Media Release:

Vanguard International Semiconductor Corp. Ratings Affirmed At 'twA+/twA-1' On Reduced Execution Risk; Outlook Stable

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Rating Action Overview

- **Vanguard International Semiconductor Corp.,** a specialty foundry services provider in Taiwan, generated about new Taiwan dollar (NT$) 44 billion revenue and NT$15.7 billion EBITDA in 2024.
- We believe the technical support provided by TSMC to Vanguard's joint venture in Singapore and long-term contracts with key clients significantly lowers execution and cash flow risk associated with the project.
- We expect Vanguard's debt leverage to peak in 2027 but gradually trend down thereafter, supported by stronger free operating cash flow from 2027, particularly from the joint venture.
- We therefore affirmed our 'twA+' long-term and 'twA-1' short-term issuer credit ratings on Vanguard.
- The outlook remains stable to reflect our view that Vanguard's enhanced foundry services and lower execution risk can temper the negative impact of a temporary spike in leverage on the ratings.

Rating Action Rationale

Technology and resource support from TSMC help reduce execution risk for Vanguard's Singapore joint venture. Vanguard's largest shareholder, Taiwan Semiconductor Manufacturing Co. Ltd. (TSMC), will provide its proven process technology and technical assistance in the construction of Vanguard's new 12-inch fabrication (fab) in Singapore. Vanguard will operate the new fab through a joint venture agreement with NXP Semiconductors N.V. We believe that through the technical assistance and relevant resources provided by TSMC, Vanguard could complete the construction of the fab and ramp up production with good yields in a timely manner.

The joint venture agreement and long-term contracts with key clients alleviate demand risk and margin uncertainty. Under the agreement, NXP has committed to utilize the fab's capacity based on its shareholding in the joint venture, which could significantly lower demand risk for the joint venture because it provides NXP with much needed 12-inch wafer foundry capacity. We believe NXP's 40% ownership in the joint venture demonstrates the company's commitment to utilize the fab's available capacity. The proven process technology from TSMC, Vanguard's cost competitiveness, and the favorable location of the fab also strengthen NXP's incentive to fully utilize its capacity commitment, in our view. NXP does not possess its own 12-inch wafer foundry capacity.

In addition, we believe Vanguard can secure sufficient orders for its capacity backed by prepayments from key clients. This should ensure sufficient capacity utilization for the fab's phased expansion. Singapore is one of the preferred production sites for semiconductor companies amid rising geopolitical tension.

Success of the new 12-inch fab could moderately strengthen Vanguard's business position. This is because the 12-inch fab could allow Vanguard to extend its technology nodes to 40 nanometers, with a broader product offering and more diversified downstream applications. The company can also mitigate the associated technology migration risk by gradually using the new 12-inch capacity to manufacture some of its products. This could provide more economical benefits, given the larger wafer size compared with its existing 8-inch capacity. Furthermore, Vanguard could reduce exposure to the volatile display driver IC segment, because the new facility will focus on mixed signal, power management, and analog products. These factors could enhance the company's operating scale, market position and profitability stability over the long run.

However, the fab's limited initial capacity and Vanguard's lack of operating track record in 12-inch wafer foundry services constrain the initial benefits from the joint venture. Vanguard plans to commission the new fab in 2027 and increase its capacity to 55,000 wafers per month in 2029, which will still be much smaller than its larger peers' 12-inch wafer services. Vanguard will also need to establish a solid operating record, including a satisfactory yield rate and sustainable utilization to prove its manufacturing capabilities. That's despite the technical assistance and relevant resources from TSMC. Meanwhile, Vanguard will continue to face intense market competition because it will still only be a provider of foundry services using mature process technology, which faces higher overcapacity risk.

Enhanced service offerings and reduced cash flow uncertainty alleviate heightened leverage risk. We forecast Vanguard's ratio of debt to EBITDA could materially rise to 3.3x in 2027, from a net cash position in 2024. This is to support high capital expenditure (capex) for the Singapore fab. Vanguard has reduced its debt funding needs through equity injections and capacity access fees from NXP, which will account for around 40% of the planned US$6.8 billion spending on the first phase of the fab. We also assume that prepayments from key clients for long-term purchase contracts will help fund the expansion.

In addition, Vanguard could gradually lower its debt leverage through stronger cash flow from the new 12-inch fab and its existing 8-inch foundry services over the next few years. We also believe Vanguard will be prudent when pursuing further expansion for its 12-inch wafer foundry capacity and ties the timing and capex scale to confirmed orders secured by prepayments. This will enable Vanguard to maintain the ratio of debt to EBITDA at 2x or lower over the long term, which is in line with the company's conservative financial policy.

Outlook

The stable rating outlook on Vanguard reflects our view that the company could significantly lower its execution and cash flow risk associated with its 12-inch fab project over the next two years. This should enable the company to generate stronger cash flow to manage its debt leverage over the same period. Technology assistance from TSMC, a joint venture agreement with NXP, and long-term contracts secured by prepayments from key clients underpin such derisking. This is despite Vanguard's leverage could remain elevated for a relatively long period to support the high capex for the 12-inch fab.

