

# Zacks Small-Cap Research

Sponsored – Impartial - Comprehensive

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## Tower Semiconductor (NASDAQ: TSEM)

**Tower Will More than Triple its 300mm Capacity Through its New Deal with ST Microelectronics**

We believe that the stock should be worth \$37.73 using a 19.8x PE peer multiple on \$1.63 per share in earnings.

Current Price (06/23/21) **\$27.35**  
Valuation **\$37.73**

### OUTLOOK

Tower Semiconductor is a pure-play analog semiconductor wafer foundry that manufactures SiGe, MEMS, RF, embedded flash-based memory, analog/mixed-signal, and CMOS image-sensor devices in the US, Israel and Japan. It is serving high growth markets in mobile such as RF High Position analog, as well as in CMOS image sensors, and power management. This year it is expanding capacity with a \$150 million investment to fulfill the high demand for both 200mm and 300mm product. It will also begin its work to create capacity at the new ST fab.

### SUMMARY DATA

52-Week High **\$33.20**  
52-Week Low **\$17.85**  
One-Year Return (%) **42.5**  
Beta **1.4**  
Average Daily Volume (sh) **324,785**

Shares Outstanding (mil) **107.8**  
Market Capitalization (\$mil) **\$2,921**  
Short Interest Ratio (days) **1.7**  
Institutional Ownership (%) **55**  
Insider Ownership (%) **1**

Annual Cash Dividend **\$0.00**  
Dividend Yield (%) **0.00**

5-Yr. Historical Growth Rates  
Sales (%) **0.3**  
Earnings Per Share (%) **-22.7**  
Dividend (%) **N/A**

P/E using TTM EPS **26.0**  
P/E using 2021 Estimate **20.3**  
P/E using 2022 Estimate **16.8**

Zacks Rank **N/A**

Risk Level  
Type of Stock  
Industry  
Average  
Mid-Blend  
Elec Comp-Semis

### ZACKS ESTIMATES

#### Revenue

(in millions of \$)

	Q1	Q2	Q3	Q4	Year
	(Mar)	(Jun)	(Sep)	(Dec)	(Dec)
2019	310 A	306 A	312 A	306 A	1,234 A
2020	300 A	310 A	310 A	345 A	1,266 A
2021	347 A	360 E	366 E	375 E	1,448 E
2022					1,521 E

#### Earnings Per Share

(Adjusted non-GAAP Diluted)

	Q1	Q2	Q3	Q4	Year
	(Mar)	(Jun)	(Sep)	(Dec)	(Dec)
2019	\$0.30 A	\$0.24 A	\$0.25 A	\$0.22 A	\$1.00 A
2020	\$0.20 A	\$0.22 A	\$0.18 A	\$0.34 A	\$0.94 A
2021	\$0.31 A	\$0.33 E	\$0.33 E	\$0.38 E	\$1.35 E
2022					\$1.63 E

Zacks Projected EPS Growth Rate - Next 5 Years % **10**

## WHAT'S NEW

Today Tower announced it had struck a deal with STMicroelectronics (NYSE: STM) to utilize a third of ST's Agrate R3 fab now under construction in Agrate Brianza, Italy. It is a 300mm fab and Tower will help increase capacity utilization reducing wafer costs and making it a win-win for both companies. Most importantly this arrangement **will more than triple Tower's 300mm foundry capacity**. Currently the company has capacity in the Uozo fab of approximately 8,000 wafers per month and at full capacity Tower expects the STMicro fab to add at least another 16,000 per month. This could equate to another \$300-\$400 million a year in incremental 300mm sales. Tower expects to reach half capacity by 2024 with production starting at the end of 2022 and building. Since this is a new fab, we expect gross margins to initially be slightly higher than the corporate average 20%, and not at the over 50% one might expect for incremental sales at older fabs.

The two will share a cleanroom but Tower will install its own equipment in one third of the total space. Equipment will begin to be installed later in 2021. Operations will continue to be managed by ST with help from Tower. First 130, 90 and 65nm processes for smart power, analog mixed signal and RF processes will be qualified in R3. Both companies are targeting the automotive, industrial and personal electronics markets but Tower's focus will be on 65nm for analog RF, power platforms, and displays. Tower will establish a wholly owned Italian subsidiary.

