

# Taiwan Semiconductor Manufacturing (TSM)

Updated January 13th, 2022 by Aristofanis Papadatos

#### **Key Metrics**

<b>Current Price:</b>	\$143	5 Year CAGR Estimate:	4.9%	Market Cap:	\$675 B
Fair Value Price:	\$105	5 Year Growth Estimate:	10.0%	Ex-Dividend Date:	3/16/22
% Fair Value:	137%	5 Year Valuation Multiple Estimate:	-6.1%	Dividend Payment Date:	4/14/22
Dividend Yield:	1.4%	5 Year Price Target	\$168	Years Of Dividend Growth:	7
<b>Dividend Risk Score:</b>	D	Retirement Suitability Score:	F	Last Dividend Increase:	11.1%

#### Overview & Current Events

Taiwan Semiconductor Manufacturing is the world's largest dedicated foundry for semiconductor components. The company is headquartered in Hsinchu, Taiwan. American investors can initiate an ownership stake in Taiwan Semiconductor through American Depository Receipts on the New York Stock Exchange, where they trade under the ticker TSM with a market capitalization of US\$675 billion.

In mid-January, Taiwan Semiconductor reported (1/13/22) financial results for the fourth quarter of fiscal 2021. Revenue grew 21% and earnings-per-share increased 16% over the prior year's quarter thanks to sustained strength in the demand for 5-nanometer technology. Earnings-per-share exceeded the analysts' consensus of \$1.11 by \$0.04. Taiwan Semiconductor has exceeded the analysts' earnings-per-share estimates for 16 consecutive quarters.

Thanks to strong trends in high-performance computing and a continued recovery in the automotive industry, the company expects to grow its revenues by about 8% sequentially in the first quarter and post operating margin of 42.0%-44.0%. Given the markedly strong demand for the chips of the company in smartphones, vehicles and high-performance computing, we expect record earnings per share of approximately \$5.00 in 2022.

#### Growth on a Per-Share Basis

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2027
EPS	\$1.08	\$1.22	\$1.68	\$1.87	\$2.01	\$2.19	\$2.24	\$2.15	\$3.39	\$4.11	\$5.00	\$8.05
DPS	\$0.50	\$0.50	\$0.50	\$0.73	\$0.94	\$1.16	\$1.31	\$1.60	\$1.72	\$1.88	\$2.00	\$3.22
Shares <sup>1</sup>	5,185	5,190	5,190	5,190	5,190	5,190	5,190	5,190	5,190	5,190	5,190	5,190

As the leader in the semiconductor manufacturing industry, it is unsurprising that Taiwan Semiconductor has generated tremendous growth over the last decade. Indeed, the company has compounded its adjusted earnings-per-share by 16.0% per year over this time period. The company decelerated in 2015-2019, with 3.5% average annual earnings-per-share growth, partly due to a defective chemical from a supplier which damaged production in early 2019. Nevertheless, this non-recurring issue now belongs to the past and the company has returned to strong growth mode. We expect it to deliver approximately 10.0% annualized earnings-per-share growth over the next five years thanks to accelerated deployment of 5G and the growing adoption of 7-nanometer solutions in High Performance Computing. Moreover, we expect the company to grow its dividend significantly thanks to its healthy payout ratio and its rising earnings.

### Valuation Analysis

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Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Now	2027
Avg. P/E	13.7	14.6	12.1	12.1	13.3	16.3	18.1	20.4	20.6	28.9	28.6	20.9
Avg. Yld.	3.4%	2.8%	2.5%	3.2%	3.5%	3.3%	3.1%	3.6%	2.5%	1.6%	1.4%	1.9%

Taiwan Semiconductor has traded at an average price-to-earnings ratio of 17.0 over the last decade but we view its 5-year average of 20.9 as more suitable for this stock, which has promising growth prospects. The stock is currently trading

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<sup>&</sup>lt;sup>1</sup> In millions.



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at a nearly decade-high price-to-earnings ratio, of 28.6. We expect the stock to revert towards its 5-year average valuation level over the next five years. If this were to come to fruition, the stock would incur a -6.1% annualized drag due to the contraction of its earnings multiple over this period.

From an income perspective, Taiwan Semiconductor trades with a gross forward dividend yield of 1.4%, although a 21% withholding tax from the Taiwanese government reduces its after-tax yield to 1.1%.

## Safety, Quality, Competitive Advantage, & Recession Resiliency

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2027
Payout	46.3%	41.0%	29.8%	39.0%	46.8%	53.0%	55.8%	74.4%	50.7%	45.7%	40.0%	40.0%

Taiwan Semiconductor has a remarkably strong balance sheet. As very few companies are debt-free, the exceptional balance sheet of the semiconductor manufacturer is a testament to the strength of its business model, which does not require debt to fuel growth and generates ample free cash flows.

