

BUY (From: SELL)
Change in Recommendation

TP: Bt 20.00 (From: Bt 17.00)
Upside : 23.5% **24 NOVEMBER 2025**

Small Cap Research

Hana Micro Electronics (HANA TB)

Picking up the pieces

We upgrade our call on HANA to BUY as its stock price has fallen below our estimated breakup or distressed asset value of Bt17.4, where we assume the impairment of SiC and other major loss-making businesses. HANA still generates positive free cash flow with a Bt11bn net cash position.



PATTADOL BUNNAK

662-779-9119

Pattadol.bun@thanachartsec.co.th

Below distressed asset value; now a BUY

We upgrade HANA to BUY (from Sell) for two reasons. **First**, HANA has guided for a potential exit from its Si and SiC business if prospects don't improve. We raise our DCF-based 12-month TP (2026F base year) to Bt20 (from Bt17) to reflect no further losses from the business. **Second**, HANA's share price has come down below its breakup or distressed asset value of Bt17.4/share, which comprises 1) Bt13.1 of cash and cash equivalents, 2) Bt3.3 for its IC and PCBA factories in Thailand, 3) Bt1.3 for inventory at an 80% discount, 4) Bt5.0 for receivables, and 5) the subtraction of Bt5.3 for its total liabilities. We exclude asset value or assume full impairment for businesses facing significant challenges, including the Si and SiC business, IC packaging and PCBA in China and Cambodia, and the RFID business in the US.

Business situation

HANA's businesses consist of IC packaging (IC) and PCB assembly (PCBA) in Thailand, IC and PCBA in China, IC in Cambodia, Si and SiC chip making in Korea for Chinese customers (PMS), and RFID tire tags in the US (HTI). HANA's earnings fell 18/50/35% in 2023-9M25. The core IC and PCBA business in Thailand is facing weak industry demand amid a downcycle. PCBA remains a profitable operation while IC makes some losses due to the excess capacity it has overexpanded earlier. However, IC and PCBA China, HTI, and PMS all face fierce competition, leading to cutthroat pricing, and they are making large losses. PCBA in Cambodia is also faces challenges.

Si and SiC business outlook

Since 2019, HANA has invested over Bt4.0bn in its South Korea facilities for its PMS silicon (Si) and high-end SiC chip design businesses. However, HANA wasn't able to penetrate the mass Chinese EV market as planned. And given plummeting product prices due to oversupply in China, HANA generated losses of about Bt1bn-1.2bn p.a. in 2024-9M25. HANA still plans to pursue new customers in the non-EV segment, but it will focus more on cost reduction. It is moving PMS chip production to cheaper outsourcing in China. HANA also guided for a possible exit if PMS doesn't improve after restructuring. We estimate PMS's losses to fall from Bt1.5bn this year to Bt0.8/0.4/0bn in 2026-28F.

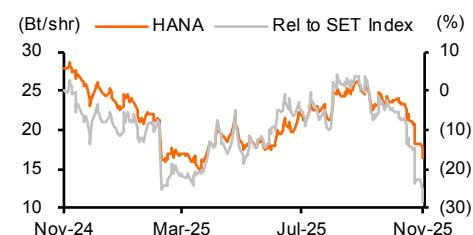
Earnings outlook

We cut our earnings estimates by an average of 57/30% p.a. in 2025-26F after the disappointing 3Q25 results due to the higher-than-expected losses from Si and SiC and US RFID tire tag businesses. However, we still project 2-3% p.a. US\$ sales growth and EPS growth of -45/29/55/44% in 2025-28F. The turnaround from 2026F is due to PMS's cost restructuring.

