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Zacks Small-Cap Research

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Tower Semiconductor (NASDAQ: TSEM)

Tower Will Benefit as 5G Finally Takes Off

We believe that the stock should be worth $24.70 using a 21.3x PE peer multiple on 2021 EPS of $1.16.

Current Price (11/11/20)	$23.07
Valuation	**$24.70**

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 expanded capacity with a $100 million investment in its fab in Japan to fulfill the high demand for 300mm technology.

SUMMARY DATA

52-Week High	**$25.68**
52-Week Low	**$13.56**
One-Year Return (%)	**-0.7**
Beta	**1.4**
Average Daily Volume (sh)	**488,599**
Shares Outstanding (mil)	**107.5**
Market Capitalization ($mil)	**$2,480**
Short Interest Ratio (days)	**1.9**
Institutional Ownership (%)	**54**
Insider Ownership (%)	**1**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**4.7**
Earnings Per Share (%)	**-21.2**
Dividend (%)	**N/A**
P/E using TTM EPS	**28.2**
P/E using 2020 Estimate	**25.9**
P/E using 2021 Estimate	**19.9**
Zacks Rank	**N/A**

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

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2018	313 A	345 A	323 A	334 A	1,304 A
2019	310 A	306 A	312 A	306 A	1,234 A
2020	300 A	310 A	310 A	340 E	1,261 E
2021					1,350 E

Earnings Per Share
(Adjusted non-GAAP Diluted)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2018	$0.31 A	$0.42 A	$0.37 A	$0.41 A	$1.51 A
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	$0.29 E	$0.89 E
2021					$1.16 E

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

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WHAT'S NEW

Tower Semiconductor has long been considered a 5G play due to its high proportion of revenues from 5G handsets, infrastructure products and data centers in which to hold all that new data to be generated. Of course we have been hearing this is the year of 5G for some time and it hasn't happened yet. First there were technical obstacles and fiber constraints, and then the world got hit with a pandemic that slowed down infrastructure built out and demand. 2021 may finally be the year it all starts to take off. Researchandmarkets said global handset sales declined in 2019 1.6% to 2.1 billion units. IDC is forecasting the worldwide smartphone market will decline 9.5% to 1.24 billion units in 2020, from the 1.37 billion in 2019. From there it expects shipments will move back up to 1.49 billion units in 2024, or a CAGR of 4.7%. Not only will the market return to growth, but there is an expected doubling in the demand for 5G handsets. QUALCOMM predicts 500 million 5G handsets could be sold in 2021 versus the 250 million sold in 2020. Tower benefits two ways from this shift in its sales of RF SOI. In addition to unit growth, it provides 30-50% more content to a 5G handset than a 4G, increasing its revenues further. In addition, 5G infrastructure demand is picking up and there is even life in data center orders. Tower expects to grow faster than these markets as it captures market share and provides more content per unit. It expects organic growth in 2021 to be better than this year.

Q3 2020 Results

Q3 revenues came in slightly above expectations at $310.2 million, down 0.6% year over year. Guidance for Q4 revenues was $340 million ± 5%, above street estimates. This guidance points to Q4 year over year growth of 11% and sequential growth of 10%, but organic (i.e. excluding revenues generated by the Panasonic JV and Maxim) growth of 14% year over year and 17% quarter over quarter. During the quarter the company had a cybersecurity breach and as a result Tower shut down all of its Israeli and US IT systems, which stopped all activities in those locations. In less than a week, all the factories were back operating. There was no damage to the functional quality of the work in progress, and it and its customer data were protected. Because of this shut down, Tower missed between 8-12 days of new wafer starts and a few weeks of full fab activity levels during the third quarter. This is affecting Q4 sales that could have been even higher than the current guidance. In the 2020 year, only Q1 was affected by the contract renegotiation with Panasonic, making overall growth more attainable. The 2020 revenue forecast assumes flat Panasonic revenues after taking out $23 million for contract renegotiation in Q1 and Maxim declines of $9 million (also by design in its contract.)

Q3 2020 gross margin decreased to 17.2% from 18.7% due to the revenue decline, while gross margin dollars decreased $4.8 million or 8.3%. Operating expenses were down $1.3 million year over year, and were down $1.2 million sequentially. The operating margin declined to 6.2% from 7.3% year over year. On a dollar basis it increased 16.0%. Other income was an expense of $565,000 compared to expense of $426,000 a year ago.

