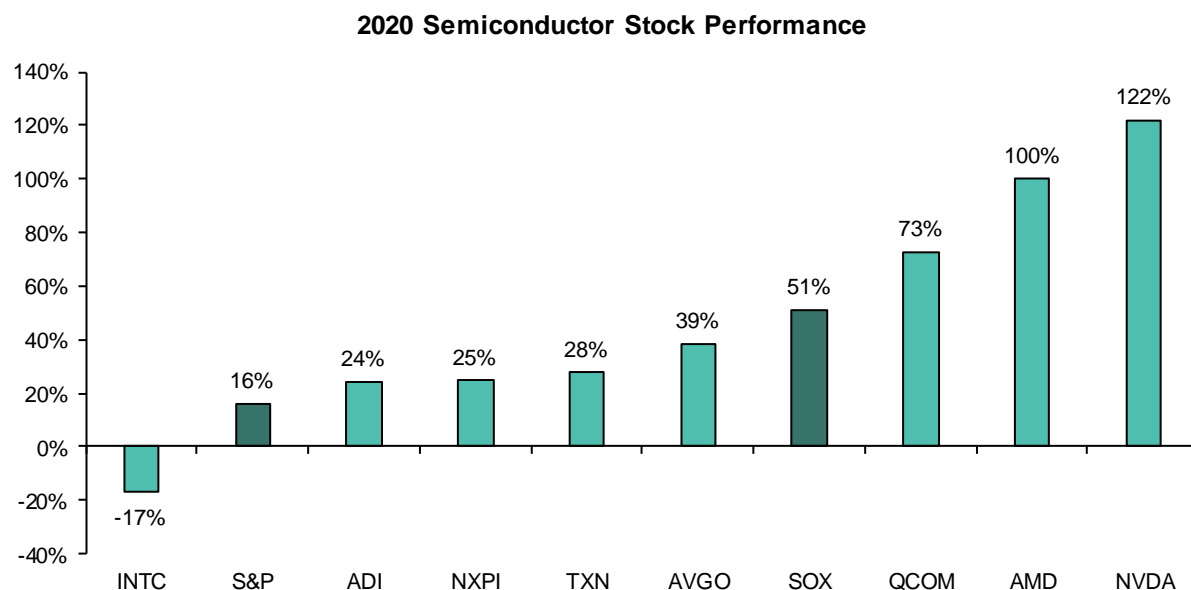
Semi multiples are up 21% YoY, but down -9% YTD and -15% since the Feb 16 '21 SOX Peak (**Exhibit 21**).

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<sup>2</sup> February 16, 2021 - [Global Semiconductors and Autos - Where have all the semis gone?](#)

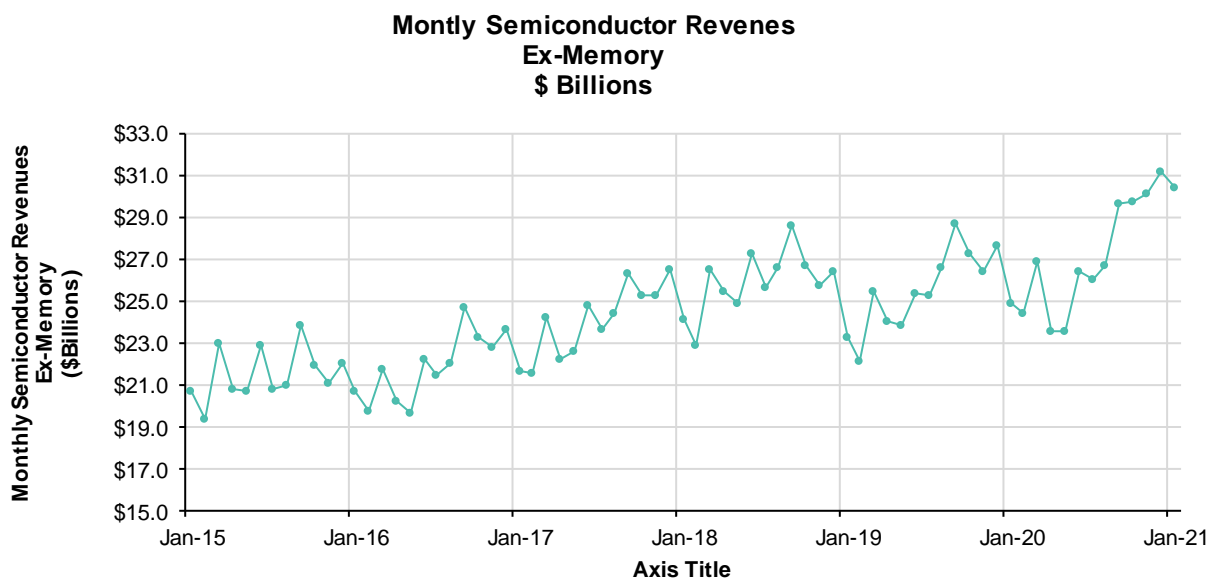
<sup>3</sup> March 10, 2021 - [Global Semiconductors: Bitcoin back on the stage? How about ESG considerations?](#)

EXHIBIT 2: **Semi stocks were high-flying through most of 2020**



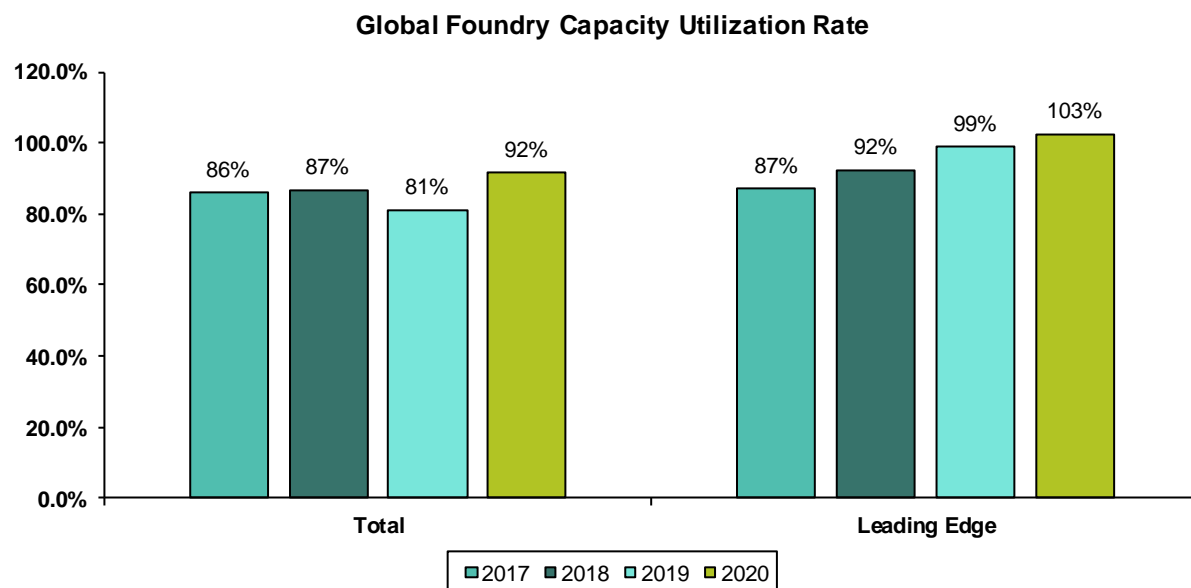
Source: Bloomberg, Bernstein analysis

EXHIBIT 3: **Industry trajectory remains strong after a surprisingly resilient 2020**



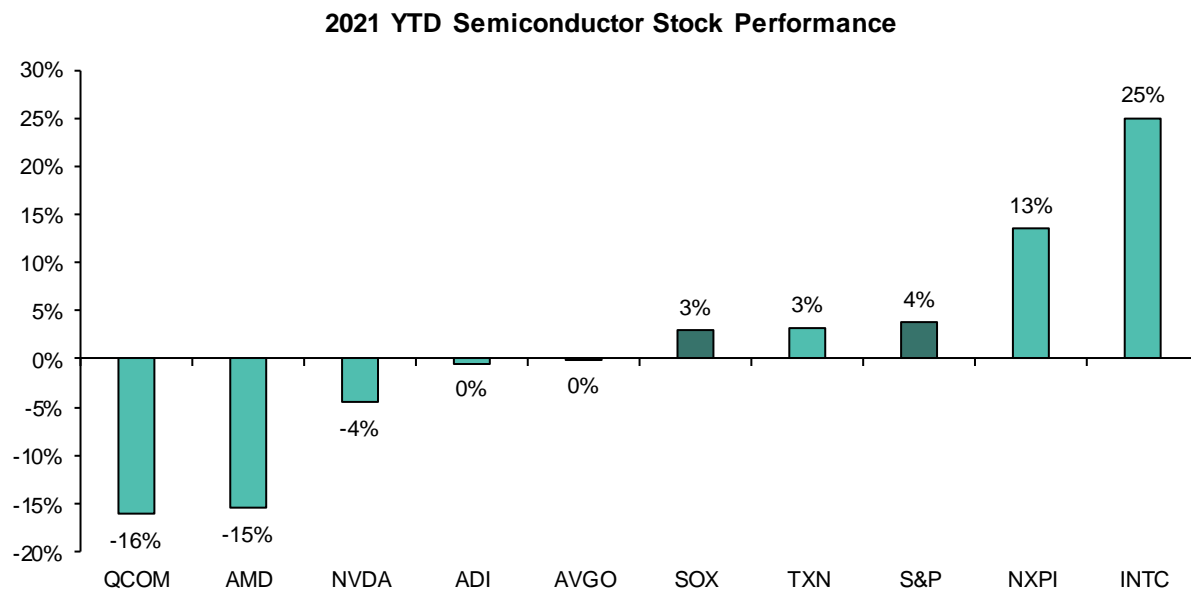
Source: World Semiconductor Trade Statistics, Bernstein analysis

EXHIBIT 4: **But industry capacity is very tight, with shortages compounding...**



Source: Gartner, Bernstein analysis

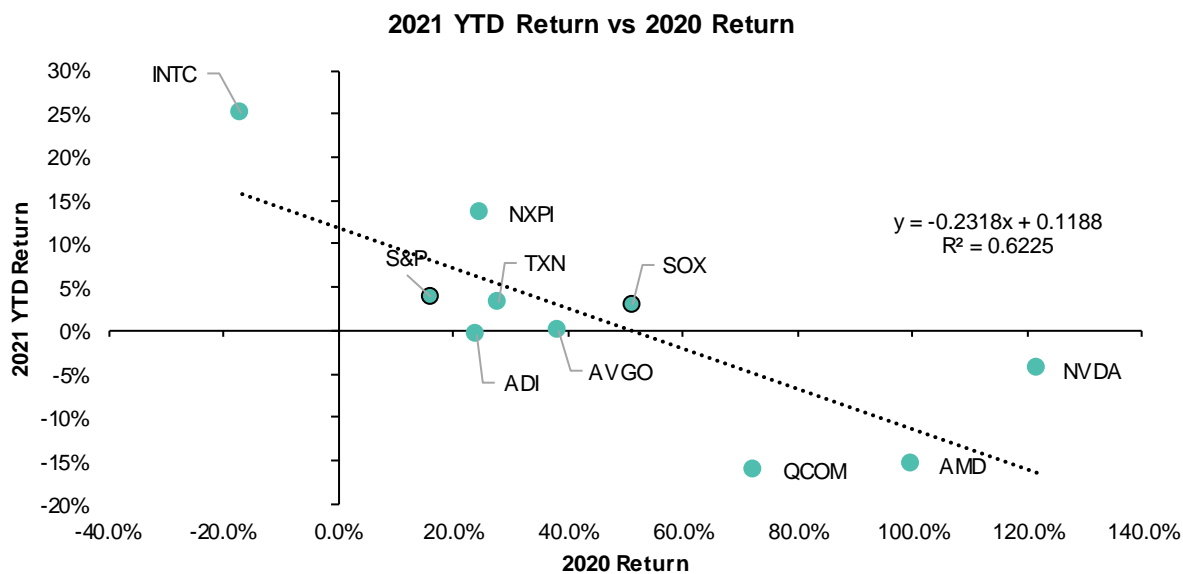
EXHIBIT 5: **...and stock performance trends have reversed so far this year with YTD underperformance for semis...**



Source: Bloomberg, Bernstein analysis

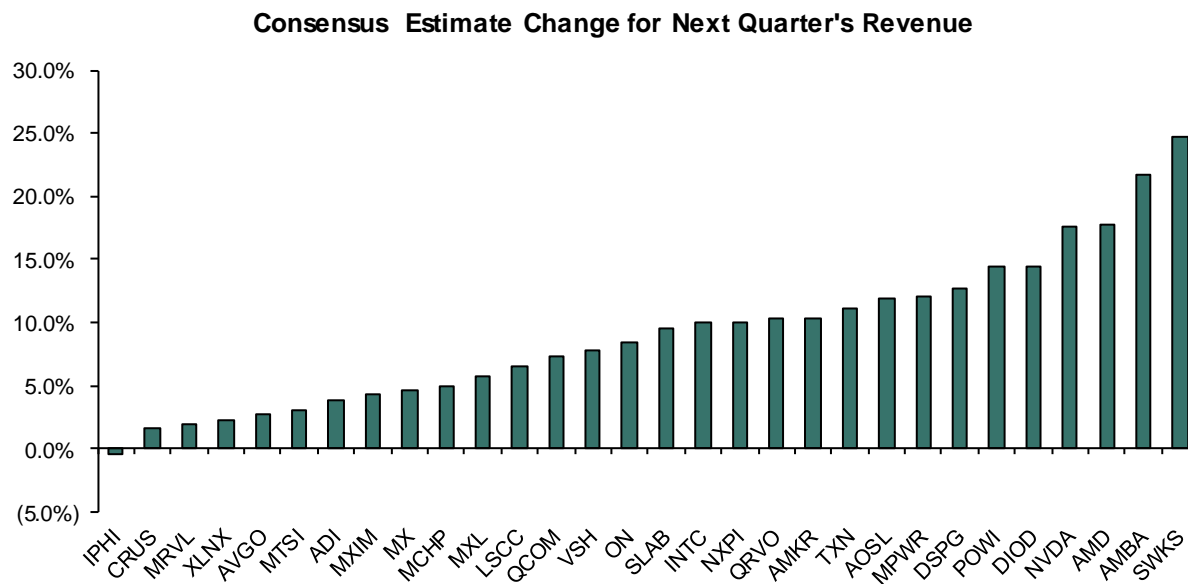


EXHIBIT 6: ...and a sharp reversal for most of our names so far in 2021



Source: Bloomberg, Bernstein analysis

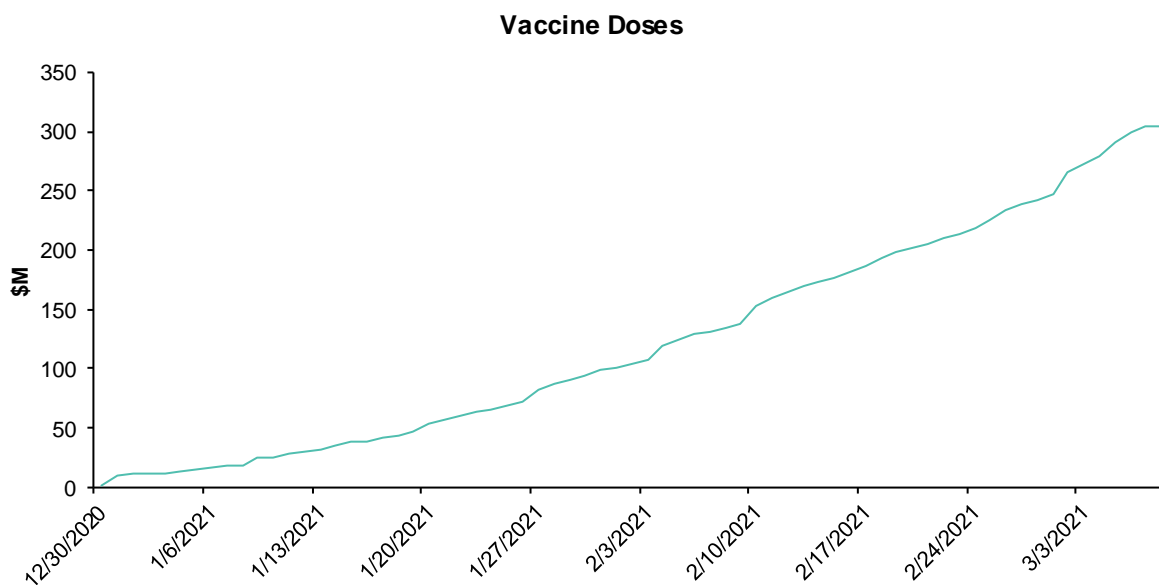
EXHIBIT 7: Most companies raised numbers on their most recent earnings reports



Note: Data pulled 3/08/2021

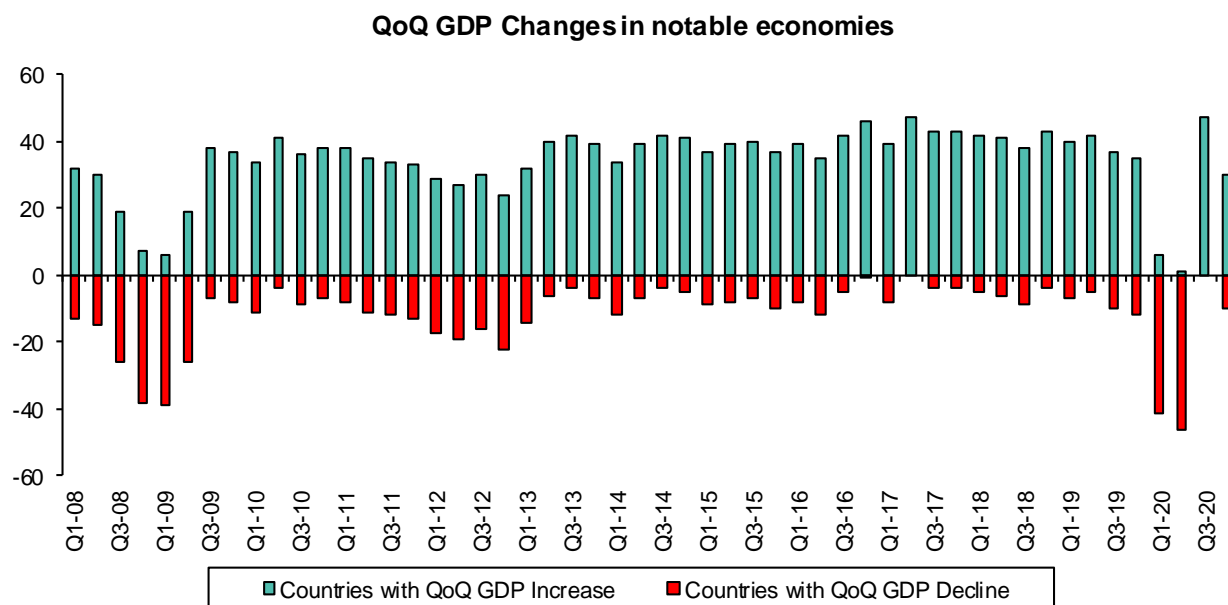
Source: Bloomberg, Bernstein analysis

EXHIBIT 8: **Vaccine distribution is accelerating**



Source: Bloomberg, Bernstein analysis

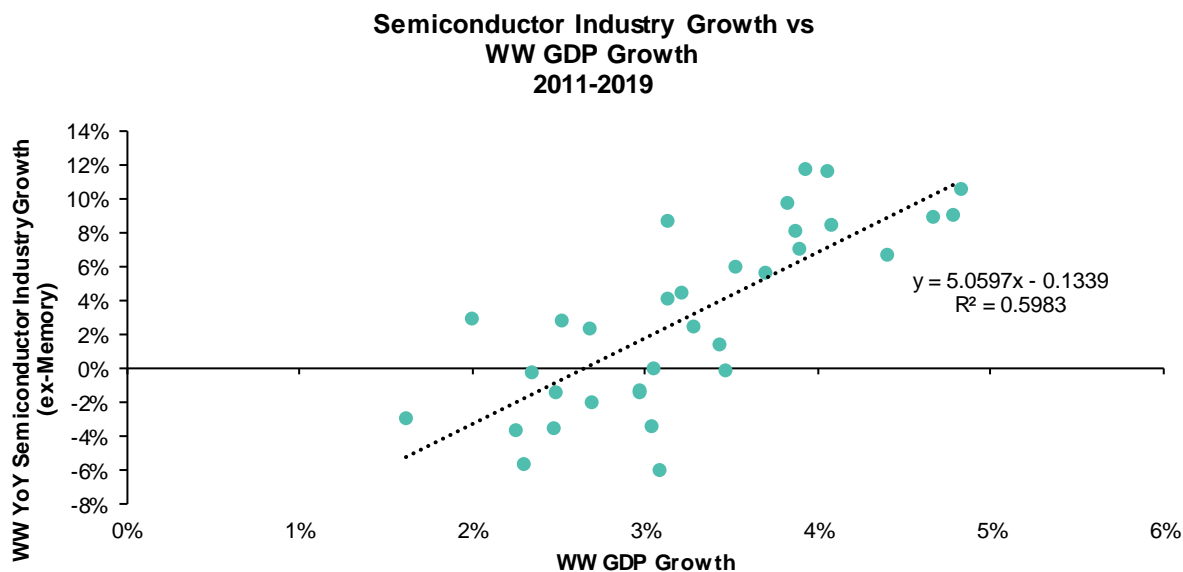
EXHIBIT 9: **The macro situation is generally improving globally following the impact of COVID earlier in the year**



Note: Q4-2020 QoQ GDP change is available for 40 countries (out of 47) as of this writing.

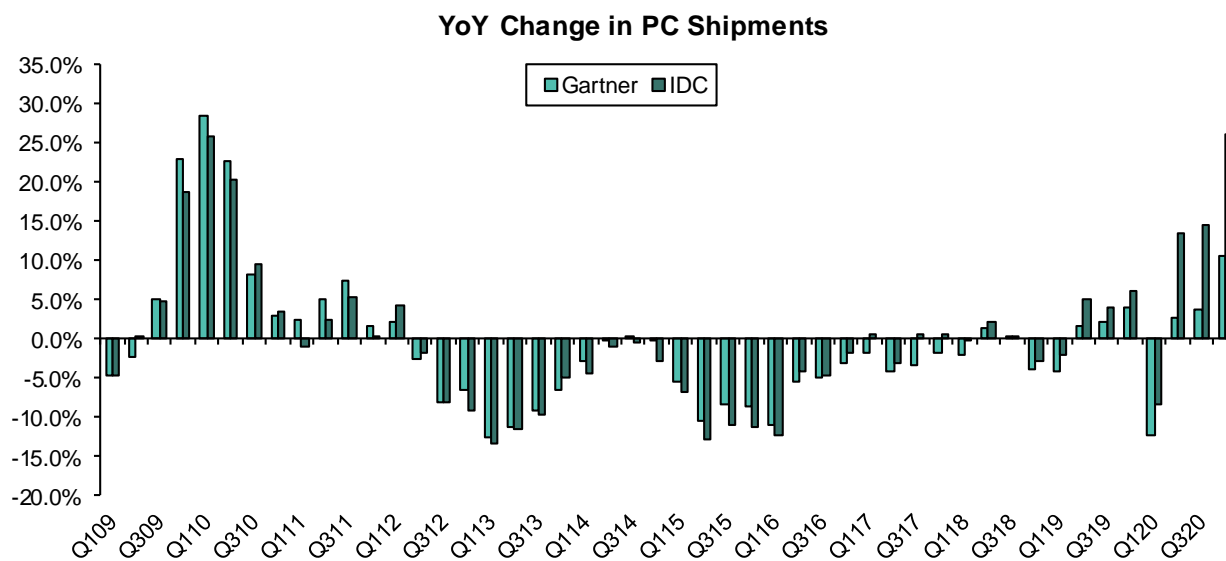
Source: OECD, Bernstein analysis

EXHIBIT 10: **Semis remain highly correlated to GDP growth**



Source: Bloomberg, WSTS, Bernstein analysis

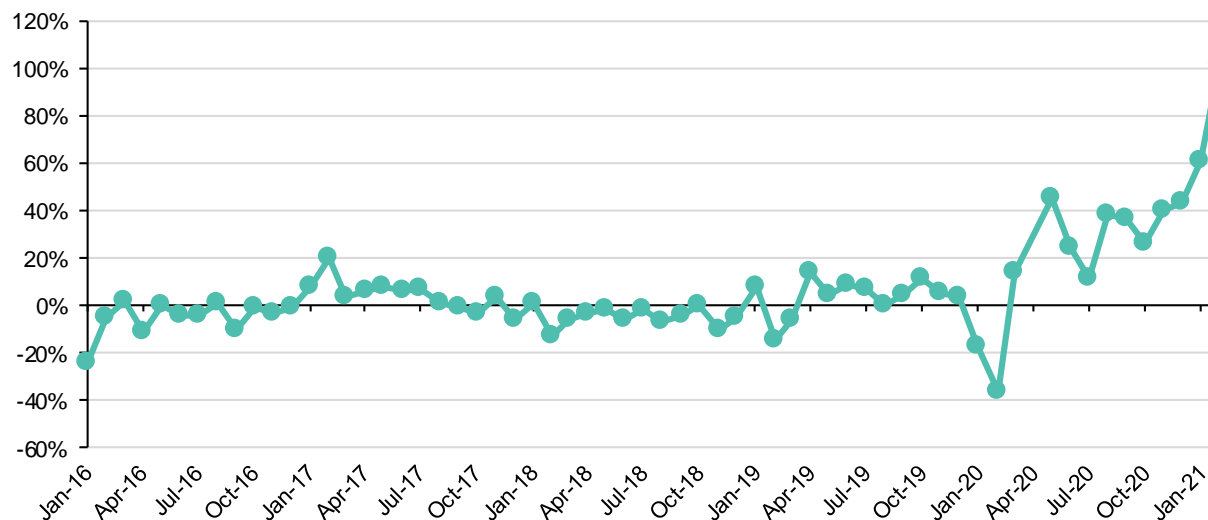
EXHIBIT 11: **PC shipments were quite strong in Q4, as demand remains elevated**



Source: IDC, Gartner, Bernstein analysis

**EXHIBIT 12: ...with end demand particularly for notebooks continuing at high levels on WFH drivers, with Taiwan ODM notebook shipments continuing to grow significantly YoY into Q1**

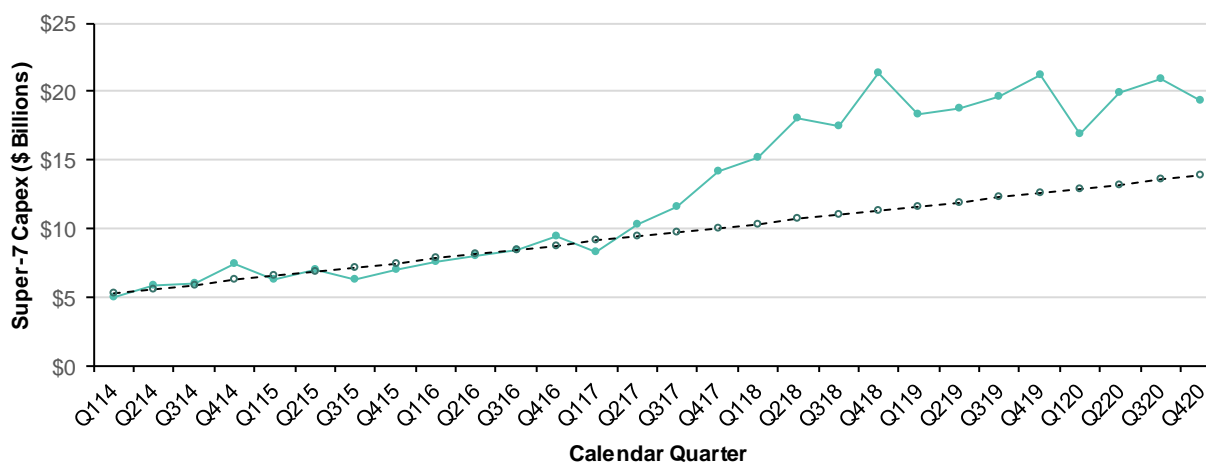
**Taiwan ODM Notebook Shipments  
Monthly YoY Growth**



Source: Company reports (compiled by Digitimes), Bernstein analysis

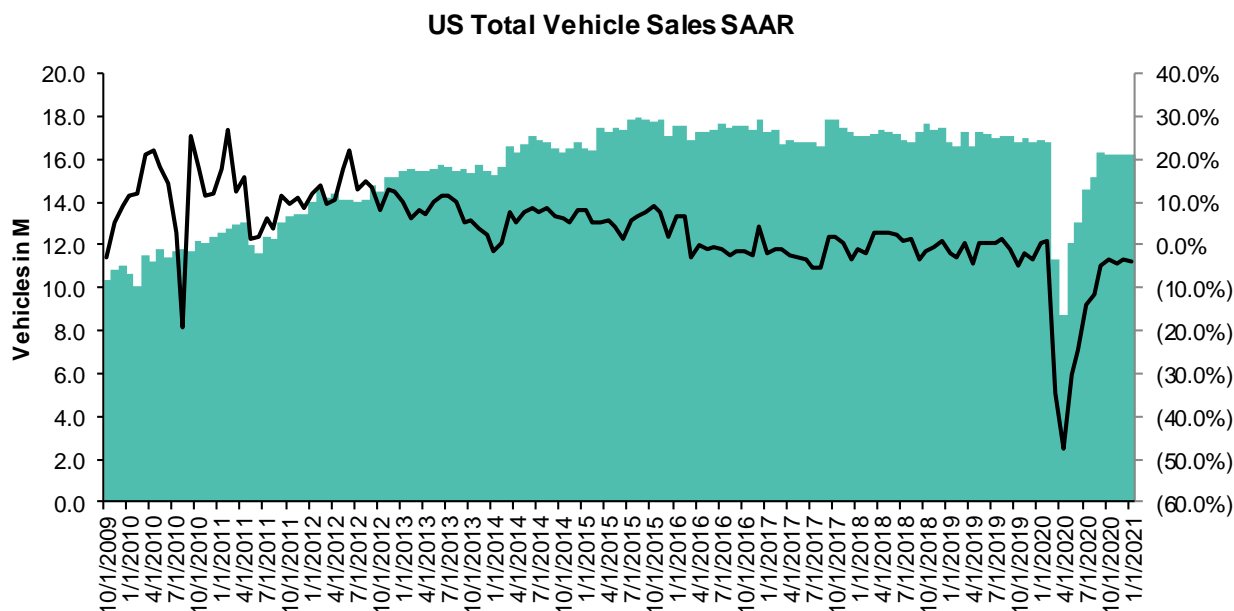
**EXHIBIT 13: Hyperscale capex spending was down QoQ and YoY in Q420**

**Super 7 Capex (\$ Billions)**



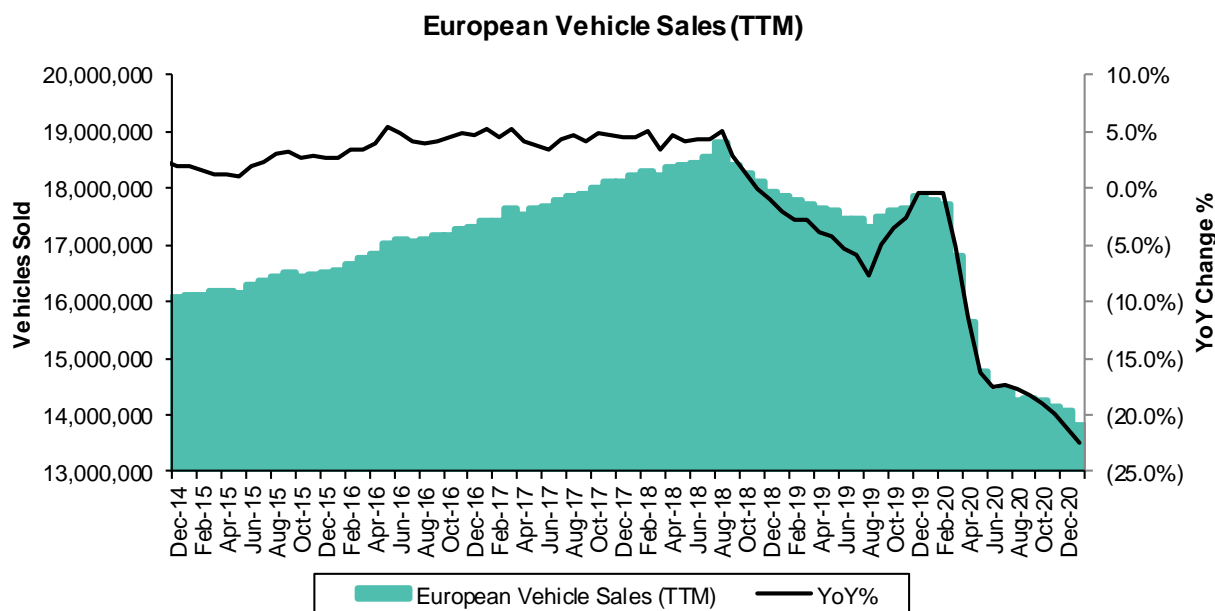
Source: Company reports, Bernstein analysis

EXHIBIT 14: **US auto sales declined -3.9 % YoY in January, as the auto rebound is muted by supply shortages**



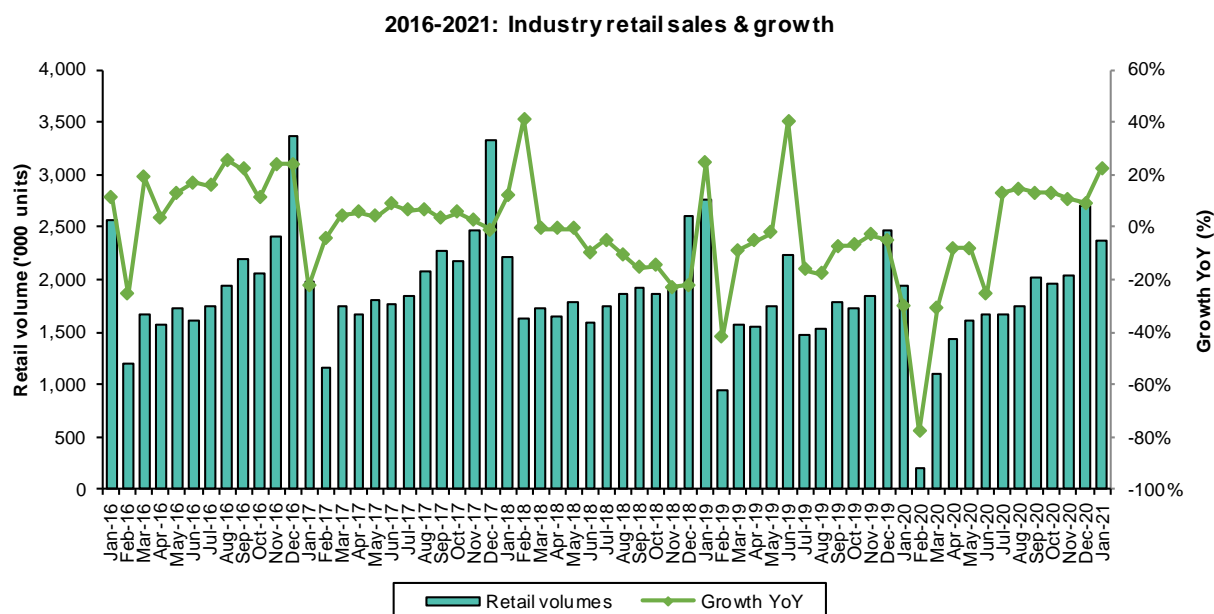
Source: Source: Federal Reserve, Bernstein analysis

EXHIBIT 15: **Units declined -22.4% in Europe in January**



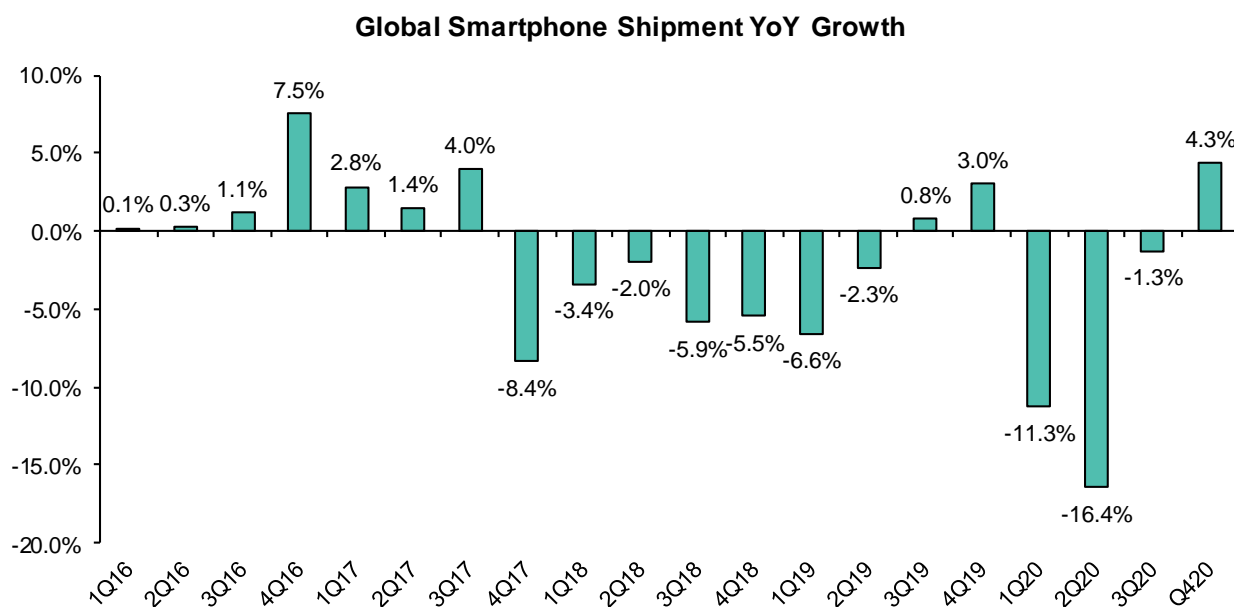
Source: Bloomberg, Bernstein analysis

**EXHIBIT 16: Chinese first-time retail car insurance volumes continue to rebound, posting a 22.4% year on year increase in January**



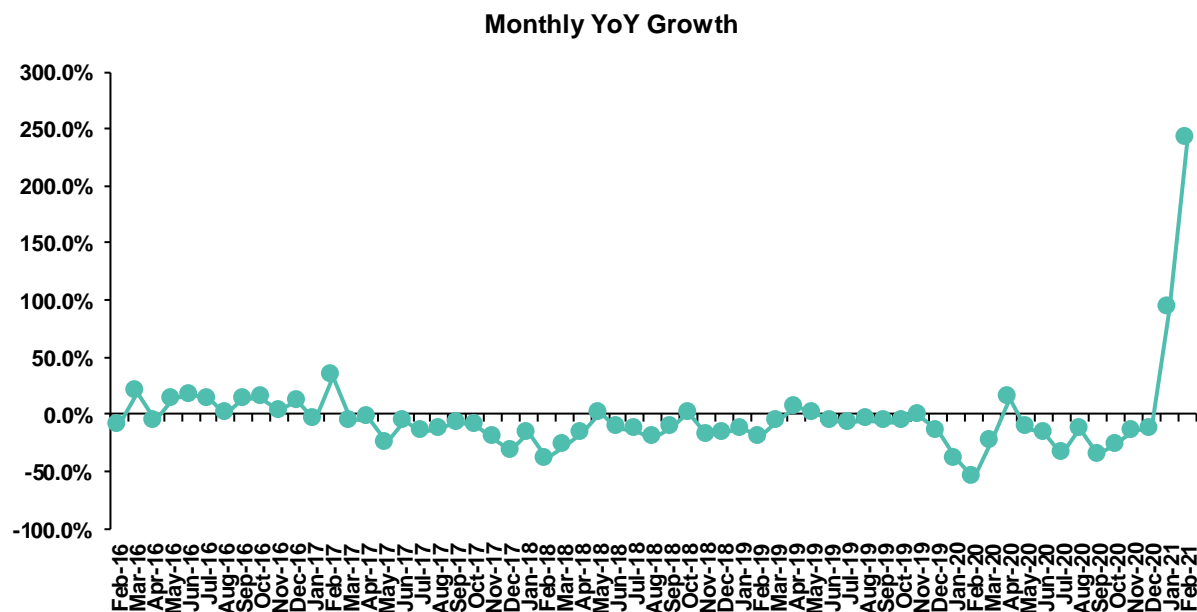
Source: C.A.D. and Bernstein analysis.

