Maalot

S&P Global Ratings

Tower Semiconductor Ltd.

May 1, 2024

Rating Affirmation

'ilAA' Rating Affirmed, Outlook Stable

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Overview

Key Strengths	Key Risks
• High competitive position in the analog chip market. • Long-term relationships with clients. • Low leverage. • Strong liquidity.	• Relatively concentrated customer base. • Diseconomies of scale, requiring the Company to invest in R&D and fixed assets in order to maintain its technological advantage.

In 2023, Tower Semiconductor Ltd. ("Tower" or "the Company") posted an increase of about $150 million in its operating cash flow and an increase of about $254 million in net profit (taking into account a one-off receipt from Intel). At the same time, In accordance with our assessment, the Company's revenues decreased by about 15.2% compared to 2022 and amounted to about $1.42 billion. The decrease in revenues was mainly due to a sharp decrease in demand for chips compared to 2021-2022 when a sharp increase in demand was recorded as the market recovered from the covid-19 pandemic. Accordingly, the adjusted EBITDA rate decreased to 33.2% in 2023 from 36.6% in 2022. (Unlike reported EBITDA, the adjusted EBITDA does not include a one-time amount of about $313.5 million from a one-time receipt from Intel due to the cancellation of the acquisition deal.) At the same time, gross adjusted debt decreased by about 15% and was about $232 million at year-end 2023. As a result, adjusted gross debt to EBITDA was about 0.5x in 2023, compared to about 0.4x in 2022.

In the medium term, we expect that Tower will continue to make investments while maintaining low leverage. In our base case scenario we assume that the Company will continue to make substantial investments, in accordance with its strategy to extend its production capabilities, in particular of 12" chips, in order to maintain its competitive position in the medium to long term. This assumption is consistent with the expected investments in the medium term in the two new factories in Italy and in New Mexico, USA. At the same time, we believe that the Company's debt will continue to decrease, so that the Company will continue to maintain an adjusted gross debt to EBITDA ratio below 1x in the next two years. We also estimate that, similarly to previous years, the Company will focus its operating cash flows on investments and growth and will not distribute dividends in the medium term.

We acknowledge a high degree of uncertainty regarding the scope, duration and effects of the war in Israel. If the conflict expands to additional fronts, it could significantly increase the adverse risk to macroeconomic parameters in Israel and capital market volatility. There are already concerns that Israel's main economic indicators may be weaker than expected (see Israel Long-Term Ratings Lowered To 'A+' From 'AA-' On Heightened Geopolitical Risk; Outlook Negative, published on April 18, 2024). As the situation evolves, we will update our assumptions and estimates accordingly. We note that only two of Tower's six factories are located in Israel, so its production risk is relatively spread.

Outlook

The stable outlook reflects our assessment that Tower will maintain its competitive position in the analog chip market and strong liquidity in the medium term. We also expect the Company to maintain adequate utilization rates and profitability. We expect the Company to maintain an adjusted gross debt to EBITDA ratio below 1.5x, commensurate with the current rating.

Downside Scenario

We may lower the rating if Tower's competitive position is undermined. This could happen if market conditions worsen, leading to lower utilization rates in the Company's factories and to a continued or material decline in profitability. The rating will also come under pressure if the Company consistently fails to generate positive cash flows and if its adjusted gross debt to EBITDA exceeds 1.5x.

Upside Scenario

We may consider a positive rating action if Tower's business risk profile materially improves, as reflected, inter alia, by a larger market share, materially improved profitability, wider geographical spread of its factories, and a wider client base and product variety compared to peers.

Base-Case Scenario

Key Assumptions

- A slight decrease of about 1%-2% in revenues in 2024 due to cost-cutting processes in factories in Israel and relatively low demand expected in the chip industry, and about 3% revenue growth in 2025.
- An adjusted EBITDA margin of about 30% in 2023-2024.
- Capital expenditure of about $400 million - $500 million on maintenance and new investments.
- No dividend distribution.

Key Metrics

Financial Metric	2023A	2024E	2025E
Debt/EBITDA	0.5x	0.5x-1.0x	0.4x-1.0x
FFO/debt	~200%	>100%	>100%

A - actual. E – Estimate. FFO – funds from operations.

We are taking into account gross debt, without deducting cash.

Company Description

Tower Semiconductor Ltd. is an Israeli company engaged in the processing and production of silicon wafers as a pure play foundry according to the design specifications of its customers, which are used in a wide variety of products in different markets, including personal computers and consumer, communication, automotive, industrial and medical products. Tower also provides engineering support services and ancillary manufacturing services. The Company produces in eight factories located in Israel, U.S.A., Japan and Italy (two of them are not yet in serial production).