Pretax profit was $18.5 million versus $22.3 million a year ago. The company paid $2.8 million in taxes in the quarter versus paying $61,000 last year. The tax rate is going up as incremental sales are mostly coming from Japan and Newport Beach, California where the taxes range from 20% to 30%.

GAAP net income was $15.2 million versus $22.2 million last year, while non-GAAP net income was $19.1 million versus $26.5 million.

Diluted GAAP EPS was $0.14 per share versus $0.21 last year. Adjusted non-GAAP EPS decreased to $0.18 versus $0.25 a year ago. Average diluted shares for the quarter were 108.5 million, up from 107.6 million last year. EBITDA for the second quarter of 2020 was $79.2 million compared to $75.3 million a year ago and down sequentially from $81.6 million in Q2 2020.

Balance Sheet and Capacity

The company has **cash, short-term deposits, and marketable securities of $705 million** compared to $724 million last quarter while increasing debt by $16.6 million to $316 million. Its quick ratio is high at 3.3s and it has $799 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. This year's planned capacity expansion should be funded out of operating cash flow, leaving current balances the same. Operating cash flow this quarter was $77.4 million and free cash flow was $10.5 million.

The company has been investing 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). This quarter it spent $67 million on investments in cap ex and expects about the same spending in Q4 and Q1 before it drops back down to the more typical low 40s. The company estimates that at full utilization this capacity could provide $70 million in annual revenues and leave the company with a total revenue capacity of $1.65 billion.

Utilization

The current fab capacity will allow the company to grow revenues and improve margins through capacity utilization. Tower has been expanding capacity at its TPSCo Uozu 300 millimeter foundry in Japan by investing $100 million. The capacity utilization of the 8" TPSCo lines stayed at 60%, and the Uozu 300-millimeter foundry dropped to 70% this quarter from 85% last quarter this capacity has been increased.

The company targets 85% utilization at its fabs and believes that level gives the company the capacity to generate $1.65 billion in revenues. 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
Fab1 Migdal Haemek, Israel 6"	84%	76%	60%	70%	60%	60%	50%
Fab2 Migdal Haemek, Israel 8"	70%	80%	80%	70%	70%	70%	60%
Fab3 Newport Beach, CA 8"	80%	70%	50%	50%	55%	70%	70%
Three TPSCo factories	50%	50%	NA	NA	NA	NA	NA
8 inch	NA	NA	50%	55%	55%	60%	60%
12 inch	NA	NA	60%	70%	80%	85%	70%
San Antonio, 8"	50%	50%	50%	55%	65%	70%	60%

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 discretes.
- 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. When the company adds 12" revenues that blended percentage will trend higher as 12" can sell at 60+ gross margins. 300nm product also enjoys higher gross margins
- 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 the coronavirus or political supply chain directives.
- We believe the stock is currently undervalued on a PE basis versus peers. Our price target is $24.70 per share, and we expect continued sequential improvement in revenues, earnings, and margins going forward.

VALUATION

Our fully diluted non-GAAP EPS estimate for 2020 for TSEM is now $0.89 and our 2021 EPS estimate is $1.16. We believe the stock deserves a PE of at least 21.3xs in line with its peers. Applying that to 2021 estimate of $1.16 gives us a stock price of $24.70 per share by next year. We expect that the stock will begin to move as the company returns to growth due to demand in end markets specifically smartphones.

Foundry Companies	Ticker	EPS 20E	EPS 21E	Price	PE 2020E	PE 2021E	Growth Rate	2020E Sales	EV/Sales
Company									
Taiwan Semiconductor	TSM	3.40	3.61	90.42	26.6	25.0	6.2%	41.76	9.85
United Microelectronics	UMC	0.26	0.31	5.47	21.0	17.6	19.2%	5.38	2.45
Average					23.8	21.3			6.2