**EXHIBIT 17: Smartphones rose YoY in the Dec-Q, returning to growth**



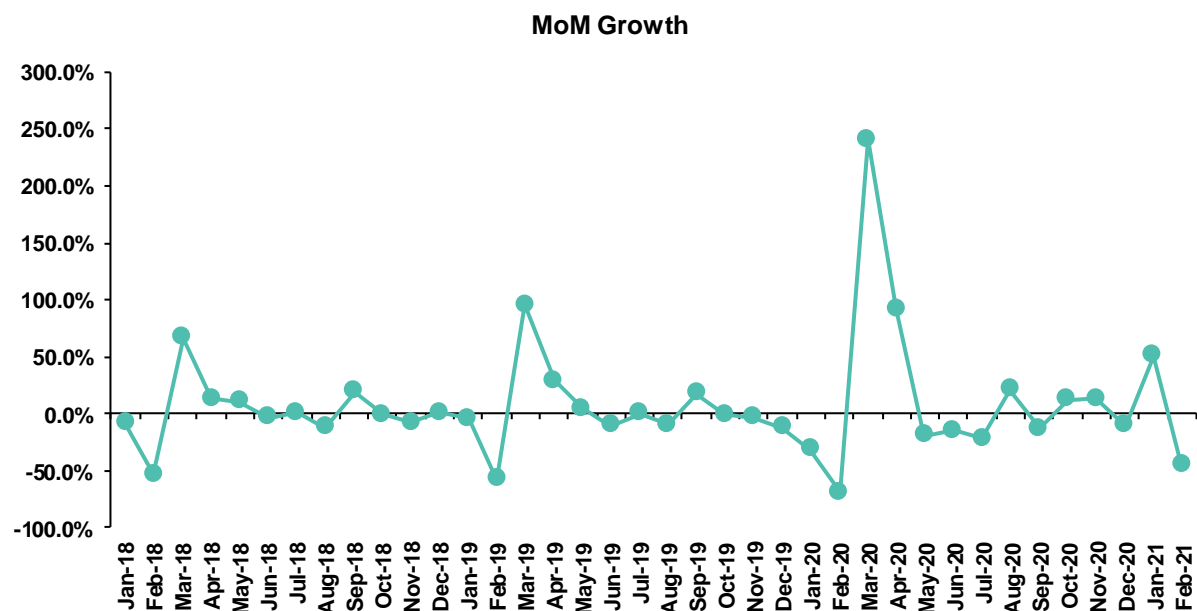
Source: IDC, Bernstein analysis

**EXHIBIT 18: China handset shipments rose 241% in February 2021 vs February 2020 (admittedly an easy compare off the COVID trough)**



Source: China Academy of Telecommunication Research, Bernstein analysis

**EXHIBIT 19: ...and fell -46% MoM in February off a very strong January**



Source: China Academy of Telecommunication Research, Bernstein analysis

EXHIBIT 20: **Cryptocurrency prices have risen dramatically**



Source: Coinbase, Bloomberg, Bernstein analysis

EXHIBIT 21: **Semi multiples are up 21% YoY and down -9 % YTD, and - 15% since the Feb 16 2021 SOX peak**

	12 months ago	YTD	Last Bernstein Cycle Check	SOX Peak	Today	Today vs 3/10/2020	Today vs 12/31/2020	Today vs 12/11/2020	Today vs 2/16/2021
<b>Price</b>	<b>3/10/2020</b>	<b>12/31/2020</b>	<b>12/11/2020</b>	<b>2/16/2021</b>	<b>3/10/2021</b>	<b>Δ</b>	<b>Δ</b>	<b>Δ</b>	<b>Δ</b>
SOX	1656.5	2795.5	2704.1	3238.9	2879.3	74%	3%	6%	-11%
S&P 500	2882.2	3756.1	3663.5	3932.6	3907.2	36%	4%	7%	-1%
<b>Implied Forward Earnings</b>						<b>Δ</b>	<b>Δ</b>	<b>Δ</b>	<b>Δ</b>
SOX	96.3	121.3	120.3	132.2	138.0	43%	14%	15%	4%
S&P 500	172.1	158.7	160.7	172.4	174.2	1%	10%	8%	1%
<b>P/FE</b>						<b>Δ</b>	<b>Δ</b>	<b>Δ</b>	<b>Δ</b>
SOX	17.2x	23.1x	22.5x	24.5x	20.9x	21%	-9%	-7%	-15%
S&P 500	16.7x	23.7x	22.8x	22.8x	22.4x	34%	-5%	-2%	-2%
<b>SOX Premium/(Discount) to S&amp;P 500</b>	3%	-3%	-1%	7%	-7%				

Note: Rolling Relative NTM P/FE. Priced as of 3/10/2021

Source: Bloomberg, Bernstein analysis



## Semiconductor demand continues to be resilient as we start to turn the corner on the COVID-19 pandemic

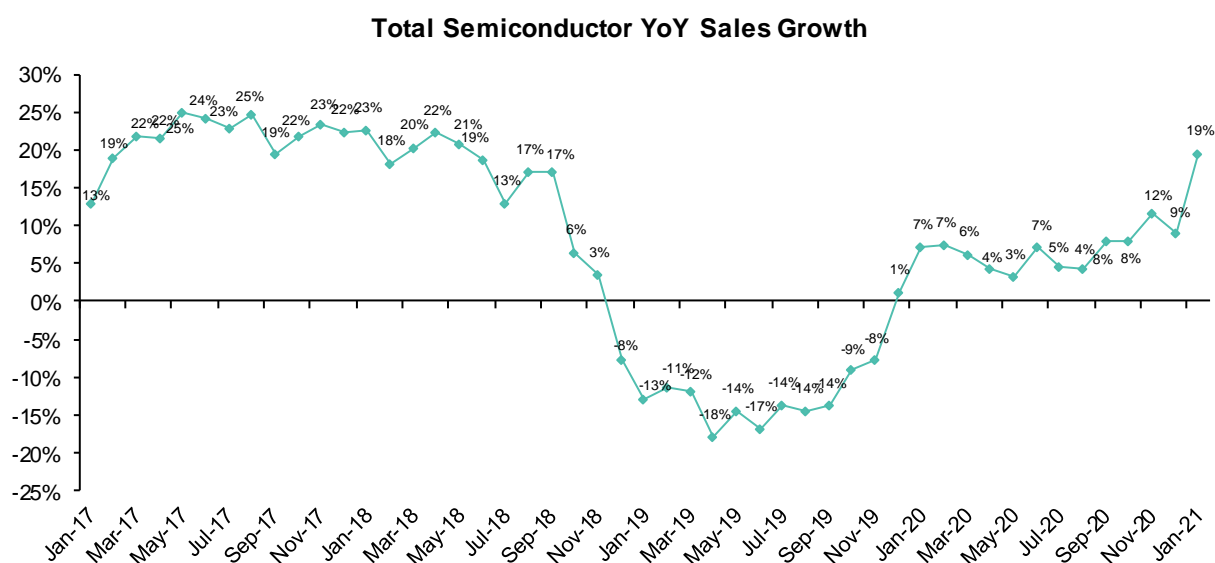
Entering 2021 overall industry demand remains strong, with worldwide semiconductor sales growing ~19% YoY in January, and ~22% ex-Memory (**Exhibit 22, Exhibit 23**).

Applying normal seasonality (acknowledging that we are in an unprecedented environment) this suggests semis growing ~9% in 2021 (**Exhibit 24**).

Semis have performed on par with the S&P 500 (**Exhibit 25, Exhibit 27**).

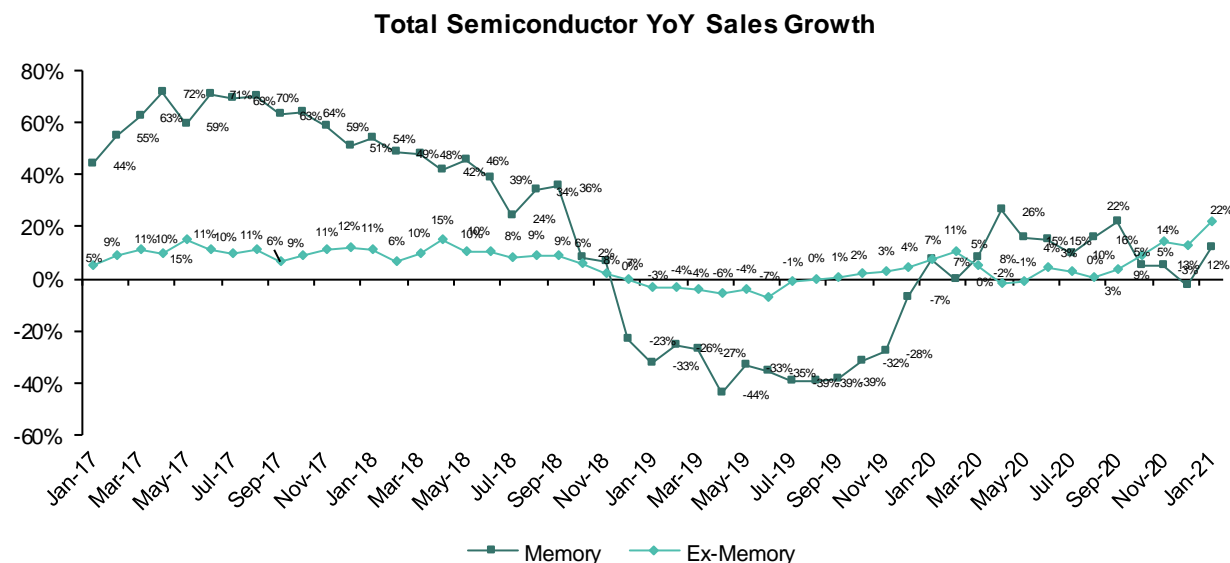
Both the SOX and S&P 500 are up YTD in absolute terms (up 3.0% and 3.8% respectively) (**Exhibit 28**). However, the SP&500 and SOX have both fallen since their all time highs mid-February 2021, when the Sox was up 15.9% YTD (on Feb 16) and the S&P500 up 4.8% YTD (on Feb 12) (**Exhibit 28**).

### EXHIBIT 22: Semiconductor revenues grew 19% YoY in January



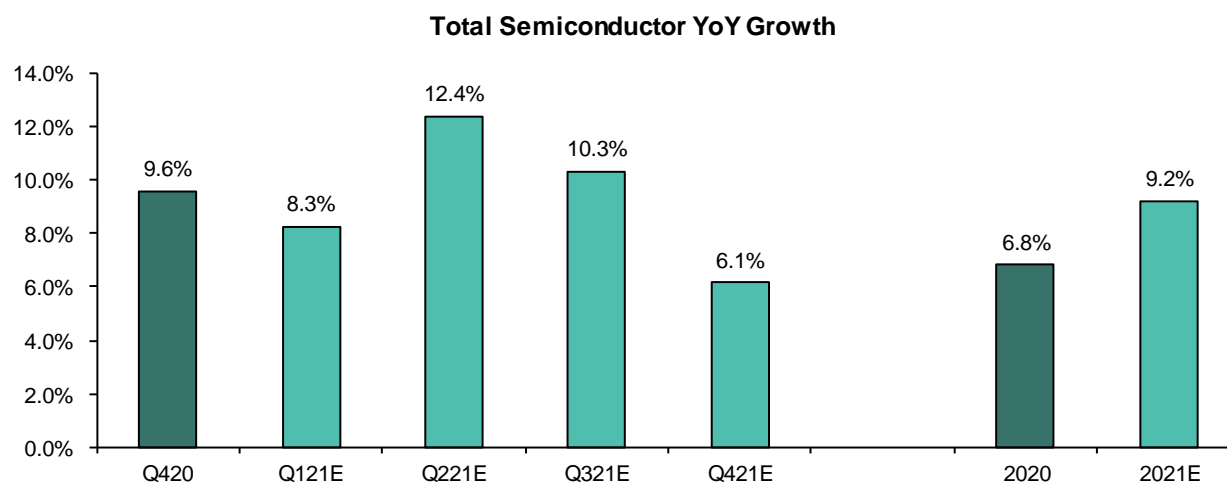
Source: WSTS, Bernstein analysis

EXHIBIT 23: Industry growth was supported by both memory (up 12%) and non-memory (up 22%),



Source: WSTS, Bernstein analysis

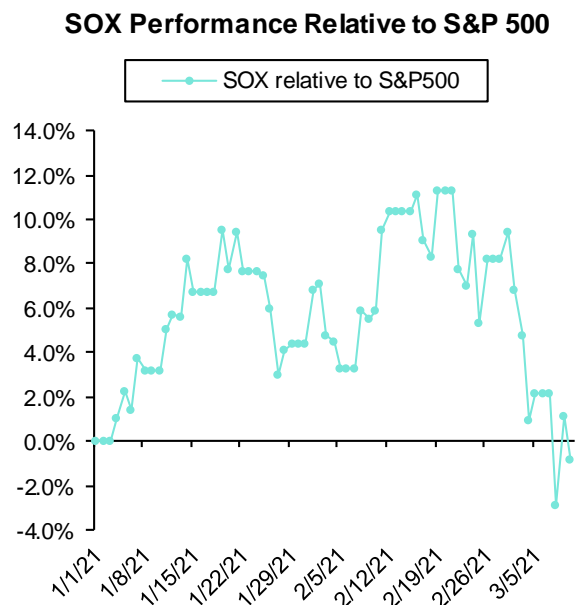
EXHIBIT 24: Semis were up 9.6% YoY in Q420; normal seasonality would drive high-single digit growth for 2021



\*Analysis assumes typically seasonal industry growth for 2021 off the Q420 base

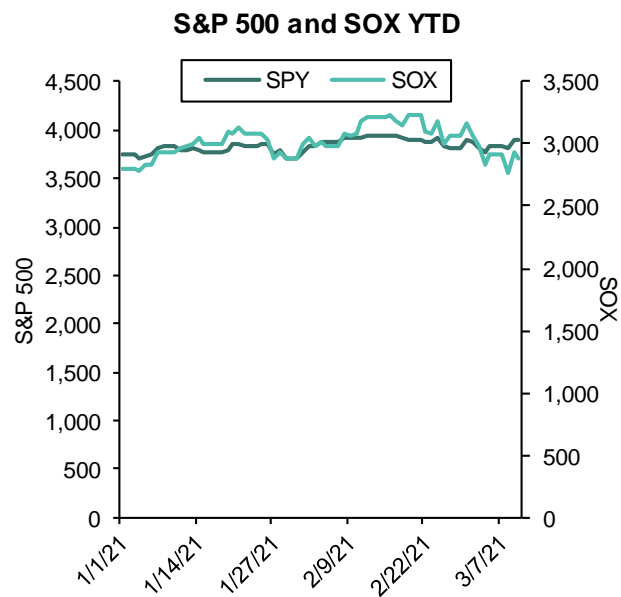
Source: WSTS, Bernstein estimates and analysis

EXHIBIT 25: **The SOX is slightly underperforming the S&P500 YTD**



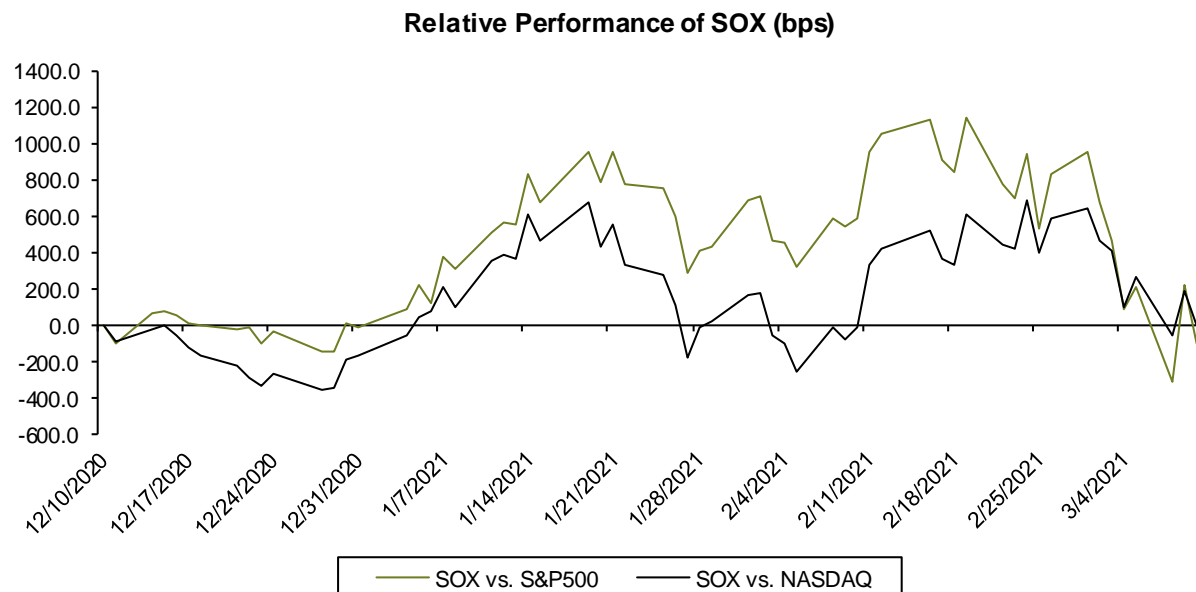
Source Bloomberg, Bernstein analysis

EXHIBIT 26: **Both the SOX and S&P 500 are up YTD in absolute terms (up 3.0% and 3.8% respectively), although both down from mid-February peaks (15.9% and 4.8%, respectively)**



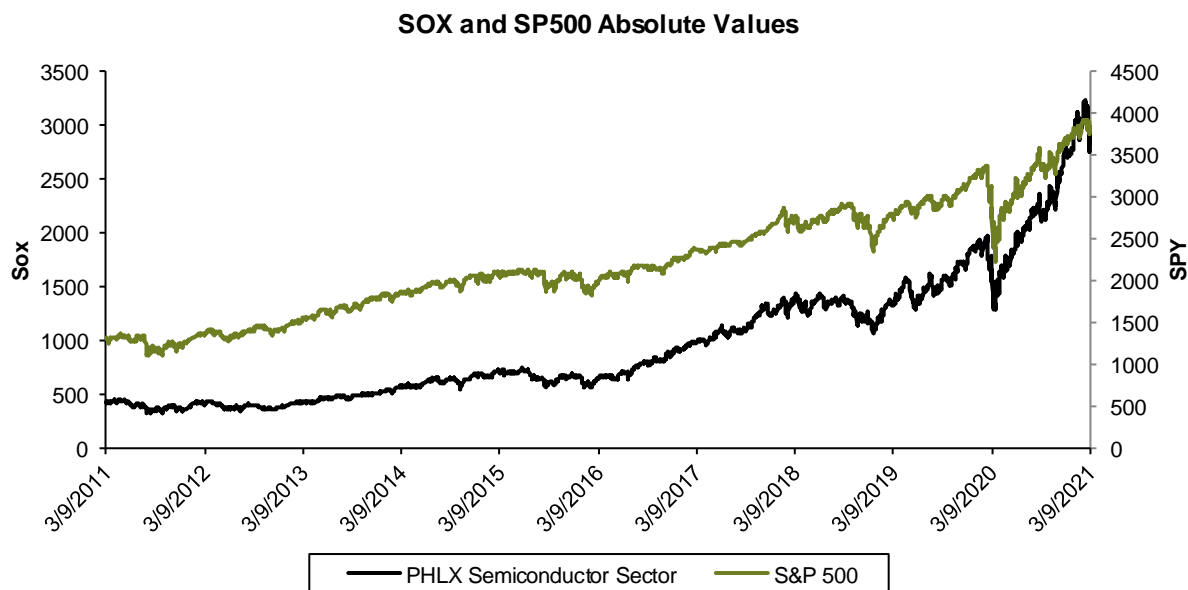
Source: Bloomberg, Bernstein analysis

**EXHIBIT 27: SOX has slightly underperformed the SP500 and performed on par with the Nasdaq over the last 3 months**



Source: Bloomberg, Bernstein analysis

**EXHIBIT 28: The SOX and the S&P have fallen since their peaks in mid-February 2021.**

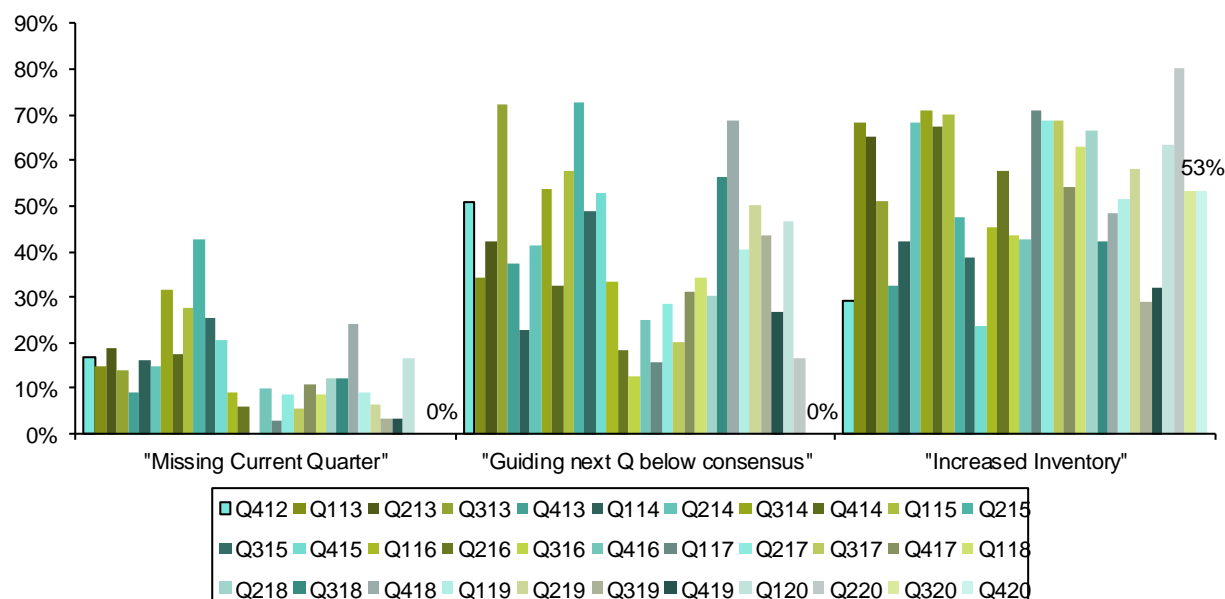


Source: Bloomberg, Bernstein analysis

## We continue in full snapback mode, with almost no companies guiding down Q1

For the second quarter in a row, no companies in our screen missed quarter results or their next quarter guides during the Q4 earnings season. 53% of the companies reported dollar inventory increases, flat vs last quarter (**Exhibit 29-Exhibit 31**).

EXHIBIT 29: **Almost no companies missed Q4 or Q1 guidance, and about half built inventory**



Note: Based on Bloomberg consensus, assumes consensus converges to guidance in a week after the report.

Source: Company reports, Bloomberg, Bernstein analysis

**EXHIBIT 30: Almost no companies in our sample significantly missed revenue estimates for this quarter or next quarter, and 53% reported growth in absolute inventory dollars**

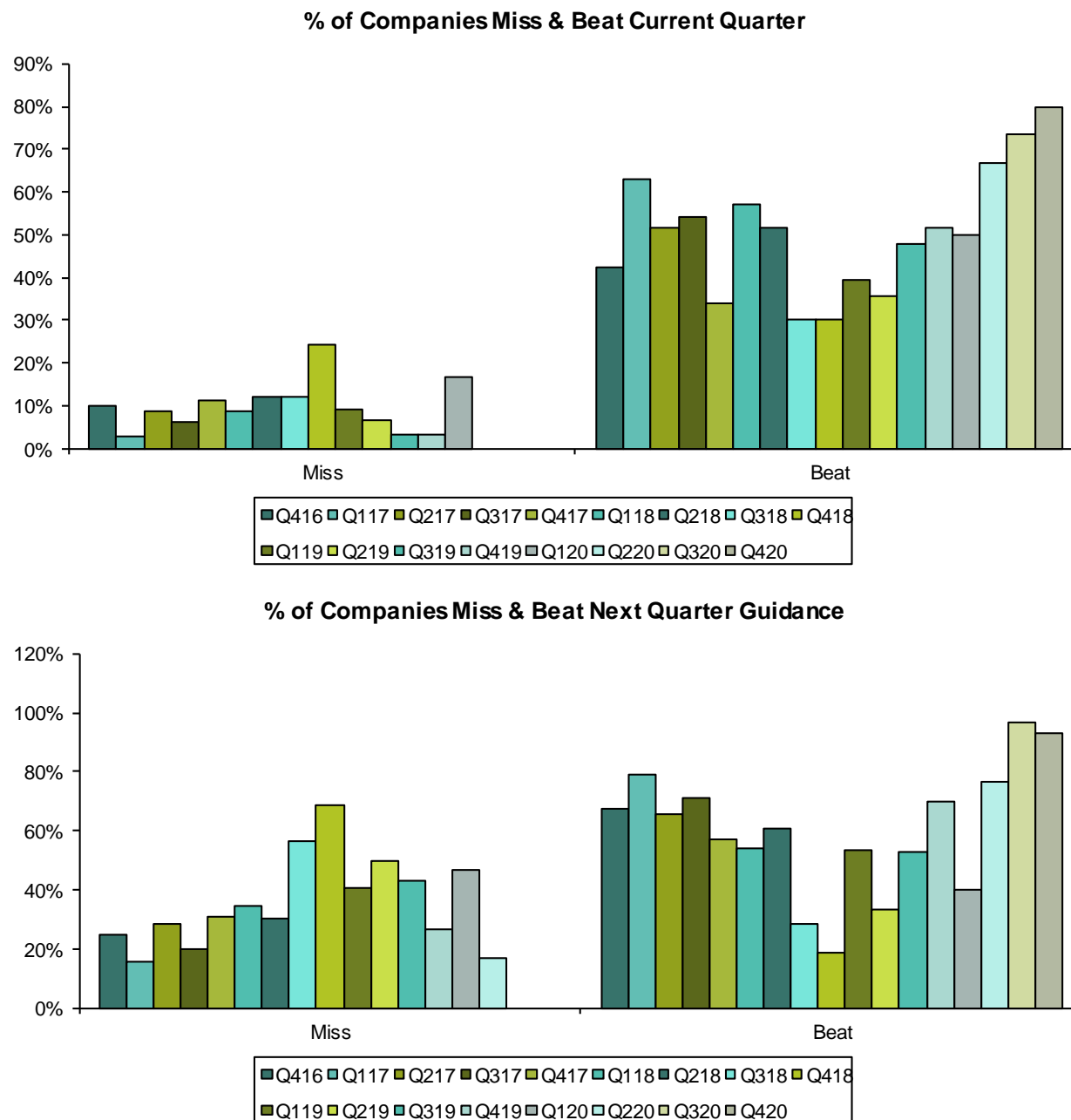
Ticker	Company Name	Q4 Actual vs Consensus		Q1 Guidance vs Consensus		Inventory Increase
		Revenue	Gross Margin	Revenue	Gross Margin	
AMD	Advanced Micro Devices, Inc.	7.4%	-29bps	17.7%	7bps	8.3%
AOSL	Alpha and Omega Semiconductor Limited	3.1%	251bps	11.9%	130bps	4.8%
AMBA	Ambarella, Inc.	6.9%	69bps	21.8%	61bps	10.0%
AMKR	Amkor Technology, Inc.	5.5%	181bps	10.4%	250bps	(0.8%)
ADI	Analog Devices, Inc.	3.2%	2bps	3.8%	-2bps	1.7%
AVGO	Broadcom Limited	0.6%	1495bps	2.7%	0bps	(5.1%)
CRUS	Cirrus Logic, Inc.	5.3%	69bps	1.6%	-19bps	(31.7%)
DIOD	Diodes Incorporated	4.2%	-43bps	14.4%	-48bps	18.0%
DSPG	DSP Group, Inc.	6.3%	5bps	12.7%	80bps	10.6%
IPHI	Inphi Corporation	0.1%	783bps	(0.2%)	-114bps	2.6%
INTC	Intel Corporation	14.1%	341bps	9.7%	171bps	(9.1%)
LSCC	Lattice Semiconductor Corporation	4.0%	154bps	6.5%	40bps	8.6%
MTSI	MACOM Technology Solutions Holdings, Inc.	0.4%	51bps	3.0%	128bps	(2.8%)
MX	MagnaChip Semiconductor Corporation	15.0%	64bps	4.6%	27bps	16.1%
MRVL	Marvell Technology Group Ltd.	1.5%	1105bps	1.9%	7bps	(0.1%)
MXIM	Maxim Integrated Products, Inc.	4.2%	-19bps	4.3%	-10bps	(1.6%)
MXL	MaxLinear, Inc.	2.3%	38bps	5.7%	28bps	(6.3%)
MCHP	Microchip Technology Incorporated	0.2%	41bps	4.9%	74bps	0.7%
MPWR	Monolithic Power Systems, Inc.	3.5%	3bps	12.0%	-21bps	6.1%
NVDA	NVIDIA Corporation	3.8%	-4bps	17.5%	25bps	22.1%
NXPI	NXP Semiconductors NV	1.9%	167bps	10.1%	74bps	(3.2%)
ON	ON Semiconductor Corporation	6.8%	40bps	8.5%	77bps	(2.3%)
POWI	Power Integrations, Inc.	16.1%	8bps	14.4%	-129bps	(1.8%)
QCOM	QUALCOMM Incorporated	(0.2%)	103bps	7.4%	-219bps	(1.8%)
QRVO	Qorvo, Inc.	2.9%	204bps	10.3%	-18bps	0.5%
SLAB	Silicon Laboratories Inc.	7.4%	-37bps	9.5%	-88bps	0.8%
SWKS	Skyworks Solutions, Inc.	43.1%	56bps	24.7%	34bps	(10.9%)
TXN	Texas Instruments Incorporated	13.2%	82bps	11.2%	38bps	(5.6%)
VSH	Vishay Intertechnology	2.4%	-127bps	7.8%	25bps	1.8%
XLNX	Xilinx, Inc	3.6%	-61bps	1.9%	-25bps	6.4%

We define a revenue "miss" in this context as more than 1% light vs consensus, a "beat" if results exceed consensus

Note: Based on Bloomberg consensus, assumes consensus converges to guidance in a week after the report. (For AVGO, +6 day)

Source: Company reports, Bloomberg, Bernstein analysis

**EXHIBIT 31: No companies in our sample missed in the current quarter; 83% of companies provided guidance above consensus while none guided below consensus**

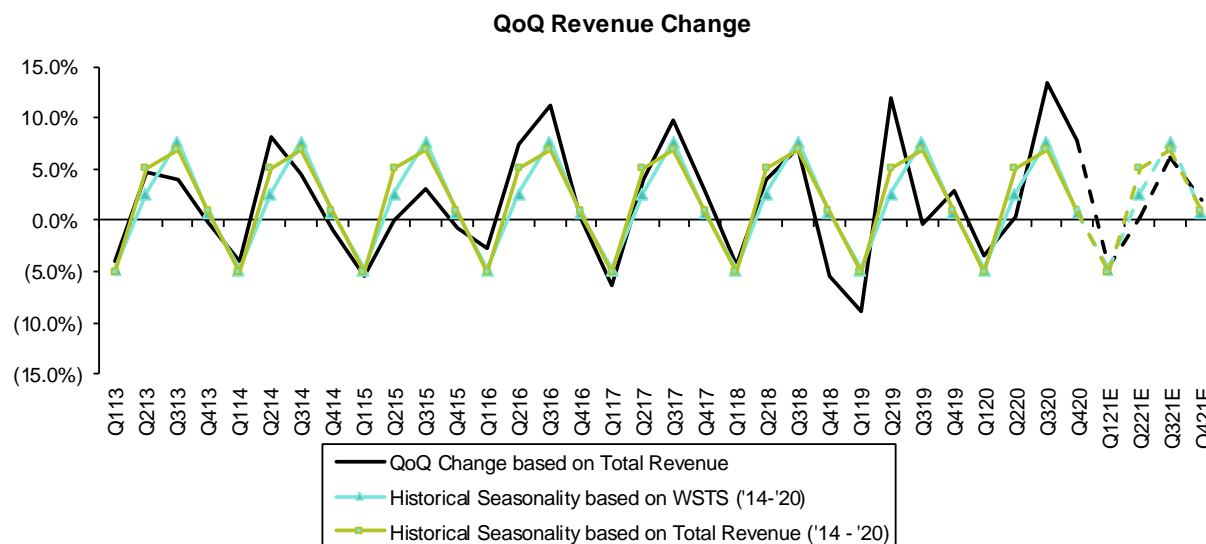


We define a revenue "miss" in this context as more than 1% light vs consensus, a "beat" if results exceed consensus  
 Source: Company reports, Bloomberg, Bernstein analysis

**After a significantly above-seasonal Q4, investors are modeling normalization off that higher base, with a roughly in-line to slightly below seasonal trajectory going forward for the next several quarters**

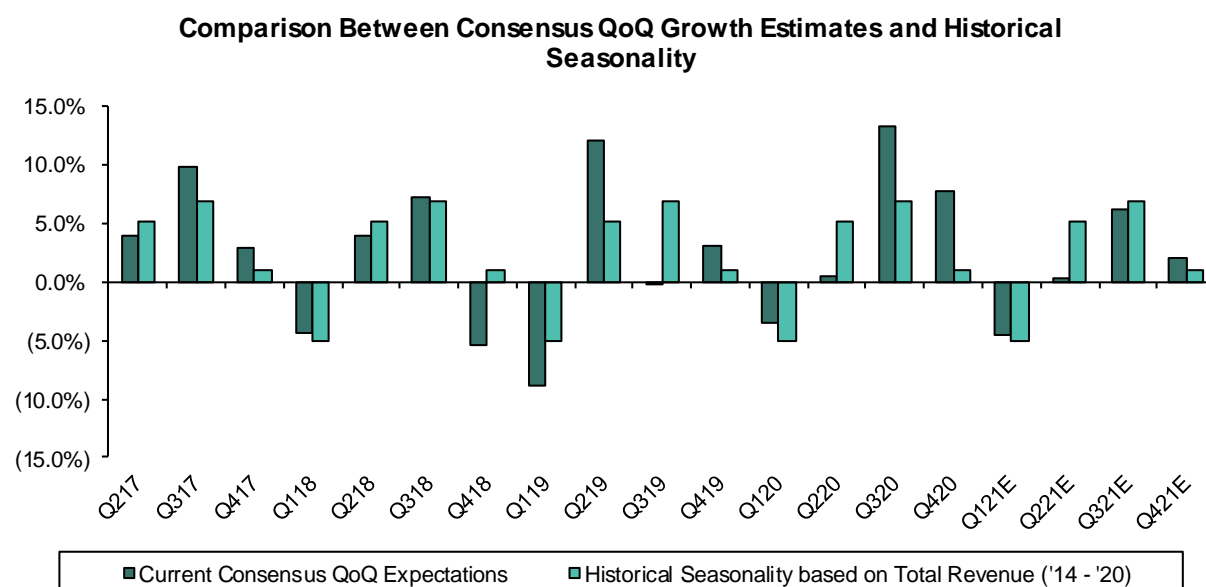
Q4 results were above seasonal as the COVID recovery continues. Investors are modeling a normalization off that higher base, with a roughly in-line to slightly below seasonal trajectory going forward for the next several quarters (**Exhibit 32, Exhibit 33**).

