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Zacks Small-Cap Research

Sponsored – Impartial - Comprehensive

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Tower Semiconductor (NASDAQ: TSEM)

Pandemic Continues to Take its Toll On End User Demand

We believe that the stock could be worth \$26.20 next year using a 25.2x PE on 2021 EPS of \$1.04.

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 \$100 million investment in its fab in Japan to fulfill the high demand for 300mm technology.

Current Price (07/29/20) \$20.30
Valuation **\$26.20**

SUMMARY DATA

52-Week High **\$25.68**
52-Week Low **\$13.56**
One-Year Return (%) **3.2**
Beta **1.4**
Average Daily Volume (sh) **532,765**

Shares Outstanding (mil) **107**
Market Capitalization (\$mil) **\$2,168**
Short Interest Ratio (days) **1.0**
Institutional Ownership (%) **54**
Insider Ownership (%) **1**

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

5-Yr. Historical Growth Rates
Sales (%) **6.5**
Earnings Per Share (%) **-19.4**
Dividend (%) **N/A**

P/E using TTM EPS **22.8**
P/E using 2020 Estimate **23.3**
P/E using 2021 Estimate **19.5**

Zacks Rank **N/A**

Risk Level **Low**
Type of Stock **Mid-Value**
Industry **Elec Comp-Semis**

ZACKS ESTIMATES

Revenue

(in millions of \$)

	Q1	Q2	Q3	Q4	Year
	(Mar)	(Jun)	(Sep)	(Dec)	(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	320 E	325 E	1,255 E
2021					1,318 E

Earnings Per Share

(Adjusted non-GAAP Diluted)

	Q1	Q2	Q3	Q4	Year
	(Mar)	(Jun)	(Sep)	(Dec)	(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	\$0.22 E	\$0.23 E	\$0.87 E
2021					\$1.04 E

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

WHAT'S NEW

The Pandemic Continues to Take its Toll On End User Demand

Q2 2020 Results

Q2 revenues came in on target at \$310 million up 1% year over year. Guidance for Q3 revenues was \$320 million, and slightly below street expectations. While production has continued unimpeded by the pandemic, end user demand continues soft particularly for smartphones. Visibility is the same, but customers themselves are unsure of the demand they will have for their products.

Organic revenues in the quarter were flat year over year compared with up 10% in Q1 2020. This is the first quarter with the same contract terms with Panasonic as last year; all growth shown by the company is now just organic.

In 2020, 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, Maxim declines of \$9 million (also by design in its contract), and some growth for the rest of the business, although this quarter did not show any after growing 10% in Q1.

The silicon germanium optical business continues to show good growth as 5G infrastructure suppliers and data centers continue to buy transistors and switches. The growth in Q2 was greater than Q1 and the company expects its output will grow 20% this year over the full year 2019. The San Antonio fab is expected to start contributing product shortly. Demand is primarily for 200G with some 400G. TSEM is also working on an 800G transceiver with its partner Infinera.

The mobile RF business is weak and handset sales are expected to decline 20% this year although TSEM continues to gain market share in this declining market.

Power ICs are expected to grow 20% this year.

Power discrete is still significantly down from last year but is showing some signs of life in Q3.

Sensors are expected to grow in the single digits this year. Particularly hard hit are dental x-ray sensors as dentists were shut down during the pandemic and where TSEM has a large market share. Industrial sensors are also affected. However fingerprint sensors for smartphones should go into volume production starting in Q4.

Q2 2020 gross margin increased to 18.6% from 17.4% due to product mix, while gross margin dollars increased \$4.3 million or 8%.

Operating expenses were virtually flat year over year, and were down \$527,000 sequentially. The operating margin increased to 7.1% from 5.8% year over year. On a dollar basis it increased 24.6%.

Other income was \$1.8 million compared to income of \$947,000 a year ago.

Pretax profit was \$24.0 million versus \$18.7 million a year ago.

The company paid \$2.4 million in taxes in the quarter versus paying \$1 million 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%. This was the greatest variation in our forecast and the cause of the slight earnings miss. This growth in Japan also affected minority income and reduced net income.

GAAP net income was \$19.1 million versus \$20.9 million last year, while non-GAAP net income was \$23.4 million versus \$25.3 million.