COMPANY VALUATION

VALUATION	2024A	2025F	2026F	2027F
Sales	24,801	20,432	21,045	21,676
Net profit	(634)	706	758	1,177
Consensus NP	—	814	1,121	1,271
Diff frm cons (%)	—	(13.3)	(32.4)	(7.4)
Norm profit	1,072	589	758	1,177
Prev. Norm profit	—	1,364	1,084	1,087
Chg frm prev (%)	—	(56.8)	(30.0)	8.3
Norm EPS (Bt)	1.2	0.7	0.9	1.3
Norm EPS grw (%)	(50.3)	(45.1)	28.8	55.1
Norm PE (x)	13.4	24.4	18.9	12.2
EV/EBITDA (x)	2.1	2.3	1.4	0.6
P/BV (x)	0.5	0.5	0.5	0.5
Div yield (%)	4.6	2.1	2.6	4.1
ROE (%)	3.8	2.2	2.8	4.2
Net D/E (%)	(35.1)	(37.3)	(40.1)	(44.4)

PRICE PERFORMANCE



COMPANY INFORMATION

Price: (Bt) as of 24-Nov-25	16.20
Market Cap (US\$ m)	441.6
Listed Shares (m shares)	885.4
Free Float (%)	63.1
Avg. Daily Turnover (US\$ m)	12.0
12M Price H/L (Bt)	28.50/14.90
Sector	Electronics
Major Shareholder	OMAC (HK) Limited 19.5%

Sources: Bloomberg, Company data, Thanachart estimates

Picking up the pieces

We upgrade HANA to BUY (from Sell)

We upgrade our rating on Hana Microelectronics Pcl (HANA) to BUY (from Sell) for two reasons:

Restructuring loss-making Si and SiC

First, HANA is restructuring PMS to reduce expenses and has guided that a potential business exit could occur if the plan proves unsuccessful.

HANA at Bt16.3/share is now trading our Bt17.4 estimated break up value

Second, HANA's share price has fallen below its breakup or distressed asset value of Bt17.4/share.

HANA's book value is Bt30.3/share

Note that our breakup value excludes businesses facing significant challenges from its book value of Bt30.3/share as of 3Q25. The book value comprises:

- 1) Bt13.1 from cash and cash equivalents.
- 2) Bt5.0 from receivables.
- 3) Bt2.2 from PCB assembly (PCBA) Thailand.
- 4) Bt2.2 from IC packaging (IC) Thailand (estimated).
- 5) Bt5.3 from overseas operations (Si and SiC chip-making in South Korea for Chinese customers (PMS), RFID tire tags in the US (HTI), IC and PCBA in China, and PCBA in Cambodia).
- 6) Bt6.6 from inventory.
- 7) Bt1.2 from other assets (e.g., 49% stake in FT1 with PTT group which operates SiC raw material production to serve HANA's Si and SiC business, and loans to other companies).
- 8) A subtraction of Bt5.3 total liabilities.

Our breakup value is Bt17.4/share

We calculate the distressed value at Bt17.4/share, which includes:

- 1) Bt13.1 of cash and cash equivalents.
- 2) Bt2.2 from PCBA Thailand. Despite weak industry demand during the downcycle, it still operates at over 70% utilization and remains profitable.
- 3) Bt1.1 from IC Thailand at a 50% discount. The business faces weaker demand in its focused segments. With utilization falling to 40%, it is making some losses. We still value it at 50% because the weakness is due to the industry downcycle — HANA hasn't lost customers and does not face intense competition.
- 4) Bt1.3 of inventory at an 80% discount. We conservatively include only the estimated value of finished goods and raw materials for IC Thailand. We exclude other businesses' raw materials, given the challenging outlook.
- 5) Bt5.0 from receivables.
- 6) A subtraction of Bt5.3 total liabilities.