### Balance Sheet and Capacity

On March 31<sup>st</sup> the company had cash, short-term deposits, and marketable securities of \$710 million compared to \$711 million last quarter while decreasing debt by \$47.3 million to \$343 million. Its quick ratio is high at 3.3s and it has \$826 million in working capital. The company had been stockpiling cash to pay for both capacity expansion, as well as acquiring companies that contribute complementary products or technology. Operating cash flow was \$84 million and free cash flow was \$34 million.

In 2020, the company invested a total of \$100 million in capacity expansion in Japan, plus another \$20 million for QT9 capacity (TSEM's new 200-millimeter RF SOI technology). In Q1 2021, it spent \$49.4 million on investments in cap ex. This year it will spend \$150 million starting in Q3 2021. The remaining three quarters cap ex spending is expected to be: Q2 \$45-49 million, Q3 \$75-79 million, Q4 \$75-79 million, and Q1 2022 \$75-79 million. In 2022 the company will also start to spend on equipment for use in the ST Micro fab that, will continue for a number of years until it reaches full capacity.

### Utilization

The company has been running over its targeted utilization rates in 300mm and this ST deal will vastly improve that situation. Tower expanded capacity at its TPSCo Uozu 300 millimeter foundry in Japan by investing \$100 million last year. In Q1 2021 capacity utilization of the 8" TPSCo lines increased to 70%, and the Uozu 300-millimeter foundry remained at 90%. It can run at 90% utilization for short periods, but then cycle time suffers. All the other foundries also increased utilization.

The company targets 85% utilization at its fabs and believes that level gives the company the capacity to generate over \$1.6 billion in revenues. The ST deal could increase that another \$300-\$400 million at full production. Its current fabs were at the following capacity utilization at quarter end:

	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
<b>Fab1 Migdal Haemek, Israel 6"</b>	84%	76%	60%	70%	60%	60%	50%	64%	70%
<b>Fab2 Migdal Haemek, Israel 8"</b>	70%	80%	80%	70%	70%	70%	60%	76%	80%
<b>Fab3 Newport Beach, CA 8"</b>	80%	70%	50%	50%	55%	70%	70%	75%	75%
<b>Three TPSCo factories</b>	50%	50%	NA	NA	NA	NA	NA	NA	NA
<b>8 inch</b>	NA	NA	50%	55%	55%	60%	60%	65%	70%
<b>12 inch</b>	NA	NA	60%	70%	80%	85%	70%	90%	90%
<b>San Antonio, 8"</b>	50%	50%	50%	55%	65%	70%	60%	67%	70%

## KEY POINTS

- Although the semiconductor market is typically considered cyclical, we believe that based on the end-user markets for which Tower Semiconductor's products used, it should be less so. The company is currently being impacted in slower sales of mobile handsets and discretets.
- As a foundry, the company has natural operating leverage given its high fixed costs. Every dollar in revenue tends to add over \$0.50 to gross margin although this year that is expected to be lower in the first three quarters as the company staffs up and invests in more capacity. When the company adds 12" revenues that blended percentage will trend higher as 12" can sell at 60+ gross margins. 300mm product also enjoys higher gross margins, although it will be initially lower than that at the new ST Micro fab.
- The company has a strong market position in high quality imaging and 3D, which is increasing being used for gesturing controls, machine vision, security anti-crash systems and self driving cars, as well as smartphones with high megapixel cameras.
- The company has considerable exposure to data center growth and 5G and should be a major beneficiary of these growing markets in 2021 and beyond.
- The company has no fabs in China and suffers less disruption to its business than its Chinese competitors due to pandemic supply chain issues or political issues.
- We believe the stock is currently undervalued on a PE basis versus peers. Our price target is \$37.73 per share, and we expect continued sequential improvement in revenues, earnings, and margins going forward.