**EXHIBIT 32: Consensus appears to expect roughly normal-to-below seasonality for the next few quarters**



Based on a basket of 54 representative semiconductor companies. Seasonality from 2014-2020  
Source: Company reports, Bloomberg, WSTS, Bernstein estimates and analysis

**EXHIBIT 33: ...with generally in line-to-below seasonal expectations in numbers for the next four quarters**



Based on a basket of 56 representative semiconductor companies. Seasonality from 2014-2020.  
Source: Bloomberg, WSTS and Bernstein analysis



### Estimates cuts have eased as the COVID trough passes

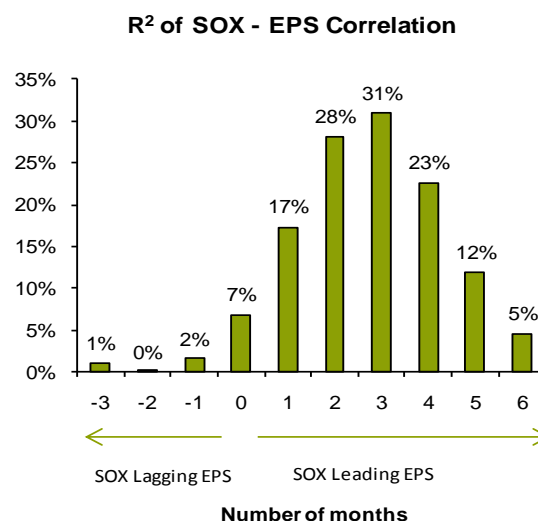
The pandemic initially drove a sharp uptick in negative revisions a couple of quarters ago. However, given the initial impact of COVID has proven less than feared the pace of companies lowering numbers has significantly slowed and now, halted as companies have seen near-term (relative) strength (though in some cases caveated somewhat with pull-forward and inventory build concerns) (**Exhibit 34**). Note that the most upside is typically obtained when buying semi stocks after numbers have come down, but before they trough<sup>4</sup> (**Exhibit 35**); we appear to be past this point now.

**EXHIBIT 34: Negative earnings revisions appear to have troughed**



% of companies demonstrating MoM negative revision to NTM EPS; 3-month smoothed. Negative revision if changes by at least 1%  
Source: Bloomberg, Bernstein analysis

**EXHIBIT 35: Stock performance tends to lead revisions by about a quarter or so**



Source: Bloomberg, Bernstein analysis

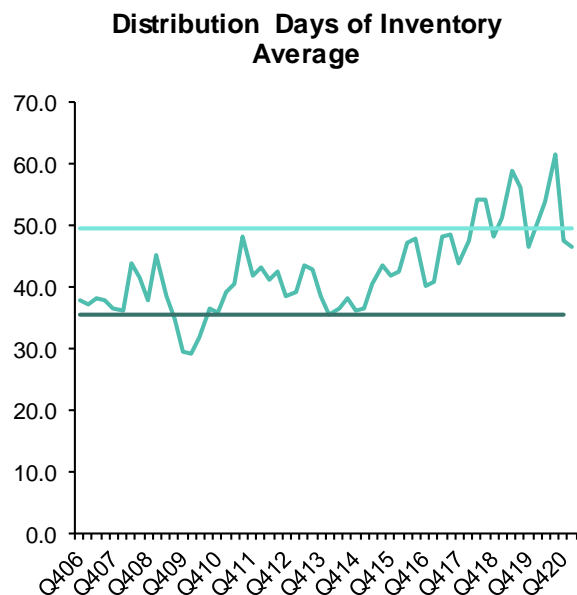
**Inventory days and \$ in the channel dropped on strong sellout, and days are in the historical range though near the higher end. Semiconductor-owned inventories dropped on a days basis and appear roughly normal, though \$ rose YoY**

In Q420, distributor inventory days fell sequentially amid tight supply and a strong demand environment. \$ were up slightly QoQ and down YoY (**Exhibit 36, Exhibit 37, Exhibit 40**).

Semiconductor company inventory days also fell, with inventory dollars down QoQ but increasing YoY (**Exhibit 38, Exhibit 39, Exhibit 41**).

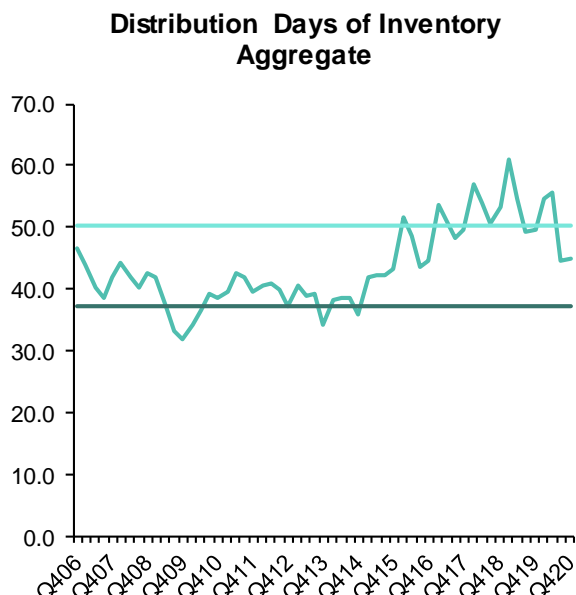
<sup>4</sup> Please see "[U.S. Semiconductors: Signs of the Cyclical Peak Arriving, When Will It Be Time To Buy?](#)" published on September 22, 2010.

**EXHIBIT 36: Distribution days of inventories decreased on average on strong sell-out**



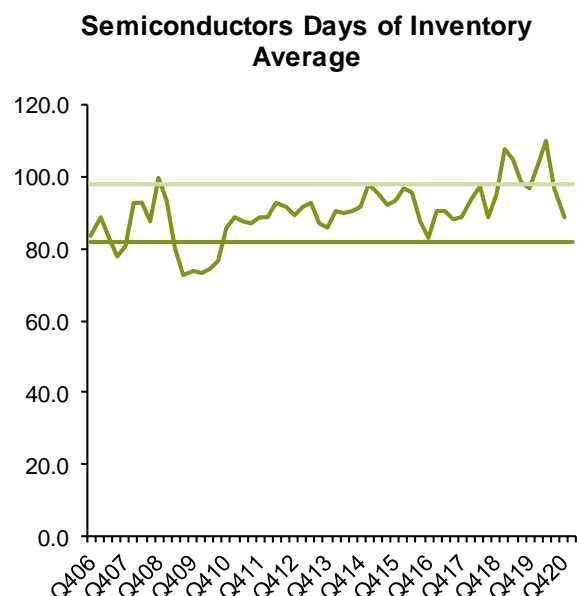
Source: Bloomberg, Bernstein analysis

**EXHIBIT 37: On an aggregate basis, days decreased, remaining in the historical range**



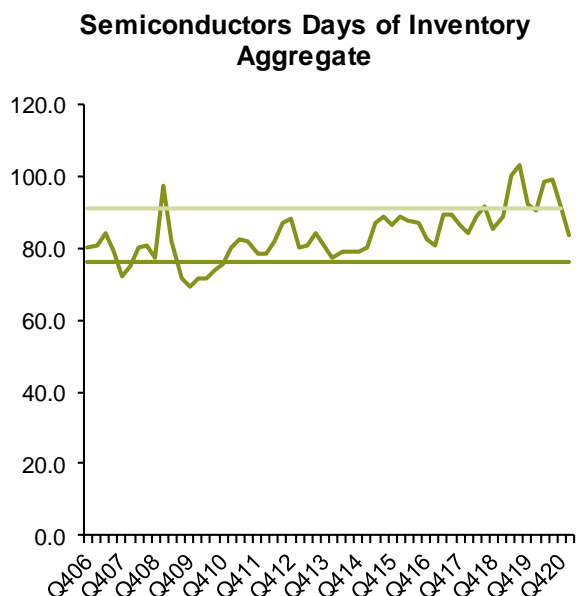
Source: Bloomberg, Bernstein analysis

**EXHIBIT 38: Semi days of inventories decreased on average and returned to the historical range**



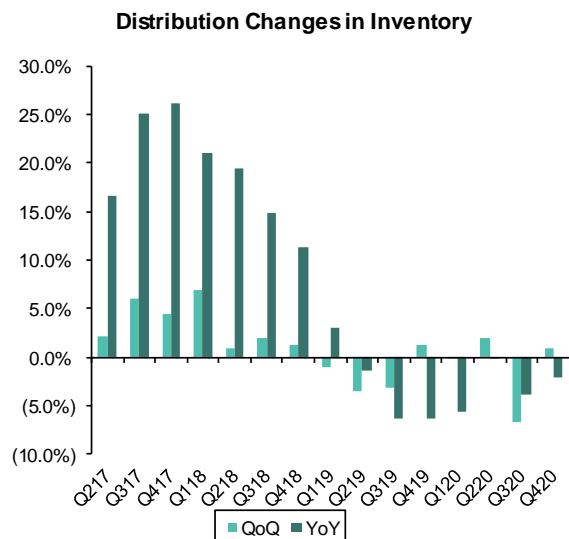
Source: Bloomberg, Bernstein analysis

**EXHIBIT 39: The same is true on an aggregate basis**



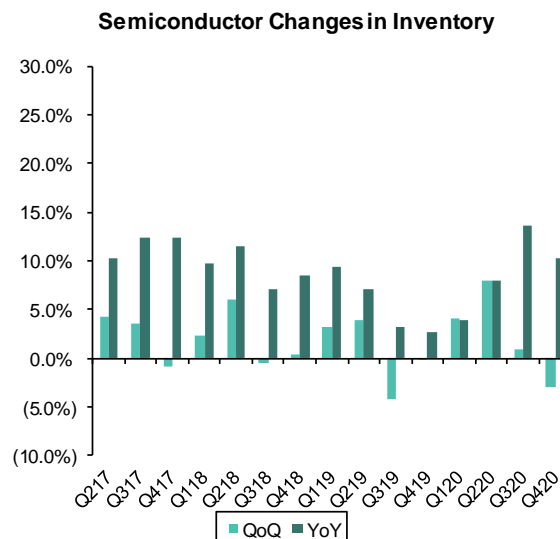
Source: Bloomberg, Bernstein analysis

EXHIBIT 40: **Overall distributor inventory \$ were up QoQ and down YoY...**



Source: Company reports, Bloomberg, Bernstein analysis

EXHIBIT 41: **... while semiconductor company inventory \$ fell QoQ and rose YoY**

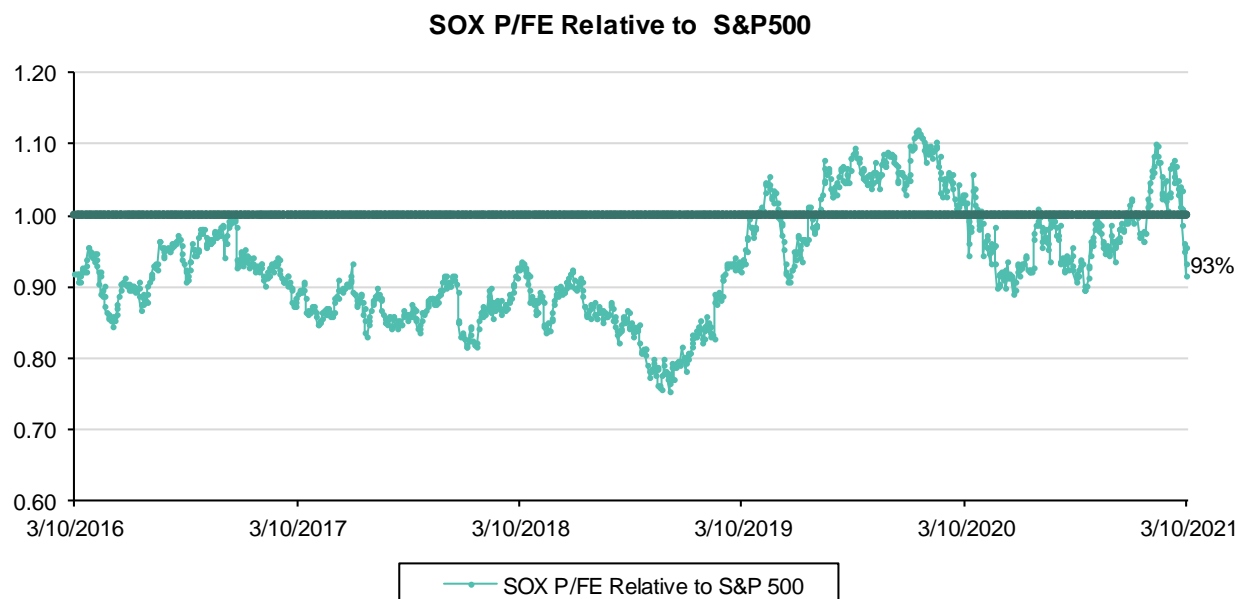


Source: Company reports, Bloomberg, Bernstein analysis

**Semi relative valuations appear reasonably normal vs historical trends (at a ~7% discount to the S&P), though absolute valuations remain elevated (in semis and the broader market)**

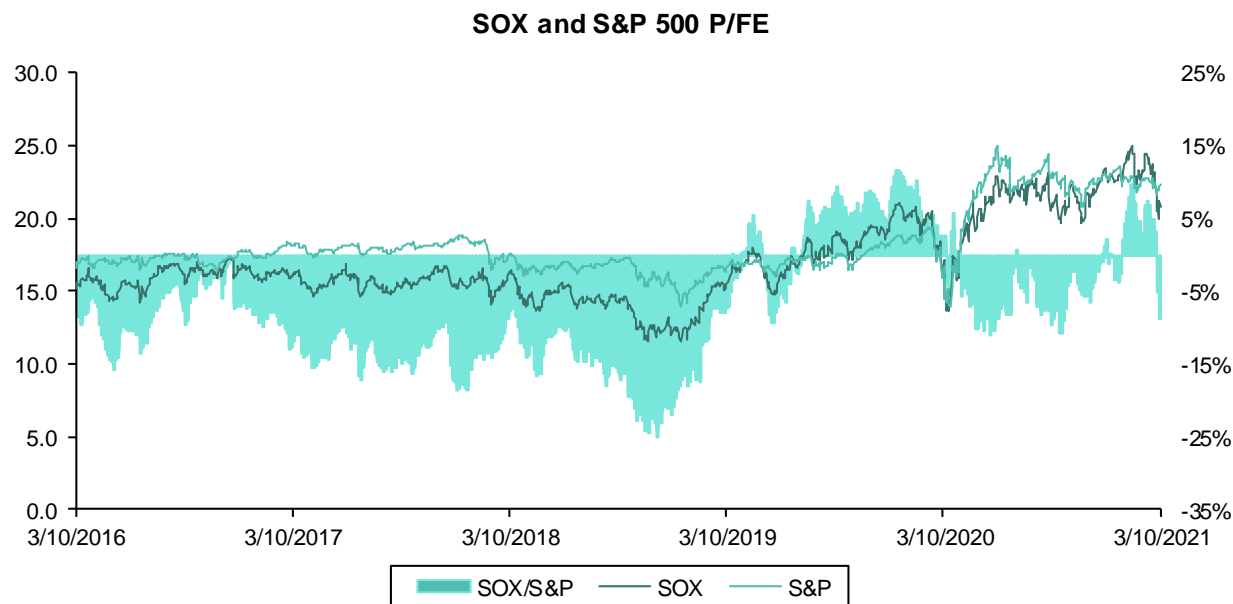
The SOX is trading at a 7% discount to the S&P500 (vs trading roughly at par at the time of our prior December cycle note), in line with historical trends (**Exhibit 42**). However, valuations remain elevated on an absolute basis (both for semis and the broader market) (**Exhibit 43**).

EXHIBIT 42: **Semis are trading at 7% discount to the S&P 500, inline with historical trends**



Note: Rolling relative NTM P/FE  
Source: Bloomberg, Bernstein analysis

EXHIBIT 43: **However, absolute valuations remain elevated (for the broader market as well as semis)**

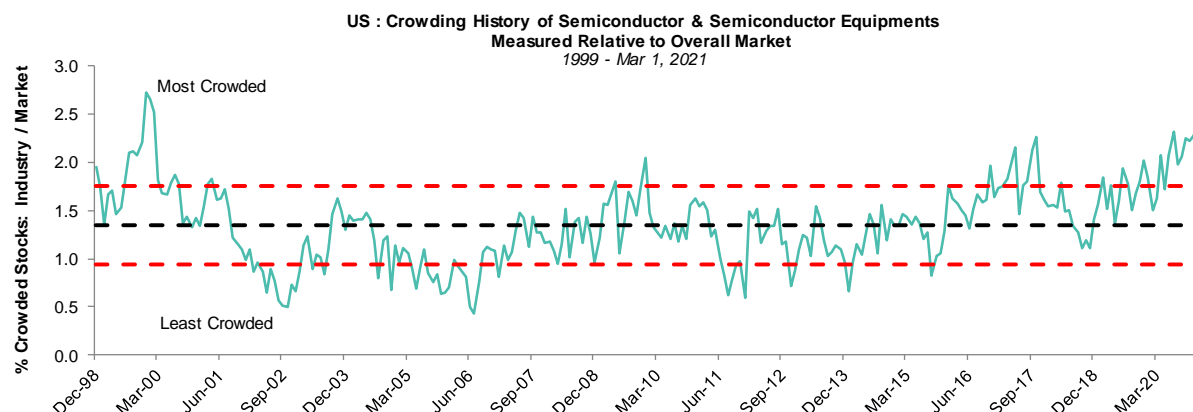


Note: Rolling relative NTM P/FE  
Source: Bloomberg, Bernstein analysis

**Semiconductors appear quite crowded relative to historical trends as well as relative to the broader TMT space, increasing over the last quarter**

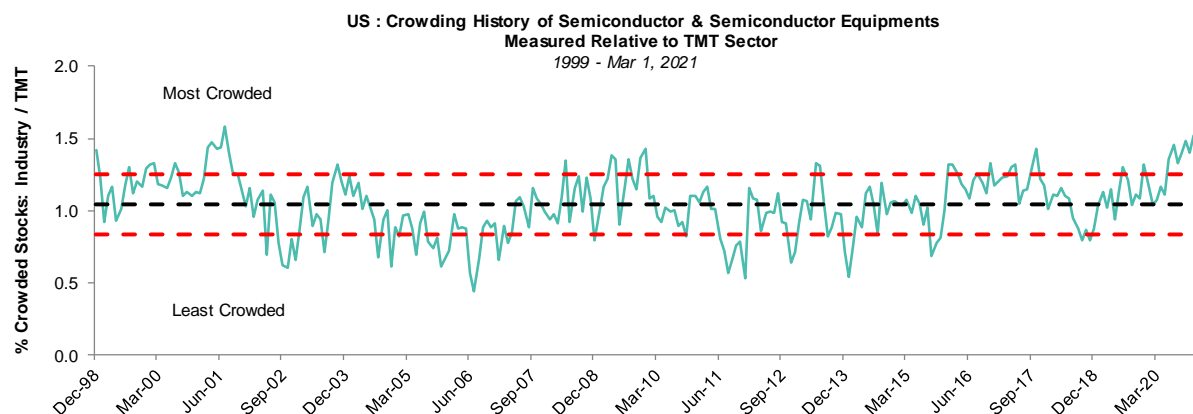
Crowding can identify further risks or opportunities. The semiconductor today is quite crowded vs its own history, well above 2 standard deviations (relative to the market) vs its own historical mean, and nearly 1.5 standard deviations relative to the TMT sector (**Exhibit 44, Exhibit 45**). Crowding has increased vs last quarter.

**EXHIBIT 44: Semiconductors appear crowded relative to their own history vs the market...**



Source: MSCI, FactSet, Bernstein analysis

**EXHIBIT 45: ...and vs. the TMT space**



Source: MSCI, FactSet, Bernstein analysis

So, what to do from here? We have liked a somewhat selective approach in this environment, looking for names that either 1) possess long term secular growth stories that can continue to be attractive as we look through the near term, and/or 2) potentially more cyclical, but less expensive names with less WFH exposure. At a minimum we admit our secular names have taken a bath so far this year, caught up in the current industry dynamics as well as a turn of the cheek against growthier names in general (with NVDA ~19% off its highs on stellar numbers, and with QCOM the worst performer YTD in our coverage), but we believe entry points are getting attractive given the underlying narratives. Anything auto-exposed looks attractive to us given we believe the auto recovery itself has legs (NXPI in particular in our coverage fits this bill). And AVGO looks like a good place to park to us with a solid combination of better visibility, prospect for cash deployment, and valuation.

**NXPI looks like a winner here.** While shortages are most rampant in the auto space given COVID-induced supply chain whipsaws and order cancellations, the auto semi recovery also likely has the longest legs given likely multiple quarters needed to rebalance supply and demand, and with a bone-dry channel likely to run fuller in the future given the industry's just-in-time practices may no longer be viable<sup>5</sup>. And over the long term we like the name as well, with attractive normalized valuation and good FCF generation, and a story that in our opinion remains underappreciated on every metric vs history (whether growth, margins, cash generation and return, leverage, or business mix) (**rated OP**).

**We continue to like AVGO,** with better than average visibility on a record backlog, lower volatility due to their SW strategy, strong FCF generation (with a likely return to deployment, either through M&A or buybacks forthcoming) and increased transparency all coupled to a quality, margin, and execution profile unavailable anywhere else in the space at a very attractive valuation (**rated OP**).

**The NVDA story remains attractive, with the recent pullback offering an entry point.** The shares sold off hard after a stellar print amid the re-emergence of crypto and a fear that datacenter isn't "beating by enough." However, we believe dynamics around crypto can be different this time around (with much stronger organic gaming demand in this cycle and a much leaner channel given the current supply situation<sup>6</sup>), and the datacenter trajectory is a function of very long leadtimes (allowing growth but making blowouts harder to come by, but also protecting to the downside with the company navigating a recent industry digestion phase without feeling it at all). The narrative still appears very strong to us, with the recent pullback offering an entry point (**rated OP**).

**And the QCOM sell-off looks a bit overdone to us as well.** While QCOM enjoyed a stellar 2020, 2021 has not been so kind, and the shares (somewhat surprisingly to us) have been the worst YTD performers in our coverage, a function of expectations that got a bit over-inflated into the last earnings print (and which subsequently required a bit of a reset) and concerns that China handset makers may be a tad overzealous in their pursuit of newly-available Huawei share. However, while resetting numbers isn't fun, it's better to do it now vs later (and it's now done), the 5G cycle continues to play out, and the adjacency story is becoming increasingly real, all against a backdrop where customer and regulatory disputes have (finally) eased. With the pullback the shares now trade at an almost 20% discount to the SOX, reminiscent of much more troubled times; we believe the entry point is attractive here (**rated OP**).

We note that both NVDA and QCOM make an appearance in our quant team's recent screen of high-quality, beaten-down stocks<sup>7</sup> (**Exhibit 46**).

**We remain neutral on ADI and TXN, primarily on valuation,** and while both stocks have been decent absolute performers, both underperformed the SOX last year and YTD so far this year, with valuations that remain elevated. TXN's bet on factory loadings and inventory build looks like the right one now given current industry supply constraints, but the very strong near-term trajectory and high availability makes it somewhat difficult to fully dismiss the risk of overorders (though of course the company won't care about it given their long-term perspective, a point of view we are loath to disagree with fundamentally). And ADI may grow more interesting as the MXIM acquisition approaches closure but the general narrative is shifting a bit (with the company backing off their growth targets around comm infrastructure) (**both rated MP**).

<sup>5</sup> February 16, 2021 - [Global Semiconductors and Autos - Where have all the semis gone?](#)

<sup>6</sup> March 10, 2021 - [Global Semiconductors: Bitcoin back on the stage? How about ESG considerations?](#)

<sup>7</sup> March 9, 2021 - [Quantitative Research: Quality On Sale - High quality stocks selling at historic discounts](#) (Larson)

**As the Gelsinger Bump has transferred hope back to Intel, some of that hope has come at AMD's expense, and the shares have suffered somewhat YTD after an amazing 2020.** The company is admittedly firing on all cylinders, with a strong 2021 outlook offered in January, but some of the "hope" that has supported the shares seems to be transferring back to Intel as investors look to Pat Gelsinger for salvation. We do believe share gains remain in the cards likely for the next several years regardless of any actions Intel takes, and valuation is getting more agreeable given the pullback (**rated MP**).

**And INTC remains an enigma here. The stock has run on the Gelsinger trade,** and in fact we can see the near-term tactical bull call as we await more color on "The Plan," likely forthcoming relatively soon. That being said, we wonder what happens after that as the next several years appear challenging, with continued share losses likely guaranteed (AMD, as well as AAPL), ARM gets increasing traction in the datacenter (with even more risk should NVDA manage to close the ARM deal), and current PC strength (at some point) is going to come to an end (with our 2022 numbers well below the Street) (**rated UP**).

**EXHIBIT 46: Nvidia and QCOM are both rated in the top quintiles of the Bernstein Quality Model (1<sup>st</sup> and 2<sup>nd</sup>, respectively) and down more than 10% off their 52-week high**

Company	Market Cap (USD Bill)	Analyst Rating	Quality Model Quintile (1=Highest)	Price Return Relative to 52-Week High	YTD Return
AMAZON.COM INC	1549	O	1	-17%	-9.4%
FACEBOOK INC-CLASS A	762	O	1	-16%	-6.5%
WALMART INC	366	O	1	-17%	-11.3%
NVIDIA CORP	309	O	1	-25%	-11.2%
PAYPAL HOLDINGS INC	285	O	1	-27%	-3.5%
NETFLIX INC	225	O	1	-17%	-8.8%
ADOBE INC	211	O	1	-22%	-15.8%
ABBOTT LABORATORIES	209	O	1	-10%	5.6%
MERCK & CO. INC.	189	O	1	-16%	-9.3%
QUALCOMM INC	146	O	2	-27%	-19.1%
ZOOM VIDEO COMMUNICATIONS	99	O	1	-47%	-7.8%

Note: Quality based on ROE, Earnings Stability, Sales Growth, EBIT Margins, Net Cash Ratio Volatility, Debt Ratios, and Trend Stability of ROE

Source: Bloomberg, Bernstein Quantitative Research Team, Bernstein analysis

EXHIBIT 47: Bernstein AMD Income statement

AMD: Income Statement (\$M)																																		
AMD (Calendar)				Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E																			
Revenue	\$	9,763.0	\$	13,418.4	\$	14,631.5	\$	16,657.0	\$	1,786.0	\$	1,932.0	\$	2,801.0	\$	3,244.0	\$	3,200.0	\$	3,211.8	\$	3,431.1	\$	3,575.5	\$	3,251.1	\$	3,396.0	\$	4,013.7	\$	3,970.7		
COGS	\$	5,416.0	\$	7,092.3	\$	7,507.7	\$	8,275.0	\$	968.0	\$	1,084.0	\$	1,571.0	\$	1,793.0	\$	1,860.4	\$	1,702.0	\$	1,801.7	\$	1,939.3	\$	1,741.5	\$	1,800.2	\$	2,100.2	\$	2,016.8		
Gross Profit	\$	4,347.0	\$	6,326.1	\$	7,123.7	\$	8,382.0	\$	818.0	\$	848.0	\$	1,230.0	\$	1,451.0	\$	1,471.8	\$	1,509.8	\$	1,629.4	\$	1,715.1	\$	1,601.8	\$	1,654.5	\$	1,913.5	\$	1,953.9		
R&D	\$	1,983.0	\$	2,510.0	\$	2,810.0	\$	3,150.0	\$	442.0	\$	460.0	\$	508.0	\$	573.0	\$	590.0	\$	615.0	\$	640.0	\$	665.0	\$	680.0	\$	695.0	\$	710.0	\$	725.0		
SG&A	\$	995.0	\$	1,330.0	\$	1,450.0	\$	1,630.0	\$	199.0	\$	215.0	\$	273.0	\$	308.0	\$	320.0	\$	325.0	\$	335.0	\$	350.0	\$	355.0	\$	360.0	\$	365.0	\$	370.0		
Amortization of Intangibles	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
Licensing (Gain)	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
Other Operating Expense/(Income)	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
Total Operating Expenses	\$	2,978.0	\$	3,840.0	\$	4,260.0	\$	4,780.0	\$	641.0	\$	675.0	\$	781.0	\$	881.0	\$	910.0	\$	940.0	\$	975.0	\$	1,015.0	\$	1,035.0	\$	1,055.0	\$	1,075.0	\$	1,095.0		
Operating Income	\$	1,369.0	\$	2,486.1	\$	2,863.7	\$	3,602.0	\$	177.0	\$	173.0	\$	449.0	\$	570.0	\$	561.8	\$	569.8	\$	654.4	\$	700.1	\$	566.8	\$	599.5	\$	838.5	\$	858.9		
Net Interest Income (Loss)	\$	(42.0)	\$	(60.0)	\$	(60.0)	\$	(60.0)	\$	(9.0)	\$	(13.0)	\$	(11.0)	\$	(9.0)	\$	(15.0)	\$	(15.0)	\$	(15.0)	\$	(15.0)	\$	(15.0)	\$	(15.0)	\$	(15.0)	\$	(15.0)		
Other Non-operating Income (Loss)	\$	(52.0)	\$	-	\$	-	\$	-	\$	-	\$	-	\$	(37.0)	\$	(15.0)	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
EBT before equity investment	\$	1,275.0	\$	2,426.1	\$	2,803.8	\$	3,542.1	\$	168.0	\$	160.0	\$	401.0	\$	546.0	\$	546.8	\$	554.8	\$	639.4	\$	685.1	\$	551.8	\$	584.6	\$	823.5	\$	843.9		
Equity in net income (loss) of investee	\$	5.0	\$	-	\$	-	\$	-	\$	-	\$	1.0	\$	3.0	\$	3.0	\$	-	\$	1.0	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
Income Before Taxes	\$	1,280.0	\$	2,426.1	\$	2,803.8	\$	3,542.1	\$	168.0	\$	161.0	\$	402.0	\$	549.0	\$	546.8	\$	554.8	\$	639.4	\$	685.1	\$	551.8	\$	584.6	\$	823.5	\$	843.9		
Provision for Income Taxes	\$	(1,210.0)	\$	363.9	\$	420.6	\$	531.3	\$	6.0	\$	4.0	\$	12.0	\$	(1,232.0)	\$	82.0	\$	83.2	\$	95.9	\$	102.8	\$	82.8	\$	87.7	\$	123.5	\$	126.6		
Equity in income (loss) of ATMP JV	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
GAAP Net Income	\$	2,490.0	\$	2,062.2	\$	2,383.2	\$	3,010.8	\$	162.0	\$	157.0	\$	390.0	\$	1,781.0	\$	464.8	\$	471.6	\$	543.5	\$	582.3	\$	469.0	\$	496.9	\$	700.0	\$	717.3		
Pro Forma Reconciliation																																		
+Amortization of Intangibles	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-		
Share Based Compensation	\$	268.0	\$	350.0	\$	430.0	\$	480.0	\$	57.0	\$	58.0	\$	75.0	\$	78.0	\$	80.0	\$	85.0	\$	90.0	\$	95.0	\$	100.0	\$	105.0	\$	110.0	\$	115.0		
One Time Benefits	\$	1,184.0	\$	-	\$	-	\$	-	\$	(2.0)	\$	(1.0)	\$	(36.0)	\$	1,223.0	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
Pro-Forma Net Income	\$	1,574.0	\$	2,412.2	\$	2,813.2	\$	3,490.8	\$	221.0	\$	216.0	\$	501.0	\$	636.0	\$	544.8	\$	556.6	\$	633.5	\$	677.3	\$	569.0	\$	601.9	\$	810.0	\$	832.3		
GAAP Basic EPS (\$)	\$	2.10	\$	1.69	\$	1.93	\$	2.42	\$	0.14	\$	0.13	\$	0.33	\$	1.48	\$	0.38	\$	0.39	\$	0.44	\$	0.47	\$	0.38	\$	0.40	\$	0.57	\$	0.58		
GAAP Diluted EPS (\$)	\$	2.06	\$	1.67	\$	1.91	\$	2.39	\$	0.14	\$	0.13	\$	0.32	\$	1.45	\$	0.38	\$	0.38	\$	0.44	\$	0.47	\$	0.38	\$	0.40	\$	0.56	\$	0.57		
PF Basic EPS (\$)	\$	1.33	\$	1.98	\$	2.28	\$	2.80	\$	0.19	\$	0.18	\$	0.42	\$	0.53	\$	0.45	\$	0.46	\$	0.52	\$	0.55	\$	0.46	\$	0.49	\$	0.66	\$	0.67		
PF Diluted EPS (\$)	\$	1.28	\$	1.95	\$	2.24	\$	2.76	\$	0.18	\$	0.18	\$	0.41	\$	0.52	\$	0.44	\$	0.45	\$	0.51	\$	0.54	\$	0.46	\$	0.48	\$	0.64	\$	0.66		
Weighted Average Basic Shares		1,183		1,220		1,235		1,247		1,170		1,174		1,184		1,205		1,212		1,217		1,222		1,227		1,230		1,233		1,236		1,239		
Weighted Average Diluted Shares		1,228		1,240		1,255		1,267		1,224		1,227		1,230		1,232		1,232		1,237		1,242		1,247		1,250		1,253		1,256		1,259		
Margins																																		
		2020E		2021E		2022E		2023E		Q120		Q220		Q320		Q420		Q121E		Q221E		Q321E		Q421E		Q122E		Q222E		Q322E		Q422E		
Gross Margin		44.5%		47.1%		48.7%		50.3%		45.8%		43.9%		43.9%		44.7%		46.0%		47.0%		47.5%		48.0%		49.3%		48.7%		47.7%		49.2%		
PF Gross Margin		44.6%		47.1%		48.7%		50.3%		45.9%		44.0%		43.9%		44.8%		46.0%		47.0%		47.5%		48.0%		49.3%		48.7%		47.7%		49.2%		
GAAP R&D % of Sales		20.3%		18.7%		19.2%		18.9%		24.7%		23.8%		18.1%		17.7%		18.4%		19.1%		18.7%		18.6%		20.9%		20.5%		17.7%		18.3%		
GAAP SG&A % of Sales		10.2%		9.9%		9.9%		9.8%		11.1%		11.1%		9.7%		9.5%		10.0%		10.1%		9.8%		9.8%		10.9%		10.6%		9.1%		9.3%		
GAAP Operating Margin		14.0%		18.5%		19.6%		21.6%		9.9%		9.0%		16.0%		17.6%		17.6%		17.7%		19.1%		19.6%		17.4%		17.7%		20.9%		21.6%		
Tax Rate		-94.5%		15.0%		15.0%		15.0%		3.6%		2.5%		3.0%		-224.4%		15.0%		15.0%		15.0%		15.0%		15.0%		15.0%		15.0%		15.0%		
Pro-Forma Net Margin		16.1%		18.0%		19.2%		21.0%		12.4%		11.2%		17.9%		19.6%		17.0%		17.3%		18.5%		18.9%		17.5%		17.7%		20.2%		21.0%		
GAAP Net Margin		25.5%		15.4%		16.3%		18.1%		9.1%		8.1%		13.9%		54.9%		14.5%		14.7%		15.8%		16.3%		14.4%		14.6%		17.4%		18.1%		
Year-over-Year Change (%)																																		
		2020		2021E		2022E		2023E		Q120		Q220		Q320		Q420		Q121E		Q221E		Q321E		Q421E		Q122E		Q222E		Q322E		Q422E		
Total Revenues		45.0%		37.4%		9.0%		13.8%		40.4%		26.2%		55.5%		52.5%		79.2%		66.2%		22.5%		10.2%		1.6%		5.7%		17.0%		11.1%		
Pro-Forma Gross Margin		189 bp		256 bp		154 bp		163 bp		488 bp		330 bp		69 bp		10 bp		8 bp		301 bp		354 bp		321 bp		328 bp		171 bp		19 bp		124 bp		
GAAP Research and Development		28.2%		26.6%		12.0%		12.1%		18.5%		23.3%		25.1%		45.1%		33.5%		33.7%		26.0%		16.1%		15.3%		13.0%		10.9%		9.0%		
GAAP Selling, General and Administrative		32.7%		33.7%		9.0%		12.4%		17.1%		13.8%		47.6%		49.5%		60.8%		51.2%		22.7%		13.6%		10.9%		10.8%		9.0%		5.7%		
GAAP Operating Expenses		33.1%		28.9%		10.9%		12.2%		18.0%		20.1%		32.1%		46.6%		42.0%		39.3%		24.8%		15.2%		13.7%		12.2%		10.3%		7.9%		
GAAP Operating Margin		465 bp		450 bp		105 bp		205 bp		692 bp		510 bp		570 bp		121 bp		764 bp		879 bp		304 bp		201 bp		(12)bp		(9)bp		182 bp		205 bp		
Pro-Forma Net Margin		489 bp		185 bp		125 bp		173 bp		750 bp		517 bp		573 bp		160 bp		465 bp		615 bp		58 bp		(66)bp		48 bp		39 bp		172 bp		202 bp		
GAAP Net Margin		2,044 bp		(1,014)bp		92 bp		179 bp		781 bp		584 bp		726 bp		4,691 bp		545 bp		656 bp		192 bp		(3,961)bp		(10)bp		(5)bp		160 bp		178 bp		
Pro-Forma Diluted EPS		100.7%		51.0%		15.2%		22.9%		222.0%		131.5%		125.4%		63.0%		144.9%		155.8%		25.2%		5.2%		2.9%		6.8%		26.4%		21.7%		
PF Incl Share based comp Diluted EPS		114.4%		54.4%		14.2%		25.1%		583.7%		199.0%		134.5%		65.4%		175.5%		189.8%		25.3%		3.0%		-0.5%		4.0%		27.4%		22.0%		
Weighted Average Diluted Shares		19.3		11.3		15.0		12.0		29.4		17.4		18.0		16.0		8.0		10.0		12.0		15.0		18.0		16.0		14.0		12.0		