The outlook also reflects our view that Vanguard will maintain a prudent expansion strategy and financial management to limit the financial impact of any future expansion in 12-inch wafer foundry services.

Downward scenario

We could lower the long-term rating on Vanguard if:

- The company's debt leverage stays materially higher than our forecast without demonstrating deleveraging trend towards a ratio of debt to EBITDA of 2.0x after the initial high capex for the fab. This could happen if: (1) the 12-inch wafer project suffers a severe cost overrun or project delay; 2) a prolonged market downturn or the underutilized of the 12-inch fab causes much weaker cash flow generation than our forecast; or (3) Vanguard significantly increases shareholder friendly actions or engages in significant investments or acquisitions without capital balancing measures; or
- Vanguard's EBITDA margin dips and stay persistently below 20%, which could happen if: (1) aggressive capacity additions from other mature node foundries lead to sustained overcapacity and intensifying price competition that Vanguard fails to absorb; (2) Vanguard fails to ramp up the new 12-inch fab with a satisfactory yield rate or a competitive cost structure; or (3) the company fails to develop competitive technologies and products, which leads to a major loss of customers and business opportunities.

Upward scenario

We may upgrade Vanguard if the company delivers above-average revenue growth and sustains its profitability through industry cycles with extended technology nodes. This would require Vanguard to improve its performance and stability with a larger operating scale and more diversified product portfolio, including significant growth in 12-inch wafer foundry services for more specialty applications such auto and industrial, while at the same time maintaining the debt-to-EBITDA ratio materially below 2.0x.

Our Base Case Scenario

- S&P Global's forecast for world GDP growth at 3% annually in 2025 and 2026.
- Vanguard's revenue to grow by 5%-10% in 2025 and around 10% in 2026, mainly underpinned by continuous demand from clients seeking supply diversification amid rising geopolitical tension. China's economic stimulus measures to support domestic demand could provide additional revenue support. Revenue could materially grow by 30%-35% in 2027 when Vanguard's new 12-inch fab will enter mass production with over 50% of its capacity covered by long-term supply agreements.
- Capacity will increase by 1%-5% annually in 2025 and 2026, because Vanguard will moderately expand its 8-inch capacity based on demand from major clients. Capacity could materially increase by 15%-20% in 2027 as the company gradually ramps up the new 12-inch fab.
- Utilization could improve to around 75% in 2025 and 80% 2026, underpinned by normalized inventory levels for industrial and auto applications. Utilization could improve to 80%-90% in 2027 once the market returns to a normal cycle.
- Average selling price (ASP) could drop by 2%-4% annually in 2025 and 2026, because intense market competition could continue to pressure mature node foundries, particularly within commodity-like products such as large display driver ICs. Blended ASP could materially increase by around 15% in 2027 once the company's 12-inch fab enters mass production, which will have a much higher ASP than Vanguard's 8-inch capacity.
- Gross margin before depreciation and amortization will slightly decline to 45%-46% in 2025 amid ongoing pricing pressure among mature nodes foundries, despite the company's improving utilization. Gross margin could decline to 42%-43% in 2026 and 2027 due to the increased manufacturing cost during the ramping of the new 12-inch fab.
- Expense ratio will remain stable at 10%-12% in 2025-2027, similar to the level in 2024.
- Annual capex to significantly rise to NT$70 billion-NT$80 billion in 2025 and 2026 and could stay at around NT$50 billion 2027, up from around NT$16 billion in 2024. This is mainly to support Vanguard's investment in the new Singapore fab.
- Cash inflows of prepayments from long-term supply agreements of NT$20 billion-NT$21 billion in 2025 and NT$8 billion-NT$9 billion in 2026.
- Equity capital paid-in from NXP of NT$21 billion-NT$22 billion in 2025, NT$20 billion-NT$21 billion in 2026, and NT$3 billion-NT$4 billion in 2027.
- Annual cash dividend to remain stable at NT$8 billion-NT$9 billion in 2025-2027.
- We net 97.2% of Vanguard's cash and liquid investments with debt.

Vanguard International Semiconductor Corp. --Taiwan Ratings Corp. Forecast Summary