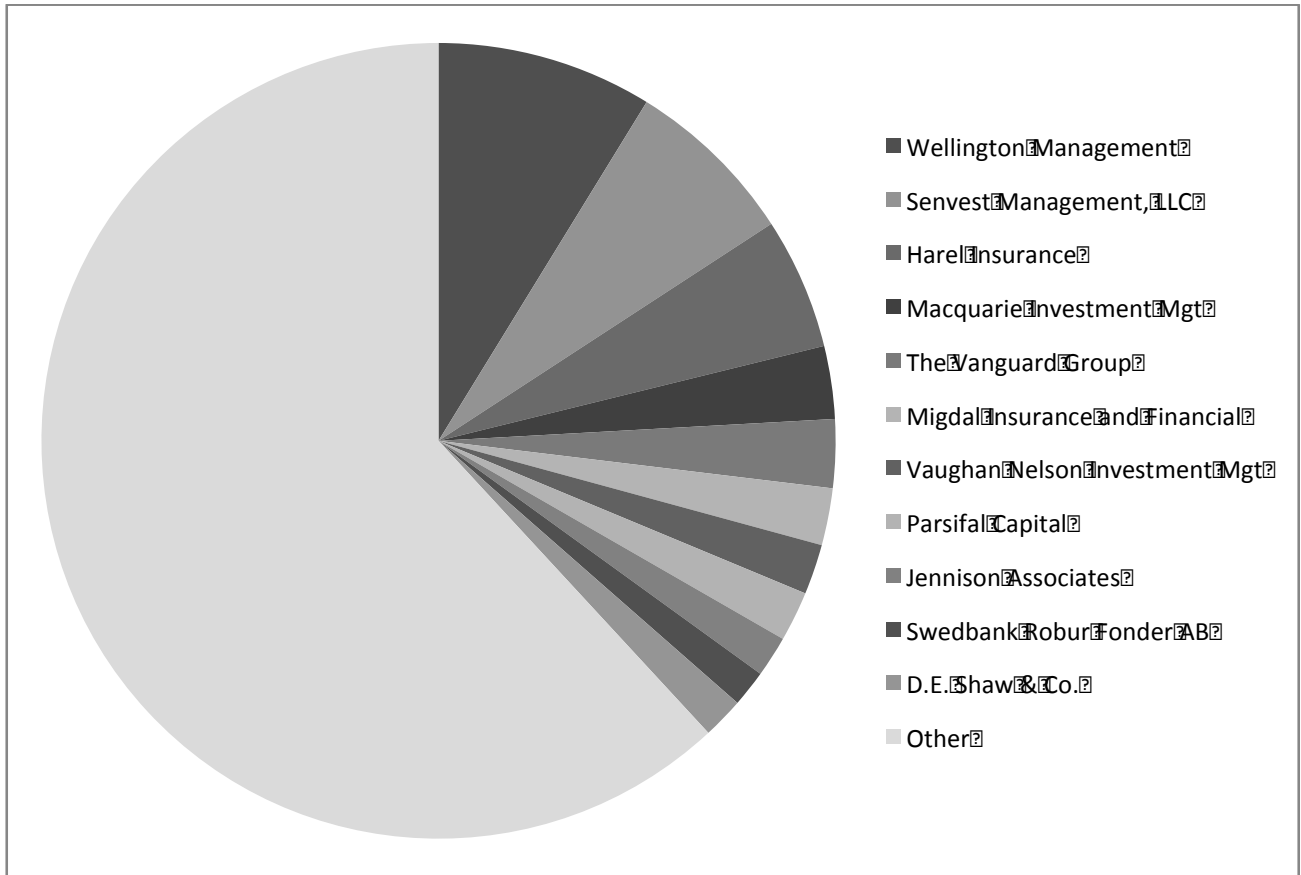
## VALUATION

Our fully diluted non-GAAP EPS estimate for 2021 for TSEM remains at \$1.35 and our 2022 EPS estimate is \$1.63. We believe the stock deserves a PE of at least 19.8xs in line with its peers. Applying that to 2022 estimate of \$1.63 gives us a stock price of \$32.27 per share. With its \$6.45 in cash per share we are leaving our price target at \$37.73. We expect that the stock will begin to move up as the company has returned to revenue growth due to demand in end markets as well as market share gains specifically in smartphones.