Business Risk

Tower's business risk profile is supported by a leading market share in its niche – production and processing of silicon wafers, and by its competitive position as one of the leading analog specialty foundries in the world. The Company's business risk profile is also supported by high barriers to entry based on technological know-how, long-term relationships with clients and high replacement costs when changing chip suppliers, since up to 18 months may pass between the initial order of a product and its commercial manufacturing, due to the design and development process.

On the other hand, Tower's business risk profile is constrained by its niche-type activity and by its product variety compared with global peers, and is affected by inherent risks in the chip industry and by diseconomies of scale. These two factors require the Company to invest heavily in R&D and fixed assets in order to maintain its technological advantage. We believe the fast technological developments in the chip market constitute a material risk for the Company. However, the analog chip segment on which Tower focuses is characterized by lower investments compared with the digital chip segment, as analog chip technology is less affected by the chip-size minimization race which largely dictates the need to develop new technologies and make large investments. Accordingly, the life cycle of the products and technologies in the analog chip segment tends to be longer.

Tower's business risk profile is also constrained by its concentrated customer base – the Company's largest client, Nuvoton Technology Corporation Japan, was responsible for over 10% of Company revenues in the past two years, and its five largest clients – for over 40% of revenues.

In the medium to long term we believe that in order to expand its operations, Tower will continue investing in enhancing its microchip production capacity and improving utilization in its factories. This is in accordance with the agreement it signed with Intel in September 2023 for production space at Intel's factory in New Mexico, U.S.A., and in accordance with the partnership agreement it signed in 2021 with ST Microelectronics Srl to construct a factory in Italy. Both plants are designed for the production of 12" chips and in both Tower will use part of the space for production of the chips using its own machines.

Financial Risk

Tower's financial risk profile reflects its low leverage, similar to other companies in the microchip industry, but potentially high volatility in operating performance over the business cycle due to the high correlation between demand and the business cycle, production and utilization rates at the Company's factories.

In accordance with our forecasts, the Company's revenues decreased by about 15.2% in 2023 due to low demand in the chip industry compared to 2021-2022 and lower customer inventory volumes. The Company's revenues in 2023 were about $1.42 billion and its adjusted EBITDA was about $473 million. We note that unlike reported EBITDA, adjusted EBITDA does not include a one-time amount of about $313.5 million from a one-time receipt from Intel due to the cancellation of the acquisition deal.

The Company's adjusted gross debt decreased by about 15% in 2023 to $232 million at year-end from about $272 million at year-end 2022. Despite large investments of about $432 million in 2023 and about $214 million in 2022, including for the purpose of continuing to expand production capacity, the Company's gross debt decreased and its cash and cash equivalents increased. This was largely due to operating cash flows of about $680 million in 2023 and about $530 million in 2022, and no dividend distribution.

We estimate that, in the medium term, the Company will continue investing given the need to increase its product offering and production capacity, and that its adjusted gross debt to EBITDA ratio will remain below 1x in 2024-2025. We also expect the Company will continue supporting growth in the upcoming years, and therefore will refrain from distributing dividends in the short term.

Table 1.

Tower Semiconductor Ltd. -- Financial Summary (Mil. $)

Industry Sector: High Tech Equipment

	2023	**2022**	**2021**	**2020**	**2019**
Revenue	1,422.7	1,677.6	1,508.2	1,265.7	1,234.0
EBITDA	472.6	614.2	469.9	356.2	323.5
Funds from operations (FFO)	455.2	596.7	456.7	351.6	302.7
Interest expense	4.6	5.9	7.6	7.1	7.2
Cash interest paid	4.7	4.7	4.9	7.0	7.8
Cash flow from operations	681.2	535.4	428.5	283.8	299.0
Capital expenditure	444.5	366.4	313.8	313.7	191.4
Free operating cash flow (FOCF)	236.7	169.0	114.7	(29.8)	107.6
Discretionary cash flow (DCF)	236.7	169.0	114.7	(29.8)	107.6
Cash and short-term investments	1,236.4	1,005.8	764.6	710.9	747.2
Gross available cash	1,236.4	1,005.8	764.6	710.9	747.2
Debt	231.6	272.3	314.8	390.3	311.8
Equity	2,427.0	1,888.5	1,615.4	1,454.9	1,346.7
Adjusted ratios					
Annual revenue growth (%)	(15.2)	11.2	19.2	2.6	(5.4)
EBITDA margin (%)	33.2	36.6	31.2	28.1	26.2
Return on capital (%)	9.5	14.6	9.2	5.4	6.6
EBITDA interest coverage (x)	101.9	103.7	61.6	50.1	45.1
FFO cash interest coverage (x)	97.6	128.1	94.6	51.3	39.8
Debt/EBITDA (x)	0.5	0.4	0.7	1.1	1.0
FFO/debt (%)	196.6	219.1	145.1	90.1	97.1
Cash flow from operations/debt (%)	294.2	196.6	136.1	72.7	95.9
FOCF/debt (%)	102.2	62.1	36.4	(7.6)	34.5
DCF/debt (%)	102.2	62.1	36.4	(7.6)	34.5

The table above includes adjusted financial figures by S&P Global Ratings.