Industry sector: Semiconductors

(Mil. NT$)	2022a	2023a	2024a	2025e	2026f	2027f
Revenue	51,694	38,273	44,055	47,172	52,114	70,261
EBITDA (reported)	23,349	13,626	15,734	15,992	16,622	22,452
Plus/(less): Other	--	--	--	--	--	--
EBITDA	23,349	13,626	15,734	15,992	16,622	22,452
Less: Cash interest paid	129	205	(299)	(254)	(910)	(2,193)
Less: Cash taxes paid	(2,904)	(2,394)	(2,645)	(1,497)	(1,019)	(775)
Funds from operations (FFO)	20,574	11,437	12,790	14,242	14,694	19,483
Cash flow from operations (CFO)	33,939	8,678	24,735	36,522	24,554	16,555
Capex	18,723	6,779	15,909	76,650	74,919	50,410
Free operating cash flow (FOCF)	15,216	1,899	8,826	(40,128)	(50,365)	(33,855)
Debt (reported)	12,362	18,286	21,241	21,241	83,241	115,001
Plus: Lease liabilities debt	2,561	2,439	3,672	5,528	8,324	12,533
Less: Accessible cash and liquid Investments	(33,101)	(37,099)	(64,880)	(38,528)	(61,699)	(54,552)
Plus/(less): Other	--	--	--	--	--	--
Debt	--	--	--	--	29,865	72,981
Cash and short-term investments (reported)	34,843	38,050	66,749	39,640	63,480	56,127
Adjusted ratios						
Debt/EBITDA (x)	--	--	--	--	1.8	3.3
FFO/debt (%)	N.M.	N.M.	N.M.	N.M.	49.2	26.7
Annual revenue growth (%)	17.6	(26.0)	15.1	7.1	10.5	34.8
EBITDA margin (%)	45.2	35.6	35.7	33.9	31.9	32.0

All figures are adjusted by Taiwan Ratings Corp., unless stated as reported. Figures for the forecast period are based on Taiwan Ratings Corp.'s base case scenario. a--Actual. e--Estimate. f--Forecast. NT$-- new Taiwan dollar. N.M.--Not meaningful.

Liquidity: Strong

The short-term issuer credit rating is 'twA-1'. We believe the company has strong liquidity which reflects a ratio of liquidity sources to liquidity uses of around 2.7x for the 12 months ending December 2025 and around 1.5x in the subsequent 12 months. We also believe the company will have positive liquidity sources minus uses, even if its EBITDA were to decline by 30%.

In addition, we believe Vanguard has sound relationships with banks and a high standing in credit markets, which is supported by the company's stable performance and good reputation among Taiwan's tech companies. Vanguard can also meet financial covenants for its bank loans, in our view.

Meanwhile, Vanguard will require some refinancing to absorb high impact, low probability events, given its debt will increase over the next two years to support its significant capacity expansion.

Principal liquidity sources:

- Cash and short-term investments of NT$66.7 billion as of the end of 2024.
- Funds from operations of NT$22 billion-NT$23 billion annually in 2025 and 2026.

- Undrawn committed credit facilities maturing beyond the 24 months ending Dec. 31, 2026 of NT$100 billion-NT$110 billion in 2025, and NT$30 billion-NT$40 billion in 2026.
- Cash inflow from NXP of NT$21 billion-NT$22 billion in the 12 months ending Dec. 31, 2025, and NT$20 billion-NT$21 billion in the following 12 months.
- Working capital inflow of NT$10 billion-NT$20 billion in 2025 and NT$1 billion-NT$2 billion in 2026.

Principal liquidity uses:

- No meaningful debt maturities for the 24-month period ending Dec. 31, 2026.
- Annual capex of NT$70 billion-NT$80 billion in 2025 and 2026.
- Annual cash dividend payout of NT$8 billion-NT$9 billion in 2025 and 2026.

Ratings Score Snapshot

Vanguard International Semiconductor Corp.		
	To	**From**
Issuer Credit Rating	twA+/Stable/twA-1	twA+/Stable/twA-1
Business risk	Fair	Fair
Country risk	Intermediate	Intermediate
Industry risk	Moderately High	Moderately High
Competitive position	Fair	Fair
Financial risk	Intermediate	Modest
Cash flow/Leverage	Intermediate	Modest
Anchor	twa	twa+
Modifiers		
Diversification/Portfolio effect	Neutral (no impact)	Neutral (no impact)
Capital structure	Neutral (no impact)	Neutral (no impact)
Financial policy	Neutral (no impact)	Neutral (no impact)
Liquidity	Strong (no impact)	Strong (no impact)
Management and governance	Neutral (no impact)	Neutral (no impact)
Comparable ratings analysis	Positive (+1 notch)	Neutral (no impact)
Stand-alone credit profile (SACP)	twa+	twa+
Note: All scores above are in comparison with global obligors.		

Related Criteria & Research

Related Criteria

- Criteria | Corporates | General: Sector-Specific Corporate Methodology - April 04, 2024
- General Criteria: National And Regional Scale Credit Ratings Methodology - June 08, 2023
- Criteria | Corporates | General: Corporate Methodology - January 07, 2024
- Criteria | Corporates | General: Methodology: Management And Governance Credit Factors For Corporate Entities - January 07, 2024
- General Criteria: Environmental, Social, And Governance Principles In Credit Ratings - October 10, 2021
- General Criteria: Group Rating Methodology - July 01, 2019
- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments - April 01, 2019
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers - December 16, 2014
- General Criteria: Country Risk Assessment Methodology And Assumptions - November 19, 2013
- General Criteria: Methodology: Industry Risk - November 19, 2013
- General Criteria: Principles Of Credit Ratings - February 16, 2011

Related Research

- Taiwan Ratings' Ratings Definitions – November 11, 2021

(Unless otherwise stated, these articles are published on www.taiwanratings.com)

Ratings List

Ratings Affirmed

Vanguard International Semiconductor Corp.	
Issuer Credit Rating	twA+/Stable/twA-1