**Foundry Companies**

Company	Ticker	EPS 21E	EPS 22E	Price	PE 2021E	PE 2022E	Growth Rate	Sales 2021E	EV/Sales	EV
Taiwan Semiconductor	TSM	3.94	4.55	116.05	29.5	25.5	15.5%	55.85	10.54	588.8
United Microelectronics	UMC	0.57	0.66	9.28	16.3	14.1	15.8%	7.19	2.86	20.5
<b>Average</b>					22.9	19.8			6.7	

**OWNERSHIP**



# INCOME STATEMENT

	March Q1 20	June Q2 20	Sept Q3 20	Dec Q4 20	March Q1 21	June Q2 21E	Sept Q3 21E	Dec Q4 21E	2019	2020	2021E	2022E
<b>REVENUE</b>	300.2	310.1	310.2	345.2	347.2	360.0	366.0	375.0	1,234.0	1,265.7	1,448.2	1,520.6
Yr-to-yr Gr.	-3%	1%	-1%	13%	16%	16%	18%	9%	-5%	3%	14%	5%
<b>OPERATING EXPENSES</b>												
Cost of goods sold	247.6	252.4	256.8	275.6	277.4	286.4	290.6	295.1	1,004.3	1,032.4	1,149.4	1,185.6
Gross Margin	52.5	57.7	53.5	69.6	69.8	73.6	75.4	79.9	229.7	233.3	298.9	335.1
% of Sales	17.5%	18.6%	17.2%	20.2%	20.1%	20.5%	20.6%	21.3%	18.6%	18.4%	20.6%	22.0%
R&D	19.4	19.4	19.6	19.9	20.3	20.3	20.3	20.4	75.6	78.3	81.4	83.5
M, G&A	16.7	16.2	14.8	16.3	17.0	17.0	17.1	17.4	67.4	64.0	68.5	70.6
One-time charges	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tot Operating Exp.	36.1	35.6	34.4	36.2	37.3	37.3	37.4	37.8	143.0	142.3	149.9	154.1
<b>Operating Income</b>	16.4	22.1	19.1	33.4	32.5	36.3	38.0	42.1	86.7	91.0	149.0	181.0
<b>Operating Margin</b>	5%	7%	6%	10%	9.4%	10%	10.4%	11%	7.0%	7%	10%	12%
Yr-to-yr Gr.	-40%	25%	-16%	77%	98%	64%	99%	26%	-44%	5%	43%	99%
Interest & other non-cash financing	(2.1)	1.8	(0.6)	(1.5)	(7.8)	(1.0)	(1.0)	(1.0)	4.3	(2.3)	(10.8)	(4.0)
Other income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gain from acquisition	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Profit before tax</b>	14.3	24.0	18.5	31.9	24.6	35.3	37.0	41.1	91.0	88.7	138.2	177.0
Profit margin	4.8%	7.7%	6.0%	9.2%	7.1%	9.8%	10.1%	11.0%	7.4%	7.0%	9.5%	11.6%
Taxes	1.7	(2.4)	(2.8)	(1.8)	5.9	(2.5)	(3.0)	(3.5)	(2.9)	(5.3)	(3.1)	(10.6)
Tax Rate	11.9%	10.1%	15.1%	5.7%	-23.8%	7.0%	8.0%	8.5%	3.2%	6.0%	2.2%	6.0%
Profit before non-controlling	16.0	21.5	15.7	30.1	30.5	32.9	34.1	37.7	88.1	83.4	135.1	166.4
Minority Income	1.0	(2.4)	(0.5)	1.0	(2.2)	(1.5)	(1.5)	(1.5)	2.0	(1.0)	(6.7)	(8.0)
GAAP Net income	17.0	19.1	15.2	31.0	28.3	31.4	32.6	36.2	90.0	82.4	128.4	158.4
Yr-to-yr Gr.	-35%	-9%	-32%	50%	66%	64%	114%	16%	-34%	-9%	56%	92%
Non-GAAP Net Income	21.9	23.4	19.1	36.6	33.7	35.9	36.8	41.6	107.68	101.01	148.08	177.75
GAAP primary EPS	\$0.16	\$0.18	\$0.14	\$0.29	\$0.26	\$0.29	\$0.30	\$0.33	\$0.85	\$0.77	\$1.19	\$1.47
Fully diluted GAAP	\$0.16	\$0.18	\$0.14	\$0.28	\$0.26	\$0.29	\$0.30	\$0.33	\$0.84	\$0.76	\$1.17	\$1.45
<b>Adj Non-GAAP EPS-Fully dil.</b>	<b>\$0.20</b>	<b>\$0.22</b>	<b>\$0.18</b>	<b>\$0.34</b>	<b>\$0.31</b>	<b>\$0.33</b>	<b>\$0.33</b>	<b>\$0.38</b>	<b>\$1.00</b>	<b>\$0.94</b>	<b>\$1.35</b>	<b>\$1.63</b>
Yr-to-yr Gr.	-47%	-25%	-43%	27%	27%	32%	68%	-2%	-34%	-7%	-17%	74%
Primary Share Out	106.8	107.0	107.5	107.8	108.0	108.2	108.4	108.6	106.3	106.7	108.3	107.8
Fully Diluted GAAP	108.1	108.3	108.5	109.0	110.0	110.0	110.0	110.0	107.4	108.0	110.0	109.0
All in shares	109.0	109.0	109.0	110.0	110.0	110.0	110.0	110.0	108.8	109.0	110.0	110.0
<b>EBITDA</b>	<b>72.8</b>	<b>81.6</b>	<b>79.2</b>	<b>95.9</b>	<b>94.5</b>	<b>97.8</b>	<b>99.3</b>	<b>104.6</b>	<b>298.9</b>	<b>329.4</b>	<b>396.2</b>	<b>424.8</b>
EBITDA Margin	24%	26%	26%	28%	27%	27%	27%	28%	24%	26%	27%	28%
Yr-to-yr Gr.	-8%	16%	5%	28%	30%	20%	25%	9%	-17%	10%	5%	29%