We exclude Bt12.9 of value from:

- 1) Bt5.3 from overseas subsidiaries — we assume full impairment for businesses facing significant challenges (Si and SiC (PMS), IC and PCBA China, PCBA Cambodia, and RFID (HTI) in the US)
- 2) Bt1.1 from IC Thailand (the other 50% discount mentioned above)
- 3) Bt5.3 from inventory (the other 80% discount mentioned above)
- 4) Bt1.2 from other assets — we assume complete impairment of FT1 following our practice of deducting PMS's value

Ex 1: Our Breakup Value Is Bt17.4/share



Sources: Company data, Thanachart estimates

Note: HANA's overseas subsidiaries include: IC and PCBA in China, PCBA in Cambodia, RFID tire tag in US, Si and SiC chip making in Korea.

Business situation

HANA's business situation

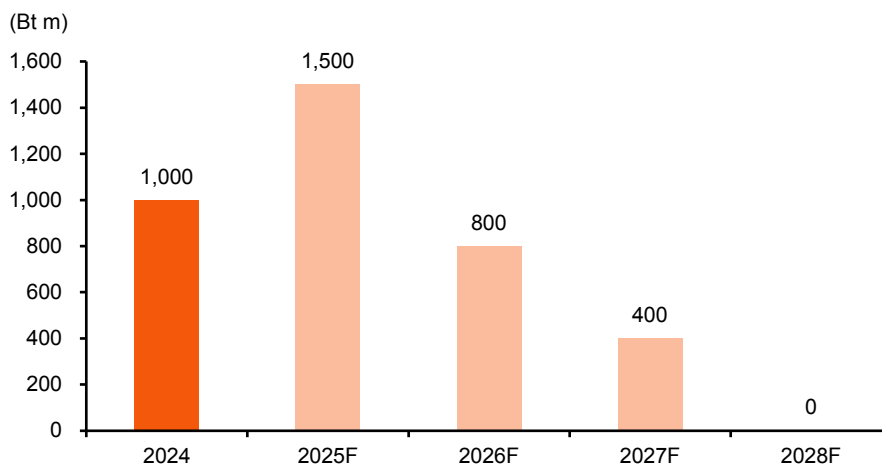
HANA's business consists of IC packaging (IC) and PCB assembly (PCBA) in Thailand; IC and PCBA in China; PCBA in Cambodia; Si and SiC chip-making in Korea for Chinese customers (PMS); and RFID tire tags in the US (HTI).

PCBA Thailand: This is the only business generating consistent profits for HANA. Against HANA's total normalized profit of Bt0.64bn in 9M25, PCBA generated about Bt1.1bn. HANA's PCB assembly services focus on end products such as automotive, and industrial products. While global demand has caused broad weakness in electronics, the decline is moderate for HANA's focused products, likely due to their high necessity. HANA still operates PCBA at about 70% utilization.

Operation facing challenges:

Si and SiC Korea: This is HANA's largest loss-making unit, estimated at Bt1bn-1.5bn in 2024-9M25. Since 2019, HANA has invested over Bt4.0bn in R&D and South Korea facilities for its silicon (Si) and high-end SiC chip design business. However, HANA hasn't been able to penetrate the mass Chinese EV market as planned. With plummeting prices due to oversupply in China, HANA generated losses of about Bt1-1.2bn in 2024-9M25. HANA still plans to pursue new customers in China's non-EV segments, hoping that falling Si & SiC chip prices will help. HANA is also cutting costs by moving PMS chip production from in-house facilities in Korea to cheaper outsourcing in China. It will keep the Korea factory for OEM customers who prefer non-China production. HANA is restructuring PMS to reduce expenses and has guided that a potential business exit could occur if the plan proves unsuccessful. We forecast PMS losses falling from Bt1.5bn this year to Bt0.8/0.4/0 in 2026-2028F.

Ex 2: We Expect Lower Losses From PMS



Sources: Company data, Thanachart estimates

IC and PCBA China: These units face challenges as US customers exit China due to the US-China trade conflict. Demand from local Chinese customers is also falling as China's electronics market weakens with the country's economic slowdown. HANA has been cutting expenses, but these businesses remain at risk of losses.