Source: Company reports, Bernstein estimates and analysis



EXHIBIT 48: Bernstein AMD Balance Sheet and Cash flow statement

AMD: Balance Sheet (\$ MM)																				
AMD (Calendar)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q221E	Q322E	Q422E				
Cash & Short Term Investments	\$ 2,290.0	\$ 4,613.0	\$ 7,211.3	\$ 10,526.5	\$ 1,385.0	\$ 1,775.0	\$ 1,771.0	\$ 2,290.0	\$ 2,711.3	\$ 3,200.1	\$ 3,869.1	\$ 4,613.0	\$ 5,128.4	\$ 5,663.3	\$ 6,325.7	\$ 7,211.3				
Accounts Receivable	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 1,691.0	\$ 1,789.0	\$ 2,138.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0	\$ 2,066.0				
Inventories	\$ 1,399.0	\$ 1,550.3	\$ 1,792.7	\$ 1,983.0	\$ 1,056.0	\$ 1,324.0	\$ 1,292.0	\$ 1,399.0	\$ 1,536.2	\$ 1,607.5	\$ 1,601.5	\$ 1,550.3	\$ 1,557.7	\$ 1,644.8	\$ 1,866.8	\$ 1,792.7				
Other Current Assets	\$ 388.0	\$ 388.0	\$ 388.0	\$ 388.0	\$ 258.0	\$ 221.0	\$ 299.0	\$ 388.0	\$ 388.0	\$ 388.0	\$ 388.0	\$ 388.0	\$ 388.0	\$ 388.0	\$ 388.0	\$ 388.0				
Total Current Assets	\$ 6,143.0	\$ 8,617.4	\$ 11,457.9	\$ 14,963.5	\$ 4,390.0	\$ 5,109.0	\$ 5,500.0	\$ 6,143.0	\$ 6,701.4	\$ 7,261.6	\$ 7,924.7	\$ 8,617.4	\$ 9,140.1	\$ 9,762.1	\$ 10,646.5	\$ 11,457.9				
Net PP&E	\$ 641.0	\$ 647.2	\$ 679.1	\$ 741.0	\$ 540.0	\$ 585.0	\$ 595.0	\$ 641.0	\$ 639.3	\$ 637.6	\$ 640.9	\$ 647.2	\$ 644.8	\$ 646.5	\$ 664.6	\$ 679.1				
Investment in GLOBALFOUNDRIES	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Acquisition-related intangible assets, net	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Goodwill	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0	\$ 289.0				
Other Long-Term Assets	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 645.0	\$ 600.0	\$ 639.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0	\$ 1,889.0				
Total Long-Term Assets	\$ 2,819.0	\$ 2,825.2	\$ 2,857.1	\$ 2,919.0	\$ 1,474.0	\$ 1,474.0	\$ 1,523.0	\$ 2,819.0	\$ 2,817.3	\$ 2,815.6	\$ 2,818.9	\$ 2,825.2	\$ 2,822.8	\$ 2,824.5	\$ 2,842.6	\$ 2,857.1				
Total Assets	\$ 8,962.0	\$ 11,442.5	\$ 14,315.0	\$ 17,882.5	\$ 5,864.0	\$ 6,583.0	\$ 7,023.0	\$ 8,962.0	\$ 9,518.8	\$ 10,077.2	\$ 10,743.5	\$ 11,442.5	\$ 11,962.9	\$ 12,586.5	\$ 13,489.1	\$ 14,315.0				
Accounts Payable	\$ 468.0	\$ 536.3	\$ 595.6	\$ 672.3	\$ 653.0	\$ 802.0	\$ 752.0	\$ 468.0	\$ 480.0	\$ 481.8	\$ 514.7	\$ 536.3	\$ 487.7	\$ 509.4	\$ 602.0	\$ 595.6				
Accounts payable to GLOBALFOUNDRIES	\$ 78.0	\$ 78.0	\$ 78.0	\$ 78.0	\$ 187.0	\$ 192.0	\$ 115.0	\$ 78.0	\$ 78.0	\$ 78.0	\$ 78.0	\$ 78.0	\$ 78.0	\$ 78.0	\$ 78.0	\$ 78.0				
Current portion of long-term debt and capital lease obligations	\$ -	\$ -	\$ 312.0	\$ 312.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 312.0	\$ 312.0	\$ 312.0	\$ 312.0				
Other current liabilities	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,145.0	\$ 1,240.0	\$ 1,550.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0	\$ 1,871.0				
Total Current Liabilities	\$ 2,417.0	\$ 2,485.3	\$ 2,856.6	\$ 2,933.3	\$ 1,985.0	\$ 2,434.0	\$ 2,417.0	\$ 2,417.0	\$ 2,429.0	\$ 2,430.8	\$ 2,463.7	\$ 2,485.3	\$ 2,748.7	\$ 2,770.4	\$ 2,863.0	\$ 2,856.6				
Long-Term Debt and Capital Lease	\$ 330.0	\$ 330.0	\$ 18.0	\$ 18.0	\$ 488.0	\$ 490.0	\$ 373.0	\$ 330.0	\$ 330.0	\$ 330.0	\$ 330.0	\$ 330.0	\$ 18.0	\$ 18.0	\$ 18.0	\$ 18.0				
Other Long-Term Liabilities	\$ 378.0	\$ 378.0	\$ 378.0	\$ 378.0	\$ 354.0	\$ 354.0	\$ 366.0	\$ 378.0	\$ 378.0	\$ 378.0	\$ 378.0	\$ 378.0	\$ 378.0	\$ 378.0	\$ 378.0	\$ 378.0				
Total Liabilities	\$ 3,125.0	\$ 3,193.3	\$ 3,252.6	\$ 3,329.3	\$ 2,827.0	\$ 3,278.0	\$ 3,156.0	\$ 3,125.0	\$ 3,137.0	\$ 3,138.8	\$ 3,171.7	\$ 3,193.3	\$ 3,144.7	\$ 3,166.4	\$ 3,259.0	\$ 3,252.6				
Shareholders' Equity	\$ 5,837.0	\$ 8,249.2	\$ 11,062.4	\$ 14,553.2	\$ 3,037.0	\$ 3,305.0	\$ 3,867.0	\$ 5,837.0	\$ 6,381.8	\$ 6,938.4	\$ 7,571.9	\$ 8,249.2	\$ 8,818.2	\$ 9,420.1	\$ 10,230.1	\$ 11,062.4				
Total Liabilities & Shareholders' Equity	\$ 8,962.0	\$ 11,442.5	\$ 14,315.0	\$ 17,882.5	\$ 5,864.0	\$ 6,583.0	\$ 7,023.0	\$ 8,962.0	\$ 9,518.8	\$ 10,077.2	\$ 10,743.5	\$ 11,442.5	\$ 11,962.9	\$ 12,586.5	\$ 13,489.1	\$ 14,315.0				

AMD: Cash Flow Statement (\$MM)																				
AMD (Calendar)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q221E	Q322E	Q422E				
Net Income	\$ 2,490.0	\$ 2,062.2	\$ 2,383.2	\$ 3,010.8	\$ 162.0	\$ 157.0	\$ 390.0	\$ 1,781.0	\$ 464.8	\$ 471.6	\$ 543.5	\$ 582.3	\$ 469.0	\$ 496.9	\$ 700.0	\$ 717.3				
D&A	\$ 312.0	\$ 362.8	\$ 370.5	\$ 396.1	\$ 68.0	\$ 72.0	\$ 82.0	\$ 90.0	\$ 89.7	\$ 90.1	\$ 91.1	\$ 92.0	\$ 91.8	\$ 91.7	\$ 92.2	\$ 94.8				
Other	\$ (1,731.0)	\$ 267.0	\$ 246.9	\$ 366.4	\$ (295.0)	\$ 14.0	\$ (133.0)	\$ (1,317.0)	\$ (45.2)	\$ 15.5	\$ 128.8	\$ 167.9	\$ 44.0	\$ 39.7	\$ (19.4)	\$ 182.7				
Cash Flow From Operations	\$ 1,071.0	\$ 2,692.0	\$ 3,000.6	\$ 3,773.3	\$ (65.0)	\$ 243.0	\$ 339.0	\$ 554.0	\$ 509.3	\$ 577.2	\$ 763.4	\$ 842.2	\$ 604.8	\$ 628.3	\$ 772.7	\$ 994.8				
Capex	\$ (294.0)	\$ (369.0)	\$ (402.4)	\$ (458.1)	\$ (55.0)	\$ (91.0)	\$ (74.0)	\$ (74.0)	\$ (88.0)	\$ (88.3)	\$ (94.4)	\$ (98.3)	\$ (89.4)	\$ (93.4)	\$ (110.4)	\$ (109.2)				
Other	\$ (658.0)	\$ -	\$ -	\$ -	\$ (18.0)	\$ 55.0	\$ (475.0)	\$ (220.0)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Cash Flow From Investments	\$ (952.0)	\$ (369.0)	\$ (402.4)	\$ (458.1)	\$ (73.0)	\$ (36.0)	\$ (549.0)	\$ (294.0)	\$ (88.0)	\$ (88.3)	\$ (94.4)	\$ (98.3)	\$ (89.4)	\$ (93.4)	\$ (110.4)	\$ (109.2)				
Net Stock Issuance (Repurchase)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Change in long-term debt and capital lease obligations	\$ (156.0)	\$ -	\$ -	\$ -	\$ 2.0	\$ 202.0	\$ (317.0)	\$ (43.0)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Other	\$ 162.0	\$ -	\$ -	\$ -	\$ -	\$ 36.0	\$ 48.0	\$ 78.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Cash Flow From Financing	\$ 6.0	\$ -	\$ -	\$ -	\$ 2.0	\$ 238.0	\$ (269.0)	\$ 35.0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Cash, Short, and Long Term Investments at Beginning of Period	1,503.0	2,290.0	4,613.0	7,211.3	1,503.0	1,385.0	1,775.0	1,771.0	2,290.0	2,711.3	3,200.1	3,869.1	4,613.0	5,128.4	5,663.3	6,325.7				
Cash, Short, and Long Term Investments at End of Period	2,290.0	4,613.0	7,211.3	10,526.5	1,385.0	1,775.0	1,771.0	2,290.0	2,711.3	3,200.1	3,869.1	4,613.0	5,128.4	5,663.3	6,325.7	7,211.3				

AMD (Calendar)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q221E	Q322E	Q422E				
Cash Flow from Operations	\$ 1,071.0	\$ 2,692.0	\$ 3,000.6	\$ 3,773.3	\$ (65.0)	\$ 243.0	\$ 339.0	\$ 554.0	\$ 509.3	\$ 577.2	\$ 763.4	\$ 842.2	\$ 604.8	\$ 628.3	\$ 772.7	\$ 994.8				
subtract Capex	\$ (294.0)	\$ (369.0)	\$ (402.4)	\$ (458.1)	\$ (55.0)	\$ (91.0)	\$ (74.0)	\$ (74.0)	\$ (88.0)	\$ (88.3)	\$ (94.4)	\$ (98.3)	\$ (89.4)	\$ (93.4)	\$ (110.4)	\$ (109.2)				
FCF	\$ 777.0	\$ 2,323.0	\$ 2,598.2	\$ 3,315.2	\$ (120.0)	\$ 152.0	\$ 265.0	\$ 480.0	\$ 421.3	\$ 488.8	\$ 669.0	\$ 743.9	\$ 515.4	\$ 534.9	\$ 662.4	\$ 885.6				
Operating Income	\$ 1,369.0	\$ 2,486.1	\$ 2,863.7	\$ 3,602.0	\$ 177.0	\$ 173.0	\$ 449.0	\$ 570.0	\$ 561.8	\$ 569.8	\$ 654.4	\$ 700.1	\$ 566.8	\$ 599.5	\$ 838.5	\$ 858.9				
add back D&A	\$ 312.0	\$ 362.8	\$ 370.5	\$ 396.1	\$ 68.0	\$ 72.0	\$ 82.0	\$ 90.0	\$ 89.7	\$ 90.1	\$ 91.1	\$ 92.0	\$ 91.8	\$ 91.7	\$ 92.2	\$ 94.8				
EBITDA	\$ 1,681.0	\$ 2,848.9	\$ 3,234.2	\$ 3,998.1	\$ 245.0	\$ 245.0	\$ 531.0	\$ 660.0	\$ 651.5	\$ 659.9	\$ 745.5	\$ 792.1	\$ 658.6	\$ 691.3	\$ 930.7	\$ 953.7				

Source: Company reports, Bernstein estimates and analysis

EXHIBIT 49: Bernstein ADI Income Statement

Analog Devices: Income Statement (\$ MM)																
ADI (Fiscal Years)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenue	5,603.1	6,504.2	6,944.0	7,415.3	1,303.6	1,317.1	1,456.1	1,526.3	1,558.5	1,600.5	1,648.4	1,696.9	1,674.3	1,733.0	1,767.4	1,769.3
Non-GAAP Revenue	5,603.1	6,504.2	6,944.0	7,415.3	1,303.6	1,317.1	1,456.1	1,526.3	1,558.5	1,600.5	1,648.4	1,696.9	1,674.3	1,733.0	1,767.4	1,769.3
COGS	1,912.6	2,076.2	2,157.9	2,281.6	455.4	470.4	483.6	503.2	513.1	512.9	521.4	528.8	522.6	538.7	547.8	548.9
Gross Profit	3,690.5	4,428.0	4,786.1	5,133.7	848.1	846.7	972.6	1,023.1	1,045.4	1,087.6	1,127.0	1,168.0	1,151.7	1,194.4	1,219.6	1,220.4
Non-GAAP Gross Profit	3,869.9	4,605.0	4,962.1	5,309.7	893.2	891.1	1,017.8	1,067.8	1,090.4	1,131.6	1,171.0	1,212.0	1,195.7	1,238.4	1,263.6	1,264.4
R&D	1,050.5	1,190.0	1,242.7	1,302.8	257.1	252.4	260.8	280.2	288.2	299.7	305.7	296.5	308.4	308.4	311.4	314.6
SG&A	659.9	759.6	791.4	829.6	199.3	141.8	153.8	165.1	185.3	190.8	194.6	188.8	196.4	196.4	198.3	200.3
Other Operating Expenses (Income)	429.5	431.6	432.0	432.0	107.2	107.1	107.1	108.0	107.6	108.0	108.0	108.0	108.0	108.0	108.0	108.0
Restructuring & Other Charges	52.3	0.4	-	-	11.1	1.3	31.8	8.1	0.4	-	-	-	-	-	-	-
Total Operating Expenses	2,192.2	2,381.6	2,466.1	2,564.4	574.7	502.7	553.5	561.4	581.5	598.5	608.3	593.3	612.7	612.7	617.8	622.9
Non-GAAP R&D+SG&A	1,635.5	1,887.7	1,974.1	2,072.4	411.8	390.3	402.0	431.4	455.5	476.5	485.3	470.3	489.7	489.7	494.8	499.9
Operating Income	1,498.2	2,046.4	2,320.0	2,569.3	273.4	344.0	419.1	461.7	463.9	489.1	518.7	574.7	539.0	581.7	601.8	597.6
Non-GAAP Operating Income	2,234.3	2,717.4	2,988.0	3,237.3	481.4	500.8	615.8	636.4	634.8	655.1	685.7	741.7	706.0	748.7	768.8	764.6
Interest Income	4.3	0.9	0.9	1.0	1.9	1.3	0.5	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Interest Expense	(193.3)	(173.2)	(174.3)	(174.3)	(48.8)	(50.0)	(45.9)	(48.6)	(42.5)	(43.6)	(43.6)	(43.6)	(43.6)	(43.6)	(43.6)	(43.6)
Other Income (Expense), Net	2.4	14.4	-	-	(0.3)	(0.3)	(0.7)	3.7	15.0	(0.6)	-	-	-	-	-	-
Pre-Tax Income	1,311.6	1,888.4	2,146.6	2,395.9	226.2	295.1	373.0	417.3	436.6	445.1	475.3	531.4	495.6	538.3	558.5	554.2
Non-GAAP Pre-Tax Income	2,047.7	2,559.4	2,814.6	3,063.9	434.2	451.8	569.7	592.0	607.6	611.1	642.3	698.4	662.6	705.3	725.5	721.2
Tax provision (Benefit)	90.9	207.8	236.1	263.5	22.3	27.4	10.4	30.8	48.1	49.0	52.3	58.5	54.5	59.2	61.4	61.0
Non-GAAP Tax Provision (Benefit)	223.1	305.1	337.8	367.7	50.6	49.2	65.6	57.7	70.9	73.3	77.1	83.8	79.5	84.6	87.1	86.5
Minority Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Earnings from Disc. Ops & Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Income	1,220.8	1,680.6	1,910.5	2,132.4	203.9	267.7	362.7	386.5	388.5	396.2	423.0	472.9	441.1	479.1	497.0	493.3
Non-GAAP Net Income	1,824.6	2,254.3	2,476.8	2,696.2	383.5	402.6	504.1	534.4	536.7	537.8	565.3	614.6	583.1	620.7	638.4	634.7
EPS, Basic	\$ 3.31	\$ 4.56	\$ 5.26	\$ 5.97	\$ 0.55	\$ 0.73	\$ 0.98	\$ 1.05	\$ 1.05	\$ 1.07	\$ 1.15	\$ 1.29	\$ 1.21	\$ 1.32	\$ 1.37	\$ 1.37
EPS, Diluted	\$ 3.28	\$ 4.51	\$ 5.20	\$ 5.90	\$ 0.55	\$ 0.72	\$ 0.97	\$ 1.04	\$ 1.04	\$ 1.06	\$ 1.14	\$ 1.27	\$ 1.19	\$ 1.30	\$ 1.36	\$ 1.35
EPS, Diluted (ex. One-Time)	\$ 4.91	\$ 6.05	\$ 6.74	\$ 7.47	\$1.03	\$1.08	\$1.36	\$1.44	\$1.44	\$1.44	\$1.52	\$1.66	\$1.58	\$1.69	\$1.74	\$1.74
Shares Outstanding, Basic	369	368	363	357	368	368	369	369	369	369	368	367	366	364	363	361
Shares Outstanding, Diluted	372	372	367	361	372	371	372	372	373	373	372	371	370	368	367	365
Margins	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Gross Margin	65.9%	68.1%	68.9%	69.2%	65.1%	64.3%	66.8%	67.0%	67.1%	68.0%	68.4%	68.8%	68.8%	68.9%	69.0%	69.0%
Gross Margin Excl Acq Charges	69.1%	70.8%	71.5%	71.6%	68.5%	67.7%	69.9%	69.962%	70.0%	70.7%	71.0%	71.4%	71.4%	71.5%	71.5%	71.5%
% R&D	18.7%	18.3%	17.9%	17.6%	19.7%	19.2%	17.9%	18.4%	18.5%	18.7%	18.5%	17.5%	18.4%	17.8%	17.6%	17.8%
% SG&A	11.8%	11.7%	11.4%	11.2%	15.3%	10.8%	10.6%	10.8%	11.9%	11.9%	11.8%	11.1%	11.7%	11.3%	11.2%	11.3%
% Other Op. Expenses	7.7%	6.6%	6.2%	5.8%	8.2%	8.1%	7.4%	7.1%	6.9%	6.7%	6.6%	6.4%	6.5%	6.2%	6.1%	6.1%
% Non-GAAP R&D+SG&A	29.2%	29.0%	28.4%	27.9%	31.6%	29.6%	27.6%	28.3%	29.2%	29.8%	29.4%	27.7%	29.2%	28.3%	28.0%	28.3%
GAAP Operating Margin	26.7%	31.5%	33.4%	34.6%	21.0%	26.1%	28.8%	30.2%	29.8%	30.6%	31.5%	33.9%	32.2%	33.6%	34.1%	33.8%
Non-GAAP Operating Margin	39.9%	41.8%	43.0%	43.7%	36.9%	38.0%	42.3%	41.7%	40.7%	40.9%	41.6%	43.7%	42.2%	43.2%	43.5%	43.2%
Tax Rate	6.9%	11.0%	11.0%	11.0%	9.9%	9.3%	2.8%	7.4%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
Non-GAAP Tax Rate	10.9%	11.9%	12.0%	12.0%	11.7%	10.9%	11.5%	9.7%	11.7%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
Non-GAAP Net Income Margin	32.6%	34.7%	35.7%	36.4%	29.4%	30.6%	34.6%	35.0%	34.4%	33.6%	34.3%	36.2%	34.8%	35.8%	36.1%	35.9%
Year over Year Growth (%)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenues	-6.5%	16.1%	6.8%	6.8%	-15.4%	-13.7%	-1.6%	5.8%	19.6%	21.5%	13.2%	11.2%	7.4%	8.3%	7.2%	4.3%
Non-GAAP Operating Income	-8.2%	21.6%	10.0%	8.3%	-24.2%	-21.0%	1.9%	13.6%	31.9%	30.8%	11.4%	16.6%	11.2%	14.3%	12.1%	3.1%
Non-GAAP Net Income	-5.0%	23.6%	9.9%	8.9%	-22.8%	-21.0%	7.2%	20.5%	39.9%	33.6%	12.1%	15.0%	8.6%	15.4%	12.9%	3.3%
Shares Outstanding, Diluted	-0.2%	0.1%	-1.4%	-1.7%	-0.1%	-0.5%	-0.3%	-0.1%	0.2%	0.5%	0.0%	-0.3%	-0.9%	-1.4%	-1.5%	-1.6%
Non-GAAP EPS, Diluted	-4.7%	23.4%	11.4%	10.7%	-22.7%	-20.6%	7.5%	20.6%	39.6%	32.9%	12.1%	15.4%	9.7%	17.0%	14.7%	5.0%

Source: Company Reports, Bernstein estimates and analysis

EXHIBIT 50: **Bernstein ADI Balance Sheet and Cash Flow Statement**

Analog Devices: Balance Sheet (\$ MM)																
ADI (Fiscal Years)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash & Short Term Investments	1,055.9	1,179.1	1,214.2	1,242.5	654.4	784.9	1,090.3	1,055.9	1,048.1	1,077.4	1,102.7	1,179.1	1,165.3	1,161.3	1,184.0	1,214.2
Accounts Receivable	737.5	827.0	827.0	827.0	584.4	588.2	681.7	737.5	827.0	827.0	827.0	827.0	827.0	827.0	827.0	827.0
Inventories	608.3	646.3	670.9	718.5	588.5	590.3	612.6	608.3	618.6	626.9	637.2	646.3	638.7	658.4	669.5	670.9
Other Current Assets	116.0	131.1	131.1	131.1	83.9	87.8	100.6	116.0	131.1	131.1	131.1	131.1	131.1	131.1	131.1	131.1
<b>Total Current Assets</b>	<b>2,517.7</b>	<b>2,783.4</b>	<b>2,843.1</b>	<b>2,919.0</b>	<b>1,911.2</b>	<b>2,051.3</b>	<b>2,485.2</b>	<b>2,517.7</b>	<b>2,624.7</b>	<b>2,662.3</b>	<b>2,698.0</b>	<b>2,783.4</b>	<b>2,762.1</b>	<b>2,777.7</b>	<b>2,811.5</b>	<b>2,843.1</b>
Net PP&E	1,120.6	1,204.6	1,240.0	1,286.6	1,206.8	1,189.3	1,134.2	1,120.6	1,129.2	1,153.3	1,178.5	1,204.6	1,211.5	1,220.6	1,230.6	1,240.0
Goodwill	12,278.4	12,282.8	12,282.8	12,282.8	12,257.1	12,253.7	12,273.8	12,278.4	12,282.8	12,282.8	12,282.8	12,282.8	12,282.8	12,282.8	12,282.8	12,282.8
Other Long-Term Assets	5,551.9	4,967.7	4,393.7	3,846.3	6,001.8	5,856.6	5,706.3	5,551.9	5,403.4	5,258.2	5,112.9	4,967.7	4,824.2	4,680.7	4,537.2	4,393.7
<b>Total Long-Term Assets</b>	<b>18,950.9</b>	<b>18,455.0</b>	<b>17,916.5</b>	<b>17,415.7</b>	<b>19,465.6</b>	<b>19,299.6</b>	<b>19,114.3</b>	<b>18,950.9</b>	<b>18,815.4</b>	<b>18,694.2</b>	<b>18,574.2</b>	<b>18,455.0</b>	<b>18,318.4</b>	<b>18,184.0</b>	<b>18,050.5</b>	<b>17,916.5</b>
<b>Total Assets</b>	<b>21,468.6</b>	<b>21,238.4</b>	<b>20,759.6</b>	<b>20,334.7</b>	<b>21,376.8</b>	<b>21,350.9</b>	<b>21,599.6</b>	<b>21,468.6</b>	<b>21,440.1</b>	<b>21,356.6</b>	<b>21,272.2</b>	<b>21,238.4</b>	<b>21,080.5</b>	<b>20,961.7</b>	<b>20,862.0</b>	<b>20,759.6</b>
Accounts Payable	227.3	227.4	227.4	227.4	211.7	194.2	215.9	227.3	227.4	227.4	227.4	227.4	227.4	227.4	227.4	227.4
Short Term Debt	-	400.0	400.0	400.0	748.5	448.9	449.3	-	399.2	400.0	400.0	400.0	400.0	400.0	400.0	400.0
Other Current Liabilities	1,137.7	1,050.1	1,050.1	1,050.1	810.4	938.8	1,022.6	1,137.7	1,050.1	1,050.1	1,050.1	1,050.1	1,050.1	1,050.1	1,050.1	1,050.1
<b>Total Current Liabilities</b>	<b>1,365.0</b>	<b>1,677.5</b>	<b>1,677.5</b>	<b>1,677.5</b>	<b>1,770.5</b>	<b>1,582.0</b>	<b>1,687.8</b>	<b>1,365.0</b>	<b>1,676.8</b>	<b>1,677.5</b>	<b>1,677.5</b>	<b>1,677.5</b>	<b>1,677.5</b>	<b>1,677.5</b>	<b>1,677.5</b>	<b>1,677.5</b>
Long Term Debt	5,145.1	4,775.0	4,775.0	4,775.0	4,745.3	5,142.2	5,143.7	5,145.1	4,747.3	4,775.0	4,775.0	4,775.0	4,775.0	4,775.0	4,775.0	4,775.0
Other Long Term Liabilities	2,960.6	2,928.3	2,928.3	2,928.3	3,171.5	3,035.9	2,990.6	2,960.6	2,928.3	2,928.3	2,928.3	2,928.3	2,928.3	2,928.3	2,928.3	2,928.3
<b>Total Liabilities</b>	<b>9,470.7</b>	<b>9,380.8</b>	<b>9,380.8</b>	<b>9,380.8</b>	<b>9,687.3</b>	<b>9,760.1</b>	<b>9,822.0</b>	<b>9,470.7</b>	<b>9,352.4</b>	<b>9,380.8</b>	<b>9,380.8</b>	<b>9,380.8</b>	<b>9,380.8</b>	<b>9,380.8</b>	<b>9,380.8</b>	<b>9,380.8</b>
<b>Shareholders' Equity</b>	<b>11,997.9</b>	<b>11,857.6</b>	<b>11,378.8</b>	<b>10,953.9</b>	<b>11,689.5</b>	<b>11,590.9</b>	<b>11,777.6</b>	<b>11,997.9</b>	<b>12,087.7</b>	<b>11,975.8</b>	<b>11,891.4</b>	<b>11,857.6</b>	<b>11,699.7</b>	<b>11,580.9</b>	<b>11,481.2</b>	<b>11,378.8</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>21,468.6</b>	<b>21,238.4</b>	<b>20,759.6</b>	<b>20,334.7</b>	<b>21,376.8</b>	<b>21,350.9</b>	<b>21,599.6</b>	<b>21,468.6</b>	<b>21,440.1</b>	<b>21,356.6</b>	<b>21,272.2</b>	<b>21,238.4</b>	<b>21,080.5</b>	<b>20,961.7</b>	<b>20,862.0</b>	<b>20,759.6</b>

Analog Devices: Cash Flow Statement (\$MM)																
ADI (Fiscal Years)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Net Income	1,220.8	1,680.6	1,910.5	2,132.4	203.9	267.7	362.7	386.5	388.5	396.2	423.0	472.9	441.1	479.1	497.0	493.3
Depreciation & Amortization	810.9	809.0	816.2	797.4	203.9	203.3	201.5	202.2	201.4	201.2	202.5	204.1	203.5	203.7	204.2	204.8
Other	(22.9)	(79.7)	122.0	99.0	(58.2)	(42.0)	(6.9)	84.1	(161.9)	28.4	26.2	27.6	44.2	17.0	25.5	35.3
<b>Cash Flow from Operations</b>	<b>2,008.7</b>	<b>2,410.0</b>	<b>2,848.7</b>	<b>3,028.8</b>	<b>349.6</b>	<b>429.0</b>	<b>557.2</b>	<b>672.9</b>	<b>427.9</b>	<b>625.7</b>	<b>651.8</b>	<b>704.6</b>	<b>688.8</b>	<b>699.8</b>	<b>726.8</b>	<b>733.3</b>
Capex	(165.7)	(314.7)	(277.8)	(296.6)	(54.8)	(60.2)	(20.8)	(29.9)	(67.4)	(80.0)	(82.4)	(84.8)	(67.0)	(69.3)	(70.7)	(70.8)
Other	(14.8)	(7.7)	-	-	0.1	(1.4)	(12.7)	(0.9)	(7.7)	-	-	-	-	-	-	-
<b>Cash Flow from Investments</b>	<b>(180.5)</b>	<b>(322.4)</b>	<b>(277.8)</b>	<b>(296.6)</b>	<b>(54.7)</b>	<b>(61.6)</b>	<b>(33.5)</b>	<b>(30.7)</b>	<b>(75.1)</b>	<b>(80.0)</b>	<b>(82.4)</b>	<b>(84.8)</b>	<b>(67.0)</b>	<b>(69.3)</b>	<b>(70.7)</b>	<b>(70.8)</b>
Repurchase of Common Stock	(244.5)	(1,057.1)	(1,500.0)	(1,600.0)	(106.0)	(113.6)	(17.7)	(7.2)	(157.1)	(300.0)	(300.0)	(300.0)	(375.0)	(375.0)	(375.0)	(375.0)
Dividends	(886.2)	(991.4)	(1,075.8)	(1,143.8)	(199.2)	(228.6)	(228.8)	(229.6)	(229.2)	(254.8)	(254.1)	(253.4)	(270.6)	(269.5)	(268.4)	(267.3)
Other	(290.0)	80.8	40.0	40.0	15.6	106.5	27.3	(439.3)	22.4	38.4	10.0	10.0	10.0	10.0	10.0	10.0
<b>Cash Flow from Financing</b>	<b>(1,420.6)</b>	<b>(1,967.6)</b>	<b>(2,535.8)</b>	<b>(2,703.8)</b>	<b>(289.6)</b>	<b>(235.7)</b>	<b>(219.2)</b>	<b>(676.2)</b>	<b>(363.8)</b>	<b>(516.3)</b>	<b>(544.1)</b>	<b>(543.4)</b>	<b>(635.6)</b>	<b>(634.5)</b>	<b>(633.4)</b>	<b>(632.3)</b>
FX Adjustments	(0.7)	3.2	-	-	0.7	(1.3)	0.8	(0.9)	3.2	-	-	-	-	-	-	-
<b>Cash at Beginning of Period</b>	<b>648.3</b>	<b>1,055.3</b>	<b>1,178.5</b>	<b>1,213.6</b>	<b>648.3</b>	<b>654.4</b>	<b>785.0</b>	<b>1,090.3</b>	<b>1,055.3</b>	<b>1,047.5</b>	<b>1,076.9</b>	<b>1,102.2</b>	<b>1,178.5</b>	<b>1,164.8</b>	<b>1,160.7</b>	<b>1,183.4</b>
<b>Cash at End of Period</b>	<b>1,178.5</b>	<b>1,178.5</b>	<b>1,213.6</b>	<b>1,241.9</b>	<b>654.4</b>	<b>785.0</b>	<b>1,090.3</b>	<b>1,055.3</b>	<b>1,047.5</b>	<b>1,076.9</b>	<b>1,102.2</b>	<b>1,178.5</b>	<b>1,164.8</b>	<b>1,160.7</b>	<b>1,183.4</b>	<b>1,213.6</b>

ADI (Fiscal Years)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash Flow from Operations	2,008.7	2,410.0	2,848.7	3,028.8	349.6	429.0	557.2	672.9	427.9	625.7	651.8	704.6	688.8	699.8	726.8	733.3
subtract Capex	(165.7)	(314.7)	(277.8)	(296.6)	(54.8)	(60.2)	(20.8)	(29.9)	(67.4)	(80.0)	(82.4)	(84.8)	(67.0)	(69.3)	(70.7)	(70.8)
<b>FCF</b>	<b>1,843.1</b>	<b>2,095.3</b>	<b>2,570.9</b>	<b>2,732.2</b>	<b>294.8</b>	<b>368.9</b>	<b>536.4</b>	<b>643.0</b>	<b>360.6</b>	<b>545.7</b>	<b>569.3</b>	<b>619.7</b>	<b>621.9</b>	<b>630.5</b>	<b>656.1</b>	<b>662.5</b>
Non-GAAP Operating Income	2,234.3	2,717.4	2,988.0	3,237.3	481.4	500.8	615.8	636.4	634.8	655.1	685.7	741.7	706.0	748.7	768.8	764.6
Add back Dep / Other	233.8	228.3	242.3	250.0	59.9	59.3	57.6	57.1	56.3	55.9	57.2	58.8	60.0	60.2	60.7	61.3
<b>EBITDA</b>	<b>2,468.1</b>	<b>2,945.6</b>	<b>3,230.3</b>	<b>3,487.3</b>	<b>541.2</b>	<b>560.1</b>	<b>673.4</b>	<b>693.5</b>	<b>691.1</b>	<b>711.0</b>	<b>742.9</b>	<b>800.6</b>	<b>766.0</b>	<b>808.9</b>	<b>829.6</b>	<b>825.8</b>
<b>Leverage (Net Debt / TTM EBITDA)</b>	<b>1.7</b>	<b>1.4</b>	<b>1.2</b>	<b>1.1</b>	<b>1.9</b>	<b>2.0</b>	<b>1.9</b>	<b>1.7</b>	<b>1.6</b>	<b>1.5</b>	<b>1.4</b>	<b>1.4</b>	<b>1.3</b>	<b>1.3</b>	<b>1.2</b>	<b>1.2</b>

Source: Company Reports, Bernstein estimates and analysis

EXHIBIT 51: **Bernstein AVGO Income Statement**

**AVGO: Income Statement**

Fiscal Quarter	2020	2021E	2022E	2023E
Non-GAAP Revenue	\$23,887.5	\$26,818.5	\$28,278.5	\$29,713.0
COGS	6,335.5	7,076.7	7,355.1	7,618.7
Non-GAAP Gross Profit	\$17,552.0	\$19,741.8	\$20,923.4	\$22,094.3
R&D	3,535.0	3,542.0	3,575.0	3,615.0
SG&A	1,078.0	864.0	900.0	940.0
Other	—	—	—	—
Total Operating Expenses	4,613.0	4,406.0	4,475.0	4,555.0
Non-GAAP Operating Income	\$12,939.0	\$15,335.8	\$16,448.4	\$17,539.3
Interest Expense	(1,608.0)	(1,574.3)	(1,552.1)	(1,532.3)
Other Non-Operating Inc. (Exp.)	25.0	(4.0)	—	—
Non-GAAP Income from continuing operations before income taxes	\$11,356.0	\$13,757.5	\$14,896.3	\$16,007.1
Provision for Income Taxes (Benefit)	1,363.0	1,650.5	1,862.0	2,000.9
Non-GAAP Net Income	\$9,993.0	\$12,106.9	\$13,034.3	\$14,006.2
GAAP Basic Share Count	402	407	408	422
GAAP Weighted Average Shares - Diluted	421	428	429	444
Non-GAAP Share Adjustment	30	22	22	9
Non-GAAP Weighted Average Shares - Diluted	451	450	451	453
GAAP Basic EPS (\$)	\$6.63	\$13.06	\$19.88	\$24.77
GAAP Diluted EPS (\$)	\$6.29	\$12.42	\$18.90	\$23.57
Non-GAAP Diluted EPS (\$)	\$22.15	\$26.90	\$28.88	\$30.90
Non-GAAP Diluted EPS incl SBC (\$)	\$17.77	\$22.92	\$24.80	\$26.70

**Pro Forma Reconciliation**

GAAP Gross Profit	\$13,516.0	\$16,100.8	\$18,398.4	\$20,349.3
GAAP Opex	\$9,502.0	\$8,957.0	\$8,772.5	\$7,952.0
GAAP Operating Income	\$4,014.0	\$7,296.8	\$10,229.4	\$12,397.3
GAAP Net Income	\$2,960.0	\$5,615.9	\$8,415.3	\$10,464.2
GAAP Net Income Attributable to Common Shares	\$2,960.0	\$5,615.9	\$8,415.3	\$10,464.2

**Growth and Non-GAAP Margins**

	2020	2021E	2022E	2023E
QoQ Revenue Growth				
YoY Revenue Growth	5.7%	12.3%	5.4%	5.1%
YoY EPS Growth	4.0%	21.5%	7.4%	7.0%
Non-GAAP Gross Margin	73.5%	73.6%	74.0%	74.4%
R&D as % of Sales	14.8%	13.2%	12.6%	12.2%
SG&A as % of Sales	4.5%	3.2%	3.2%	3.2%
Other Opex as % of Sales	0.0%	0.0%	0.0%	0.0%
Opex as % of Sales	19.3%	16.4%	15.8%	15.3%
Non-GAAP Operating Margin	54.2%	57.2%	58.2%	59.0%
Non-GAAP Tax Rate	12.0%	12.0%	12.5%	12.5%
Non-GAAP Net Margin	41.8%	45.1%	46.1%	47.1%

Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
\$5,858.0	\$5,742.0	\$5,820.5	\$6,467.0	\$6,655.0	\$6,502.0	\$6,520.8	\$7,140.6	\$7,017.8	\$6,888.1	\$6,949.5	\$7,423.1
1,581.0	1,546.0	1,499.5	1,709.0	1,779.0	1,710.0	1,695.4	1,892.3	1,824.6	1,756.5	1,806.9	1,967.1
\$4,277.0	\$4,196.0	\$4,321.0	\$4,758.0	\$4,876.0	\$4,792.0	\$4,825.4	\$5,248.4	\$5,193.2	\$5,131.6	\$5,142.6	\$5,455.9
891.0	891.0	890.0	863.0	882.0	890.0	885.0	885.0	895.0	900.0	890.0	890.0
302.0	274.0	250.0	252.0	214.0	220.0	215.0	215.0	225.0	225.0	225.0	225.0
—	—	—	—	—	—	—	—	—	—	—	—
1,193.0	1,165.0	1,140.0	1,115.0	1,096.0	1,110.0	1,100.0	1,100.0	1,120.0	1,125.0	1,115.0	1,115.0
\$3,084.0	\$3,031.0	\$3,181.0	\$3,643.0	\$3,780.0	\$3,682.0	\$3,725.4	\$4,148.4	\$4,073.2	\$4,006.6	\$4,027.6	\$4,340.9
(401.0)	(394.0)	(409.0)	(404.0)	(398.0)	(393.3)	(392.1)	(390.9)	(389.8)	(388.7)	(387.4)	(386.2)
10.0	3.0	(5.0)	17.0	(4.0)	—	—	—	—	—	—	—
\$2,693.0	\$2,640.0	\$2,767.0	\$3,256.0	\$3,378.0	\$3,288.7	\$3,333.3	\$3,757.5	\$3,683.4	\$3,618.0	\$3,640.2	\$3,954.7
323.0	317.0	332.0	391.0	405.0	394.6	400.0	450.9	460.4	452.2	455.0	494.3
\$2,370.0	\$2,323.0	\$2,435.0	\$2,865.0	\$2,973.0	\$2,894.1	\$2,933.3	\$3,306.6	\$3,223.0	\$3,165.7	\$3,185.2	\$3,460.4
398	401	403	405	407	407	407	407	408	408	409	409
420	417	422	426	428	428	428	428	429	429	430	430
31	35	29	25	22	22	22	22	22	22	22	22
451	452	451	451	450	450	450	450	451	451	452	452
\$0.79	\$1.23	\$1.53	\$3.09	\$3.20	\$2.89	\$3.03	\$3.94	\$4.91	\$4.70	\$4.80	\$5.47
\$0.74	\$1.17	\$1.45	\$2.93	\$3.04	\$2.75	\$2.88	\$3.75	\$4.67	\$4.47	\$4.57	\$5.20
\$5.25	\$5.14	\$5.40	\$6.35	\$6.61	\$6.43	\$6.52	\$7.35	\$7.15	\$7.02	\$7.05	\$7.66
\$4.05	\$4.00	\$4.37	\$5.36	\$5.62	\$5.41	\$5.53	\$6.36	\$6.14	\$5.96	\$6.05	\$6.65