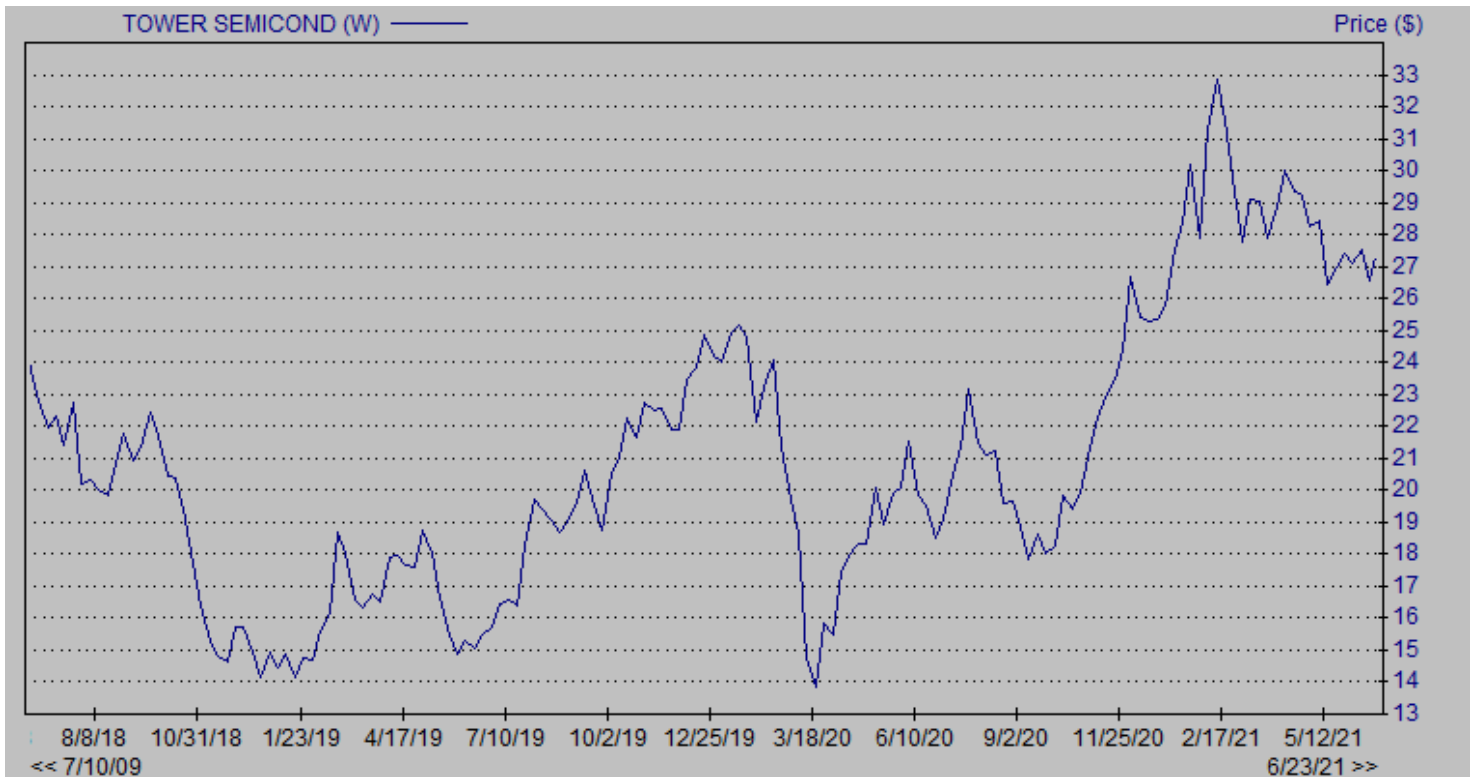
## BALANCE SHEET

\$ in thousands	Mar. 31, 2021	Dec. 31, 2020	Qtr-Qtr % Change	Mar. 31, 2020	Yr-Yr % Change
<b>CURRENT ASSETS</b>					
Cash and cash equivalents	\$215,581	\$211,683	1.8%	\$251,348	-14.2%
Short term deposits	307,386	310,230	-0.9%	277,857	10.6%
Marketable securities	187,027	188,967	-1.0%	191,434	-2.3%
Trade accounts receivable	164,166	162,100	1.3%	115,194	42.5%
Inventories	197,189	199,126	-1.0%	198,285	-0.6%
Other current assets	27,854	30,810	-9.6%	22,332	24.7%
<b>Total current assets</b>	<b>1,099,203</b>	<b>1,102,916</b>	<b>-0.3%</b>	<b>1,056,450</b>	<b>4.0%</b>
LONG-TERM INVESTMENTS	40,765	40,699	0.2%	39,562	3.0%
PROPERTY AND EQUIPMENT, NET	827,230	839,171	-1.4%	732,169	13.0%
GOODWILL & INTANGIBLE ASSETS, NET	17,471	17,962	-2.7%	9,963	75.4%
DEFERRED TAX & OTHER ASSETS, NET	92,980	93,401	-0.5%	93,032	-0.1%
<b>TOTAL ASSETS</b>	<b>2,077,649</b>	<b>2,094,149</b>	<b>-0.8%</b>	<b>1,938,176</b>	<b>7.2%</b>
<b>CURRENT LIABILITIES</b>					
<b>Short term debt</b>	<b>101,295</b>	<b>106,513</b>	<b>-4.9%</b>	<b>62,885</b>	<b>61.1%</b>
Trade accounts payable	85,288	96,940	-12.0%	148,671	-42.6%