PCBA Cambodia: HANA faces very weak demand here. It has been a multi-year loss-making operation, though there are some positive signs, as some of HANA's China customers are moving orders to Cambodia to avoid US trade conflict risks.

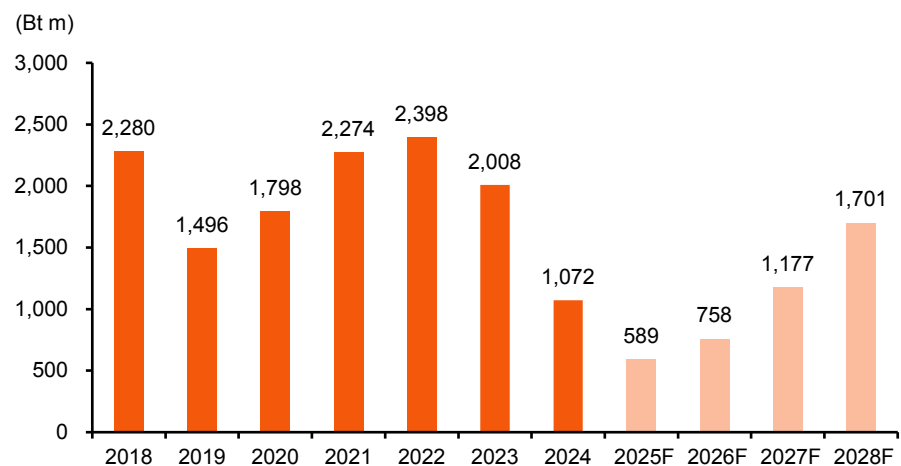
IC Thailand: HANA also focuses on end products like automotive and industrial products for its IC Thailand operations. They face a demand decline similar to the PCBA operation in Thailand, but IC packaging is making losses likely due to negative operating leverage as it operates at only 40% utilization. This stems from HANA's overexpansion during the COVID-boom years in 2021-22. Although we do not expect meaningful demand improvement, HANA has been aggressively reducing expenses, and we believe the operation can achieve profitability at 50-60% utilization levels. This is why we still include this operation's value in our distress valuation calculation. Note that we apply a 50% discount to its value due to impairment risks associated with the excess capacity.

Earnings outlook

**We estimate -44/30/54/44%
EPS growth in 2025-28F**

We estimate HANA's US\$ sales growth of 2-3% p.a. in 2026-28F and earnings growth of -44/30/54/44% in 2025-28F based on our PMS restructuring assumptions. HANA is working with new customers, such as makers of new solid-state cooling products for AI data centers, which could start next year. We do not include the impact of HANA's potential new orders.

Ex 3: Earnings Outlook



Sources: Company data, Thanachart estimates

We cut our earnings estimates by an average of 57/30% p.a. in 2025-26F after the disappointing 3Q25 results due to the higher-than-expected losses from Si and SiC and US RFID tire tag businesses. However, we raise earnings by 8/50/51% in 2027-29F and 8% in the long term to reflect no further losses from the business.

Ex 4: Our Assumptions

	2018	2019	2020	2021	2022	2023	2024	2025F	2026F
Total US\$ sales (% growth)	3.4	(6.0)	20.4	4.1	(2.8)	(6.6)	(11.8)	3.0	3.0
Gross margin (%)	14.4	10.7	13.2	13.8	13.5	12.4	8.8	7.8	9.2
SG&A to sales (%)	5.7	5.4	6.3	6.0	6.2	6.2	6.8	8.0	7.4
EBIT margin (%)	8.7	5.4	6.9	7.8	7.2	6.2	2.0	(0.2)	1.8