Diluted GAAP EPS was \$0.18 per share versus \$0.20 last year. Adjusted non-GAAP EPS decreased to \$0.22 versus \$0.24 a year ago. Average diluted shares for the quarter were 108.3 million, up from 107.2 million last year. EBITDA for the second quarter of 2020 was \$81.6 million compared to \$70.1 million a year ago and up sequentially from \$72.8 million in Q1 2020.

Balance Sheet and Capacity

The company has **cash, short-term deposits, and marketable securities of \$724 million** compared to \$721 million last quarter while increasing debt by \$16.3 million to \$299 million. Its quick ratio is high at 2.8xs and it has \$780 million in working capital. The company has 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 \$84 million and free cash flow was \$21.5 million.

The company is investing \$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 again spent \$63 million on investments in cap ex. Plans are to spend the typical \$42-44 million per quarter, plus the extra \$100 million spent entirely in the first three quarters, plus \$20 million for QT9 (spent equally in Q3 and Q4.) Thus total cap ex for the year should be approximately \$290 million. Equipment being installed in the first half of 2020 and the capacity increase should be fully available by the end of the first half of Q2. 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 is expanding capacity at its TPSCo Uozu 300 millimeter foundry in Japan by investing \$100 million. The capacity utilization of the 8" TPSCo lines increased to 60%, and the Uozu 300-millimeter foundry moved up to 85% from 80% last quarter and expectations are for increased capacity and production there again next quarter.

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 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020
Fab1 Migdal Haemek, Israel 6"	90%	95%	90%	90%	84%	76%	60%	70%	60%	60%
Fab2 Migdal Haemek, Israel 8"	80%	85%	80%	76%	70%	80%	80%	70%	70%	70%
Fab3 Newport Beach, CA 8"	80%	85%	85%	90%	80%	70%	50%	50%	55%	70%
Three TPSCo factories	50%	50%	60%	55%	50%	50%	NA	NA	NA	NA
8 inch	NA	NA	NA	NA	NA	NA	50%	55%	55%	60%
12 inch	NA	NA	NA	NA	NA	NA	60%	70%	80%	85%
San Antonio, 8"	55%	60%	50%	50%	50%	50%	50%	55%	65%	50%

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 discretetes.
- 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 2020 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 \$26.20 per share, and we expect continued sequential improvement in revenues, earnings, and margins going forward.

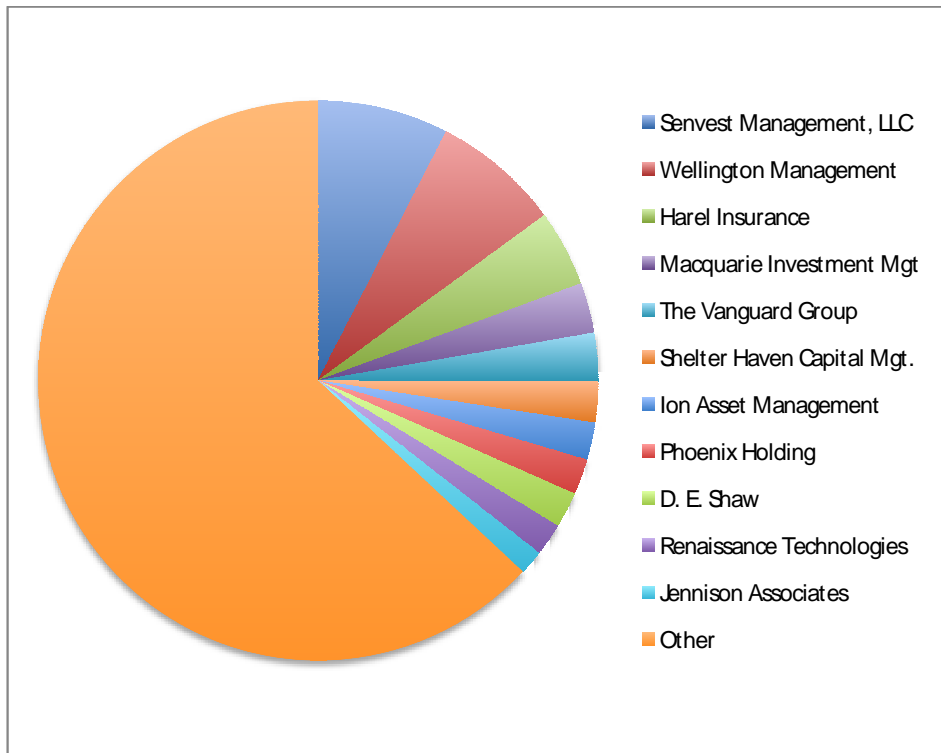
VALUATION

Our fully diluted non-GAAP EPS estimate for 2020 for TSEM is now \$0.87 and our 2021 EPS estimate is \$1.04. We believe the stock deserves a PE of at least 25.2xs in line with its peers. Applying that to 2021 estimate of \$1.04 gives us a stock price of \$26.20 per share by next year. While it is counterintuitive that valuations would go up when estimates are reduced, investors are paying up for other foundry companies, thus raising group multiples.