Deferred revenue	20,814	10,027	107.6%	10,191	104.2%
Other current liabilities	66,160	59,432	11.3%	54,192	22.1%
<b>Total current liabilities</b>	<b>273,557</b>	<b>272,912</b>	<b>0.2%</b>	<b>275,939</b>	<b>-0.9%</b>
<b>LONG-TERM DEBT</b>					
<b>LONG-TERM CUSTOMERS' ADVANCES</b>	<b>33,971</b>	<b>25,451</b>	<b>33.5%</b>	<b>27,755</b>	<b>22.4%</b>
EMPLOYEE RELATED LIABILITIES	15,447	15,833	-2.4%	12,730	21.3%
DEFERRED TAX LIABILITY	35,011	41,286	-15.2%	40,941	-14.5%
Total liabilities	599,620	639,247	-6.2%	577,581	3.8%
SHAREHOLDERS' EQUITY	1,478,029	1,454,902	1.6%	1,360,595	8.6%
<b>TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY</b>	<b>\$2,077,649</b>	<b>\$2,094,149</b>	<b>-0.8%</b>	<b>\$1,938,176</b>	<b>7.2%</b>
Current Ratio	4.0	4.0	-0.6%	3.8	5.0%
Quick Ratio	3.3	3.3	-0.4%	3.1	6.0%
Working Capital	825,646	830,004	-0.5%	780,511	5.8%
Debt Percent of Assets	17%	19%	-11.4%	15%	13.0%
Debt to Equity	0.2	0.3	-13.5%	0.2	11.5%
Cash and equivalents	709,994	710,880	-0.1%	720,639	-1.5%
Cash and equivalents per share	\$6.49	\$6.69	-3.0%	\$6.75	-3.9%
Debt	342,929	390,278	-12.1%	283,101	21.1%