\$3,264.0	\$3,189.0	\$3,316.0	\$3,747.0	\$3,952.0	\$3,883.0	\$3,921.4	\$4,344.4	\$4,563.2	\$4,496.6	\$4,512.6	\$4,825.9
\$2,550.0	\$2,423.0	\$2,308.0	\$2,221.0	\$2,115.0	\$2,243.0	\$2,223.0	\$2,223.0	\$2,038.5	\$2,063.5	\$2,033.5	\$2,033.5
\$714.0	\$766.0	\$1,008.0	\$1,526.0	\$1,837.0	\$1,640.0	\$1,698.4	\$2,121.4	\$2,524.7	\$2,433.1	\$2,479.1	\$2,792.4
\$385.0	\$563.0	\$688.0	\$1,324.0	\$1,378.0	\$1,252.1	\$1,306.3	\$1,679.6	\$2,074.5	\$1,992.2	\$2,036.7	\$2,311.9
\$385.0	\$563.0	\$688.0	\$1,324.0	\$1,378.0	\$1,252.1	\$1,306.3	\$1,679.6	\$2,074.5	\$1,992.2	\$2,036.7	\$2,311.9

Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
1.4%	(2.0%)	1.4%	11.1%	2.9%	(2.3%)	0.3%	9.5%	(1.7%)	(1.8%)	0.9%	6.8%
1.2%	4.1%	5.5%	12.0%	13.6%	13.2%	12.0%	10.4%	5.5%	5.9%	6.6%	4.0%
(5.3%)	(1.4%)	4.6%	18.0%	25.7%	25.1%	20.7%	15.7%	8.3%	9.1%	8.2%	4.2%
73.0%	73.1%	74.2%	73.6%	73.3%	73.7%	74.0%	73.5%	74.0%	74.5%	74.0%	73.5%
15.2%	15.5%	15.3%	13.3%	13.3%	13.7%	13.6%	12.4%	12.8%	13.1%	12.8%	12.0%
5.2%	4.8%	4.3%	3.9%	3.2%	3.4%	3.3%	3.0%	3.2%	3.3%	3.2%	3.0%
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
20.4%	20.3%	19.6%	17.2%	16.5%	17.1%	16.9%	15.4%	16.0%	16.3%	16.0%	15.0%
52.6%	52.8%	54.7%	56.3%	56.8%	56.6%	57.1%	58.1%	58.0%	58.2%	58.0%	58.5%
12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.5%	12.5%	12.5%	12.5%
40.5%	40.5%	41.8%	44.3%	44.7%	44.5%	45.0%	46.3%	45.9%	46.0%	45.8%	46.6%

Source: Company Reports, Bernstein Estimates and Analysis

EXHIBIT 52: **Bernstein AVGO Balance Sheet**

**AVGO: Balance Sheet**

Fiscal Quarter	2020	2021E	2022E	2023E
<b>Assets</b>				
<b>Current Assets:</b>				
Cash and cash equivalents	\$7,618	\$15,441	\$22,990	\$31,219
Short-term investments	\$0	\$0	\$0	\$0
Net accounts receivable	\$2,297	\$2,642	\$2,969	\$3,104
Inventory	\$1,003	\$1,144	\$1,189	\$1,243
Assets held-for-sale	\$0	\$0	\$0	\$0
Other current assets	\$977	\$1,272	\$1,272	\$1,272
<b>Total Current Assets</b>	<b>\$11,895</b>	<b>\$20,499</b>	<b>\$28,420</b>	<b>\$36,838</b>
<b>Non Current Assets:</b>				
Property, plant and equipment, net	\$2,509	\$2,401	\$2,322	\$2,281
Goodwill	\$43,447	\$43,457	\$43,457	\$43,457
Intangible assets, net	\$16,782	\$10,673	\$6,299	\$3,062
Other long-term assets	\$1,300	\$1,300	\$1,300	\$1,300
<b>Total Non Current Assets</b>	<b>\$64,038</b>	<b>\$57,831</b>	<b>\$53,378</b>	<b>\$50,100</b>
<b>Total Assets</b>	<b>\$75,933</b>	<b>\$78,330</b>	<b>\$81,798</b>	<b>\$86,939</b>
<b>Liabilities and equity</b>				
<b>Current liabilities:</b>				
Accounts payable	\$836	\$946	\$984	\$1,029
Employee compensation and benefits	\$877	\$794	\$794	\$794
Other current liabilities	\$3,831	\$4,438	\$4,438	\$4,438
Current portion of long term debt	\$827	\$864	\$864	\$864
<b>Total current liabilities</b>	<b>\$6,371</b>	<b>\$7,042</b>	<b>\$7,080</b>	<b>\$7,125</b>
<b>Long-term liabilities:</b>				
Long-term debt	\$40,235	\$41,110	\$41,110	\$41,110
Convertible notes payable to related party - non current	\$0	\$0	\$0	\$0
Pension and post-retirement benefit obligations	\$0	\$0	\$0	\$0
Other long-term liabilities	\$5,426	\$5,211	\$5,211	\$5,211
<b>Total non-current liabilities</b>	<b>\$45,661</b>	<b>\$46,321</b>	<b>\$46,321</b>	<b>\$46,321</b>
<b>Total liabilities</b>	<b>\$52,032</b>	<b>\$53,363</b>	<b>\$53,401</b>	<b>\$53,446</b>
<b>Shareholders' equity:</b>				
Ordinary shares	\$23,982	\$25,430	\$27,275	\$29,180
Retained earnings	\$0	(\$382)	\$1,202	\$4,393
Accumulated other comprehensive loss	(\$108)	(\$107)	(\$107)	(\$107)
Noncontrolling interest	\$0	\$0	\$0	\$0
<b>Total Shareholders' equity</b>	<b>\$23,874</b>	<b>\$24,939</b>	<b>\$28,368</b>	<b>\$33,464</b>
<b>Total liabilities and shareholders' equity</b>	<b>\$75,933</b>	<b>\$78,330</b>	<b>\$81,798</b>	<b>\$86,939</b>

Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
\$6,444	\$9,207	\$8,857	\$7,618	\$9,552	\$11,664	\$13,484	\$15,441	\$17,066	\$19,035	\$20,934	\$22,990
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$3,651	\$3,211	\$2,684	\$2,297	\$2,524	\$2,276	\$2,347	\$2,642	\$2,667	\$2,686	\$2,780	\$2,969
\$944	\$953	\$1,081	\$1,003	\$952	\$977	\$1,006	\$1,144	\$1,103	\$1,062	\$1,092	\$1,189
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,070	\$851	\$1,059	\$977	\$1,272	\$1,272	\$1,272	\$1,272	\$1,272	\$1,272	\$1,272	\$1,272
<b>\$12,109</b>	<b>\$14,222</b>	<b>\$13,681</b>	<b>\$11,895</b>	<b>\$14,300</b>	<b>\$16,189</b>	<b>\$18,110</b>	<b>\$20,499</b>	<b>\$22,108</b>	<b>\$24,055</b>	<b>\$26,078</b>	<b>\$28,420</b>
\$2,616	\$2,618	\$2,567	\$2,509	\$2,496	\$2,460	\$2,426	\$2,401	\$2,379	\$2,355	\$2,334	\$2,322
\$43,472	\$43,457	\$43,447	\$43,447	\$43,457	\$43,457	\$43,457	\$43,457	\$43,457	\$43,457	\$43,457	\$43,457
\$21,465	\$19,909	\$18,357	\$16,782	\$15,419	\$13,837	\$12,255	\$10,673	\$9,580	\$8,486	\$7,393	\$6,299
\$1,344	\$1,342	\$1,246	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300
<b>\$68,897</b>	<b>\$67,326</b>	<b>\$65,617</b>	<b>\$64,038</b>	<b>\$62,672</b>	<b>\$61,054</b>	<b>\$59,438</b>	<b>\$57,831</b>	<b>\$56,716</b>	<b>\$55,598</b>	<b>\$54,483</b>	<b>\$53,378</b>
<b>\$81,006</b>	<b>\$81,548</b>	<b>\$79,298</b>	<b>\$75,933</b>	<b>\$76,972</b>	<b>\$77,243</b>	<b>\$77,547</b>	<b>\$78,330</b>	<b>\$78,823</b>	<b>\$79,653</b>	<b>\$80,561</b>	<b>\$81,798</b>
\$985	\$1,230	\$1,092	\$836	\$898	\$855	\$848	\$946	\$914	\$879	\$904	\$984
\$435	\$494	\$732	\$877	\$494	\$594	\$694	\$794	\$494	\$594	\$694	\$794
\$4,008	\$4,058	\$4,056	\$3,831	\$4,438	\$4,438	\$4,438	\$4,438	\$4,438	\$4,438	\$4,438	\$4,438
\$2,311	\$819	\$822	\$827	\$864	\$864	\$864	\$864	\$864	\$864	\$864	\$864
<b>\$7,739</b>	<b>\$6,601</b>	<b>\$6,702</b>	<b>\$6,371</b>	<b>\$6,694</b>	<b>\$6,751</b>	<b>\$6,844</b>	<b>\$7,042</b>	<b>\$6,710</b>	<b>\$6,775</b>	<b>\$6,900</b>	<b>\$7,080</b>
\$42,407	\$45,044	\$43,201	\$40,235	\$41,068	\$41,110	\$41,110	\$41,110	\$41,110	\$41,110	\$41,110	\$41,110
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$6,464	\$5,933	\$5,810	\$5,426	\$5,211	\$5,211	\$5,211	\$5,211	\$5,211	\$5,211	\$5,211	\$5,211
<b>\$48,871</b>	<b>\$50,977</b>	<b>\$49,011</b>	<b>\$45,661</b>	<b>\$46,279</b>	<b>\$46,321</b>	<b>\$46,321</b>	<b>\$46,321</b>	<b>\$46,321</b>	<b>\$46,321</b>	<b>\$46,321</b>	<b>\$46,321</b>
<b>\$56,610</b>	<b>\$57,578</b>	<b>\$55,713</b>	<b>\$52,032</b>	<b>\$52,973</b>	<b>\$53,072</b>	<b>\$53,165</b>	<b>\$53,363</b>	<b>\$53,031</b>	<b>\$53,096</b>	<b>\$53,221</b>	<b>\$53,401</b>
\$24,500	\$24,073	\$23,688	\$23,982	\$24,080	\$24,540	\$24,985	\$25,430	\$25,885	\$26,365	\$26,820	\$27,275
\$0	\$0	\$0	\$0	\$0	(\$288)	(\$522)	(\$382)	(\$12)	\$273	\$601	\$1,202
(\$132)	(\$131)	(\$131)	(\$108)	(\$107)	(\$107)	(\$107)	(\$107)	(\$107)	(\$107)	(\$107)	(\$107)
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>\$24,368</b>	<b>\$23,942</b>	<b>\$23,557</b>	<b>\$23,874</b>	<b>\$23,973</b>	<b>\$24,145</b>	<b>\$24,354</b>	<b>\$24,939</b>	<b>\$25,764</b>	<b>\$26,529</b>	<b>\$27,312</b>	<b>\$28,368</b>
<b>\$81,006</b>	<b>\$81,548</b>	<b>\$79,298</b>	<b>\$75,933</b>	<b>\$76,972</b>	<b>\$77,243</b>	<b>\$77,547</b>	<b>\$78,330</b>	<b>\$78,823</b>	<b>\$79,653</b>	<b>\$80,561</b>	<b>\$81,798</b>

Source: Company Reports, Bernstein Estimates and Analysis

EXHIBIT 53: **Bernstein AVGO Cash Flow Statement**

**AVGO: Cash Flow Statement**

Fiscal Quarter	2020	2021E	2022E	2023E
<b>Cash flows from operating activities:</b>				
<b>GAAP Net income</b>	<b>\$ 2,960</b>	<b>\$ 5,616</b>	<b>\$ 8,415</b>	<b>\$ 10,464</b>
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	\$6,905	\$6,719	\$4,938	\$3,786
Amortization of debt issuance costs and accretion of debt discount	\$0	\$0	\$0	\$0
Share-based compensation	\$1,976	\$1,794	\$1,845	\$1,905
Tax benefits from share-based compensation	(\$459)	(\$149)	\$0	\$0
Excess tax benefits from share-based compensation	\$0	\$0	\$0	\$0
Non-cash portion of restructuring and asset impairment charges	\$44	\$172	\$0	\$0
Gain on sale of business	\$0	(\$119)	\$0	\$0
Deferred taxes	(\$683)	\$0	\$0	\$0
Other	\$225	\$32	\$0	\$0
Changes in assets and liabilities, net of acquisitions and disposals:				
Trade accounts receivable, net	\$981	(\$365)	(\$327)	(\$135)
Inventory	(\$31)	(\$141)	(\$45)	(\$54)
Accounts payable	(\$3)	\$92	\$38	\$45
Employee compensation and benefits	\$217	(\$75)	\$0	\$0
Other current assets and current liabilities	\$331	\$408	\$0	\$0
Other long-term assets and long-term liabilities	(\$402)	(\$59)	\$0	\$0
<b>Net cash provided by operating activities</b>	<b>\$ 12,061</b>	<b>\$ 13,926</b>	<b>\$ 14,864</b>	<b>\$16,011</b>
<b>Cash flows from investing activities:</b>				
Proceeds from sale of business	\$218	\$0	\$0	\$0
Acquisition of businesses, net of cash acquired	(\$10,872)	(\$8)	\$0	\$0
Purchases of property, plant and equipment	(\$463)	(\$459)	(\$484)	(\$509)
Proceeds from disposal of property, plant and equipment	\$12	\$0	\$0	\$0
Purchases of investments	\$0	\$0	\$0	\$0
Proceeds from sale of investments	\$0	\$0	\$0	\$0
Proceeds from insurance claims on property, plant and equipment	\$0	\$0	\$0	\$0
Other	(\$4)	\$0	\$0	\$0
<b>Net cash used in investing activities</b>	<b>\$ (11,109)</b>	<b>\$ (467)</b>	<b>\$ (484)</b>	<b>(\$509)</b>
<b>Cash flows from financing activities:</b>				
Debt repayments	(\$18,814)	(\$9,200)	\$0	\$0
Payment of assumed debt	\$0	\$0	\$0	\$0
Proceeds from term loan borrowings	\$27,802	\$9,946	\$0	\$0
Proceeds from issuance of convertible senior notes	\$0	\$0	\$0	\$0
Debt issuance costs	\$0	\$0	\$0	\$0
Dividend payments to shareholders	(\$5,235)	(\$5,864)	(\$6,532)	(\$6,974)
Issuance of ordinary shares	\$276	\$35	\$0	\$0
Repurchases of ordinary shares	\$0	\$0	\$0	\$0
Preferred Dividend Payment	(\$299)	(\$299)	(\$299)	(\$299)
Excess tax benefits from share-based compensation	(\$765)	(\$225)	\$0	\$0
Proceeds from government grants	\$0	\$0	\$0	\$0
Payment of capital lease obligations	\$0	\$0	\$0	\$0
Payments for settlement of acquisition liability	\$0	\$0	\$0	\$0
Other	(\$1,354)	(\$28)	\$0	\$0
<b>Net cash (used in) provided by financing activities</b>	<b>\$ 1,611</b>	<b>\$ (5,635)</b>	<b>\$ (6,831)</b>	<b>\$ (7,273)</b>
<b>Free Cash Flow</b>	<b>\$ 11,598</b>	<b>\$ 13,466</b>	<b>\$ 14,380</b>	<b>\$ 15,502</b>
EBITDA	\$13,552	\$15,922	\$17,012	\$18,089

Source: Company Reports, Bernstein Estimates and Analysis

Q120	Q220	Q320	Q420	Q121	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
\$ 385	\$ 563	\$ 688	\$ 1,324	\$ 1,378	\$ 1,252	\$ 1,306	\$ 1,680	\$ 2,074	\$ 1,992	\$ 2,037	\$ 2,312
\$ 1,728	\$ 1,730	\$ 1,719	\$ 1,728	\$ 1,533	\$ 1,729	\$ 1,729	\$ 1,729	\$ 1,236	\$ 1,235	\$ 1,234	\$ 1,233
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 545	\$ 517	\$ 465	\$ 449	\$ 444	\$ 460	\$ 445	\$ 445	\$ 455	\$ 480	\$ 455	\$ 455
\$ -	\$ -	\$ -	\$ (459)	\$ (149)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 11	\$ 6	\$ 15	\$ 12	\$ 172	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ (119)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (72)	\$ (175)	\$ (436)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 54	\$ 116	\$ 23	\$ 32	\$ 32	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (392)	\$ 440	\$ 542	\$ 391	\$ (247)	\$ 248	\$ (72)	\$ (295)	\$ (25)	\$ (20)	\$ (93)	\$ (189)
\$ 40	\$ (10)	\$ (128)	\$ 67	\$ 51	\$ (25)	\$ (29)	\$ (138)	\$ 41	\$ 41	\$ (30)	\$ (97)
\$ 117	\$ 233	\$ (123)	\$ (230)	\$ 44	\$ (43)	\$ (7)	\$ 98	\$ (32)	\$ (36)	\$ 25	\$ 80
\$ (217)	\$ 61	\$ 231	\$ 142	\$ (375)	\$ 100	\$ 100	\$ 100	\$ (300)	\$ 100	\$ 100	\$ 100
\$ 346	\$ 118	\$ (2)	\$ (131)	\$ 408	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (223)	\$ (386)	\$ 184	\$ 23	\$ (59)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 2,322	\$ 3,213	\$ 3,178	\$ 3,348	\$ 3,113	\$ 3,721	\$ 3,472	\$ 3,619	\$ 3,450	\$ 3,793	\$ 3,727	\$ 3,894
\$ -	\$ 168	\$ 50	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (10,870)	\$ -	\$ (2)	\$ -	\$ (8)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (108)	\$ (148)	\$ (105)	\$ (102)	\$ (114)	\$ (111)	\$ (112)	\$ (122)	\$ (120)	\$ (118)	\$ (119)	\$ (127)
\$ -	\$ -	\$ 10	\$ 2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (9)	\$ 4	\$ 1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (10,987)	\$ 24	\$ (46)	\$ (100)	\$ (122)	\$ (111)	\$ (112)	\$ (122)	\$ (120)	\$ (118)	\$ (119)	\$ (127)
\$ (4,537)	\$ (4,452)	\$ (6,825)	\$ (3,000)	\$ (9,200)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 15,381	\$ 4,468	\$ 7,953	\$ -	\$ 9,904	\$ 42	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (1,297)	\$ (1,306)	\$ (1,312)	\$ (1,320)	\$ (1,468)	\$ (1,465)	\$ (1,465)	\$ (1,465)	\$ (1,630)	\$ (1,632)	\$ (1,634)	\$ (1,636)
\$ 37	\$ 91	\$ 46	\$ 102	\$ 35	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (75)	\$ (75)	\$ (74)	\$ (75)	\$ (75)	\$ (75)	\$ (75)	\$ (75)	\$ (75)	\$ (75)	\$ (75)	\$ (75)
\$ (169)	\$ (219)	\$ (192)	\$ (185)	\$ (225)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 714	\$ 1,019	\$ (3,078)	\$ (9)	\$ (28)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 10,054	\$ (474)	\$ (3,482)	\$ (4,487)	\$ (1,057)	\$ (1,498)	\$ (1,540)	\$ (1,540)	\$ (1,705)	\$ (1,707)	\$ (1,709)	\$ (1,711)
\$ 2,214	\$ 3,065	\$ 3,073	\$ 3,246	\$ 2,999	\$ 3,610	\$ 3,360	\$ 3,497	\$ 3,330	\$ 3,675	\$ 3,608	\$ 3,767
\$3,236	\$3,178	\$3,328	\$3,810	\$3,926	\$3,829	\$3,872	\$4,295	\$4,216	\$4,148	\$4,168	\$4,480

U.S. SEMICONDUCTORS

BERNSTEIN

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EXHIBIT 54: Bernstein INTC Income Statement

Intel: Income Statement (\$M)

INTC (Calendar)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenue	77,867.0	71,705.6	69,434.4	71,215.4	19,828.0	19,728.0	18,333.0	19,978.0	17,527.3	17,170.8	17,907.4	19,100.1	16,544.1	16,851.1	17,913.5	18,125.8
COGS	34,255.0	31,084.5	30,857.8	32,161.8	7,812.0	9,221.0	8,592.0	8,630.0	7,712.0	7,462.2	7,698.5	8,211.8	7,334.1	7,495.8	7,958.1	8,069.9
GAAP Gross Profit	43,612.0	40,621.1	38,576.6	39,053.7	12,016.0	10,507.0	9,741.0	11,348.0	9,815.3	9,708.6	10,208.9	10,888.3	9,210.0	9,355.3	9,955.4	10,055.9
Non-GAAP Gross Profit	44,823.0	42,055.3	39,965.3	40,478.0	12,305.0	10,809.0	10,051.0	11,658.0	10,165.9	10,052.0	10,567.0	11,270.3	9,540.9	9,692.3	10,313.6	10,418.4
R&D	13,556.0	13,550.0	13,750.0	13,950.0	3,275.0	3,354.0	3,272.0	3,655.0	3,350.0	3,400.0	3,400.0	3,400.0	3,425.0	3,425.0	3,450.0	3,450.0
SG&A	6,180.0	6,200.0	6,300.0	6,400.0	1,541.0	1,447.0	1,435.0	1,757.0	1,550.0	1,550.0	1,550.0	1,550.0	1,575.0	1,575.0	1,575.0	1,575.0
Other Operating Expenses	198.0	-	-	-	162.0	9.0	(25.0)	52.0	-	-	-	-	-	-	-	-
Total Operating Expenses	19,934.0	19,750.0	20,050.0	20,350.0	4,978.0	4,810.0	4,682.0	5,464.0	4,900.0	4,950.0	4,950.0	4,950.0	5,000.0	5,000.0	5,025.0	5,025.0
GAAP Operating Income	23,678.0	20,871.1	18,526.6	18,703.7	7,038.0	5,697.0	5,059.0	5,884.0	4,915.3	4,758.6	5,258.9	5,938.3	4,210.0	4,355.3	4,930.4	5,030.9
Non-GAAP Operating Income	25,087.0	22,305.3	19,915.3	20,128.0	7,539.0	6,058.0	5,396.0	6,246.0	5,265.9	5,102.0	5,617.0	6,320.3	4,540.9	4,692.3	5,288.6	5,393.4
Gains (losses) on Investments, Net	1,904.0	-	-	-	(111.0)	267.0	56.0	1,692.0	-	-	-	-	-	-	-	-
Other Non-operating Income (Loss)	(504.0)	(102.0)	(152.0)	(152.0)	(313.0)	(29.0)	(74.0)	(88.0)	12.0	(38.0)	(38.0)	(38.0)	(38.0)	(38.0)	(38.0)	(38.0)
Pre-Tax Income	25,078.0	20,769.1	18,374.6	18,551.7	6,614.0	5,935.0	5,041.0	7,488.0	4,927.3	4,720.6	5,220.9	5,900.3	4,172.0	4,317.3	4,892.4	4,992.9
Income Tax Provision	4,179.0	3,011.5	2,664.3	2,690.0	953.0	830.0	765.0	1,631.0	714.5	684.5	757.0	855.5	604.9	626.0	709.4	724.0
GAAP Net Income	20,899.0	17,757.6	15,710.3	15,861.7	5,661.0	5,105.0	4,276.0	5,857.0	4,212.8	4,036.1	4,463.8	5,044.8	3,567.1	3,691.3	4,183.0	4,268.9
Non-GAAP tax rate adjustment and other	1,364.9	1,226.2	1,187.3	1,217.8	431.2	165.3	420.2	347.2	299.7	293.6	306.2	326.6	282.9	288.2	306.3	310.0
Acquisition-related Opex (tax adjusted)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acquisition-Related Amortization and Restructuring(tax a	166.1	-	-	-	139.8	7.7	(21.2)	40.8	-	-	-	-	-	-	-	-
Acquisition-Related Charges in GM (tax adjusted)	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-GAAP Net Income	22,430.0	18,983.8	16,897.6	17,079.5	6,232.0	5,278.0	4,675.0	6,245.0	4,512.6	4,329.8	4,770.1	5,371.4	3,850.0	3,979.4	4,489.3	4,578.9
GAAP Basic EPS (\$)	\$ 4.98	\$ 4.40	\$ 4.00	\$ 4.14	\$ 1.33	\$ 1.20	\$ 1.02	\$ 1.43	\$ 1.04	\$ 1.00	\$ 1.11	\$ 1.26	\$ 0.90	\$ 0.94	\$ 1.07	\$ 1.10
GAAP Diluted EPS (\$)	\$ 4.94	\$ 4.38	\$ 3.97	\$ 4.12	\$ 1.31	\$ 1.19	\$ 1.02	\$ 1.42	\$ 1.03	\$ 0.99	\$ 1.10	\$ 1.26	\$ 0.89	\$ 0.93	\$ 1.06	\$ 1.09
Non-GAAP Diluted EPS	\$ 5.30	\$ 4.68	\$ 4.27	\$ 4.43	\$ 1.45	\$ 1.23	\$ 1.11	\$ 1.52	\$ 1.10	\$ 1.06	\$ 1.18	\$ 1.34	\$ 0.96	\$ 1.00	\$ 1.14	\$ 1.17
Weighted Average Basic Shares	4,199	4,032	3,932	3,829	4,266	4,246	4,188	4,094	4,069	4,044	4,019	3,994	3,969	3,944	3,919	3,894
Weighted Average Diluted Shares	4,232	4,056	3,956	3,852	4,312	4,284	4,211	4,119	4,094	4,069	4,044	4,018	3,993	3,968	3,943	3,918
Margins	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
GAAP Gross Margin	56.0%	56.6%	55.6%	54.8%	60.6%	53.3%	53.1%	56.8%	56.0%	56.5%	57.0%	57.0%	55.7%	55.5%	55.6%	55.5%
Pro-Forma Gross Margin	57.6%	58.6%	57.6%	56.8%	62.1%	54.8%	54.8%	58.4%	58.0%	58.5%	59.0%	59.0%	57.7%	57.5%	57.6%	57.5%
R&D % of Sales	17.4%	18.9%	19.8%	19.6%	16.5%	17.0%	17.6%	18.3%	19.1%	19.8%	19.0%	17.8%	20.7%	20.3%	19.3%	19.0%
SG&A % of Sales	7.9%	8.6%	9.1%	9.0%	7.8%	7.3%	7.8%	8.8%	8.8%	9.0%	8.7%	8.1%	9.5%	9.3%	8.8%	8.7%
GAAP Operating Margin	30.4%	29.1%	26.7%	26.3%	35.5%	28.9%	27.6%	29.5%	28.0%	27.7%	29.4%	31.1%	25.4%	25.8%	27.5%	27.8%
Non-GAAP Operating Margin	32.2%	31.1%	28.7%	28.3%	38.0%	30.7%	29.4%	31.3%	30.0%	29.7%	31.4%	33.1%	27.4%	27.8%	29.5%	29.8%
GAAP Tax Rate	16.7%	14.5%	14.5%	14.5%	14.4%	14.0%	15.2%	21.8%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%
Non-GAAP Tax Rate	16.1%	14.5%	14.5%	14.5%	13.7%	13.9%	15.3%	21.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%	14.5%
GAAP Net Margin	26.8%	24.8%	22.6%	22.3%	28.6%	25.9%	23.3%	29.3%	24.0%	23.5%	24.9%	26.4%	21.6%	21.9%	23.4%	23.6%
Non-GAAP Net Margin	28.8%	26.5%	24.3%	24.0%	31.4%	26.8%	25.5%	31.3%	25.7%	25.2%	26.6%	28.1%	23.3%	23.6%	25.1%	25.3%
Year-over-Year Change (%)	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Total Revenues	8.2%	-7.9%	-3.2%	2.6%	23.5%	19.5%	-4.5%	-1.1%	-11.6%	-13.0%	-2.3%	-4.4%	-5.6%	-1.9%	0.0%	-5.1%
GAAP Gross Margin	(255)bp	64 bp	(109)bp	(72)bp	401 bp	(659)bp	(573)bp	(197)bp	(460)bp	328 bp	388 bp	20 bp	(33)bp	(102)bp	(143)bp	(153)bp
Non-GAAP Gross Margin	(255)bp	109 bp	(109)bp	(72)bp	372 bp	(680)bp	(553)bp	(175)bp	(406)bp	375 bp	418 bp	65 bp	(33)bp	(102)bp	(143)bp	(153)bp
R&D	1.5%	0.0%	1.5%	1.5%	-1.7%	-2.4%	2.0%	8.0%	2.3%	1.4%	3.9%	-7.0%	2.2%	0.7%	1.5%	1.5%
SG&A	0.5%	0.3%	1.6%	1.6%	0.5%	-8.9%	-3.4%	13.9%	0.6%	7.1%	8.0%	-11.8%	1.6%	1.6%	1.6%	1.6%
GAAP Operating Expenses	-0.9%	-0.9%	1.5%	1.5%	1.3%	-8.6%	-3.4%	7.5%	-1.6%	2.9%	5.7%	-9.4%	2.0%	1.0%	1.5%	1.5%
Non-GAAP Operating Expenses	1.1%	0.1%	1.5%	1.5%	-1.0%	-4.5%	0.3%	9.9%	1.7%	3.1%	5.2%	-8.5%	2.0%	1.0%	1.5%	1.5%
GAAP Operating Margin	(21)bp	(130)bp	(242)bp	(42)bp	951 bp	90 bp	(600)bp	(418)bp	(745)bp	(116)bp	177 bp	164 bp	(260)bp	(187)bp	(184)bp	(334)bp
Non-GAAP Operating Margin	(79)bp	(111)bp	(242)bp	(42)bp	997 bp	(42)bp	(647)bp	(446)bp	(798)bp	(99)bp	193 bp	183 bp	(260)bp	(187)bp	(184)bp	(334)bp
GAAP Net Margin	(241)bp	(207)bp	(214)bp	(35)bp	381 bp	56 bp	(789)bp	(485)bp	(451)bp	(237)bp	160 bp	(290)bp	(247)bp	(160)bp	(158)bp	(286)bp
Non-GAAP Net Margin	(147)bp	(233)bp	(214)bp	(35)bp	623 bp	(224)bp	(727)bp	(171)bp	(568)bp	(154)bp	114 bp	(314)bp	(247)bp	(160)bp	(158)bp	(286)bp
Diluted GAAP EPS	4.5%	-11.4%	-9.3%	3.7%	50.8%	29.0%	-24.9%	-9.9%	-21.6%	-16.8%	8.7%	-11.7%	-13.2%	-6.2%	-3.9%	-13.2%
Diluted Non-GAAP EPS	8.5%	-11.7%	-8.7%	3.8%	62.9%	16.5%	-21.7%	-0.5%	-23.7%	-13.6%	6.3%	-11.8%	-12.5%	-5.8%	-3.5%	-12.6%
Weighted Average Diluted Shares	(223.2)	(175.4)	(100.6)	(103.1)	(252.0)	(239.0)	(222.0)	(254.0)	(218.2)	(215.3)	(167.5)	(100.6)	(100.6)	(100.6)	(100.6)	(100.6)

Source: Company reports, Bernstein estimates and analysis

EXHIBIT 55: **Bernstein INTC Balance Sheet and Cash Flow Statement**

Intel: Balance Sheet (\$ MM)																
INTC (Calendar)	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash & Short Term Investments	8,157.0	11,995.5	14,399.9	17,601.0	12,676.0	13,527.0	6,343.0	8,157.0	8,348.7	9,012.4	10,403.7	11,995.5	12,500.6	12,860.9	13,634.5	14,399.9
Accounts Receivable	6,782.0	6,782.0	6,782.0	6,782.0	8,455.0	7,441.0	7,140.0	6,782.0	6,782.0	6,782.0	6,782.0	6,782.0	6,782.0	6,782.0	6,782.0	6,782.0
Inventories	8,427.0	8,668.0	8,787.2	9,125.4	9,246.0	8,969.0	9,273.0	8,427.0	8,568.9	8,540.1	8,382.8	8,668.0	8,312.0	8,328.6	8,488.6	8,787.2
Other Current Assets	23,883.0	23,883.0	23,883.0	23,883.0	11,124.0	14,453.0	14,029.0	23,883.0	23,883.0	23,883.0	23,883.0	23,883.0	23,883.0	23,883.0	23,883.0	23,883.0
<b>Total Current Assets</b>	<b>47,249.0</b>	<b>51,328.5</b>	<b>53,852.1</b>	<b>57,391.3</b>	<b>41,501.0</b>	<b>44,390.0</b>	<b>36,785.0</b>	<b>47,249.0</b>	<b>47,582.6</b>	<b>48,217.4</b>	<b>49,451.6</b>	<b>51,328.5</b>	<b>51,477.5</b>	<b>51,854.5</b>	<b>52,788.2</b>	<b>53,852.1</b>
Net PP&E	56,584.0	59,933.1	62,930.5	65,238.6	56,770.0	58,036.0	59,205.0	56,584.0	57,648.2	58,544.1	59,267.3	59,933.1	60,790.6	61,552.4	62,259.0	62,930.5
Goodwill	26,971.0	26,971.0	26,971.0	26,971.0	26,276.0	26,943.0	26,955.0	26,971.0	26,971.0	26,971.0	26,971.0	26,971.0	26,971.0	26,971.0	26,971.0	26,971.0
Other Long-Term Assets	22,287.0	22,287.0	22,287.0	22,287.0	23,163.0	23,170.0	22,316.0	22,287.0	22,287.0	22,287.0	22,287.0	22,287.0	22,287.0	22,287.0	22,287.0	22,287.0
<b>Total Long-Term Assets</b>	<b>105,842.0</b>	<b>109,191.1</b>	<b>112,188.5</b>	<b>114,496.6</b>	<b>106,209.0</b>	<b>108,149.0</b>	<b>108,476.0</b>	<b>105,842.0</b>	<b>106,906.2</b>	<b>107,802.1</b>	<b>108,525.3</b>	<b>109,191.1</b>	<b>110,048.6</b>	<b>110,810.4</b>	<b>111,517.0</b>	<b>112,188.5</b>
<b>Total Assets</b>	<b>153,091.0</b>	<b>160,519.6</b>	<b>166,040.6</b>	<b>171,887.9</b>	<b>147,710.0</b>	<b>152,539.0</b>	<b>145,261.0</b>	<b>153,091.0</b>	<b>154,488.7</b>	<b>156,019.5</b>	<b>157,976.9</b>	<b>160,519.6</b>	<b>161,526.2</b>	<b>162,665.0</b>	<b>164,305.1</b>	<b>166,040.6</b>
Accounts Payable	5,581.0	5,581.0	5,581.0	5,581.0	4,638.0	5,045.0	5,159.0	5,581.0	5,581.0	5,581.0	5,581.0	5,581.0	5,581.0	5,581.0	5,581.0	5,581.0
Short-Term Debt	2,504.0	2,504.0	2,504.0	2,504.0	3,464.0	2,254.0	504.0	2,504.0	2,504.0	2,504.0	2,504.0	2,504.0	2,504.0	2,504.0	2,504.0	2,504.0
Other Current Liabilities	16,669.0	16,669.0	16,669.0	16,669.0	15,793.0	15,182.0	16,449.0	16,669.0	16,669.0	16,669.0	16,669.0	16,669.0	16,669.0	16,669.0	16,669.0	16,669.0
<b>Total Current Liabilities</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>23,895.0</b>	<b>22,481.0</b>	<b>22,112.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>	<b>24,754.0</b>
Long-Term Debt	33,897.0	33,897.0	33,897.0	33,897.0	36,455.0	36,093.0	36,059.0	33,897.0	33,897.0	33,897.0	33,897.0	33,897.0	33,897.0	33,897.0	33,897.0	33,897.0
Other Long-Term Liabilities	13,402.0	12,727.0	12,052.0	11,377.0	11,006.0	11,955.0	12,536.0	13,402.0	13,233.3	13,064.5	12,895.8	12,727.0	12,558.3	12,389.5	12,220.8	12,052.0
<b>Total Liabilities</b>	<b>72,053.0</b>	<b>71,378.0</b>	<b>70,703.0</b>	<b>70,028.0</b>	<b>71,356.0</b>	<b>70,529.0</b>	<b>70,707.0</b>	<b>72,053.0</b>	<b>71,884.3</b>	<b>71,715.5</b>	<b>71,546.8</b>	<b>71,378.0</b>	<b>71,209.3</b>	<b>71,040.5</b>	<b>70,871.8</b>	<b>70,703.0</b>
<b>Shareholders' Equity</b>	<b>81,038.0</b>	<b>89,141.6</b>	<b>95,337.6</b>	<b>101,859.9</b>	<b>76,354.0</b>	<b>82,010.0</b>	<b>74,554.0</b>	<b>81,038.0</b>	<b>82,604.5</b>	<b>84,304.0</b>	<b>86,430.1</b>	<b>89,141.6</b>	<b>90,316.9</b>	<b>91,624.5</b>	<b>93,433.4</b>	<b>95,337.6</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>153,091.0</b>	<b>160,519.6</b>	<b>166,040.6</b>	<b>171,887.9</b>	<b>147,710.0</b>	<b>152,539.0</b>	<b>145,261.0</b>	<b>153,091.0</b>	<b>154,488.7</b>	<b>156,019.5</b>	<b>157,976.9</b>	<b>160,519.6</b>	<b>161,526.2</b>	<b>162,665.0</b>	<b>164,305.1</b>	<b>166,040.6</b>