Sources: Company data, Thanachart estimates

Ex 5: Earnings Revisions

	2022	2023	2024	2025F	2026F	2027F
Sales (US\$ m)						
- New	773	752	702	619	638	657
- Old				610	628	653
- Change (%)				1.5	1.5	0.6
Sales (Bt m)						
- New	27,167	26,152	24,801	20,432	21,045	21,676
- Old				20,198	21,677	22,525
- Change (%)				1.2	(2.9)	(3.8)
Gross margin (%)						
- New	13.5	12.4	8.8	7.8	9.2	11.2
- Old				8.0	9.5	9.2
- Change (ppt)				(0.2)	(0.2)	2.1
SG&A/sales (%)						
- New	6.2	6.2	6.8	8.0	7.4	7.4
- Old				6.9	6.9	6.9
- Change (ppt)				1.1	0.5	0.5
Normalized profit (Bt m)						
- New	2,398	2,008	1,072	589	758	1,177
- Old				1,364	1,084	1,087
- Change (%)				(56.8)	(30.0)	8.3

Sources: Company data, Thanachart estimates

Ex 6: 12-month DCF-based TP Calculation, Using A Base Year Of 2026F

(Bt m)	2026F	2027F	2028F	2029F	2030F	2031F	2032F	2033F	2034F	2035F	2036F	Terminal value
EBITDA excl. depreciation from right of use	2,241	2,701	3,275	3,251	3,188	3,120	3,070	3,045	3,044	3,036	3,062	—
Free cash flow	1,480	1,897	2,523	1,489	1,507	1,436	1,379	175	157	131	234	1,728
PV of free cash flow	1,476	1,415	1,624	828	723	595	493	54	42	30	47	343
Risk-free rate (%)	2.5											
Market risk premium (%)	8.0											
Beta	1.3											
WACC (%)	15.8											
Terminal growth (%)	2.0											
Enterprise value - add investments	7,669											
Net debt (2025F)	(10,185)											
Minority interest	—											
Equity value	17,854											
# of shares (m)	885											
Target price/share (Bt)	20											

Sources: Company data, Thanachart estimates

Note: EBITDA excludes the new TFRS16 accounting standard's financial lease impact

Valuation Comparison

Ex 7: Valuation Comparison With Regional Peers

Name	BBG code	Market	EPS growth		— PE —		— P/BV —		EV/EBITDA		— Div. yield —	
			25F	26F	25F	26F	25F	26F	25F	26F	25F	26F
			(%)	(%)	(x)	(x)	(x)	(x)	(%)	(%)	(%)	(%)
TTM Technologies Inc	TTMI US	USA	42.5	17.1	24.1	20.6	3.7	3.6	14.5	13.3	na	na
Chin-Poon Industrial	2355 TT	Taiwan	(23.2)	(51.6)	13.5	28.0	0.7	0.7	5.3	4.5	2.9	2.0
Tripod Technology Corp	3044 TT	Taiwan	25.0	18.0	15.3	13.0	3.1	2.8	8.7	7.7	3.9	4.6
CMK Corp	6958 JP	Japan	(11.0)	(34.7)	10.3	15.8	0.4	0.4	na	na	4.1	2.1
Meiko Electronics	6787 JP	Japan	25.8	11.1	13.7	12.4	2.0	1.8	9.2	7.7	1.0	1.1
Delta Electronics	DELTA TB*	Thailand	38.1	47.5	101.0	68.5	25.6	20.1	69.7	47.3	0.3	0.5
Hana Microelectronics	HANA TB*	Thailand	(45.1)	28.8	24.4	18.9	0.5	0.5	2.3	1.4	2.1	2.6
KCE Electronics	KCE TB*	Thailand	3.1	4.9	14.9	14.2	1.8	1.8	9.2	8.6	5.8	6.1
Average			6.9	5.1	27.2	23.9	4.7	4.0	17.0	12.9	2.9	2.7