We expect that the stock will begin to move up once the company returns to more vibrant growth due to demand in end market. The biggest risks to the stock is that weakness in the industry in general caused by the pandemic and China in specific, continues or worsens, or somehow its ramp of 300 mm technology is impeded or constrained.

Foundry Companies	Ticker	EPS 20E	EPS 21E	Price	PE 2020E	PE 2021E	Growth Rate	2020E	EV/Sales
								Sales	
<u>Company</u>									
Taiwan Semiconductor	TSM	2.88	3.01	82.67	28.7	27.5	4.5%	41.76	8.69
United Microelectronics	UMC	0.17	0.22	3.70	21.8	16.8	29.4%	5.38	1.62
Average					25.2	22.1			5.2

OWNERSHIP



Source: Zacks Investment Research

INCOME STATEMENT

	March Q1 19	June Q2 19	Sept Q3 19	Dec Q4 19	March Q1 20	June Q2 20	Sept Q3 20E	Dec Q4 20E	2019	2020E	2021E
REVENUE	310.1	306.1	312.1	305.7	300.2	310.1	320.0	325.0	1,234.0	1,255.3	1,318.0
Yr-to-yr Gr.	-1%	-9%	-3%	-8%	-3%	1%	3%	6%	-5%	2%	5%
OPERATING EXPENSES											
Cost of goods sold	247.0	252.7	253.8	250.9	247.6	252.4	256.8	259.3	1,004.3	1,016.2	1,047.6
Gross Margin	63.2	53.4	58.3	54.8	52.5	57.7	63.2	65.7	229.7	239.1	270.4
% of Sales	20.4%	17.4%	18.7%	17.9%	17.5%	18.6%	19.7%	20.2%	18.6%	19.0%	20.5%
R&D	19.2	18.8	18.7	18.9	19.4	19.4	19.8	18.5	75.6	77.1	78.0
M, G&A	16.6	16.8	16.8	17.1	16.7	16.2	16.7	16.7	67.4	66.2	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	36.5	35.2	143.0	143.4	146.0
Operating Income	27.3	17.8	22.7	18.9	16.4	22.1	26.7	30.5	86.7	95.7	124.4
Operating Margin	9%	6%	7%	6%	5%	7%	8%	9%	7.0%	8%	9%
Yr-to-yr Gr.	-14%	-60%	-41%	-53%	-40%	25%	17%	61%	-44%	10%	30%
Interest & other non-cash financing	0.7	0.9	(0.4)	3.1	(2.1)	1.8	0.0	0.0	4.3	(0.3)	(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 acquisition	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	26.7	30.5	91.0	95.4	123.4
Profit margin	9.1%	6.1%	7.1%	7.2%	4.8%	7.7%	8.3%	9.4%	7.4%	7.6%	9.4%
Taxes	(1.7)	1.0	0.1	(2.4)	1.7	(2.4)	(3.7)	(4.9)	(2.9)	(9.3)	(14.8)
Tax Rate	5.9%	5.4%	0.3%	10.7%	11.9%	10.1%	13.8%	16.2%	3.2%	9.8%	12.0%
Profit before non-controlling	26.4	19.7	22.4	19.6	16.0	21.5	23.0	25.5	88.1	86.1	108.6
Minority Income	(0.2)	1.2	(0.2)	1.1	1.0	(2.4)	(3.6)	(4.6)	2.0	(9.7)	(12.0)
GAAP Net income	26.2	20.9	22.2	20.7	17.0	19.1	19.4	20.9	90.0	76.4	96.6
Yr-to-yr Gr.	0%	-45%	-34%	-46%	-35%	-9%	-13%	1%	-34%	-15%	26%
Non-GAAP Net Income	31.7	25.3	26.5	24.2	21.9	23.4	23.6	25.3	107.68	94.13	112.53
GAAP primary EPS	\$0.25	\$0.20	\$0.21	\$0.19	\$0.16	\$0.18	\$0.18	\$0.20	\$0.85	\$0.72	\$0.90
Fully diluted GAAP	\$0.25	\$0.20	\$0.21	\$0.19	\$0.16	\$0.18	\$0.18	\$0.19	\$0.84	\$0.71	\$0.89
Adj Non-GAAP EPS-Fully dil.	\$0.30	\$0.24	\$0.25	\$0.22	\$0.20	\$0.22	\$0.22	\$0.23	\$1.00	\$0.87	\$1.04
Yr-to-yr Gr.	-20%	-53%	-45%	-53%	-47%	-25%	-27%	-14%	-34%	-13%	19%
Primary Share Out	105.3	106.3	106.6	106.7	106.8	107.0	107.0	107.1	106.3	106.7	107.1
Fully Diluted GAAP	107.0	107.2	107.6	108.0	108.1	108.3	108.3	108.3	107.4	108.0	108.3
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	86.0	90.0	298.9	330.5	340.3
EBITDA Margin	25%	23%	24%	24%	24%	26%	27%	28%	24%	26%	26%
Yr-to-yr Gr.	-6%	-27%	-15%	-19%	-8%	16%	14%	21%	-17%	11%	3%