Liquidity

According to our criteria, the Company's liquidity is "strong". We estimate that the ratio between the Company's sources and uses will exceed 1.5x in the next 12-24 months. This assessment mainly reflects expected operating cash flow and the Company's cash and liquid investment balance, which are sufficient to support its investment and working capital needs. We note that the Company has a large share of liquid and available assets to finance its debt maturities in the next two years. In addition, the Company intends to avoid distributing dividends in the medium term in accordance with its organic-growth-oriented strategy.

We estimate the Company's main sources and uses in the 12 months starting January 1, 2024, to be as follows:

Principal Liquidity Sources:	Principal Liquidity Uses
• Cash and liquid investments of about $1.24 billion. • Cash FFO of about $300 million - $400 million.	• Debt maturities of about $15 million. • Capital expenditure (capex) of about $400 million - $500 million.

Modifiers

Diversification/portfolio effect: Neutral

Capital structure: Neutral

Liquidity: Neutral

Financial policy: Neutral

Management and governance: Neutral

Comparable ratings analysis: Positive

Environmental, Social, And Governance

ESG factors have an overall neutral influence on our credit analysis of Tower Semiconductor Ltd.

Reconciliation

In order to create a basis for comparison with other rated companies, we adjust the data reported in the financial statements which we use to calculate financial ratios. The main adjustments to Tower Semiconductor Ltd.'s consolidated data for 2023 are deducting about $313.5 million from EBITDA due a one-time receipt from Intel due to the cancellation of the acquisition deal, and adding lease-related obligations to reported debt.

Table 2.

Tower Semiconductor Ltd.--Reconciliation Of Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. $) for the Fiscal Year Ended Dec 31, 2023

	Debt	Shareholders' equity	EBITDA	Interest expense	S&P Global Ratings' adjusted EBITDA	Cash flow from operations
Reported Amounts	**103.5**	**2,432.5**	**805.3**	**4.4**	**472.6**	**676.6**
S&P Global Ratings adjustments						
Cash taxes paid	--	--	--	--	(12.7)	--
Cash interest paid	--	--	--	--	(4.5)	--
Reported lease liabilities	128.0	--	--	--	--	--
Operating leases	--	--	4.8	0.2	(0.2)	4.6
Share-based compensation expense	--	--	28.2	--	--	--
Nonoperating income (expense)	--	--	--	--	--	--

	Debt	Shareholders' equity	EBITDA	Interest expense	S&P Global Ratings' adjusted EBITDA	Cash flow from operations
Noncontrolling interest/minority interest	--	(5.5)	--	--	--	--
EBITDA: Gain/(loss) on disposals of PP&E	--	--	(52.2)	--	--	--
EBITDA: Other (situational)	--	--	(313.5)	--	--	--
Total adjustments	**128.0**	**(5.5)**	**(332.6)**	**0.2**	**(17.5)**	**4.6**

S&P Global Ratings adjusted amounts

	Debt	Equity	EBITDA	Interest expense	Funds from operations	Cash flow from operations
Adjusted	**231.6**	**2,427.0**	**472.6**	**4.6**	**455.2**	**681.2**

Related Criteria And Research

- Principles Of Credit Ratings, February 16, 2011
- Methodology: Industry Risk, November 19, 2013
- Country Risk Assessment Methodology And Assumptions, November 19, 2013
- Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, December 16, 2014
- Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Group Rating Methodology, July 1, 2019
- Environmental, Social, And Governance Principles In Credit Ratings, October 10, 2021
- Methodology For National And Regional Scale Credit Ratings, June 8, 2023
- Corporate Methodology, April 4, 2024
- Methodology: Management And Governance Credit Factors For Corporate Entities, January 7, 2024
- S&P Global Ratings Definitions, June 9, 2023

Ratings List

Tower Semiconductor Ltd.	Rating	Date when the rating was first published	Date when the rating was last updated
Issuer rating(s)			
Long term	ilAA/Stable	09/05/2016	08/05/2023
Issuer Credit Rating history			
Long term			
May 03, 2022	ilAA/Stable		
April 30, 2018	ilAA-/Stable		
May 10, 2017	ilA+/Stable		
May 09, 2016	ilA/Stable		

Additional details	
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