Source: Bloomberg

Note: *Thanachart estimates, using Thanachart normalized EPS

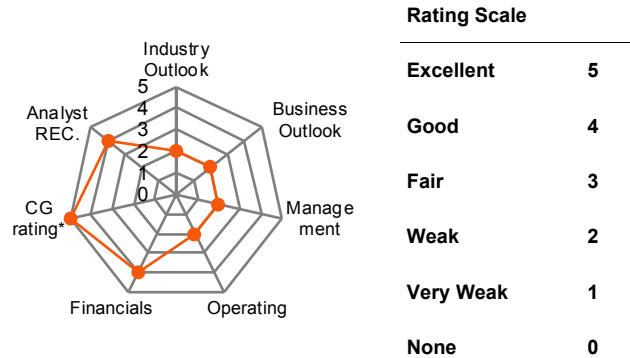
Based on 24 November 2025 closing prices

COMPANY DESCRIPTION

Hana Microelectronics Pcl (HANA) is an electronics manufacturing service (EMS) company, producing electronic components for original equipment manufacturers (OEM). The company offers three services for its clients: Printed Circuit Board Assembly (PCBA), Integrated Circuit Assembly and Test (IC), and Microdisplay. HANA has five manufacturing bases in Thailand, China, Cambodia and the US.

Source: Thanachart

COMPANY RATING



Source: Thanachart; *CG Rating

THANACHART'S SWOT ANALYSIS

S — Strength

- Well-established production facilities.
- Highly capable and experienced management team who have been working together for over a decade.
- High net cash position and no financial leverage.

O — Opportunity

- In-house developed production processes lowering production costs.
- Expanding to value-added and higher-margin industries such as the automotive and medical sectors.
- Capacity expansion allows the company to boost revenues when demand recovers.

W — Weakness

- Capital-intensive business, particularly machinery.
- Depends to a large extent on global demand for electronic components.
- Competing on a global scale with other big EMS players.

T — Threat

- Unexpected external events (i.e. flooding, political turmoil) can disrupt HANA's operations.
- New developments in the fast-changing technology industry can significantly dent demand for its products.

CONSENSUS COMPARISON

	Consensus	Thanachart	Diff
Target price (Bt)	20.40	20.00	-2%
Net profit 25F (Bt m)	814	706	-13%
Net profit 26F (Bt m)	1,121	758	-32%
Consensus REC	BUY: 3	HOLD: 9	SELL: 6

HOW ARE WE DIFFERENT FROM THE STREET?

- Our TP is below the Bloomberg consensus number, which we attribute to us having a more bearish view about the global demand for HANA's exposed electronic products.

Sources: Bloomberg consensus, Thanachart estimates

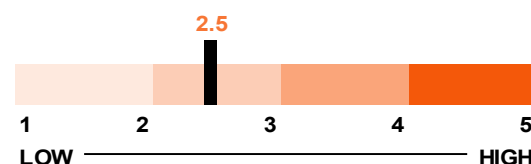
RISKS TO OUR INVESTMENT CASE

- A weaker-than-expected improvement in the global semiconductor industry would represent the key downside risk to our projections and TP.
- Weaker-than-expected impacts from global trade and geopolitical issues represent another downside risk to our forecasts.
- Worse-than-expected execution of R&D projects represents another downside risk to our earnings forecasts.

Source: Thanachart

HANA is among the top-30 global EMS service providers for electronic products. HANA has clear targets for pollution reduction, and it is implementing various measures to achieve these goals, although its manufacturing-based business releases sizable amounts of pollutants by nature. Our ESG score for HANA is 2.5, lower than sector average reflect our concern on HANA's capital allocation after series of impairment of new business investment.

Thanachart ESG Rating



	SET ESG Index	SET ESG (BBB-AAA)	DJSI Index	MSCI (CCC-AAA)	ESG Book (0-100)	Refinitiv (0-100)	S&P Global (0-100)	Moody's (0-100)	CG Rating (0-5)
HANA	YES	AA	-	BBB	61.19	62.01	38.00	-	5.0

Sources: SETTRADE, SET ESG Index, SET ESG Rating, The Dow Jones Industrial Average (DJSI), MSCI ESG Research LLC, ESG Book, Refinitiv ESG Information, S&P Global Market Intelligence, Moody's ESG Solutions, Thai IOD (CG rating)
Note: Please see third party on "terms of use" in the following back page.