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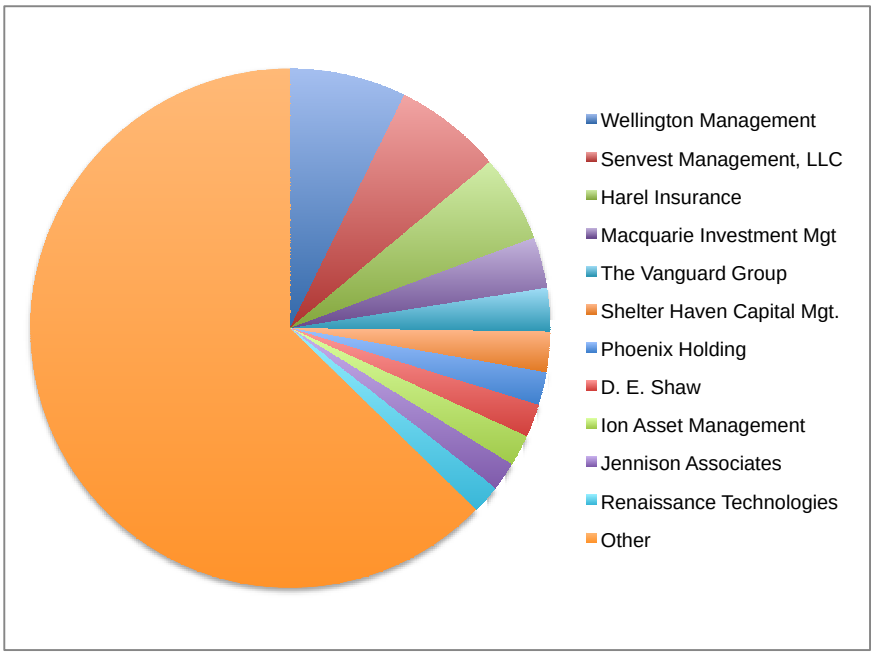

INCOME STATEMENT

	March Q1 19	June Q2 19	Sept Q3 19	Dec Q4 19	March Q1 20	June Q2 20	Sept Q3 20	Dec Q4 20E	2019	2020E	2021E
REVENUE	310.1	306.1	312.1	305.7	300.2	310.1	310.2	340.0	1,234.0	1,260.5	1,350.0
Yr-to-yr Gr.	-1%	-9%	-3%	-8%	-3%	1%	-1%	11%	-5%	2%	7%
OPERATING EXPENSES											
Cost of goods sold	247.0	252.7	253.8	250.9	247.6	252.4	256.8	271.6	1,004.3	1,028.4	1,047.6
Gross Margin	63.2	53.4	58.3	54.8	52.5	57.7	53.5	68.4	229.7	232.1	278.8
% of Sales	20.4%	17.4%	18.7%	17.9%	17.5%	18.6%	17.2%	20.1%	18.6%	18.4%	20.7%
R&D	19.2	18.8	18.7	18.9	19.4	19.4	19.6	19.6	75.6	78.0	78.4
M, G&A	16.6	16.8	16.8	17.1	16.7	16.2	14.8	16.0	67.4	63.6	68.0
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
Tot Operating Exp.	35.8	35.7	35.6	35.9	36.1	35.6	34.4	35.6	143.0	141.7	146.4
Operating Income	27.3	17.8	22.7	18.9	16.4	22.1	19.1	32.8	86.7	90.4	132.4
Operating Margin	9%	6%	7.3%	6%	5%	7%	6.2%	10%	7.0%	7%	10%
Yr-to-yr Gr.	-14%	-60%	-41%	-53%	-40%	25%	-16%	73%	-44%	4%	46%
Interest & other non-cash financing	0.7	0.9	(0.4)	3.1	(2.1)	1.8	(0.6)	0.0	4.3	(0.8)	(1.0)
Other income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gain from acqusiition	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Profit before tax	28.1	18.7	22.3	22.0	14.3	24.0	18.5	32.8	91.0	89.6	131.4
Profit margin	9.1%	6.1%	7.1%	7.2%	4.8%	7.7%	6.0%	9.6%	7.4%	7.1%	9.7%
Taxes	(1.7)	1.0	0.1	(2.4)	1.7	(2.4)	(2.8)	(4.0)	(2.9)	(7.6)	(15.8)
Tax Rate	5.9%	5.4%	0.3%	10.7%	11.9%	10.1%	15.1%	12.4%	3.2%	8.4%	12.0%
Profit before non-controlling	26.4	19.7	22.4	19.6	16.0	21.5	15.7	28.7	88.1	82.0	115.7
Minority Income	(0.2)	1.2	(0.2)	1.1	1.0	(2.4)	(0.5)	(1.5)	2.0	(3.5)	(6.0)
GAAP Net income	26.2	20.9	22.2	20.7	17.0	19.1	15.2	27.2	90.0	78.5	109.7
Yr-to-yr Gr.	0%	-45%	-34%	-46%	-35%	-9%	-32%	31%	-34%	-13%	40%
Non-GAAP Net Income	31.7	25.3	26.5	24.2	21.9	23.4	19.1	31.6	107.68	95.99	125.56
GAAP primary EPS	$0.25	$0.20	$0.21	$0.19	$0.16	$0.18	$0.14	$0.25	$0.85	$0.74	$1.02
Fully diluted GAAP	$0.25	$0.20	$0.21	$0.19	$0.16	$0.18	$0.14	$0.25	$0.84	$0.73	$1.01
Adj Non-GAAP EPS-Fully dil.	**$0.30**	**$0.24**	**$0.25**	**$0.22**	**$0.20**	**$0.22**	**$0.18**	**$0.29**	**$1.00**	**$0.89**	**$1.16**
Yr-to-yr Gr.	-20%	-53%	-45%	-53%	-47%	-25%	-43%	11%	-34%	-11%	30%
Primary Share Out	105.3	106.3	106.6	106.7	106.8	107.0	107.5	107.7	106.3	106.7	107.7
Fully Diluted GAAP	107.0	107.2	107.6	108.0	108.1	108.3	108.5	108.7	107.4	108.0	108.7
All in shares	108.2	109.0	109.0	109.0	109.0	109.0	109.0	109.0	108.8	109.0	109.0
EBITDA	**78.8**	**70.1**	**75.3**	**74.6**	**72.8**	**81.6**	**79.2**	**93.3**	**298.9**	**326.8**	**372.7**
EBITDA Margin	25%	23%	24%	24%	24%	26%	26%	27%	24%	26%	28%
Yr-to-yr Gr.	-6%	-27%	-15%	-19%	-8%	16%	5%	25%	-17%	9%	14%
	27.34	17.76	22.72	18.90	16.44	22.13	19.09	32.76	86.72	90.41	132.43