Intel: Cash Flow Statement (\$MM)																
INTC (Calendar)	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Net Income	20,899.0	17,757.6	15,710.3	15,861.7	5,661.0	5,105.0	4,276.0	5,857.0	4,212.8	4,036.1	4,463.8	5,044.8	3,567.1	3,691.3	4,183.0	4,268.9
Depreciation & Amortization	12,239.0	13,081.2	13,705.8	14,239.5	3,050.0	3,063.0	3,123.0	3,003.0	3,199.0	3,252.2	3,297.0	3,333.1	3,366.4	3,409.3	3,447.4	3,482.7
Other	1,845.0	924.6	1,066.6	873.7	(2,553.0)	2,989.0	780.0	629.0	151.1	327.8	446.3	(0.5)	653.2	279.3	136.3	(2.2)
<b>Cash Flow From Operations</b>	<b>35,384.0</b>	<b>31,763.4</b>	<b>30,482.7</b>	<b>30,974.9</b>	<b>6,158.0</b>	<b>11,157.0</b>	<b>8,179.0</b>	<b>9,890.0</b>	<b>7,562.9</b>	<b>7,616.1</b>	<b>8,207.1</b>	<b>8,377.4</b>	<b>7,586.7</b>	<b>7,379.8</b>	<b>7,766.7</b>	<b>7,749.4</b>
Capex	(14,259.0)	(14,951.3)	(15,224.1)	(15,068.6)	(3,268.0)	(3,408.0)	(3,716.0)	(3,867.0)	(3,893.4)	(3,778.3)	(3,650.5)	(3,629.2)	(3,854.2)	(3,801.3)	(3,784.1)	(3,784.5)
Other	(6,537.0)	-	-	-	(468.0)	(7,202.0)	2,950.0	(1,817.0)	-	-	-	-	-	-	-	-
<b>Cash Flow From Investments</b>	<b>(20,796.0)</b>	<b>(14,951.3)</b>	<b>(15,224.1)</b>	<b>(15,068.6)</b>	<b>(3,736.0)</b>	<b>(10,610.0)</b>	<b>(766.0)</b>	<b>(5,684.0)</b>	<b>(3,893.4)</b>	<b>(3,778.3)</b>	<b>(3,650.5)</b>	<b>(3,629.2)</b>	<b>(3,854.2)</b>	<b>(3,801.3)</b>	<b>(3,784.1)</b>	<b>(3,784.5)</b>
Net Stock Repurchase	(14,229.0)	(8,295.0)	(8,000.0)	(8,000.0)	(4,229.0)	-	(10,000.0)	-	(2,295.0)	(2,000.0)	(2,000.0)	(2,000.0)	(2,000.0)	(2,000.0)	(2,000.0)	(2,000.0)
Dividends	(5,568.0)	(5,678.6)	(5,854.2)	(5,705.2)	(1,408.0)	(1,403.0)	(1,404.0)	(1,353.0)	(1,432.8)	(1,424.0)	(1,415.2)	(1,406.4)	(1,477.5)	(1,468.2)	(1,458.9)	(1,449.6)
Other	6,880.0	1,000.0	1,000.0	1,000.0	10,401.0	(1,788.0)	(1,389.0)	(344.0)	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
<b>Cash Flow From Financing</b>	<b>(12,917.0)</b>	<b>(12,973.6)</b>	<b>(12,854.2)</b>	<b>(12,705.2)</b>	<b>4,764.0</b>	<b>(3,191.0)</b>	<b>(12,793.0)</b>	<b>(1,697.0)</b>	<b>(3,477.8)</b>	<b>(3,174.0)</b>	<b>(3,165.2)</b>	<b>(3,156.4)</b>	<b>(3,227.5)</b>	<b>(3,218.2)</b>	<b>(3,208.9)</b>	<b>(3,199.6)</b>

INTC (Calendar)	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash Flow from Operations	35,384.0	31,763.4	30,482.7	30,974.9	6,158.0	11,157.0	8,179.0	9,890.0	7,562.9	7,616.1	8,207.1	8,377.4	7,586.7	7,379.8	7,766.7	7,749.4
subtract Capex	(14,259.0)	(14,951.3)	(15,224.1)	(15,068.6)	(3,268.0)	(3,408.0)	(3,716.0)	(3,867.0)	(3,893.4)	(3,778.3)	(3,650.5)	(3,629.2)	(3,854.2)	(3,801.3)	(3,784.1)	(3,784.5)
<b>FCF</b>	<b>21,125.0</b>	<b>16,812.1</b>	<b>15,258.5</b>	<b>15,906.3</b>	<b>2,890.0</b>	<b>7,749.0</b>	<b>4,463.0</b>	<b>6,023.0</b>	<b>3,669.5</b>	<b>3,837.7</b>	<b>4,556.6</b>	<b>4,748.2</b>	<b>3,732.5</b>	<b>3,578.5</b>	<b>3,982.5</b>	<b>3,965.0</b>
Operating Income	23,678.0	20,871.1	18,526.6	18,703.7	7,539.0	6,058.0	5,396.0	6,246.0	5,265.9	5,102.0	5,617.0	6,320.3	4,540.9	4,692.3	5,288.6	5,393.4
add back D&A	12,239.0	13,081.2	13,705.8	14,239.5	3,050.0	3,063.0	3,123.0	3,003.0	3,199.0	3,252.2	3,297.0	3,333.1	3,366.4	3,409.3	3,447.4	3,482.7
<b>EBITDA</b>	<b>35,917.0</b>	<b>33,952.3</b>	<b>32,232.4</b>	<b>32,943.2</b>	<b>10,589.0</b>	<b>9,121.0</b>	<b>8,519.0</b>	<b>9,249.0</b>	<b>8,464.8</b>	<b>8,354.2</b>	<b>8,914.0</b>	<b>9,653.5</b>	<b>7,907.3</b>	<b>8,101.6</b>	<b>8,736.0</b>	<b>8,876.1</b>

Source: Company reports, Bernstein estimates and analysis



EXHIBIT 56: Bernstein NVDA income statement

NVIDIA: Income Statement					
Calendar Quarter	2020	2021E	2022E	2023E	
Fiscal Quarter	2021	2022E	2023E	2024E	
GAAP Revenue	\$16,675.0	\$21,870.2	\$24,020.2	\$27,121.8	
COGS	6,279.0	7,934.2	8,647.3	9,727.7	
GAAP Gross Profit	\$10,396.0	\$13,936.0	\$15,372.9	\$17,394.1	
R&D	3,926.0	4,788.5	5,198.9	5,761.7	
SG&A	1,938.0	2,116.1	2,260.0	2,377.4	
Other	-	-	-	-	
Total Opex	5,864.0	6,904.6	7,458.9	8,139.2	
GAAP Operating Profit	\$4,532.0	\$7,031.4	\$7,914.0	\$9,255.0	
Net Interest Expense / Other	(124.0)	(200.0)	(200.0)	(200.0)	
Pre Tax Income	\$4,408.0	\$6,831.4	\$7,714.0	\$9,055.0	
Taxes	(76.0)	(683.1)	(771.4)	(905.5)	
Net Income	\$4,332.0	\$6,148.3	\$6,942.6	\$8,149.5	
Non-GAAP Metrics					
Gross Profit	\$10,948.0	\$14,405.4	\$15,853.0	\$17,889.7	
Opex	4,144.0	4,965.5	5,384.8	5,920.2	
Operating Profit	6,803.0	9,439.9	10,468.3	11,969.6	
Net Income	6,277.0	8,315.9	9,241.5	10,592.6	
GAAP Diluted Share Count	627.3	632.9	635.9	638.9	
Non-GAAP Diluted Share Count	627.3	632.9	635.9	638.9	
GAAP Diluted EPS	\$6.90	\$9.71	\$10.92	\$12.76	
Non-GAAP Diluted EPS	\$10.00	\$13.14	\$14.53	\$16.58	

Growth and Margins	2021	2022E	2023E	2024E
QoQ Revenue Growth	-	-	-	-
YoY Revenue Growth	52.7%	31.2%	9.8%	12.9%
GAAP Gross Margin %	62.3%	63.7%	64.0%	64.1%
Non-GAAP Gross Margin %	65.7%	65.9%	66.0%	66.0%
R&D as % of Sales	23.5%	21.9%	21.6%	21.2%
SG&A as % of Sales	11.6%	9.7%	9.4%	8.8%
GAAP Opex as % of Sales	35.2%	31.6%	31.1%	30.0%
Non-GAAP Opex as % of sales	24.9%	22.7%	22.4%	21.8%
GAAP Operating Margin	27.2%	32.2%	32.9%	34.1%
Non-GAAP Operating Margin	40.8%	43.2%	43.6%	44.1%
GAAP Tax Rate	(1.7%)	(10.0%)	(10.0%)	(10.0%)
GAAP Net Margin	26.0%	28.1%	28.9%	30.0%
Non-GAAP Net Margin	37.6%	38.0%	38.5%	39.1%

Source: Company Reports, Bernstein estimates and analysis

Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Q121	Q221	Q321	Q421	Q122E	Q222E	Q322E	Q422E	Q123E	Q223E	Q323E	Q423E
\$3,080.0	\$3,866.0	\$4,726.0	\$5,003.0	5,306.0	5,453.6	5,545.4	5,565.3	5,443.1	5,719.2	6,443.7	6,414.2
1,076.0	1,591.0	1,766.0	1,846.0	1,920.8	1,946.9	2,029.6	2,036.9	1,959.5	2,058.9	2,319.7	2,309.1
\$2,004.0	\$2,275.0	\$2,960.0	\$3,157.0	\$3,385.2	\$3,506.6	\$3,515.8	\$3,528.4	\$3,483.6	\$3,660.3	\$4,124.0	\$4,105.1
735.0	997.0	1,047.0	1,147.0	1,161.0	1,194.3	1,214.4	1,218.8	1,235.6	1,269.7	1,333.9	1,359.8
293.0	627.0	515.0	503.0	509.4	529.0	537.9	539.8	555.2	560.5	567.0	577.3
-	-	-	-	-	-	-	-	-	-	-	-
1,028.0	1,624.0	1,562.0	1,650.0	1,670.3	1,723.3	1,752.3	1,758.6	1,790.8	1,830.1	1,900.9	1,937.1
\$976.0	\$651.0	\$1,398.0	\$1,507.0	\$1,714.9	\$1,783.3	\$1,763.4	\$1,769.8	\$1,692.8	\$1,830.1	\$2,223.1	\$2,168.0
5.0	(42.0)	(50.0)	(37.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)	(50.0)
\$981.0	\$609.0	\$1,348.0	\$1,470.0	\$1,664.9	\$1,733.3	\$1,713.4	\$1,719.8	\$1,642.8	\$1,780.1	\$2,173.1	\$2,118.0
(64.0)	13.0	(12.0)	(13.0)	(166.5)	(173.3)	(171.3)	(172.0)	(164.3)	(178.0)	(217.3)	(211.8)
\$917.0	\$622.0	\$1,336.0	\$1,457.0	\$1,498.4	\$1,560.0	\$1,542.1	\$1,547.8	\$1,478.5	\$1,602.1	\$1,955.8	\$1,906.2
\$2,026.0	\$2,551.0	\$3,095.0	\$3,276.0	\$3,501.8	\$3,623.9	\$3,633.5	\$3,646.2	\$3,600.8	\$3,778.9	\$4,246.2	\$4,227.1
821.0	1,035.0	1,101.0	1,187.0	1,200.1	1,238.9	1,260.9	1,265.7	1,279.9	1,319.8	1,379.8	1,405.3
1,205.0	1,516.0	1,993.0	2,089.0	2,301.7	2,385.1	2,372.6	2,380.5	2,320.9	2,459.1	2,866.4	2,821.9
1,120.0	1,366.0	1,834.0	1,957.0	2,026.5	2,101.5	2,090.3	2,097.5	2,043.8	2,168.2	2,534.7	2,494.7
622	626	630	631	632	633	633	634	635	636	636	637
622	626	630	631	632	633	633	634	635	636	636	637
\$1.47	\$0.99	\$2.12	\$2.31	\$2.37	\$2.47	\$2.44	\$2.44	\$2.33	\$2.52	\$3.07	\$2.99
\$1.80	\$2.18	\$2.91	\$3.10	\$3.21	\$3.32	\$3.30	\$3.31	\$3.22	\$3.41	\$3.98	\$3.92

Q121	Q221	Q321	Q421	Q122E	Q222E	Q322E	Q422E	Q123E	Q223E	Q323E	Q423E
(0.8%)	25.5%	22.2%	5.9%	6.1%	2.8%	1.7%	0.4%	(2.2%)	5.1%	12.7%	(0.5%)
38.7%	49.9%	56.8%	61.1%	72.3%	41.1%	17.3%	11.2%	2.6%	4.9%	16.2%	15.3%
65.1%	58.8%	62.6%	63.1%	63.8%	64.3%	63.4%	63.4%	64.0%	64.0%	64.0%	64.0%
65.8%	66.0%	65.5%	65.5%	66.0%	66.5%	65.5%	65.5%	66.2%	66.1%	65.9%	65.9%
23.9%	25.8%	22.2%	22.9%	21.9%	21.9%	21.9%	21.9%	22.7%	22.2%	20.7%	21.2%
9.5%	16.2%	10.9%	10.1%	9.6%	9.7%	9.7%	9.7%	10.2%	9.8%	8.8%	9.0%
33.4%	42.0%	33.1%	33.0%	31.5%	31.6%	31.6%	31.6%	32.9%	32.0%	29.5%	30.2%
26.7%	26.8%	23.3%	23.7%	22.6%	22.7%	22.7%	22.7%	23.5%	23.1%	21.4%	21.9%
31.7%	16.8%	29.6%	30.1%	32.3%	32.7%	31.8%	31.8%	31.1%	32.0%	34.5%	33.8%
39.1%	39.2%	42.2%	41.8%	43.4%	43.7%	42.8%	42.8%	42.6%	43.0%	44.5%	44.0%
(6.5%)	2.1%	(0.9%)	(0.9%)	(10.0%)	(10.0%)	(10.0%)	(10.0%)	(10.0%)	(10.0%)	(10.0%)	(10.0%)
29.8%	16.1%	28.3%	29.1%	28.2%	28.6%	27.8%	27.8%	27.2%	28.0%	30.4%	29.7%
36.4%	35.3%	38.8%	39.1%	38.2%	38.5%	37.7%	37.7%	37.5%	37.9%	39.3%	38.9%

EXHIBIT 57: **Bernstein NVDA balance sheet statement**

NVIDIA: Balance Sheet				
Calendar Quarter	2020	2021E	2022E	2023E
Fiscal Quarter	2021	2022E	2023E	2024E
<b>Assets</b>				
<b>Current Assets:</b>				
Cash	\$847	\$4,930	\$11,906	\$20,035
Short Term Investments	\$10,714	\$10,714	\$10,714	\$10,714
Net accounts receivable	\$2,429	\$2,429	\$2,429	\$2,429
Inventory	\$1,826	\$1,935	\$2,078	\$2,334
Prepaid expenses	\$239	\$239	\$239	\$239
Other current assets	\$0	\$0	\$0	\$0
<b>Total Current Assets</b>	<b>\$16,055</b>	<b>\$20,247</b>	<b>\$27,366</b>	<b>\$35,751</b>
<b>Non Current Assets:</b>				
Property, plant and equipment, net	\$2,149	\$2,923	\$3,651	\$4,478
Goodwill	\$4,193	\$4,193	\$4,193	\$4,193
Intangible assets, net	\$2,737	\$2,195	\$1,656	\$1,117
Other long-term assets	\$3,657	\$3,657	\$3,657	\$3,657
<b>Total Non Current Assets</b>	<b>\$12,736</b>	<b>\$12,968</b>	<b>\$13,157</b>	<b>\$13,445</b>
<b>Total Assets</b>	<b>\$28,791</b>	<b>\$33,215</b>	<b>\$40,523</b>	<b>\$49,195</b>
<b>Liabilities and equity</b>				
<b>Current liabilities:</b>				
Accounts payable	\$1,201	\$1,201	\$1,201	\$1,201
Accrued Liabilities	\$1,725	\$1,725	\$1,725	\$1,725
Convertible Short Term Debt	\$999	\$0	\$0	\$0
Other Current Liabilities	\$0	\$0	\$0	\$0
<b>Total current liabilities</b>	<b>\$3,925</b>	<b>\$2,926</b>	<b>\$2,926</b>	<b>\$2,926</b>
<b>Long-term liabilities:</b>				
Long-term debt	\$5,964	\$4,964	\$4,964	\$4,964
Capital Lease Obligations, LT	\$634	\$634	\$634	\$634
Deferred tax liability	\$0	\$0	\$0	\$0
Other long-term liabilities	\$1,375	\$1,375	\$1,375	\$1,375
<b>Total non-current liabilities</b>	<b>\$7,973</b>	<b>\$6,973</b>	<b>\$6,973</b>	<b>\$6,973</b>
<b>Total liabilities</b>	<b>\$11,898</b>	<b>\$9,899</b>	<b>\$9,899</b>	<b>\$9,899</b>
<b>Shareholders' equity:</b>				
Ordinary shares	\$1	\$1	\$1	\$1
Additional Paid-In Capital	\$8,497	\$10,268	\$12,183	\$14,257
Treasury Stock	(\$10,530)	(\$11,530)	(\$12,530)	(\$13,530)
Accumulated other comp loss	\$12	\$12	\$12	\$12
Retained earnings	\$18,913	\$24,565	\$30,958	\$38,556
<b>Total Shareholders' equity</b>	<b>\$16,893</b>	<b>\$23,316</b>	<b>\$30,624</b>	<b>\$39,296</b>
<b>Total liabilities and shareholders' equity</b>	<b>\$28,791</b>	<b>\$33,215</b>	<b>\$40,523</b>	<b>\$49,195</b>

Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Q121	Q221	Q321	Q421	Q122E	Q222E	Q322E	Q422E	Q123E	Q223E	Q323E	Q423E
\$15,494	\$3,274	\$2,251	\$847	\$1,360	\$2,904	\$3,378	\$4,930	\$6,531	\$8,073	\$9,938	\$11,906
\$860	\$7,707	\$7,888	\$10,714	\$10,714	\$10,714	\$10,714	\$10,714	\$10,714	\$10,714	\$10,714	\$10,714
\$1,907	\$2,084	\$2,546	\$2,429	\$2,429	\$2,429	\$2,429	\$2,429	\$2,429	\$2,429	\$2,429	\$2,429
\$1,128	\$1,401	\$1,495	\$1,826	\$1,825	\$1,850	\$1,928	\$1,935	\$1,862	\$1,956	\$2,088	\$2,078
\$195	\$215	\$213	\$239	\$239	\$239	\$239	\$239	\$239	\$239	\$239	\$239
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>\$19,584</b>	<b>\$14,681</b>	<b>\$14,393</b>	<b>\$16,055</b>	<b>\$16,567</b>	<b>\$18,136</b>	<b>\$18,689</b>	<b>\$20,247</b>	<b>\$21,775</b>	<b>\$23,411</b>	<b>\$25,407</b>	<b>\$27,366</b>
\$1,715	\$1,964	\$2,059	\$2,149	\$2,328	\$2,522	\$2,722	\$2,923	\$3,090	\$3,272	\$3,462	\$3,651
\$628	\$4,193	\$4,193	\$4,193	\$4,193	\$4,193	\$4,193	\$4,193	\$4,193	\$4,193	\$4,193	\$4,193
\$80	\$2,854	\$2,861	\$2,737	\$2,602	\$2,466	\$2,331	\$2,195	\$2,060	\$1,926	\$1,791	\$1,656
\$1,247	\$1,488	\$3,375	\$3,657	\$3,657	\$3,657	\$3,657	\$3,657	\$3,657	\$3,657	\$3,657	\$3,657
<b>\$3,670</b>	<b>\$10,499</b>	<b>\$12,488</b>	<b>\$12,736</b>	<b>\$12,780</b>	<b>\$12,838</b>	<b>\$12,902</b>	<b>\$12,968</b>	<b>\$13,000</b>	<b>\$13,048</b>	<b>\$13,103</b>	<b>\$13,157</b>
<b>\$23,254</b>	<b>\$25,180</b>	<b>\$26,881</b>	<b>\$28,791</b>	<b>\$29,346</b>	<b>\$30,974</b>	<b>\$31,591</b>	<b>\$33,215</b>	<b>\$34,775</b>	<b>\$36,459</b>	<b>\$38,510</b>	<b>\$40,523</b>
\$761	\$893	\$1,097	\$1,201	\$1,201	\$1,201	\$1,201	\$1,201	\$1,201	\$1,201	\$1,201	\$1,201
\$1,142	\$1,517	\$1,574	\$1,725	\$1,725	\$1,725	\$1,725	\$1,725	\$1,725	\$1,725	\$1,725	\$1,725
\$0	\$0	\$998	\$999	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>\$1,903</b>	<b>\$2,410</b>	<b>\$3,669</b>	<b>\$3,925</b>	<b>\$2,926</b>	<b>\$2,926</b>	<b>\$2,926</b>	<b>\$2,926</b>	<b>\$2,926</b>	<b>\$2,926</b>	<b>\$2,926</b>	<b>\$2,926</b>
\$6,959	\$6,960	\$5,963	\$5,964	\$5,964	\$5,964	\$4,964	\$4,964	\$4,964	\$4,964	\$4,964	\$4,964
\$519	\$611	\$604	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634	\$634
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$774	\$1,285	\$1,311	\$1,375	\$1,375	\$1,375	\$1,375	\$1,375	\$1,375	\$1,375	\$1,375	\$1,375
<b>\$8,252</b>	<b>\$8,856</b>	<b>\$7,878</b>	<b>\$7,973</b>	<b>\$7,973</b>	<b>\$7,973</b>	<b>\$6,973</b>	<b>\$6,973</b>	<b>\$6,973</b>	<b>\$6,973</b>	<b>\$6,973</b>	<b>\$6,973</b>
<b>\$10,155</b>	<b>\$11,266</b>	<b>\$11,547</b>	<b>\$11,898</b>	<b>\$10,899</b>	<b>\$10,899</b>	<b>\$9,899</b>	<b>\$9,899</b>	<b>\$9,899</b>	<b>\$9,899</b>	<b>\$9,899</b>	<b>\$9,899</b>
\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1
\$7,354	\$7,828	\$8,301	\$8,497	\$8,927	\$9,369	\$9,818	\$10,268	\$10,737	\$11,206	\$11,689	\$12,183
(\$10,036)	(\$10,232)	(\$10,530)	(\$10,530)	(\$10,780)	(\$11,030)	(\$11,280)	(\$11,530)	(\$11,780)	(\$12,030)	(\$12,280)	(\$12,530)
(\$10)	\$4	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$12
\$15,790	\$16,313	\$17,550	\$18,913	\$20,288	\$21,723	\$23,141	\$24,565	\$25,906	\$27,371	\$29,190	\$30,958
<b>\$13,099</b>	<b>\$13,914</b>	<b>\$15,334</b>	<b>\$16,893</b>	<b>\$18,447</b>	<b>\$20,075</b>	<b>\$21,692</b>	<b>\$23,316</b>	<b>\$24,876</b>	<b>\$26,560</b>	<b>\$28,611</b>	<b>\$30,624</b>
<b>\$23,254</b>	<b>\$25,180</b>	<b>\$26,881</b>	<b>\$28,791</b>	<b>\$29,346</b>	<b>\$30,974</b>	<b>\$31,591</b>	<b>\$33,215</b>	<b>\$34,775</b>	<b>\$36,459</b>	<b>\$38,510</b>	<b>\$40,523</b>

Source: Company Reports, Bernstein estimates and analysis

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EXHIBIT 58: **Bernstein NVDA cash flow statement**

NVidia: Cash Flow Statement				
Calendar Quarter	2020	2021E	2022E	2023E
Fiscal Quarter	2021	2022E	2023E	2024E
<b>Cash flows from operating activities:</b>				
GAAP Net income	\$ 4,332	\$ 6,148	\$ 6,943	\$ 8,149
Adjustments to reconcile net income to net cash provided by operating activities:				
Depreciation and amortization	\$1,097	\$1,074	\$1,068	\$1,068
Share-based compensation	\$1,398	\$1,771	\$1,914	\$2,075
Restructuring / Other	\$0	\$0	\$0	\$0
Amortization of debt discount	\$0	\$0	\$0	\$0
Net gain on sale/disposal of long-lived assets/investments	\$0	\$0	\$0	\$0
Loss on early debt conversions	\$0	\$0	\$0	\$0
Deferred income taxes	(\$281)	\$0	\$0	\$0
Tax benefit from stock-based compensation	\$0	\$0	\$0	\$0
Other	(\$19)	\$0	\$0	\$0
Changes in assets and liabilities, net of acquisitions:	0	0	0	-
Accounts receivable, net	(\$551)	\$0	\$0	\$0
Inventory	(\$524)	(\$109)	(\$143)	(\$256)
Prepaid expenses/other assets	(\$394)	\$0	\$0	\$0
Accounts payable	\$363	\$0	\$0	\$0
Accrued and other current liabilities	\$237	\$0	\$0	\$0
Other long-term liabilities	\$163	\$0	\$0	\$0
<b>Net cash provided by operating activities</b>	<b>\$ 5,821</b>	<b>\$ 8,885</b>	<b>\$ 9,782</b>	<b>\$ 11,036</b>
<b>Cash flows from investing activities:</b>				
Net Proceeds from sale of marketable securities	(\$9,989)	\$0	\$0	\$0
Proceeds from sale of long-lived assets/investments	\$0	\$0	\$0	\$0
Purchases of property, plant and equipment	(\$1,128)	(\$1,306)	(\$1,257)	(\$1,356)
Acquisitions	(\$8,524)	\$0	\$0	\$0
Reimbursement of HQ building development costs	(\$6)	\$0	\$0	\$0
Other	(\$27)	\$0	\$0	\$0
<b>Net cash used in investing activities</b>	<b>\$ (19,674)</b>	<b>\$ (1,306)</b>	<b>\$ (1,257)</b>	<b>\$ (1,356)</b>
<b>Cash flows from financing activities:</b>				
Proceeds from issuance of notes, net	\$ 4,971	(\$1,000)	-	\$ -
Payments related to repurchases of common stock	\$0	(\$1,000)	(\$1,000)	(\$1,000)
Repayment of convertible notes	\$0	(\$999)	\$0	\$0
Dividends paid	(\$395)	(\$497)	(\$549)	(\$552)
Other	(\$22)	\$0	\$0	\$0
<b>Net cash (used in) provided by financing activities</b>	<b>\$ 3,804</b>	<b>\$ (3,496)</b>	<b>\$ (1,549)</b>	<b>\$ (1,552)</b>
<b>Free Cash Flow</b>	<b>\$ 4,693</b>	<b>\$ 7,579</b>	<b>\$ 8,525</b>	<b>\$ 9,680</b>

Source: Company Reports, Bernstein estimates and analysis

Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Q121	Q221	Q321	Q421	Q122E	Q222E	Q322E	Q422E	Q123E	Q223E	Q323E	Q423E
\$ 917	\$ 622	\$ 1,336	\$ 1,457	\$ 1,498	\$ 1,560	\$ 1,542	\$ 1,548	\$ 1,479	\$ 1,602	\$ 1,956	\$ 1,906
\$ 107	\$ 404	\$ 299	\$ 287	\$ 269	\$ 269	\$ 269	\$ 269	\$ 267	\$ 267	\$ 267	\$ 267
\$ 224	\$ 374	\$ 383	\$ 417	\$ 430	\$ 442	\$ 449	\$ 451	\$ 468	\$ 469	\$ 483	\$ 494
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 16	\$ (80)	\$ (53)	\$ (164)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 4	\$ (8)	\$ 2	\$ (17)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (249)	\$ 44	\$ (463)	\$ 117	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (151)	\$ 54	\$ (93)	\$ (334)	\$ 1	\$ (25)	\$ (79)	\$ (7)	\$ 73	\$ (94)	\$ (132)	\$ 10
\$ (8)	\$ 42	\$ (443)	\$ 15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 71	\$ (8)	\$ 225	\$ 75	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (32)	\$ 112	\$ 31	\$ 126	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 10	\$ 10	\$ 55	\$ 88	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 909	\$ 1,566	\$ 1,279	\$ 2,067	\$ 2,198	\$ 2,245	\$ 2,181	\$ 2,260	\$ 2,287	\$ 2,244	\$ 2,574	\$ 2,677
\$ (860)	\$ (6,135)	\$ (178)	\$ (2,816)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (155)	\$ (217)	\$ (473)	\$ (283)	\$ (312)	\$ (327)	\$ (333)	\$ (334)	\$ (299)	\$ (315)	\$ (322)	\$ (321)
\$ (34)	\$ (7,137)	\$ (1,353)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (6)	\$ -	\$ 3	\$ (30)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (1,055)	\$ (13,489)	\$ (2,001)	\$ (3,129)	\$ (312)	\$ (327)	\$ (333)	\$ (334)	\$ (299)	\$ (315)	\$ (322)	\$ (321)
\$ 4,979	\$ (8)	\$ -	\$ -	\$ -	\$ -	\$ (1,000)	\$ -	\$ -	\$ -	\$ -	\$ -
\$ -	\$ -	\$ -	\$ -	\$ (250)	\$ (250)	\$ (250)	\$ (250)	\$ (250)	\$ (250)	\$ (250)	\$ (250)
\$ -	\$ -	\$ -	\$ -	\$ (999)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ (98)	\$ (99)	\$ (99)	\$ (99)	\$ (124)	\$ (124)	\$ (124)	\$ (124)	\$ (137)	\$ (137)	\$ (137)	\$ (138)
\$ (3)	\$ -	\$ -	\$ (19)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
\$ 4,744	\$ (297)	\$ (301)	\$ (342)	\$ (1,373)	\$ (374)	\$ (1,374)	\$ (374)	\$ (387)	\$ (387)	\$ (387)	\$ (388)
\$ 754	\$ 1,349	\$ 806	\$ 1,784	\$ 1,886	\$ 1,918	\$ 1,848	\$ 1,926	\$ 1,988	\$ 1,929	\$ 2,252	\$ 2,356

EXHIBIT 59: **Bernstein NVDA Revenue Model**

**NVDA: Detailed Revenue Model (\$M)**

Calendar Year	CY2020				CY2021				CY2022			
Fiscal Year ends January	FY2021				FY2022				FY2023			
Fiscal Quarter (FYE Jan):	Q121	Q221	Q321	Q421E	Q122E	Q222E	Q322E	Q422E	Q123E	Q223E	Q323E	Q423E
Revenue by End Market												
Gaming	1,339.0	1,654.0	2,271.0	2,495.0	2,656.1	2,726.1	2,726.1	2,706.1	2,455.6	2,525.6	3,125.1	3,055.1
Professional Visualization	307.0	203.0	236.0	307.0	313.1	328.5	344.6	344.6	348.0	365.2	383.2	402.1
Datacenter	1,141.0	1,752.0	1,900.0	1,903.0	1,983.8	2,027.4	2,083.3	2,120.1	2,253.9	2,418.4	2,513.1	2,538.1
Automotive	155.0	111.0	125.0	145.0	150.0	167.0	179.0	191.0	210.5	238.0	243.0	248.0
OEM	138.0	146.0	194.0	153.0	203.0	204.5	212.3	203.3	175.0	172.0	179.3	170.9
IP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Revenues	3,080.0	3,866.0	4,726.0	5,003.0	5,306.0	5,453.6	5,545.4	5,565.3	5,443.1	5,719.2	6,443.7	6,414.2

Calendar Year	CY2020				CY2021				CY2022			
Fiscal Year ends January	FY2021				FY2022				FY2023			
Fiscal Quarter (FYE Jan):	Q121	Q221	Q321	Q421E	Q122E	Q222E	Q322E	Q422E	Q123E	Q223E	Q323E	Q423E
QoQ Growth												
Gaming	-10.2%	23.5%	37.3%	9.9%	6.5%	2.6%	0.0%	(0.7%)	(9.3%)	2.9%	23.7%	(2.2%)
Professional Visualization	-7.3%	-33.9%	16.3%	30.1%	2.0%	4.9%	4.9%	0.0%	1.0%	4.9%	4.9%	4.9%
Datacenter	17.9%	53.5%	8.4%	0.2%	4.2%	2.2%	2.8%	1.8%	6.3%	7.3%	3.9%	1.0%
Automotive	-4.9%	-28.4%	12.6%	16.0%	3.4%	11.3%	7.2%	6.7%	10.2%	13.1%	2.1%	2.1%
OEM	-9.2%	5.8%	32.9%	-21.1%	32.7%	0.8%	3.8%	(4.2%)	(13.9%)	(1.7%)	4.3%	(4.7%)
IP												
Total Revenues	-0.8%	25.5%	22.2%	5.9%	6.1%	2.8%	1.7%	0.4%	-2.2%	5.1%	12.7%	-0.5%

Calendar Year	CY 2019				CY2021				CY2022			
Fiscal Year ends January	FY 2020				FY2022				FY2023			
YoY Growth	Q121	Q221	Q321	Q421E	Q122E	Q222E	Q322E	Q422E	Q122E	Q222E	Q322E	Q422E
Revenue by End Market												
Gaming	26.9%	26.0%	36.9%	67.3%	98.4%	64.8%	20.0%	8.5%	-7.5%	-7.4%	14.6%	12.9%
Professional Visualization	15.4%	-30.2%	-27.2%	-7.3%	2.0%	61.8%	46.0%	12.3%	11.2%	11.2%	11.2%	16.7%
Datacenter	80.0%	167.5%	161.7%	96.6%	73.9%	15.7%	9.6%	11.4%	13.6%	19.3%	20.6%	19.7%
Automotive	-6.6%	-46.9%	-22.8%	-11.0%	-3.2%	50.5%	43.2%	31.7%	40.3%	42.5%	35.8%	29.8%
OEM	39.4%	31.5%	35.7%	0.7%	47.1%	40.1%	9.4%	32.9%	-13.8%	-15.9%	-15.5%	-16.0%
IP												
Total Revenues	38.7%	49.9%	56.8%	61.1%	72.3%	41.1%	17.3%	11.2%	2.6%	4.9%	16.2%	15.3%

Source: Company reports, Bernstein estimates and analysis

Calendar Year	2019	2020E	2021E	2022E	2023E
FYE Jan:	2020	2021E	2022E	2023E	2024E
Revenue by Segment					
Gaming	5,518.0	7,759.0	10,814.6	11,161.5	12,335.1
Professional Visualization	1,212.0	1,053.0	1,330.8	1,498.6	1,685.5
Datacenter	2,983.0	6,696.0	8,214.7	9,723.4	11,378.6
Automotive	700.0	536.0	687.0	939.5	1,154.5
OEM	505.0	631.0	823.1	697.2	568.1
IP	0.0	0.0	0.0	0.0	0.0
Total Revenues	10,918.0	16,675.0	21,870.2	24,020.2	27,121.8

Calendar Year	2019	2020E	2021E	2022E	2023E
FYE Jan:	2020	2021E	2022E	2023E	2024E
QoQ Growth					
Gaming					
Professional Visualization					
Datacenter					
Automotive					
OEM					
IP					
Total Revenues					

Calendar Year	2019	2020E	2021E	2022E	2023E
FYE Jan:	2020	2021E	2022E	2023E	2024E
YoY Growth					
Gaming	-11.7%	40.6%	39.4%	3.2%	10.5%
Professional Visualization	7.3%	-13.1%	26.4%	12.6%	12.5%
Datacenter	1.7%	124.5%	22.7%	18.4%	17.0%
Automotive	9.2%	-23.4%	28.2%	36.8%	22.9%
OEM	-34.2%	25.0%	30.4%	-15.3%	(18.5%)
IP					
Total Revenues	-6.8%	52.7%	31.2%	9.8%	12.9%