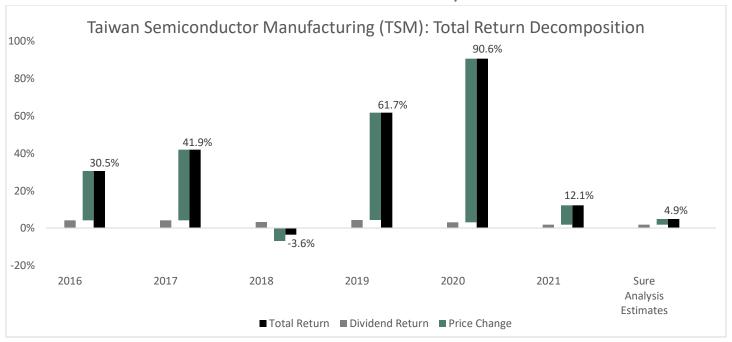
On the other hand, investors should realize that the growth trajectory of the company is strongly tied to the growth trajectory of smartphones. While smartphones will remain a vital component of human lifestyle for the foreseeable future, it is unknown how much their sales can increase from the current level.

Moreover, the stock is likely to underperform in a recession, as smartphone sales could plunge in such an event. However, in the recent recession, which resulted from the pandemic, the company managed to grow its sales and earnings thanks to strong growth in 5G smartphones and product launches in high-performance computing.

#### Final Thoughts & Recommendation

Taiwan Semiconductor has proved resilient to the pandemic, with many growth drivers in place. As a result, the stock has tripled off its bottom in 2020 and is now trading at a nearly decade-high valuation level. Nevertheless, it can still offer a 4.9% average annual return over the next five years thanks to 10.0% earnings growth and its 1.4% dividend, which may be offset by a -6.1% annualized valuation drag. The stock thus earns a hold rating.

### Total Return Breakdown by Year



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#### **Income Statement Metrics**

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenue	17,135	20,114	25,140	26,407	29,255	32,129	34,192	34,638	45,530
Gross Profit	8,255	9,480	12,448	12,848	14,654	16,265	16,506	15,950	24,176
Gross Margin	48.2%	47.1%	49.5%	48.7%	50.1%	50.6%	48.3%	46.0%	53.1%
SG&A Exp.	748	788	792	718	793	893	870	909	1,209
D&A Exp.	4,442	5,262	6,599	6,966	6,908	8,551	9,699	9,287	11,278
<b>Operating Profit</b>	6,141	7,076	9,782	10,072	11,663	12,709	12,765	12,086	19,269
Op. Margin	35.8%	35.2%	38.9%	38.1%	39.9%	39.6%	37.3%	34.9%	42.3%
Net Profit	5,393	6,199	8,381	9,481	10,237	11,340	12,036	11,458	17,606
Net Margin	31.5%	30.8%	33.3%	35.9%	35.0%	35.3%	35.2%	33.1%	38.7%
Free Cash Flow	1,253	1,922	4,255	8,393	6,381	8,199	8,330	4,707	10,399
Income Tax	757	1,082	1,578	1,492	1,670	1,680	1,142	1,160	2,265

#### **Balance Sheet Metrics**

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Assets	33,195	42,190	47,148	49,009	58,400	67,101	68,340	75,617	98,974
Cash & Equivalents	4,952	8,108	11,305	16,639	16,757	18,644	18,893	15,205	23,668
Acc. Receivable	1,995	2,394	3,619	2,515	3,973	4,097	4,088	4,540	5,119
Inventories	1,306	1,253	2,092	1,983	1,507	2,489	3,375	2,771	4,924
Goodwill & Int.	378	384	427	416	452	478	556	690	924
Total Liabilities	8,555	14,322	14,902	13,674	16,299	16,754	14,025	21,714	32,628
Accounts Payable	2,048	3,491	1,541	1,318	2,762	2,835	2,489	5,996	7,055
Long-Term Debt	4,012	7,566	7,881	6,845	6,535	7,209	4,763	4,795	12,355
Total Equity	24,553	27,859	32,241	35,307	42,076	50,324	54,293	53,880	66,312
D/E Ratio	0.16	0.27	0.24	0.19	0.16	0.14	0.09	0.09	0.19

### **Profitability & Per Share Metrics**

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Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Return on Assets	18.2%	16.4%	18.8%	19.7%	19.1%	18.1%	17.8%	15.9%	20.2%
Return on Equity	23.8%	23.7%	27.9%	28.1%	26.5%	24.5%	23.0%	21.2%	29.3%
ROIC	21.1%	19.3%	22.2%	23.0%	22.5%	21.4%	20.6%	19.5%	25.4%
Shares Out.	5,185	5,190	5,190	5,190	5,190	5,190	5,190	5,190	5,190
Revenue/Share	3.30	3.88	4.85	5.09	5.64	6.20	6.59	6.68	8.78
FCF/Share	0.24	0.37	0.82	1.62	1.23	1.58	1.61	0.91	2.01

Note: All figures in millions of U.S. Dollars unless per share or indicated otherwise.

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