BALANCE SHEET

$ in thousands	Sept 30, 2020	June 30, 2020	Qtr-Qtr % Change	Sept 30, 2019	Yr-Yr % Change
CURRENT ASSETS					
Cash and cash equivalents	**$207,704**	**$258,793**	-19.7%	**$417,636**	-50.3%
Short term deposits	**313,029**	**269,263**	16.3%	**159,230**	96.6%
Marketable securities	**183,946**	**195,886**	-6.1%	**146,264**	25.8%
Trade accounts receivable	118,111	128,401	-8.0%	123,519	-4.4%
Inventories	204,933	210,129	-2.5%	187,902	9.1%
Other current assets	30,379	28,158	7.9%	21,571	40.8%
Total current assets	**1,058,102**	**1,090,630**	-3.0%	**1,056,122**	0.2%
LONG-TERM INVESTMENTS	41,363	41,219	0.3%	36,662	12.8%
PROPERTY AND EQUIPMENT, NET	780,596	765,895	1.9%	703,569	10.9%
GOODWILL & INTANGIBLE ASSETS, NET	15,806	16,298	0.0%	17,800	-11.2%
DEFERRED TAX & OTHER ASSETS, NET	88,878	91,834	-3.2%	90,269	-1.5%
TOTAL ASSETS	1,984,745	2,005,876	-1.1%	1,904,422	4.2%
CURRENT LIABILITIES					
Short term debt	**86,717**	**79,668**	8.8%	**64,774**	33.9%
Trade accounts payable	104,354	154,517	-32.5%	104,366	0.0%
Deferred revenue	9,660	8,455	14.3%	6,539	47.7%
Other current liabilities	58,098	68,192	-14.8%	59,065	-1.6%
Total current liabilities	**258,829**	**310,832**	-16.7%	**234,744**	10.3%
LONG-TERM DEBT	**229,266**	**219,764**	4.3%	**254,683**	-10.0%
LONG-TERM CUSTOMERS' ADVANCES	25,780	27,570	-6.5%	32,843	-21.5%
EMPLOYEE RELATED LIABILITIES	16,717	14,970	11.7%	13,818	21.0%
DEFERRED TAX LIABILITY	40,536	40,596	-0.1%	45,598	-11.1%
Total liabilities	571,128	613,732	-6.9%	581,686	-1.8%
SHAREHOLDERS' EQUITY	1,413,557	1,392,144	1.5%	1,322,736	6.9%
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$1,984,685	$2,005,876	-1.1%	$1,904,422	4.2%
Current Ratio	4.1	3.5	16.5%	4.5	-9.1%
Quick Ratio	3.3	2.8	16.4%	3.7	-10.9%
Working Capital	799,273	779,798	2.5%	821,378	-2.7%
Debt Percent of Assets	16%	15%	6.7%	17%	-5.1%
Debt to Equity	0.2	0.2	3.9%	0.2	-7.4%
Cash and equivalents	$704,679	$723,942	-2.7%	$723,130	-2.6%
Cash and equivalents per share	$6.56	$6.77	-3.1%	$6.78	-3.3%
Debt	315,983	299,432	5.5%	319,457	-1.1%