## CASH FLOW

	Year	3-Mo	3-Mo	3-Mo	3-Mo	Year	3-Mo
	2019	31-Mar-20	30-Jun-20	30-Sep-20	31-Dec-20	2020	31-Mar-21
<b>CASH FLOWS - OPERATING ACTIVITIES</b>							
Net profit (loss)	\$ 88,073	\$ 16,031	\$ 21,474	\$ 15,726	\$ 30,058	\$ 83,289	\$ 30,514
<b>Income and non-cash expense items:</b>							
Depreciation and amortization	214,474	56,796	60,268	60,277	63,190	240,531	62,053
Effect of fair value measurement on debt	10,294	(4,069)	3,159	828	6,727	6,645	(3,792)
Other expense (income), net	(4,293)	(14)	(876)	558	5,547	5,215	(4,985)
<b>Changes in assets and liabilities:</b>							
Trade accounts receivable	27,317	11,685	(12,981)	11,556	(43,347)	(33,087)	(6,274)
Other assets	(4,600)	7,355	(1,998)	(7,630)	(5,726)	(7,999)	7,082
Inventories	(21,021)	(6,171)	(11,209)	6,689	7,800	(2,891)	(3,407)
Trade accounts payable	(339)	(6,199)	(6,751)	(10,299)	4,673	(18,576)	(9,266)
Deferred revenue and customers' advances	(10,331)	(571)	(1,927)	(596)	22	(3,072)	19,340
Other current liabilities	(9,435)	(3,248)	13,977	(10,832)	450	347	7,084
Employee related liabilities	(310)	(31)	2,109	1,793	65	3,936	(107)
Deferred tax liability, net	1,491	(3,228)	1,358	542	3,551	2,223	(10,829)
<b>Net cash provided by operating activities</b>	<b>291,320</b>	<b>68,336</b>	<b>66,603</b>	<b>68,612</b>	<b>73,010</b>	<b>276,561</b>	<b>87,413</b>
<b>CASH FLOWS - INVESTING ACTIVITIES</b>							
Investments in property and equipment, net	(172,166)	(62,907)	(62,537)	(66,862)	(64,233)	(256,539)	(49,415)
Interest bearing deposits, including designated deposits	(132,928)	(85,356)	6,570	(28,983)	699	(107,070)	(1,611)
Net cash provided by (used in) investing activities	(305,094)	(148,263)	(55,967)	(95,845)	(63,534)	(363,609)	(51,026)
<b>CASH FLOWS - FINANCING ACTIVITIES</b>							
Exercise of warrants and options	1,842	87	1,127	272	1,026	2,512	364
Debt repayment	(19,402)	(24,197)	(5,000)	(26,355)	(8,147)	(63,699)	(29,375)
Net cash used in financing activities	(17,560)	(24,110)	(3,873)	(26,083)	(7,121)	(61,187)	(29,011)
Effect of foreign exchange rate change	1,804	(176)	682	2,227	1,624	4,357	(3,478)
<b>INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS</b>	<b>(29,530)</b>	<b>(104,213)</b>	<b>7,445</b>	<b>(51,089)</b>	<b>3,979</b>	<b>(143,878)</b>	<b>3,898</b>
<b>CASH AND CASH EQUIVALENTS - BEGINNING OF PERIOD</b>	<b>385,091</b>	<b>355,561</b>	<b>251,348</b>	<b>258,793</b>	<b>207,704</b>	<b>355,561</b>	<b>211,683</b>
<b>CASH AND CASH EQUIVALENTS - END OF PERIOD</b>	<b>355,561</b>	<b>251,348</b>	<b>258,793</b>	<b>207,704</b>	<b>211,683</b>	<b>211,683</b>	<b>215,581</b>
Operating Cash Flow	\$ 308,548	\$ 68,744	\$ 84,025	\$ 77,389	\$ 105,522	\$ 335,680	\$ 83,790
Free cash flow	\$ 136,382	\$ 5,837	\$ 21,488	\$ 10,527	\$ 41,289	\$ 79,141	\$ 34,375

# HISTORICAL STOCK PRICE





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