Factors

Our Comments

ENVIRONMENT

- Environmental Policies & Guidelines
- Energy Management
- Carbon Management
- Water Management
- Waste Management

- We assign a 3.2 E score for HANA.
- HANA is among the top-30 global service providers for chip packaging and printed circuit board assembly services. The company has pollution release measurement systems, and it also has specific plans to achieve its ESG targets. HANA has shown its ability to reduce the release of greenhouse gases (GHG) over the years. Against its base year in 2020, HANA reduced GHG by 14%. It plans to achieve a 40% reduction by 2030.
- HANA also focuses on waste management. The amount of waste that can be recovered for reuse stood at 87% of the total in 2021. Waste levels have fallen over the years.
- HANA has undertaken investments in projects to reduce the energy consumption of its equipment and machinery. Its energy usage has fallen over the years.
- HANA focuses on water conservation. Its water consumption level has been continuously reduced.
- HANA was named on the list of sustainable stocks in 2021. HANA also received the Rising Star Sustainability award from the Stock Exchange of Thailand.

SOCIAL

- Human Rights
- Staff Management
- Health & Safety
- Product Safety & Quality
- Social Responsibility

- We assign a 2.4 S score for HANA.
- HANA provides appropriate employee remuneration which covers employees' own economic betterment, healthcare improvement and family support.
- HANA has received certificates, e.g., ISO 9001, IATF 16949, and ISO 13485, to ensure that its products and services are safe for consumers and related parties.
- HANA has been active in providing support, such as donations and other help for those in need. The company also supports career development and income generation for communities, for example, by helping to build a bakery learning knowledge center.

GOVERNANCE & SUSTAINABILITY

- Board
- Ethics & Transparency
- Business Sustainability
- Risk Management
- Innovation

- We assign a 2.1 G score for HANA, below the sector's average.
- Our low G score reflects our concerns regarding HANA's capital allocations decisions associated with the company's track record in new business ventures which have not performed as expected and have led to significant business impairments.
- HANA has a six-member board of directors (BOD), which is smaller than other businesses of a similar scale. Of the six members, two are independent directors. There are three members, including the chairman, who hold shares in HANA. There is one female board member.
- HANA has highly diversified end-products of smartphones, computers, cars, industrial and consumer electronics, and medical electronic products.

Sources: Company data, Thanachart

INCOME STATEMENT

FY ending Dec (Bt m)	2023A	2024A	2025F	2026F	2027F
Sales	26,152	24,801	20,432	21,045	21,676
Cost of sales	22,911	22,607	18,833	19,104	19,246
Gross profit	3,241	2,194	1,599	1,941	2,430
% gross margin	12.4%	8.8%	7.8%	9.2%	11.2%
Selling & administration expenses	1,631	1,691	1,635	1,557	1,604
Operating profit	1,610	503	(36)	384	826
% operating margin	6.2%	2.0%	-0.2%	1.8%	3.8%
Depreciation & amortization	1,702	1,777	1,842	1,865	1,883
EBITDA	3,312	2,280	1,806	2,249	2,709
% EBITDA margin	12.7%	9.2%	8.8%	10.7%	12.5%
Non-operating income	536	707	736	482	514
Non-operating expenses	0	0	0	0	0
Interest expense	(52)	(64)	(12)	(4)	(3)
Pre-tax profit	2,094	1,145	688	862	1,337
Income tax	85	86	83	103	160
After-tax profit	2,008	1,059	605	758	1,177
% net margin	7.7%	4.3%	3.0%	3.6%	5.4%
Shares in affiliates' Earnings	0	13	(16)	0	0
Minority interests	0	0	0	0	0
Extraordinary items	(248)	(1,706)	117	0	0
NET PROFIT	1,761	(634)	706	758	1,177
Normalized profit	2,008	1,072	589	758	1,177
EPS (Bt)	2.1	(0.7)	0.8	0.9	1.3
Normalized EPS (Bt)	2.4	1.2	0.7	0.9	1.3