CASH FLOW

	Year 2018	3-Mo 31-Mar-19	3-Mo 30-Jun-19	3-Mo 30-Sep-19	3-Mo 31-Dec-19	Year 2019	3-Mo 31-Mar-20	3-Mo 30-Jun-20	3-Mo 30-Sep-20
CASH FLOWS - OPERATING ACTIVITIES									
Net profit (loss)	$ 133,379	$ 26,400	$ 19,722	$ 22,354	$ 19,597	$ 88,073	$ 16,031	$ 21,474	$ 15,726
Income and non-cash expense items:									
Depreciation and amortization	214,391	52,014	52,853	53,203	56,404	214,474	56,796	60,268	60,277
Effect of fair value measurement on debt	(9,791)	4,001	2,204	3,095	994	10,294	(4,069)	3,159	828
Other expense (income), net	2,442	(17)	(428)	(266)	(3,582)	(4,293)	(14)	(876)	558
Changes in assets and liabilities:									
Trade accounts receivable	(3,096)	18,606	12,665	(496)	(3,458)	27,317	11,685	(12,981)	11,556
Other assets	11,260	(3,705)	(2,050)	(1,978)	3,133	(4,600)	7,355	(1,998)	(7,630)
Inventories	(26,344)	(3,395)	378	(13,276)	(4,728)	(21,021)	(6,171)	(11,209)	6,689
Trade accounts payable	(3,562)	(2,651)	(12,553)	12,110	2,755	(339)	(6,199)	(6,751)	(10,299)
Deferred revenue and customers' advances	2,625	(10,685)	(2,964)	4,178	(860)	(10,331)	(571)	(1,927)	(596)
Other current liabilities	(867)	(4,803)	2,957	(6,494)	(1,095)	(9,435)	(3,248)	13,977	(10,832)
Employee related liabilities	(795)	68	(29)	(32)	(317)	(310)	(31)	2,109	1,793
Deferred tax liability, net	(6,745)	(965)	(599)	337	2,718	1,491	(3,228)	1,358	542
Net cash provided by operating activities	**312,897**	**74,868**	**72,156**	**72,735**	**71,561**	**291,320**	**68,336**	**66,603**	**68,612**
CASH FLOWS - INVESTING ACTIVITIES									
Investments in property and equipment, net	**(169,741)**	**(41,718)**	**(43,727)**	**(43,017)**	**(43,704)**	**(172,166)**	**(62,907)**	**(62,537)**	**(66,862)**
Interest bearing deposits, including designated deposits	(158,476)	(6,726)	(27,099)	(11,573)	(87,530)	(132,928)	(85,356)	6,570	(28,983)
Net cash provided by (used in) investing activities	(328,217)	(48,444)	(70,826)	(54,590)	(131,234)	(305,094)	(148,263)	(55,967)	(95,845)
CASH FLOWS - FINANCING ACTIVITIES									
Exercise of warrants and options	714	397	0	43	1,402	1,842	87	1,127	272
Debt repayment	(48,849)	(3,074)	(7,475)	(5,606)	(3,247)	(19,402)	(24,197)	(5,000)	(26,355)
TPSCo dividend to Panasonic	0	0	0	0	0	0	0	0	0
Net cash used in financing activities	(48,135)	(2,677)	(7,475)	(5,563)	(1,845)	(17,560)	(24,110)	(3,873)	(26,083)
Effect of foreign exchange rate change	2,585	(740)	3,205	(104)	(557)	1,804	(176)	682	2,227
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(60,870)	23,007	(2,940)	12,478	(62,075)	(29,530)	(104,213)	7,445	(51,089)
CASH AND CASH EQUIVALENTS - BEGINNING OF PERIOD	445,961	385,091	408,098	405,158	417,636	385,091	355,561	251,348	258,793
CASH AND CASH EQUIVALENTS - END OF PERIOD	385,091	408,098	405,158	417,636	355,561	355,561	251,348	258,793	207,704
Operating Cash Flow	$ 340,421	$ 82,398	$ 74,351	$ 78,386	$ 73,413	$ 308,548	$ 68,744	$ 84,025	$ 77,389
Free cash flow	$ 170,680	$ 40,680	$ 30,624	$ 35,369	$ 29,709	$ 136,382	$ 5,837	$ 21,488	$ 10,527

HISTORICAL STOCK PRICE



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