EXHIBIT 60: **Bernstein NXPI Income Statement**

NXP Pro Forma Income Statement (\$M)																				
Combined (Fiscal Year ending December 31st)																				
Calendar Year:					2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenue					\$8,612.0	\$10,472.5	\$11,025.0	\$11,704.5	\$2,021.0	\$1,817.0	\$2,267.0	\$2,507.0	\$2,550.0	\$2,543.9	\$2,663.6	\$2,715.0	\$2,552.4	\$2,683.7	\$2,901.1	\$2,887.7
COGS					4,212.0	4,789.6	4,943.4	5,236.2	974.0	925.0	1,132.0	1,181.0	1,185.8	1,170.2	1,212.0	1,221.7	1,174.1	1,207.7	1,291.0	1,270.6
Non-GAAP Gross Profit					\$4,400.0	\$5,682.9	\$6,081.6	\$6,468.3	\$1,047.0	\$892.0	\$1,135.0	\$1,326.0	\$1,364.3	\$1,373.7	\$1,451.7	\$1,493.2	\$1,378.3	\$1,476.0	\$1,610.1	\$1,617.1
Operating Expenses																				
R&D					1,520.0	1,675.6	1,764.0	1,872.7	380.0	357.0	387.0	396.0	408.0	407.0	426.2	434.4	408.4	429.4	464.2	462.0
SG&A					654.0	736.6	771.7	819.3	165.0	159.0	163.0	167.0	182.0	178.1	186.5	190.0	178.7	187.9	203.1	202.1
Other Expense (Income)					(2.0)	-	-	-	-	-	(1.0)	(1.0)	-	-	-	-	-	-	-	-
Total Operating Expenses					2,172.0	2,412.2	2,535.7	2,692.0	545.0	516.0	549.0	562.0	590.0	585.1	612.6	624.4	587.1	617.2	667.3	664.2
Non-GAAP Operating Income					\$2,228.0	\$3,270.7	\$3,545.9	\$3,776.2	\$502.0	\$376.0	\$586.0	\$764.0	\$774.3	\$788.6	\$839.0	\$868.8	\$791.3	\$858.8	\$942.9	\$953.0
Net Interest Expense					(357.0)	(340.0)	(340.1)	(340.3)	(75.0)	(92.0)	(100.0)	(90.0)	(85.0)	(85.0)	(85.0)	(85.0)	(85.0)	(85.0)	(85.0)	(85.1)
Other Non-Operating Inc. (Exp.)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-GAAP Pre-Tax Income					\$1,871.0	\$2,930.7	\$3,205.7	\$3,436.0	\$427.0	\$284.0	\$486.0	\$674.0	\$689.3	\$703.6	\$754.1	\$783.8	\$706.3	\$773.8	\$857.8	\$867.9
Provision for Income Taxes (Benefit)					(113.0)	(293.1)	(352.6)	(412.3)	(28.0)	(16.0)	(39.0)	(30.0)	(56.0)	(74.4)	(79.8)	(82.9)	(77.7)	(85.1)	(94.4)	(95.5)
Non-GAAP Net Income					\$1,758.0	\$2,637.7	\$2,853.1	\$3,023.6	\$399.0	\$268.0	\$447.0	\$644.0	\$633.3	\$629.2	\$674.3	\$700.9	\$628.6	\$688.6	\$763.5	\$772.4
NI attributable to non-controlling interests					(28.0)	(39.5)	(40.0)	(40.0)	(8.0)	(5.0)	(4.0)	(11.0)	(9.5)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)	(10.0)
Non-GAAP Net Income/ (Loss) attributable to shareholders					1,730.0	2,598.2	2,813.1	2,983.6	\$391.0	\$263.0	\$443.0	\$633.0	\$623.8	\$619.2	\$664.3	\$690.9	\$618.6	\$678.6	\$753.5	\$762.4
GAAP Weighted Average Shares - Diluted					280.9	281.0	273.0	265.0	279.9	279.1	279.5	285.3	284.0	282.0	280.0	278.0	276.0	274.0	272.0	270.0
GAAP Diluted EPS (\$)					\$0.16	\$5.68	\$6.90	\$7.68	(\$0.08)	(\$0.77)	(\$0.08)	\$1.08	\$1.31	\$1.31	\$1.48	\$1.59	\$1.40	\$1.63	\$1.91	\$1.96
Non-GAAP Weighted Average Shares - Diluted					282.5	281.0	272.8	264.8	283.4	281.7	279.5	285.3	284.0	282.0	280.0	278.0	276.0	274.0	272.0	270.0
Non-GAAP Diluted EPS (\$)					\$6.12	\$9.25	\$10.31	\$11.27	\$1.38	\$0.93	\$1.59	\$2.22	\$2.20	\$2.20	\$2.37	\$2.49	\$2.24	\$2.48	\$2.77	\$2.82
Non-GAAP Diluted EPS incl SBC (\$)					\$4.73	\$7.99	\$8.96	\$9.80	\$1.00	\$0.56	\$1.25	\$1.91	\$1.89	\$1.88	\$2.06	\$2.17	\$1.91	\$2.14	\$2.43	\$2.48
Pro Forma Reconciliation																				
Non-GAAP Gross Profit					\$4,400.0	\$5,682.9	\$6,081.6	\$6,468.3	\$1,047.0	\$892.0	\$1,135.0	\$1,326.0	\$1,364.3	\$1,373.7	\$1,451.7	\$1,493.2	\$1,378.3	\$1,476.0	\$1,610.1	\$1,617.1
Total Adjustments					(165.0)	(117.7)	(114.0)	(116.0)	(50.0)	(32.0)	(45.0)	(38.0)	(33.7)	(28.0)	(28.0)	(28.0)	(28.5)	(28.5)	(28.5)	(28.5)
GAAP Gross Profit					\$4,235.0	\$5,565.2	\$5,967.6	\$6,352.3	\$997.0	\$860.0	\$1,090.0	\$1,288.0	\$1,330.6	\$1,345.7	\$1,423.7	\$1,465.2	\$1,349.8	\$1,447.5	\$1,581.6	\$1,588.6
Non-GAAP Operating Expenses					\$2,172.0	\$2,412.2	\$2,535.7	\$2,692.0	\$545	\$516	\$549	\$562	\$590	\$585	\$613	\$624	\$587	\$617	\$667	\$664
Total Adjustments					(1,803.0)	(901.3)	(819.0)	(835.0)	(497.0)	(489.0)	(554.0)	(263.0)	(235.3)	(222.0)	(222.0)	(222.0)	(204.8)	(204.8)	(204.8)	(204.8)
GAAP Operating Expenses					\$3,975.0	\$3,313.5	\$3,354.7	\$3,527.0	\$1,042	\$1,005	\$1,103	\$825	\$825	\$807	\$835	\$846	\$792	\$822	\$872	\$869
Non-GAAP Operating Income					\$2,228.0	\$3,270.7	\$3,545.9	\$3,776.2	\$502	\$376	\$586	\$764	\$774	\$789	\$839	\$869	\$791	\$859	\$943	\$953
Total Adjustments					(1,850.0)	(1,019.0)	(933.0)	(951.0)	(434.0)	(521.0)	(594.0)	(301.0)	(269.0)	(250.0)	(250.0)	(250.0)	(233.3)	(233.3)	(233.3)	(233.3)
GAAP Operating Income					\$378	\$2,252	\$2,613	\$2,825	\$68.0	(\$145.0)	(\$8.0)	\$463.0	\$505.3	\$538.6	\$589.0	\$618.8	\$558.0	\$625.5	\$709.6	\$719.7
Cash Tax Provision					(\$113.0)	(\$293.1)	(\$352.6)	(\$412.3)	(\$28.0)	(\$16.0)	(\$39.0)	(\$30.0)	(\$56.0)	(\$74.4)	(\$79.8)	(\$82.9)	(\$77.7)	(\$85.1)	(\$94.4)	(\$95.5)
Total Adjustments					(16.0)	-	-	-	(\$26.0)	\$17.0	\$18.0	(\$25.0)	-	-	-	-	-	-	-	-
GAAP Tax (expense)					(\$97)	(\$293)	(\$353)	(\$412)	(\$2.0)	(\$33.0)	(\$57.0)	(\$5.0)	(\$56.0)	(\$74.4)	(\$79.8)	(\$82.9)	(\$77.7)	(\$85.1)	(\$94.4)	(\$95.5)
Non-GAAP Net Income to attrib. shareholders					1,730.0	2,598.2	2,813.1	2,983.6	\$391	\$263	\$443	\$633	\$624	\$619	\$664	\$691	\$619	\$679	\$753	\$762
Total Adjustments					(1,678.0)	(1,002.0)	(933.0)	(951.0)	(412.0)	(477.0)	(465.0)	(324.0)	(252.0)	(250.0)	(250.0)	(250.0)	(233.3)	(233.3)	(233.3)	(233.3)
GAAP Net Income					\$52.0	\$1,596.2	\$1,880.1	\$2,032.6	(\$21.0)	(\$214.0)	(\$22.0)	\$309.0	\$371.8	\$369.2	\$414.3	\$440.9	\$385.3	\$445.4	\$520.2	\$529.2
Growth and Non-GAAP Margins					2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
QoQ Revenue Growth					-	-			-12.2%	-10.1%	24.8%	10.6%	1.7%	-0.2%	4.7%	1.9%	-6.0%	5.1%	8.1%	-0.5%
YoY Revenue Growth					-3.0%	21.6%	5.3%	6.2%	-3.5%	-18.0%	0.1%	9.0%	26.2%	40.0%	17.5%	8.3%	0.1%	5.5%	8.9%	6.4%
Non-GAAP Gross Margin					51.1%	54.3%	55.2%	55.3%	51.8%	49.1%	50.1%	52.9%	53.5%	54.0%	54.5%	55.0%	54.0%	55.0%	55.5%	56.0%
Opex as % of Sales					25.2%	23.0%	23.0%	23.0%	27.0%	28.4%	24.2%	22.4%	23.1%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%	23.0%
Non-GAAP Operating Margin					25.9%	31.2%	32.2%	32.3%	24.8%	20.7%	25.8%	30.5%	30.4%	31.0%	31.5%	32.0%	31.0%	32.0%	32.5%	33.0%
Cash Tax Rate					-6.0%	-10.0%	-11.0%	-12.0%	-6.6%	-5.6%	-8.0%	-4.5%	-8.1%	-10.6%	-10.6%	-10.6%	-11.0%	-11.0%	-11.0%	-11.0%
Non-GAAP Net Margin					20.1%	24.8%	25.5%	25.5%	19.3%	14.5%	19.5%	25.2%	24.5%	24.3%	24.9%	25.4%	24.2%	25.3%	26.0%	26.4%

Source: Company Reports, Bernstein estimates and analysis

EXHIBIT 61: **Bernstein NXPI Balance Sheet**

Balance Sheet (\$ MM)																
	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash & Short Term Investments	\$ 2,275.0	\$ 2,189.4	\$ 2,012.8	\$ 1,760.0	\$1,079.0	\$3,266.0	\$3,566.0	\$2,275.0	\$2,242.7	\$2,231.8	\$2,157.5	\$2,189.4	\$2,113.2	\$1,989.5	\$1,950.5	\$2,012.8
Accounts Receivable	765.0	814.5	866.3	921.9	616.0	481.0	755.0	765.0	765.0	763.2	799.1	814.5	765.7	805.1	870.3	866.3
Other Receivables	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Assets Held for Sale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current Assets of Disc Ops	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inventories	1,030.0	1,160.7	1,334.1	1,435.9	1,227.0	1,228.0	1,064.0	1,030.0	1,067.2	1,053.2	1,151.4	1,160.7	1,174.1	1,268.0	1,355.5	1,334.1
Other Current Assets	254.0	254.0	254.0	254.0	327.0	240.0	219.0	254.0	254.0	254.0	254.0	254.0	254.0	254.0	254.0	254.0
<b>Total Current Assets</b>	<b>\$4,324.0</b>	<b>\$4,418.5</b>	<b>\$4,467.2</b>	<b>\$4,371.9</b>	<b>\$3,249.0</b>	<b>\$5,215.0</b>	<b>\$5,604.0</b>	<b>\$4,324.0</b>	<b>\$4,328.8</b>	<b>\$4,302.2</b>	<b>\$4,361.9</b>	<b>\$4,418.5</b>	<b>\$4,307.1</b>	<b>\$4,316.7</b>	<b>\$4,430.4</b>	<b>\$4,467.2</b>
Investments in equity-accounted investees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Long-Term Assets	1,013.0	1,013.0	1,013.0	1,013.0	712.0	760.0	924.0	1,013.0	1,013.0	1,013.0	1,013.0	1,013.0	1,013.0	1,013.0	1,013.0	1,013.0
PP&E	2,284.0	2,262.5	2,271.7	2,310.2	2,397.0	2,312.0	2,255.0	2,284.0	2,274.5	2,265.2	2,262.5	2,262.5	2,254.3	2,253.3	2,263.1	2,271.7
Identified Intangible assets	2,242.0	1,807.2	1,398.1	998.5	3,218.0	2,824.0	2,380.0	2,242.0	2,182.6	2,056.1	1,931.3	1,807.2	1,702.1	1,598.8	1,498.6	1,398.1
Goodwill	9,984.0	9,984.0	9,984.0	9,984.0	9,935.0	9,946.0	9,959.0	9,984.0	9,984.0	9,984.0	9,984.0	9,984.0	9,984.0	9,984.0	9,984.0	9,984.0
Non-current assets of discontinued operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Long-Term Assets</b>	<b>15,523.0</b>	<b>15,066.7</b>	<b>14,666.8</b>	<b>14,305.7</b>	<b>\$16,262.0</b>	<b>\$15,842.0</b>	<b>\$15,518.0</b>	<b>\$15,523.0</b>	<b>\$15,454.1</b>	<b>\$15,318.3</b>	<b>\$15,190.8</b>	<b>\$15,066.7</b>	<b>\$14,953.4</b>	<b>\$14,849.1</b>	<b>\$14,758.7</b>	<b>\$14,666.8</b>
<b>Total Assets</b>	<b>\$19,847.0</b>	<b>\$19,485.2</b>	<b>\$19,134.1</b>	<b>\$18,677.6</b>	<b>\$19,511.0</b>	<b>\$21,057.0</b>	<b>\$21,122.0</b>	<b>\$19,847.0</b>	<b>\$19,782.9</b>	<b>\$19,620.5</b>	<b>\$19,552.7</b>	<b>\$19,485.2</b>	<b>\$19,260.5</b>	<b>\$19,165.8</b>	<b>\$19,189.1</b>	<b>\$19,134.1</b>
Accounts Payable	\$ 991.0	\$ 1,038.5	\$ 1,080.0	\$ 1,162.4	\$895.0	\$729.0	\$697.0	\$991.0	\$1,007.9	\$994.7	\$1,030.2	\$1,038.5	\$998.0	\$1,026.5	\$1,097.3	\$1,080.0
Liabilities held for sale	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Current liabilities of discontinued operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Restructuring Liabilities	60.0	60.0	60.0	60.0	\$26.0	\$25.0	\$25.0	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0	\$60.0
Accrued Liabilities	966.0	966.0	966.0	966.0	910.0	889.0	940.0	966.0	966.0	966.0	966.0	966.0	966.0	966.0	966.0	966.0
Short-Term Debt	-	-	-	-	-	1,349.0	1,749.0	-	-	-	-	-	-	-	-	-
<b>Total Current Liabilities</b>	<b>\$2,017.0</b>	<b>\$2,064.5</b>	<b>\$2,106.0</b>	<b>\$2,188.4</b>	<b>\$1,831.0</b>	<b>\$2,992.0</b>	<b>\$3,411.0</b>	<b>\$2,017.0</b>	<b>\$2,033.9</b>	<b>\$2,020.7</b>	<b>\$2,056.2</b>	<b>\$2,064.5</b>	<b>\$2,024.0</b>	<b>\$2,052.5</b>	<b>\$2,123.3</b>	<b>\$2,106.0</b>
Long-Term Debt	7,609.0	7,609.0	7,609.0	7,609.0	7,366.0	8,004.0	7,607.0	7,609.0	7,609.0	7,609.0	7,609.0	7,609.0	7,609.0	7,609.0	7,609.0	7,609.0
Restructuring liabilities - non-current	14.0	14.0	14.0	14.0	-	-	\$15.0	\$14.0	\$14.0	\$14.0	\$14.0	\$14.0	\$14.0	\$14.0	\$14.0	\$14.0
Deferred tax liabilities	85.0	85.0	85.0	85.0	\$199.0	\$136.0	\$136.0	\$85.0	\$85.0	\$85.0	\$85.0	\$85.0	\$85.0	\$85.0	\$85.0	\$85.0
Non-current liabilities of discontinued operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other non-current liabilities	971.0	971.0	971.0	971.0	857.0	870.0	880.0	971.0	971.0	971.0	971.0	971.0	971.0	971.0	971.0	971.0
<b>Total Liabilities</b>	<b>\$10,696.0</b>	<b>\$10,743.5</b>	<b>\$10,785.0</b>	<b>\$10,867.4</b>	<b>\$10,253.0</b>	<b>\$12,002.0</b>	<b>\$12,049.0</b>	<b>\$10,696.0</b>	<b>\$10,712.9</b>	<b>\$10,699.7</b>	<b>\$10,735.2</b>	<b>\$10,743.5</b>	<b>\$10,703.0</b>	<b>\$10,731.5</b>	<b>\$10,802.3</b>	<b>\$10,785.0</b>
Non-controlling interests	207.0	207.0	207.0	207.0	222.0	193.0	197.0	207.0	207.0	207.0	207.0	207.0	207.0	207.0	207.0	207.0
Stockholder's equity	8,944.0	8,534.7	8,142.1	7,603.1	9,036.0	8,862.0	8,876.0	8,944.0	8,863.0	8,713.8	8,610.5	8,534.7	8,350.5	8,227.2	8,179.7	8,142.1
<b>Shareholders' Equity</b>	<b>\$9,151.0</b>	<b>\$8,741.7</b>	<b>\$8,349.1</b>	<b>\$7,810.1</b>	<b>\$9,258.0</b>	<b>\$9,055.0</b>	<b>\$9,073.0</b>	<b>\$9,151.0</b>	<b>\$9,070.0</b>	<b>\$8,920.8</b>	<b>\$8,817.5</b>	<b>\$8,741.7</b>	<b>\$8,557.5</b>	<b>\$8,434.2</b>	<b>\$8,386.7</b>	<b>\$8,349.1</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>\$ 19,847.0</b>	<b>\$ 19,485.2</b>	<b>\$ 19,134.1</b>	<b>\$ 18,677.6</b>	<b>\$19,511.0</b>	<b>\$21,057.0</b>	<b>\$21,122.0</b>	<b>\$19,847.0</b>	<b>\$19,782.9</b>	<b>\$19,620.5</b>	<b>\$19,552.7</b>	<b>\$19,485.2</b>	<b>\$19,260.5</b>	<b>\$19,165.8</b>	<b>\$19,189.1</b>	<b>\$19,134.1</b>

Source: Company Reports, Bernstein estimates and analysis

EXHIBIT 62: **Bernstein NXPI Cash Flow Statement**

Cash Flow Statement (\$ MM)				Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E	
	2020	2021E	2022E													
Operating Activities																
Net income	80.0	1,635.7	1,920.1	2,072.6	(\$13.0)	(\$209.0)	(\$18.0)	\$320.0	\$381.3	\$379.2	\$424.3	\$450.9	\$395.3	\$455.4	\$530.2	\$539.2
(Income) loss from discontinued operations, net of tax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	547.0	545.2	542.0	546.8	133.0	136.0	139.0	139.0	137.0	136.5	135.9	135.7	135.7	135.3	135.2	135.8
Amortization (Internal SW and of Intangibles)	1,441.0	648.0	563.0	563.0	407.0	407.0	450.0	177.0	162.0	162.0	162.0	162.0	140.8	140.8	140.8	140.8
Stock-based compensation	384.0	352.0	370.0	388.0	107.0	105.0	83.0	89.0	88.0	88.0	88.0	88.0	92.5	92.5	92.5	92.5
Change in fair value of Warrant Liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amortization of discount on convertible debt	2.0	-	-	-	-	(1.0)	3.0	-	-	-	-	-	-	-	-	-
Amortization of debt issuance costs	6.0	-	-	-	1.0	3.0	-	2.0	-	-	-	-	-	-	-	-
Net (gain) loss on sale of assets	(136.0)	-	-	-	(110.0)	-	(1.0)	(25.0)	-	-	-	-	-	-	-	-
Other Items	(289.0)	-	-	-	(75.0)	(81.0)	(118.0)	(15.0)	-	-	-	-	-	-	-	-
Results relating to equity accounted investees	4.0	-	-	-	1.0	1.0	1.0	1.0	-	-	-	-	-	-	-	-
Income statement adjustments	\$2,039.0	\$3,180.8	\$3,395.1	\$3,570.4	\$451.0	\$361.0	\$539.0	\$688.0	\$768.3	\$765.7	\$810.2	\$836.6	\$764.3	\$823.9	\$898.6	\$908.2
Changes in Operating assets/Liabilities																
(Increase) decrease in trade receivables	(51.0)	(49.5)	(51.8)	(55.6)	27.0	224.0	(252.0)	(50.0)	-	1.8	(35.9)	(15.4)	48.8	(39.4)	(65.2)	4.0
(Increase) decrease in inventories	163.0	(130.7)	(173.5)	(101.8)	(35.0)	-	164.0	34.0	(37.2)	14.0	(98.2)	(9.3)	(13.5)	(93.9)	(87.5)	21.4
Increase (decrease) in trade payables	319.0	47.5	41.5	82.4	64.0	(160.0)	82.0	333.0	16.9	(13.2)	35.5	8.3	(40.5)	28.5	70.8	(17.3)
(Increase) decrease in other receivables	(16.0)	-	-	-	4.0	(11.0)	(9.0)	-	-	-	-	-	-	-	-	-
Increase (decrease) in other payables	23.0	-	-	-	-	-	-	23.0	-	-	-	-	-	-	-	-
Changes in Other current assets	1.0	-	-	-	-	-	-	1.0	-	-	-	-	-	-	-	-
Balance sheet adjustments	439.0	(132.7)	(183.8)	(75.0)	60.0	53.0	(15.0)	341.0	(20.3)	2.6	(98.6)	(16.4)	(5.2)	(104.8)	(81.9)	8.1
Exchange Differences	6.0	-	-	-	(4.0)	5.0	5.0	-	-	-	-	-	-	-	-	-
Other Items	(2.0)	-	-	-	5.0	(5.0)	(2.0)	-	-	-	-	-	-	-	-	-
Cash flow from operating activities	\$2,482.0	\$3,048.2	\$3,211.3	\$3,495.4	\$512.0	\$414.0	\$527.0	\$1,029.0	\$748.0	\$768.3	\$711.6	\$820.3	\$759.1	\$719.1	\$816.8	\$916.3
Investing Activities																
Purchase of identified intangible assets	(130.0)	(146.2)	(153.9)	(163.4)	(45.0)	(28.0)	(22.0)	(35.0)	(35.6)	(35.5)	(37.2)	(37.9)	(35.6)	(37.5)	(40.5)	(40.3)
Capital Expenditure	(392.0)	(523.6)	(551.2)	(585.2)	(143.0)	(75.0)	(70.0)	(104.0)	(127.5)	(127.2)	(133.2)	(135.7)	(127.6)	(134.2)	(145.1)	(144.4)
Sale of Property, Plant, and Equipment	4.0	-	-	-	-	1.0	2.0	1.0	-	-	-	-	-	-	-	-
Purchase/Sale of Investments/Businesses	112.0	-	-	-	151.0	(11.0)	(15.0)	(13.0)	-	-	-	-	-	-	-	-
Other Investing Activities	(12.0)	-	-	-	-	-	-	(12.0)	-	-	-	-	-	-	-	-
Cash flow from investing activities	(\$418.0)	(\$669.8)	(\$705.2)	(\$748.6)	(\$37.0)	(\$113.0)	(\$105.0)	(\$163.0)	(\$163.1)	(\$162.7)	(\$170.4)	(\$173.7)	(\$163.3)	(\$171.7)	(\$185.6)	(\$184.7)
Financing Activities																
Net (repayments) borrowings of short-term debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amounts drawn under the revolving credit facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repayments under the revolving credit facility	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repurchase of long-term debt	(1,809.0)	-	-	-	-	-	-	(1,809.0)	-	-	-	-	-	-	-	-
Principal payments on long-term debt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net proceeds from the issuance of long-term debt	2,000.0	-	-	-	-	2,000.0	-	-	-	-	-	-	-	-	-	-
Proceeds from sale of warrants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash paid for Notes hedge derivatives	(15.0)	-	-	-	-	(15.0)	-	-	-	-	-	-	-	-	-	-
Dividends paid to non-controlling interests	(35.0)	-	-	-	-	-	(34.0)	(1.0)	-	-	-	-	-	-	-	-
Dividends paid	(420.0)	(464.0)	(482.7)	(499.6)	(105.0)	(105.0)	(105.0)	(105.0)	(117.3)	(116.4)	(115.6)	(114.7)	(122.0)	(121.1)	(120.2)	(119.3)
Purchase of non-controlling interest shares	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net proceeds from the issuance of common stock / Other	72.0	-	-	-	29.0	8.0	27.0	8.0	-	-	-	-	-	-	-	-
Cash proceeds from exercise of stock options	(1.0)	-	-	-	-	-	-	(1.0)	-	-	-	-	-	-	-	-
Deemed dividend on buybacks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Purchase of treasury shares	(627.0)	(2,000.0)	(2,200.0)	(2,500.0)	(355.0)	(3.0)	(12.0)	(257.0)	(500.0)	(500.0)	(500.0)	(500.0)	(550.0)	(550.0)	(550.0)	(550.0)
Cash flow from financing activities	(\$835.0)	(\$2,464.0)	(\$2,682.7)	(\$2,999.6)	(\$431.0)	\$1,885.0	(\$124.0)	(\$2,165.0)	(\$617.3)	(\$616.4)	(\$615.6)	(\$614.7)	(\$672.0)	(\$671.1)	(\$670.2)	(\$669.3)
Net Cash from Continuing Operations	\$1,229.0	(\$85.6)	(\$176.6)	(\$252.8)	\$44.0	\$2,186.0	\$298.0	(\$1,299.0)	(\$32.3)	(\$10.8)	(\$74.3)	\$31.9	(\$76.2)	(\$123.7)	(\$39.0)	\$62.3
Net Cash from Discontinued Operations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Effect of changes in exchange rate on cash positions	1.0	-	-	-	(\$10.0)	\$1.0	\$2.0	\$8.0	-	-	-	-	-	-	-	-
Net Change in Cash and Cash equivalents	1,230.0	(85.6)	(176.6)	(252.8)	\$34.0	\$2,187.0	\$300.0	(\$1,291.0)	(\$32.3)	(\$10.8)	(\$74.3)	\$31.9	(\$76.2)	(\$123.7)	(\$39.0)	\$62.3
Cash at Beginning of Period	1,045.0	2,275.0	2,189.4	7,600.9	\$1,045.0	\$1,079.0	\$3,266.0	\$3,566.0	\$2,275.0	\$2,242.7	\$2,231.8	\$2,157.5	\$2,189.4	\$2,113.2	\$1,989.5	\$1,950.5
Cash at End of Period	\$2,275.0	\$2,189.4	\$2,012.8	\$7,348.2	\$1,079.0	\$3,266.0	\$3,566.0	\$2,275.0	\$2,242.7	\$2,231.8	\$2,157.5	\$2,189.4	\$2,113.2	\$1,989.5	\$1,950.5	\$2,012.8
Less (cash from discontinued ops)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash at End of Period - Continuing Ops	\$2,275.0	\$2,189.4	\$2,012.8	\$7,348.2	\$1,079.0	\$3,266.0	\$3,566.0	\$2,275.0	\$2,242.7	\$2,231.8	\$2,157.5	\$2,189.4	\$2,113.2	\$1,989.5	\$1,950.5	\$2,012.8
Free Cash Flow (OCF - Capex)	2,090.0	2,524.6	2,660.1	2,910.2	\$369.0	\$339.0	\$457.0	\$925.0	\$620.5	\$641.1	\$578.4	\$684.5	\$631.5	\$584.9	\$671.7	\$771.9

Source: Company Reports, Bernstein estimates and analysis

EXHIBIT 63: **Bernstein NXPI Revenue Model**

NXP: Segment Breakdown (\$MM)												
NXPI Pro-Forma Revenue (New Segmentation)												
	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Automotive	\$994	\$674	\$964	\$1,157	\$1,104	\$1,151	\$1,162	\$1,203	\$1,219	\$1,280	\$1,304	\$1,343
Industrial & IoT	\$376	\$435	\$514	\$504	\$473	\$506	\$527	\$514	\$539	\$604	\$653	\$603
Mobile	\$247	\$255	\$337	\$361	\$307	\$307	\$398	\$418	\$327	\$327	\$491	\$491
Communications Infrastructure & Other	\$404	\$453	\$452	\$429	\$393	\$411	\$423	\$438	\$468	\$473	\$453	\$451
Standard Products	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Manufacturing Service Agreements (zeroed out as of Q119)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Revenue	\$2,021	\$1,817	\$2,267	\$2,451	\$2,277	\$2,374	\$2,511	\$2,573	\$2,552	\$2,684	\$2,901	\$2,888
NXPI Pro-Forma Revenue (New Segmentation) QoQ Growth												
	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Automotive	-9.4%	-32.2%	43.0%	20.0%	-4.6%	4.3%	0.9%	3.5%	1.3%	5.0%	1.9%	3.0%
Industrial & IoT	-9.4%	15.7%	18.2%	-2.0%	-6.0%	6.8%	4.3%	-2.5%	4.8%	12.1%	8.2%	-7.8%
Mobile	-25.6%	3.2%	32.2%	7.0%	-15.0%	0.0%	30.0%	5.0%	-21.8%	0.0%	50.0%	0.0%
Communications Infrastructure & Other	-11.6%	12.1%	-0.2%	-5.0%	-8.4%	4.4%	2.9%	3.5%	6.8%	1.1%	-4.3%	-0.4%
Standard Products												
Manufacturing Service Agreements (zeroed out as of Q119)												
Total Revenue	-12.2%	-10.1%	24.8%	8.1%	-7.1%	4.3%	5.7%	2.5%	-0.8%	5.1%	8.1%	-0.5%

Source: Company reports, Bernstein analysis and estimates

CY16	CY17	CY18	CY19	CY20E	CY21E	CY22E	CY23E
\$3,688	\$4,263	\$4,507	\$4,212	\$3,789	\$4,620	\$5,146	\$5,551
\$1,471	\$1,718	\$1,813	\$1,599	\$1,829	\$2,020	\$2,399	\$2,623
\$890	\$1,161	\$1,164	\$1,191	\$1,200	\$1,430	\$1,637	\$1,718
\$2,180	\$1,863	\$1,787	\$1,875	\$1,738	\$1,665	\$1,844	\$1,812
\$1,220	\$118	\$0	\$0	\$0	\$0	\$0	\$0
\$49	\$133	\$136	\$0	\$0	\$0	\$0	\$0
\$9,498	\$9,256	\$9,407	\$8,877	\$8,556	\$9,735	\$11,025	\$11,704
CY16	CY17	CY18	CY19	CY20E	CY21E	CY22E	CY23E
	15.6%	5.7%	-6.5%	-10.0%	21.9%	11.4%	7.9%
	16.8%	5.5%	-11.8%	14.4%	10.5%	18.8%	9.3%
	30.4%	0.3%	2.3%	0.7%	19.2%	14.5%	5.0%
	-14.5%	-4.1%	4.9%	-7.3%	-4.2%	10.8%	-1.7%
	-90.3%	-100.0%					
	171.4%	2.3%	-100.0%				
	-2.5%	1.6%	-5.6%	-3.6%	13.8%	13.3%	6.2%



EXHIBIT 64: Bernstein QCOM Income Statement

Qualcomm: Income Statement (\$M)																
QCOM (Fiscal)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q120	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenue	21,655.0	30,302.1	32,041.4	33,830.9	5,057.0	5,206.0	4,890.0	6,502.0	8,226.0	7,630.7	6,890.4	7,554.9	8,699.1	7,768.5	7,536.2	8,037.6
COGS	8,906.0	12,913.5	13,736.4	14,482.9	2,019.0	2,208.0	1,991.0	2,688.0	3,416.0	3,418.5	2,863.4	3,215.5	3,638.9	3,359.7	3,243.6	3,494.2
Gross Profit	12,749.0	17,388.6	18,305.0	19,348.1	3,038.0	2,998.0	2,899.0	3,814.0	4,810.0	4,212.1	4,027.1	4,339.4	5,060.2	4,408.8	4,292.7	4,543.3
R&D	5,097.0	5,782.0	6,055.0	6,250.0	1,197.0	1,282.0	1,276.0	1,342.0	1,352.0	1,430.0	1,500.0	1,500.0	1,500.0	1,525.0	1,525.0	1,505.0
SG&A	1,720.0	1,819.0	1,890.0	1,935.0	446.0	428.0	400.0	446.0	427.0	447.0	470.0	475.0	470.0	475.0	475.0	470.0
Other Operating Expenses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Expenses	6,817.0	7,601.0	7,945.0	8,185.0	1,643.0	1,710.0	1,676.0	1,788.0	1,779.0	1,877.0	1,970.0	1,975.0	1,970.0	2,000.0	2,000.0	1,975.0
Operating Income	5,932.0	9,787.6	10,360.0	11,163.1	1,395.0	1,288.0	1,223.0	2,026.0	3,031.0	2,335.1	2,057.1	2,364.4	3,090.2	2,408.8	2,292.7	2,568.3
Net Investment Income (Loss)	(447.0)	(493.6)	(479.6)	(464.8)	(61.0)	(103.0)	(119.0)	(164.0)	(119.0)	(124.4)	(124.1)	(126.1)	(118.9)	(120.6)	(120.3)	(119.8)
Pre-Tax Income	5,485.0	9,294.0	9,880.5	10,698.2	1,334.0	1,185.0	1,104.0	1,862.0	2,912.0	2,210.8	1,933.0	2,238.3	2,971.3	2,288.2	2,172.4	2,448.6
Income Tax Provision (Expense)	(668.0)	(1,295.5)	(1,383.3)	(1,497.7)	(183.0)	(170.0)	(122.0)	(193.0)	(402.0)	(309.5)	(270.6)	(313.4)	(416.0)	(320.4)	(304.1)	(342.8)
Minority Interest & Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Income	4,817.0	7,998.5	8,497.2	9,200.5	1,151.0	1,015.0	982.0	1,669.0	2,510.0	1,901.3	1,662.4	1,924.9	2,555.3	1,967.9	1,868.2	2,105.8
Basic EPS (\$)	\$4.25	\$7.07	\$7.57	\$8.28	\$1.01	\$0.89	\$0.87	\$1.48	\$2.21	\$1.68	\$1.47	\$1.70	\$2.27	\$1.75	\$1.67	\$1.88
Diluted EPS (\$)	\$4.19	\$6.94	\$7.42	\$8.13	\$0.99	\$0.88	\$0.86	\$1.45	\$2.17	\$1.65	\$1.44	\$1.67	\$2.22	\$1.72	\$1.63	\$1.85
Weighted Average Basic Shares	1,135	1,131	1,123	1,111	1,144	1,139	1,127	1,130	1,134	1,130	1,130	1,130	1,127	1,124	1,121	1,118
Weighted Average Diluted Shares	1,149	1,153	1,145	1,132	1,159	1,151	1,139	1,148	1,156	1,152	1,152	1,152	1,149	1,146	1,143	1,140
<u>GAAP Financials</u>																
Sales	23,532.0	30,341.1	32,081.4	33,870.9	5,077.0	5,216.0	4,893.0	8,346.0	8,235.0	7,640.7	6,900.4	7,564.9	8,709.1	7,778.5	7,546.2	8,047.6
Gross Profit	14,276.0	17,116.9	18,032.0	19,074.8	2,964.0	2,919.0	2,813.0	5,580.0	4,746.0	4,141.4	3,957.6	4,271.8	4,992.5	4,340.0	4,224.3	4,475.2
Opex	8,021.0	9,254.1	9,481.5	9,702.0	1,934.0	1,928.0	2,031.0	2,128.0	2,220.0	2,315.2	2,356.0	2,362.9	2,356.5	2,384.1	2,383.4	2,357.5
Operating Income	6,255.0	7,862.8	8,550.5	9,372.8	1,030.0	991.0	782.0	3,452.0	2,526.0	1,826.1	1,601.7	1,909.0	2,636.0	1,955.8	1,840.9	2,117.8
Pre-Tax SBC	1,212.0	1,598.5	1,579.6	1,579.6	294.0	309.0	296.0	313.0	393.0	401.8	401.8	401.8	400.8	399.7	398.6	397.6
Net Income	5,198.0	6,722.5	6,941.0	7,660.9	925.0	468.0	845.0	2,960.0	2,455.0	1,463.5	1,270.7	1,533.2	2,164.7	1,578.3	1,479.7	1,718.3
GAAP Basic EPS	\$4.59	\$5.94	\$6.18	\$6.90	\$0.81	\$0.41	\$0.75	\$2.62	\$2.16	\$1.30	\$1.12	\$1.36	\$1.92	\$1.40	\$1.32	\$1.54
GAAP Diluted EPS	\$4.52	\$5.83	\$6.06	\$6.77	\$0.80	\$0.41	\$0.74	\$2.58	\$2.12	\$1.27	\$1.10	\$1.33	\$1.88	\$1.38	\$1.29	\$1.51
<u>Margins</u>																
Gross Margin	58.9%	57.4%	57.1%	57.2%	60.1%	57.6%	59.3%	58.7%	58.5%	55.2%	58.4%	57.4%	58.2%	56.8%	57.0%	56.5%
R&D % of Sales	23.5%	19.1%	18.9%	18.5%	23.7%	24.6%	26.1%	20.6%	16.4%	18.7%	21.8%	19.9%	17.2%	19.6%	20.2%	18.7%
SG&A % of Sales	7.9%	6.0%	5.9%	5.7%	8.8%	8.2%	8.2%	6.9%	5.2%	5.9%	6.8%	6.3%	5.4%	6.1%	6.3%	5.8%
Operating Margin	27.4%	32.3%	32.3%	33.0%	27.6%	24.7%	25.0%	31.2%	36.8%	30.6%	29.9%	31.3%	35.5%	31.0%	30.4%	32.0%
Tax Rate	-12.2%	-13.9%	-14.0%	-14.0%	-13.7%	-14.3%	-11.1%	-10.4%	-13.8%	-14.0%	-14.0%	-14.0%	-14.0%	-14.0%	-14.0%	-14.0%
Net Margin	22.2%	26.4%	26.5%	27.2%	22.8%	19.5%	20.1%	25.7%	30.5%	24.9%	24.1%	25.5%	29.4%	25.3%	24.8%	26.2%
GAAP Net Margin	22.1%	22.2%	21.6%	22.6%	18.2%	9.0%	17.3%	35.5%	29.8%	19.2%	18.4%	20.3%	24.9%	20.3%	19.6%	21.4%
<u>Year-over-Year Change (%)</u>																
Total Revenues	11.6%	39.9%	5.7%	5.6%	5.0%	6.6%	-0.1%	35.3%	62.7%	46.6%	40.9%	16.2%	5.8%	1.8%	9.4%	6.4%
Gross Margin	90 bp	(149)bp	(25)bp	6 bp	298 bp	(11)bp	25 bp	58 bp	(160)bp	(239)bp	(84)bp	(122)bp	(30)bp	155 bp	(148)bp	(91)bp
Research and Development	9.1%	13.4%	4.7%	3.2%	7.7%	11.5%	5.0%	12.4%	12.9%	11.5%	17.6%	11.8%	10.9%	6.6%	1.7%	0.3%
Selling, General and Administrative	-8.3%	5.8%	3.9%	2.4%	-1.1%	-15.4%	-13.0%	-2.8%	-4.3%	4.4%	17.5%	6.5%	10.1%	6.3%	1.1%	-1.1%
Operating Expenses	4.1%	11.5%	4.5%	3.0%	5.2%	3.3%	0.1%	8.2%	8.3%	9.8%	17.5%	10.5%	10.7%	6.6%	1.5%	0.0%
Operating Margin	316 bp	491 bp	3 bp	66 bp	293 bp	95 bp	20 bp	749 bp	926 bp	586 bp	484 bp	14 bp	(132)bp	41 bp	57 bp	66 bp
Net Margin	(5)bp	415 bp	12 bp	68 bp	(764)bp	41 bp	2 bp	596 bp	775 bp	542 bp	404 bp	(19)bp	(114)bp	42 bp	66 bp	72 bp
Share Based Compensation (pre-tax)	-3.1%	28.9%	5.7%	5.6%	4.9%	4.7%	-49.2%	73.4%	62.2%	46.5%	41.0%	-9.4%	5.8%	1.8%	9.4%	6.4%
GAAP Net Margin	402 bp	7 bp	(52)bp	98 bp	(384)bp	(434)bp	(503)bp	2,496 bp	1,159 bp	1,018 bp	115 bp	(1,520)bp	(496)bp	114 bp	119 bp	108 bp
Diluted EPS	18.3%	65.5%	7.0%	9.5%	-17.0%	15.2%	8.1%	85.9%	118.6%	87.2%	67.4%	14.9%	2.4%	4.1%	13.3%	10.6%
GAAP Diluted EPS	26.0%	28.8%	4.0%	11.6%	-8.6%	-26.1%	-57.6%	517.1%	166.1%	212.5%	48.7%	-48.4%	-11.3%	8.4%	17.4%	13.3%
Weighted Average Diluted Shares	(71.5)	3.8	(8.7)	(12.3)	(64.0)	(66.0)	(92.0)	(63.0)	(3.0)	0.9	12.9	3.9	(7.1)	(6.1)	(9.2)	(12.2)
<u>Sequential Change (%)</u>																
Total Revenues					5.3%	2.9%	-6.1%	33.0%	26.5%	-7.2%	-9.7%	9.6%	15.1%	-10.7%	-3.0%	6.7%
Gross Margin					200 bp	(249)bp	170 bp	(63)bp	(19)bp	(327)bp	324 bp	(101)bp	73 bp	(142)bp	21 bp	(43)bp
Research and Development					0.3%	7.1%	-0.5%	5.2%	0.7%	5.8%	4.9%	0.0%	0.0%	1.7%	0.0%	-1.3%
Selling, General and Administrative					-2.8%	-4.0%	-6.5%	11.5%	-4.3%	4.7%	5.1%	1.1%	-1.1%	1.1%	0.0%	-1.1%
Operating Expenses					-0.6%	4.1%	-2.0%	6.7%	-0.5%	5.5%	5.0%	0.3%	-0.3%	1.5%	0.0%	-1.3%
Operating Margin					392 bp	(284)bp	27 bp	615 bp	569 bp	(624)bp	(75)bp	144 bp	423 bp	(452)bp	(59)bp	153 bp
Net Margin					305 bp	(326)bp	59 bp	559 bp	484 bp	(560)bp	(79)bp	135 bp	390 bp	(404)bp	(54)bp	141 bp
Share Based Compensation (pre-tax)					-13.3%	5.1%	-4.2%	5.7%	25.6%	2.2%	0.0%	0.0%	-0.3%	-0.3%	-0.3%	-0.3%
GAAP Net Margin					771 bp	(925)bp	830 bp	1,820 bp	(565)bp	(1,066)bp	(74)bp	185 bp	459 bp	(457)bp	(68)bp	174 bp
Diluted EPS					27.0%	-11.2%	-2.2%	68.6%	49.3%	-24.0%	-12.6%	15.8%	33.1%	-22.8%	-4.8%	13.0%
GAAP Diluted EPS					91.0%	-49.1%	82.5%	247.5%	-17.6%	-40.2%	-13.2%	20.7%	41.6%	-26.9%	-6.0%	16.4%
Weighted Average Diluted Shares					(52.0)	(8.0)	(12.0)	9.0	8.0	(4.1)	0.0	0.0	(3.1)	(3.1)	(3.1)	(3.1)