BALANCE SHEET

\$ in thousands	June 30, 2020	Mar. 31, 2019	Qtr-Qtr % Change	June 30, 2019	Yr-Yr % Change
CURRENT ASSETS					
Cash and cash equivalents	\$258,793	\$251,348	3.0%	\$405,158	-36.1%
Short term deposits	269,263	277,857	-3.1%	147,032	83.1%
Marketable securities	195,886	191,434	2.3%	146,893	33.4%
Trade accounts receivable	128,401	115,194	11.5%	123,789	3.7%
Inventories	210,129	198,285	6.0%	174,806	20.2%
Other current assets	28,158	22,332	26.1%	22,374	25.9%
Total current assets	1,090,630	1,056,450	3.2%	1,020,052	6.9%
LONG-TERM INVESTMENTS					
LONG-TERM INVESTMENTS	41,219	39,562	4.2%	36,874	11.8%
PROPERTY AND EQUIPMENT, NET	765,895	732,169	4.6%	707,122	8.3%
INTANGIBLE ASSETS, NET	0	9,963	-100.0%	11,279	-100.0%
GOODWILL	16,298	7,000	132.8%	7,000	132.8%
DEFERRED TAX & OTHER ASSETS, NET	91,834	93,032	-1.3%	89,171	3.0%
TOTAL ASSETS	2,005,876	1,938,176	3.5%	1,871,498	7.2%
CURRENT LIABILITIES					
Short term debt	79,668	62,885	26.7%	45,173	76.4%
Trade accounts payable	154,517	148,671	3.9%	92,747	66.6%
Deferred revenue	8,455	10,191	-17.0%	7,975	6.0%
Other current liabilities	68,192	54,192	25.8%	65,904	3.5%
Total current liabilities	310,832	275,939	12.6%	211,799	46.8%
LONG-TERM DEBT					
LONG-TERM DEBT	219,764	220,216	-0.2%	275,914	-20.4%
LONG-TERM CUSTOMERS' ADVANCES	27,570	27,755	-0.7%	27,230	1.2%
EMPLOYEE RELATED LIABILITIES	14,970	12,730	17.6%	14,295	4.7%
DEFERRED TAX LIABILITY	40,596	40,941	-0.8%	47,403	-14.4%
Total liabilities	613,732	577,581	6.3%	576,641	6.4%
SHAREHOLDERS' EQUITY	1,392,144	1,360,595	2.3%	1,294,857	7.5%
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	\$2,005,876	\$1,938,176	3.5%	\$1,871,498	7.2%
Current Ratio	3.5	3.8	-8.4%	4.8	-27.1%
Quick Ratio	2.8	3.1	-8.9%	4.0	-29.0%
Working Capital	779,798	780,511	-0.1%	808,253	-3.5%
Debt Percent of Assets	15%	15%	2.2%	17%	-13.0%
Debt to Equity	0.2	0.2	3.4%	0.2	-13.3%
Cash and equivalents	\$723,942	720,639	0.5%	\$699,083	3.6%
Cash and equivalents per share	\$6.77	\$6.75	0.3%	\$6.56	3.2%
Debt	299,432	283,101	5.8%	321,087	-6.7%

CASH FLOW

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

HISTORICAL STOCK PRICE



Source: Zacks Investment Research

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