Source: Company Reports, Bernstein Estimates and Analysis

EXHIBIT 65: **Bernstein QCOM Balance Sheet and Cash Flow Statement**

Qualcomm: Balance Sheet (\$ MM)																
QCOM (Fiscal)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q120	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash & Short Term Investments	11,214.0	13,479.0	17,026.2	20,623.1	11,423.0	9,946.0	10,600.0	11,214.0	12,298.0	13,002.3	13,728.1	13,479.0	16,244.0	16,339.1	16,649.7	17,026.2
Accounts Receivable	4,003.0	4,055.6	3,215.0	3,383.5	2,737.0	3,081.0	1,847.0	4,003.0	4,148.0	3,986.0	3,479.6	4,055.6	3,044.7	3,107.4	3,014.5	3,215.0
Inventories	2,598.0	2,858.3	3,106.0	3,202.0	1,420.0	1,700.0	2,343.0	2,598.0	2,552.0	2,848.8	2,545.2	2,858.3	2,628.1	2,799.8	2,883.2	3,106.0
Other Current Assets	704.0	794.0	794.0	794.0	625.0	586.0	768.0	704.0	794.0	794.0	794.0	794.0	794.0	794.0	794.0	794.0
<b>Total Current Assets</b>	<b>18,519.0</b>	<b>21,186.9</b>	<b>24,141.3</b>	<b>28,002.6</b>	<b>16,205.0</b>	<b>15,313.0</b>	<b>15,558.0</b>	<b>18,519.0</b>	<b>19,792.0</b>	<b>20,631.0</b>	<b>20,547.0</b>	<b>21,186.9</b>	<b>22,710.7</b>	<b>23,040.3</b>	<b>23,341.3</b>	<b>24,141.3</b>
Net PP&E	3,711.0	4,176.1	4,432.8	4,703.6	3,171.0	3,358.0	3,487.0	3,711.0	4,033.0	4,044.5	4,119.6	4,176.1	4,239.9	4,304.8	4,367.4	4,432.8
Goodwill	6,323.0	6,358.0	6,358.0	6,358.0	6,297.0	6,294.0	6,299.0	6,323.0	6,358.0	6,358.0	6,358.0	6,358.0	6,358.0	6,358.0	6,358.0	6,358.0
Long Term Investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Long-Term Assets	7,041.0	6,908.0	6,390.6	5,873.3	7,438.0	6,973.0	6,984.0	7,041.0	7,296.0	7,166.7	7,037.3	6,908.0	6,778.6	6,649.3	6,520.0	6,390.6
<b>Total Long-Term Assets</b>	<b>17,075.0</b>	<b>17,442.0</b>	<b>17,181.4</b>	<b>16,934.9</b>	<b>16,906.0</b>	<b>16,625.0</b>	<b>16,770.0</b>	<b>17,075.0</b>	<b>17,687.0</b>	<b>17,569.2</b>	<b>17,514.9</b>	<b>17,442.0</b>	<b>17,376.5</b>	<b>17,312.1</b>	<b>17,245.4</b>	<b>17,181.4</b>
<b>Total Assets</b>	<b>35,594.0</b>	<b>38,628.9</b>	<b>41,322.7</b>	<b>44,937.5</b>	<b>33,111.0</b>	<b>31,938.0</b>	<b>32,328.0</b>	<b>35,594.0</b>	<b>37,479.0</b>	<b>38,200.2</b>	<b>38,061.9</b>	<b>38,628.9</b>	<b>40,087.2</b>	<b>40,352.4</b>	<b>40,586.7</b>	<b>41,322.7</b>
Accounts Payable	2,248.0	2,569.9	2,762.3	2,916.8	1,718.0	2,061.0	2,046.0	2,248.0	2,429.0	2,776.3	2,451.7	2,569.9	2,947.0	2,716.2	2,608.3	2,762.3
Short-Term Debt	500.0	500.0	500.0	500.0	2,498.0	2,499.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0
Other current liabilities	5,924.0	6,294.0	6,089.2	6,021.0	4,978.0	5,214.0	5,368.0	5,924.0	6,294.0	6,294.0	6,294.0	6,294.0	6,294.0	6,225.7	6,157.5	6,089.2
<b>Total Current Liabilities</b>	<b>8,672.0</b>	<b>9,363.9</b>	<b>9,351.5</b>	<b>9,437.7</b>	<b>9,194.0</b>	<b>9,774.0</b>	<b>7,914.0</b>	<b>8,672.0</b>	<b>9,223.0</b>	<b>9,570.3</b>	<b>9,245.7</b>	<b>9,363.9</b>	<b>9,741.0</b>	<b>9,442.0</b>	<b>9,265.8</b>	<b>9,351.5</b>
Long-Term Debt	15,226.0	15,231.0	15,231.0	15,231.0	13,437.0	13,449.0	15,425.0	15,226.0	15,231.0	15,231.0	15,231.0	15,231.0	15,231.0	15,231.0	15,231.0	15,231.0
Other Long-Term Liabilities	5,619.0	5,059.1	4,482.6	4,046.1	5,967.0	5,670.0	5,683.0	5,619.0	5,645.0	5,449.7	5,254.4	5,059.1	4,863.8	4,736.7	4,609.6	4,482.6
<b>Total Liabilities</b>	<b>29,517.0</b>	<b>29,654.0</b>	<b>29,065.1</b>	<b>28,714.9</b>	<b>28,598.0</b>	<b>28,893.0</b>	<b>29,022.0</b>	<b>29,517.0</b>	<b>30,099.0</b>	<b>30,251.0</b>	<b>29,731.1</b>	<b>29,654.0</b>	<b>29,835.8</b>	<b>29,409.7</b>	<b>29,106.4</b>	<b>29,065.1</b>
QCOM Shareholders' Equity	6,077.0	8,974.9	12,257.6	16,222.6	4,513.0	3,045.0	3,306.0	6,077.0	7,380.0	7,949.3	8,330.8	8,974.9	10,251.5	10,942.7	11,480.3	12,257.6
Non Controlling Interest	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>35,594.0</b>	<b>38,628.9</b>	<b>41,322.7</b>	<b>44,937.5</b>	<b>33,111.0</b>	<b>31,938.0</b>	<b>32,328.0</b>	<b>35,594.0</b>	<b>37,479.0</b>	<b>38,200.2</b>	<b>38,061.9</b>	<b>38,628.9</b>	<b>40,087.2</b>	<b>40,352.4</b>	<b>40,586.7</b>	<b>41,322.7</b>

Qualcomm: Cash Flow Statement (\$MM)																
QCOM (Fiscal)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q120	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Net Income	5,198.0	6,722.5	6,941.0	7,660.9	925.0	468.0	845.0	2,960.0	2,455.0	1,463.5	1,270.7	1,533.2	2,164.7	1,578.3	1,479.7	1,718.3
Depreciation & Amortization	1,393.0	1,448.3	1,496.1	1,556.0	351.0	340.0	363.0	339.0	364.0	358.1	360.8	365.4	368.6	372.2	375.9	379.5
Other	(777.0)	902.6	1,600.6	964.9	(158.0)	275.0	664.0	(1,558.0)	356.0	419.0	691.9	(564.3)	1,823.6	(260.8)	104.9	(67.1)
<b>Cash Flow From Operations</b>	<b>5,814.0</b>	<b>9,073.4</b>	<b>10,037.7</b>	<b>10,181.7</b>	<b>1,118.0</b>	<b>1,083.0</b>	<b>1,872.0</b>	<b>1,741.0</b>	<b>3,175.0</b>	<b>2,240.6</b>	<b>2,323.4</b>	<b>1,334.4</b>	<b>4,356.9</b>	<b>1,689.7</b>	<b>1,960.5</b>	<b>2,030.6</b>
Capex	(1,407.0)	(1,347.3)	(1,235.5)	(1,309.5)	(296.0)	(345.0)	(418.0)	(348.0)	(469.0)	(279.3)	(306.5)	(292.5)	(303.0)	(307.8)	(309.1)	(315.6)
Other	(3,856.0)	(733.0)	-	-	93.0	(1,221.0)	(2,738.0)	10.0	(733.0)	-	-	-	-	-	-	-
<b>Cash Flow From Investments</b>	<b>(5,263.0)</b>	<b>(2,080.3)</b>	<b>(1,235.5)</b>	<b>(1,309.5)</b>	<b>(203.0)</b>	<b>(1,566.0)</b>	<b>(3,156.0)</b>	<b>(338.0)</b>	<b>(1,202.0)</b>	<b>(279.3)</b>	<b>(306.5)</b>	<b>(292.5)</b>	<b>(303.0)</b>	<b>(307.8)</b>	<b>(309.1)</b>	<b>(315.6)</b>
Net Stock Repurchase	(2,297.0)	(1,944.0)	(2,000.0)	(2,000.0)	(762.0)	(1,578.0)	(110.0)	153.0	(444.0)	(500.0)	(500.0)	(500.0)	(500.0)	(500.0)	(500.0)	(500.0)
Dividends	(2,882.0)	(3,078.1)	(3,255.0)	(3,275.5)	(710.0)	(705.0)	(733.0)	(734.0)	(739.0)	(757.1)	(791.0)	(791.0)	(788.9)	(786.8)	(840.8)	(838.5)
Other	(528.0)	(462.0)	-	-	(187.0)	74.0	(160.0)	(255.0)	(462.0)	-	-	-	-	-	-	-
<b>Cash Flow From Financing</b>	<b>(5,707.0)</b>	<b>(5,484.1)</b>	<b>(5,255.0)</b>	<b>(5,275.5)</b>	<b>(1,659.0)</b>	<b>(2,209.0)</b>	<b>(1,003.0)</b>	<b>(836.0)</b>	<b>(1,645.0)</b>	<b>(1,257.1)</b>	<b>(1,291.0)</b>	<b>(1,291.0)</b>	<b>(1,288.9)</b>	<b>(1,286.8)</b>	<b>(1,340.8)</b>	<b>(1,338.5)</b>
Adjustments	24.0	41.0	-	-	14.0	(14.0)	4.0	20.0	41.0	-	-	-	-	-	-	-
<b>Cash at Beginning of Period</b>	<b>11,839.0</b>	<b>6,707.0</b>	<b>8,257.0</b>	<b>11,804.2</b>	<b>11,839.0</b>	<b>11,109.0</b>	<b>8,403.0</b>	<b>6,120.0</b>	<b>6,707.0</b>	<b>7,076.0</b>	<b>7,780.3</b>	<b>8,506.1</b>	<b>8,257.0</b>	<b>11,022.0</b>	<b>11,117.1</b>	<b>11,427.7</b>
<b>Cash at End of Period</b>	<b>6,707.0</b>	<b>8,257.0</b>	<b>11,804.2</b>	<b>15,401.1</b>	<b>11,109.0</b>	<b>8,403.0</b>	<b>6,120.0</b>	<b>6,707.0</b>	<b>7,076.0</b>	<b>7,780.3</b>	<b>8,506.1</b>	<b>8,257.0</b>	<b>11,022.0</b>	<b>11,117.1</b>	<b>11,427.7</b>	<b>11,804.2</b>

QCOM (Fiscal)	2020	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q120	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash Flow from Operations	5,814.0	9,073.4	10,037.7	10,181.7	1,118.0	1,083.0	1,872.0	1,741.0	3,175.0	2,240.6	2,323.4	1,334.4	4,356.9	1,689.7	1,960.5	2,030.6
subtract Capex	(1,407.0)	(1,347.3)	(1,235.5)	(1,309.5)	(296.0)	(345.0)	(418.0)	(348.0)	(469.0)	(279.3)	(306.5)	(292.5)	(303.0)	(307.8)	(309.1)	(315.6)
<b>FCF</b>	<b>4,407.0</b>	<b>7,726.1</b>	<b>8,802.2</b>	<b>8,872.3</b>	<b>822.0</b>	<b>738.0</b>	<b>1,454.0</b>	<b>1,393.0</b>	<b>2,706.0</b>	<b>1,961.4</b>	<b>2,016.9</b>	<b>1,041.9</b>	<b>4,053.9</b>	<b>1,381.9</b>	<b>1,651.4</b>	<b>1,715.1</b>
Operating Income	5,932.0	9,787.6	10,360.0	11,163.1	1,395.0	1,288.0	1,223.0	2,026.0	3,031.0	2,335.1	2,057.1	2,364.4	3,090.2	2,408.8	2,292.7	2,568.3
add back D&A	874.0	948.3	978.7	1,038.6	224.0	184.0	223.0	243.0	252.0	228.7	231.5	236.1	239.2	242.8	246.5	250.2
<b>EBITDA</b>	<b>6,806.0</b>	<b>10,735.9</b>	<b>11,338.8</b>	<b>12,201.7</b>	<b>1,619.0</b>	<b>1,472.0</b>	<b>1,446.0</b>	<b>2,269.0</b>	<b>3,283.0</b>	<b>2,563.9</b>	<b>2,288.5</b>	<b>2,600.4</b>	<b>3,329.4</b>	<b>2,651.6</b>	<b>2,539.2</b>	<b>2,818.5</b>

Source: Company Reports, Bernstein Estimates and Analysis

EXHIBIT 66: Bernstein TXN Income Statement

Texas Instruments: Income Statement (\$ MM)																
TXN (Calendar Years)																
	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenue	14,461.0	16,550.2	16,718.5	17,468.7	3,329.0	3,239.0	3,817.0	4,076.0	3,951.2	4,168.4	4,425.6	4,005.1	3,898.8	4,144.7	4,463.3	4,211.6
COGS	5,192.0	5,807.2	5,776.8	5,900.4	1,241.0	1,157.0	1,364.0	1,430.0	1,410.6	1,480.4	1,532.0	1,384.2	1,385.9	1,433.5	1,515.5	1,441.9
Gross Profit	9,269.0	10,743.1	10,941.7	11,568.3	2,088.0	2,082.0	2,453.0	2,646.0	2,540.6	2,688.0	2,893.6	2,620.8	2,513.0	2,711.2	2,947.8	2,769.7
R&D	1,530.0	1,630.9	1,671.2	1,725.5	377.0	379.0	386.0	388.0	395.8	407.6	411.7	415.8	424.1	419.9	411.5	415.6
SG&A	1,623.0	1,673.0	1,714.2	1,750.3	417.0	401.0	407.0	398.0	406.0	418.1	422.3	426.5	435.1	430.7	422.1	426.3
Other Operating Expenses	222.0	140.0	-	-	50.0	74.0	51.0	47.0	50.0	50.0	40.0	-	-	-	-	-
Total Operating Expenses	3,375.0	3,443.9	3,385.4	3,475.8	844.0	854.0	844.0	833.0	851.7	875.8	874.0	842.4	859.2	850.6	833.6	841.9
Operating Income	5,894.0	7,299.2	7,556.3	8,092.5	1,244.0	1,228.0	1,609.0	1,813.0	1,688.9	1,812.2	2,019.6	1,778.5	1,653.7	1,860.6	2,114.2	1,927.8
Other Income (Expense), Net	123.0	(103.6)	(101.3)	(94.3)	(20.0)	51.0	(22.0)	114.0	(25.9)	(25.9)	(25.9)	(25.9)	(25.9)	(25.9)	(25.9)	(23.6)
Pre-Tax Income	6,017.0	7,195.6	7,455.0	7,998.2	1,224.0	1,279.0	1,587.0	1,927.0	1,663.0	1,786.4	1,993.7	1,752.6	1,627.8	1,834.7	2,088.3	1,904.2
Tax provision (Benefit)	422.0	962.4	998.7	1,074.8	50.0	(101.0)	234.0	239.0	212.8	240.1	269.1	240.4	207.9	246.9	282.4	261.6
Earnings of Disc. Ops & Other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GAAP Net Income	5,595.0	6,233.2	6,456.3	6,923.5	1,174.0	1,380.0	1,353.0	1,688.0	1,450.2	1,546.3	1,724.6	1,512.2	1,419.9	1,587.9	1,805.9	1,642.6
Impact of ASC 260	\$ (38.6)	\$ (46.7)	\$ (48.4)	\$ (49.6)	(8.8)	(7.0)	(10.1)	(12.7)	(10.9)	(11.6)	(12.9)	(11.3)	(10.6)	(11.9)	(13.5)	(12.3)
GAAP EPS, Basic	\$ 6.04	\$ 6.77	\$ 7.07	\$ 7.65	\$ 1.25	\$ 1.50	\$ 1.46	\$ 1.82	\$ 1.57	\$ 1.68	\$ 1.87	\$ 1.65	\$ 1.55	\$ 1.74	\$ 1.98	\$ 1.81
GAAP EPS, Diluted	\$ 5.96	\$ 6.67	\$ 6.98	\$ 7.55	\$ 1.24	\$ 1.48	\$ 1.45	\$ 1.80	\$ 1.55	\$ 1.65	\$ 1.85	\$ 1.62	\$ 1.53	\$ 1.71	\$ 1.95	\$ 1.78
EPS, ex one-time, NSM amort & ASU 2016-09	\$ 5.72	\$ 6.81	\$ 6.98	\$ 7.55	\$ 1.17	\$ 1.15	\$ 1.51	\$ 1.89	\$ 1.58	\$ 1.70	\$ 1.89	\$ 1.63	\$ 1.52	\$ 1.72	\$ 1.96	\$ 1.79
Shares Outstanding, Basic	921	914	906	905	931	916	917	919	917	915	913	911	909	907	905	903
Shares Outstanding, Diluted	933	927	919	917	943	927	929	932	930	928	926	924	922	920	918	916
Margins																
	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Gross Margin	64.1%	64.9%	65.4%	66.2%	62.7%	64.3%	64.3%	64.9%	64.3%	64.5%	65.4%	65.4%	64.5%	65.4%	66.0%	65.8%
% R&D	10.6%	9.9%	10.0%	9.9%	11.3%	11.7%	10.1%	9.5%	10.0%	9.8%	9.3%	10.4%	10.9%	10.1%	9.2%	9.9%
% SG&A	11.2%	10.1%	10.3%	10.0%	12.5%	12.4%	10.7%	9.8%	10.3%	10.0%	9.5%	10.7%	11.2%	10.4%	9.5%	10.1%
% Other Op. Expenses	1.5%	0.8%	0.0%	0.0%	1.5%	2.3%	1.3%	1.2%	1.3%	1.2%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Operating Margin	40.8%	44.1%	45.2%	46.3%	37.4%	37.9%	42.2%	44.5%	42.7%	43.5%	45.6%	44.4%	42.4%	44.9%	47.4%	45.8%
Tax Rate	7.0%	13.4%	13.4%	13.4%	4.1%	-7.9%	14.7%	12.4%	12.8%	13.4%	13.5%	13.7%	12.8%	13.5%	13.5%	13.7%
Tax Rate ex-ASU 2016-09	13.9%	14.0%	14.0%	14.0%	13.6%	12.8%	14.9%	14.1%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%
Net Income Margin	38.7%	37.7%	38.6%	39.6%	35.3%	42.6%	35.4%	41.4%	36.7%	37.1%	39.0%	37.8%	36.4%	38.3%	40.5%	39.0%
Year over Year Growth (%)																
	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenues	0.5%	14.4%	1.0%	4.5%	-7.4%	-11.7%	1.2%	21.7%	18.7%	28.7%	15.9%	-1.7%	-1.3%	-0.6%	0.9%	5.2%
Operating Income	3.0%	23.8%	3.5%	7.1%	-9.8%	-18.5%	1.3%	45.2%	35.8%	47.6%	25.5%	-1.9%	-2.1%	2.7%	4.7%	8.4%
Net Income	11.5%	11.4%	3.6%	7.2%	-3.5%	5.7%	-5.1%	57.8%	23.5%	12.0%	27.5%	-10.4%	-2.1%	2.7%	4.7%	8.6%
Shares Outstanding, Diluted	-1.9%	-0.6%	-0.9%	-0.9%	-1.4%	-3.0%	-1.7%	-1.7%	-1.4%	0.1%	-0.3%	-0.9%	-0.9%	-0.9%	-0.9%	-0.9%
GAAP EPS, Diluted	13.6%	12.0%	4.5%	8.2%	-2.3%	8.8%	-2.9%	60.5%	25.3%	11.7%	27.9%	-9.6%	-1.2%	3.6%	5.6%	9.6%
EPS, ex NSM amort & ASU 2016-09	6.0%	19.0%	2.5%	8.2%	-8.6%	-21.9%	2.6%	61.3%	35.1%	48.0%	25.4%	-13.7%	-4.2%	0.8%	3.6%	9.6%
Sequential Growth (%)																
	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Revenue					-0.6%	-2.7%	17.8%	6.8%	-3.1%	5.5%	6.2%	-9.5%	-2.7%	6.3%	7.7%	-5.6%
Operating Income					-0.4%	-1.3%	31.0%	12.7%	-6.8%	7.3%	11.4%	-11.9%	-7.0%	12.5%	13.6%	-8.8%
GAAP EPS, Diluted					10.3%	19.9%	-2.4%	24.4%	-13.9%	6.9%	11.8%	-12.1%	-5.9%	12.1%	14.0%	-8.8%
EPS, ex NSM amort & ASU 2016-09					0.0%	-1.9%	31.0%	25.5%	-16.2%	7.4%	11.0%	-13.6%	-6.9%	13.0%	14.1%	-8.6%

Source: Company Reports, Bernstein Estimates and Analysis

EXHIBIT 67: **Bernstein TXN Balance Sheet and Cash Flow Statement**

Texas Instruments: Balance Sheet (\$ MM)																
TXN (Calendar Years)	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash & Short Term Investments	6,568.0	6,522.2	6,520.0	7,452.9	4,742.0	4,960.0	5,518.0	6,568.0	6,160.4	6,123.6	6,337.1	6,522.2	6,394.0	6,378.0	6,581.6	6,520.0
Accounts Receivable	1,414.0	1,464.0	1,514.0	1,564.0	1,316.0	1,176.0	1,392.0	1,414.0	1,514.0	1,614.0	1,664.0	1,464.0	1,564.0	1,664.0	1,714.0	1,514.0
Inventories	1,955.0	2,076.4	2,162.8	2,204.4	2,003.0	2,136.0	2,072.0	1,955.0	1,959.1	2,056.1	2,127.7	2,076.4	2,078.8	2,150.2	2,273.3	2,162.8
Other Current Assets	302.0	302.0	302.0	302.0	249.0	216.0	277.0	302.0	302.0	302.0	302.0	302.0	302.0	302.0	302.0	302.0
<b>Total Current Assets</b>	<b>10,239.0</b>	<b>10,364.5</b>	<b>10,498.8</b>	<b>11,523.3</b>	<b>8,310.0</b>	<b>8,488.0</b>	<b>9,259.0</b>	<b>10,239.0</b>	<b>9,935.6</b>	<b>10,095.7</b>	<b>10,430.8</b>	<b>10,364.5</b>	<b>10,338.8</b>	<b>10,494.3</b>	<b>10,870.9</b>	<b>10,498.8</b>
Net PP&E	3,269.0	3,393.5	3,537.4	3,676.7	3,233.0	3,201.0	3,190.0	3,269.0	3,289.2	3,314.1	3,350.0	3,393.5	3,434.3	3,470.9	3,504.8	3,537.4
Goodwill	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0	4,362.0
Other Long-Term Assets	1,481.0	1,329.0	1,329.0	1,329.0	1,378.0	1,394.0	1,396.0	1,481.0	1,431.0	1,381.0	1,341.0	1,329.0	1,329.0	1,329.0	1,329.0	1,329.0
<b>Total Long-Term Assets</b>	<b>9,112.0</b>	<b>9,084.5</b>	<b>9,228.4</b>	<b>9,367.7</b>	<b>8,973.0</b>	<b>8,957.0</b>	<b>8,948.0</b>	<b>9,112.0</b>	<b>9,082.2</b>	<b>9,057.1</b>	<b>9,053.0</b>	<b>9,084.5</b>	<b>9,125.3</b>	<b>9,161.9</b>	<b>9,195.8</b>	<b>9,228.4</b>
<b>Total Assets</b>	<b>19,351.0</b>	<b>19,449.0</b>	<b>19,727.2</b>	<b>20,891.0</b>	<b>17,283.0</b>	<b>17,445.0</b>	<b>18,207.0</b>	<b>19,351.0</b>	<b>19,017.8</b>	<b>19,152.8</b>	<b>19,483.8</b>	<b>19,449.0</b>	<b>19,464.1</b>	<b>19,656.2</b>	<b>20,066.7</b>	<b>19,727.2</b>
Accounts Payable	415.0	415.0	415.0	415.0	363.0	409.0	411.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0
Short Term Debt	550.0	500.0	-	-	1,051.0	551.0	550.0	550.0	-	-	-	500.0	500.0	500.0	500.0	-
Other Current Liabilities	1,425.0	1,425.0	1,425.0	1,425.0	967.0	1,203.0	1,224.0	1,425.0	1,425.0	1,425.0	1,425.0	1,425.0	1,425.0	1,425.0	1,425.0	1,425.0
<b>Total Current Liabilities</b>	<b>2,390.0</b>	<b>2,340.0</b>	<b>1,840.0</b>	<b>1,840.0</b>	<b>2,381.0</b>	<b>2,163.0</b>	<b>2,185.0</b>	<b>2,390.0</b>	<b>1,840.0</b>	<b>1,840.0</b>	<b>1,840.0</b>	<b>2,340.0</b>	<b>2,340.0</b>	<b>2,340.0</b>	<b>2,340.0</b>	<b>1,840.0</b>
Long Term Debt	6,248.0	5,745.0	5,745.0	5,745.0	5,499.0	6,245.0	6,247.0	6,248.0	6,245.0	6,245.0	6,245.0	5,745.0	5,745.0	5,745.0	5,745.0	5,745.0
Other Long Term Liabilities	1,526.0	1,526.0	1,526.0	1,526.0	1,669.0	1,393.0	1,450.0	1,526.0	1,526.0	1,526.0	1,526.0	1,526.0	1,526.0	1,526.0	1,526.0	1,526.0
<b>Total Liabilities</b>	<b>10,164.0</b>	<b>9,611.0</b>	<b>9,111.0</b>	<b>9,111.0</b>	<b>9,549.0</b>	<b>9,801.0</b>	<b>9,882.0</b>	<b>10,164.0</b>	<b>9,611.0</b>	<b>9,611.0</b>	<b>9,611.0</b>	<b>9,611.0</b>	<b>9,611.0</b>	<b>9,611.0</b>	<b>9,611.0</b>	<b>9,111.0</b>
<b>Shareholders' Equity</b>	<b>9,187.0</b>	<b>9,838.0</b>	<b>10,616.2</b>	<b>11,780.0</b>	<b>7,734.0</b>	<b>7,644.0</b>	<b>8,325.0</b>	<b>9,187.0</b>	<b>9,406.8</b>	<b>9,541.8</b>	<b>9,872.8</b>	<b>9,838.0</b>	<b>9,853.1</b>	<b>10,045.2</b>	<b>10,455.7</b>	<b>10,616.2</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>19,351.0</b>	<b>19,449.0</b>	<b>19,727.2</b>	<b>20,891.0</b>	<b>17,283.0</b>	<b>17,445.0</b>	<b>18,207.0</b>	<b>19,351.0</b>	<b>19,017.8</b>	<b>19,152.8</b>	<b>19,483.8</b>	<b>19,449.0</b>	<b>19,464.1</b>	<b>19,656.2</b>	<b>20,066.7</b>	<b>19,727.2</b>

Texas Instruments: Cash Flow Statement (\$MM)																
TXN (Calendar Years)	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Net Income	5,595.0	6,233.2	6,456.3	6,923.5	1,174.0	1,380.0	1,353.0	1,688.0	1,450.2	1,546.3	1,724.6	1,512.2	1,419.9	1,587.9	1,805.9	1,642.6
Depreciation & Amortization	960.0	960.2	846.6	881.2	250.0	249.0	234.0	227.0	246.7	251.3	244.3	217.8	207.5	210.8	213.2	215.1
Share-based Comp	224.0	264.3	270.8	278.1	63.0	69.0	50.0	42.0	64.1	66.1	66.7	67.4	68.7	68.0	66.7	67.4
Other	(640.0)	(171.4)	(136.5)	(91.6)	(636.0)	22.0	(194.0)	168.0	(104.1)	(197.0)	(121.6)	251.4	(102.4)	(171.4)	(173.1)	310.4
<b>Cash Flow from Operations</b>	<b>6,139.0</b>	<b>7,286.4</b>	<b>7,437.2</b>	<b>7,991.2</b>	<b>851.0</b>	<b>1,720.0</b>	<b>1,443.0</b>	<b>2,125.0</b>	<b>1,656.9</b>	<b>1,666.7</b>	<b>1,914.0</b>	<b>2,048.8</b>	<b>1,593.7</b>	<b>1,695.3</b>	<b>1,912.7</b>	<b>2,235.5</b>
Capex	(649.0)	(932.7)	(990.5)	(1,020.5)	(161.0)	(130.0)	(146.0)	(212.0)	(216.9)	(226.2)	(240.2)	(249.3)	(248.3)	(247.5)	(247.1)	(247.7)
Other	(273.0)	-	-	-	987.0	1,567.0	(2,043.0)	(784.0)	-	-	-	-	-	-	-	-
<b>Cash Flow from Investments</b>	<b>(922.0)</b>	<b>(932.7)</b>	<b>(990.5)</b>	<b>(1,020.5)</b>	<b>826.0</b>	<b>1,437.0</b>	<b>(2,189.0)</b>	<b>(996.0)</b>	<b>(216.9)</b>	<b>(226.2)</b>	<b>(240.2)</b>	<b>(249.3)</b>	<b>(248.3)</b>	<b>(247.5)</b>	<b>(247.1)</b>	<b>(247.7)</b>
Net Stock Repurchase	(2,553.0)	(2,319.0)	(2,011.0)	(2,137.5)	(1,641.0)	(882.0)	(15.0)	(15.0)	(439.2)	(624.0)	(609.0)	(646.7)	(508.3)	(500.7)	(501.3)	(500.7)
Dividends	(3,426.0)	(3,847.6)	(4,257.9)	(4,220.3)	(841.0)	(823.0)	(825.0)	(937.0)	(935.3)	(933.3)	(931.3)	(1,047.7)	(1,045.4)	(1,043.1)	(1,040.8)	(1,128.8)
Other	1,432.0	(233.0)	(180.0)	320.0	886.0	324.0	114.0	108.0	(473.0)	80.0	80.0	80.0	80.0	80.0	80.0	(420.0)
<b>Cash Flow from Financing</b>	<b>(4,547.0)</b>	<b>(6,399.5)</b>	<b>(6,448.9)</b>	<b>(6,037.8)</b>	<b>(1,596.0)</b>	<b>(1,381.0)</b>	<b>(726.0)</b>	<b>(844.0)</b>	<b>(1,847.5)</b>	<b>(1,477.3)</b>	<b>(1,460.3)</b>	<b>(1,614.4)</b>	<b>(1,473.6)</b>	<b>(1,463.8)</b>	<b>(1,462.1)</b>	<b>(2,049.4)</b>
<b>Cash + STI at Beginning of Period</b>	<b>5,387.0</b>	<b>6,568.0</b>	<b>6,522.2</b>	<b>6,520.0</b>	<b>5,387.0</b>	<b>4,742.0</b>	<b>4,960.0</b>	<b>5,518.0</b>	<b>6,568.0</b>	<b>6,160.4</b>	<b>6,123.6</b>	<b>6,337.1</b>	<b>6,522.2</b>	<b>6,394.0</b>	<b>6,378.0</b>	<b>6,581.6</b>
<b>Cash + STI at End of Period</b>	<b>6,568.0</b>	<b>6,522.2</b>	<b>6,520.0</b>	<b>7,452.9</b>	<b>4,742.0</b>	<b>4,960.0</b>	<b>5,518.0</b>	<b>6,568.0</b>	<b>6,160.4</b>	<b>6,123.6</b>	<b>6,337.1</b>	<b>6,522.2</b>	<b>6,394.0</b>	<b>6,378.0</b>	<b>6,581.6</b>	<b>6,520.0</b>

TXN (Calendar Years)	2020E	2021E	2022E	2023E	Q120	Q220	Q320	Q420	Q121E	Q221E	Q321E	Q421E	Q122E	Q222E	Q322E	Q422E
Cash Flow from Operations	6,139.0	7,286.4	7,437.2	7,991.2	851.0	1,720.0	1,443.0	2,125.0	1,656.9	1,666.7	1,914.0	2,048.8	1,593.7	1,695.3	1,912.7	2,235.5
subtract Capex	(649.0)	(932.7)	(990.5)	(1,020.5)	(161.0)	(130.0)	(146.0)	(212.0)	(216.9)	(226.2)	(240.2)	(249.3)	(248.3)	(247.5)	(247.1)	(247.7)
<b>FCF</b>	<b>5,490.0</b>	<b>6,353.7</b>	<b>6,446.7</b>	<b>6,970.7</b>	<b>690.0</b>	<b>1,590.0</b>	<b>1,297.0</b>	<b>1,913.0</b>	<b>1,440.0</b>	<b>1,440.4</b>	<b>1,673.8</b>	<b>1,799.5</b>	<b>1,345.4</b>	<b>1,447.8</b>	<b>1,665.6</b>	<b>1,987.8</b>
<b>FCF/Diluted Share</b>	<b>5.85</b>	<b>6.82</b>	<b>6.98</b>	<b>7.61</b>	<b>0.73</b>	<b>1.71</b>	<b>1.39</b>	<b>2.04</b>	<b>1.54</b>	<b>1.54</b>	<b>1.80</b>	<b>1.94</b>	<b>1.45</b>	<b>1.57</b>	<b>1.80</b>	<b>2.16</b>
Operating Income	5,894.0	7,299.2	7,556.3	8,092.5	1,244.0	1,228.0	1,609.0	1,813.0	1,688.9	1,812.2	2,019.6	1,778.5	1,653.7	1,860.6	2,114.2	1,927.8
add back D&A	960.0	960.2	846.6	881.2	250.0	249.0	234.0	227.0	246.7	251.3	244.3	217.8	207.5	210.8	213.2	215.1
<b>EBITDA</b>	<b>6,854.0</b>	<b>8,259.4</b>	<b>8,402.8</b>	<b>8,973.8</b>	<b>1,494.0</b>	<b>1,477.0</b>	<b>1,843.0</b>	<b>2,040.0</b>	<b>1,935.6</b>	<b>2,063.6</b>	<b>2,263.9</b>	<b>1,996.3</b>	<b>1,861.2</b>	<b>2,071.4</b>	<b>2,327.4</b>	<b>2,142.9</b>

Source: Company Reports, Bernstein Estimates and Analysis

## DISCLOSURE APPENDIX

### VALUATION METHODOLOGY

#### U.S. Semiconductors

We value companies in our coverage using a combination of Enterprise Value to Sales, Enterprise Value to EBITDA and Price to EPS multiples.

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#### U.S. Semiconductors

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Ticker	Rating Changes
ADI	M (RC) 03/25/19
AMD	M (RC) 09/20/16
AVGO	O (IC) 10/04/16
INTC	U (RC) 07/24/20    M (RC) 03/26/20    U (RC) 06/26/18
NVDA	O (RC) 02/18/20
NXPI	O (RC) 07/27/18
QCOM	O (RC) 08/03/20    M (RC) 06/30/16
TXN	M (RC) 03/25/19

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