Earnings looks set to improve from lower SiC

BALANCE SHEET

FY ending Dec (Bt m)	2023A	2024A	2025F	2026F	2027F
ASSETS:					
Current assets:	23,159	22,419	21,876	22,959	24,697
Cash & cash equivalent	8,893	10,745	10,360	11,160	12,660
Account receivables	5,178	4,481	3,747	3,917	4,094
Inventories	8,969	7,096	7,688	7,799	7,857
Others	119	98	81	83	86
Investments & loans	72	528	897	1,267	1,637
Net fixed assets	11,534	9,169	7,924	6,456	4,995
Other assets	540	399	348	346	344
Total assets	35,306	32,516	31,046	31,028	31,672
LIABILITIES:					
Current liabilities:	5,034	4,098	2,836	2,708	2,670
Account payables	3,391	3,026	2,470	2,453	2,418
Bank overdraft & ST loans	1,419	849	173	61	55
Current LT debt	24	47	0	0	0
Others current liabilities	201	176	194	194	197
Total LT debt	203	334	3	1	1
Others LT liabilities	922	1,005	931	651	640
Total liabilities	6,159	5,438	3,770	3,360	3,311
Minority interest	0	0	0	0	0
Preferred shares	0	0	0	0	0
Paid-up capital	885	885	885	885	885
Share premium	6,231	6,231	6,231	6,231	6,231
Warrants	0	0	0	0	0
Surplus	359	(375)	(375)	(375)	(375)
Retained earnings	21,672	20,337	20,535	20,927	21,620
Shareholders' equity	29,147	27,078	27,276	27,668	28,361
Liabilities & equity	35,306	32,516	31,046	31,028	31,672

Still has a decent balance sheet, based on our estimates

Sources: Company data, Thanachart estimates

CASH FLOW STATEMENT

FY ending Dec (Bt m)	2023A	2024A	2025F	2026F	2027F
Earnings before tax	2,094	1,145	688	862	1,337
Tax paid	(103)	(97)	(86)	(104)	(158)
Depreciation & amortization	1,702	1,777	1,842	1,865	1,883
Chg In working capital	(480)	2,207	(415)	(297)	(270)
Chg In other CA & CL / minorities	(264)	(7)	20	(3)	(2)
Cash flow from operations	2,949	5,024	2,048	2,322	2,790
Capex	(2,759)	677	(500)	(300)	(325)
Right of use	275	9	0	0	0
ST loans & investments	0	0	0	0	0
LT loans & investments	0	(455)	(370)	(370)	(370)
Adj for asset revaluation	0	0	0	0	0
Chg In other assets & liabilities	(72)	(1,562)	121	(373)	(105)
Cash flow from investments	(2,556)	(1,331)	(748)	(1,043)	(800)
Debt financing	1,342	(406)	(1,176)	(113)	(6)
Capital increase	4,588	0	0	0	0
Dividends paid	(845)	(664)	(509)	(366)	(484)
Warrants & other surplus	(219)	(771)	0	0	0
Cash flow from financing	4,866	(1,841)	(1,684)	(479)	(490)
Free cash flow	190	5,701	1,548	2,022	2,465

VALUATION

FY ending Dec	2023A	2024A	2025F	2026F	2027F
Normalized PE (x)	6.7	13.4	24.4	18.9	12.2
Normalized PE - at target price (x)	8.2	16.5	30.1	23.3	15.1
PE (x)	7.6	na	20.3	18.9	12.2
PE - at target price (x)	9.4	na	25.1	23.3	15.1
EV/EBITDA (x)	1.8	2.1	2.3	1.4	0.6
EV/EBITDA - at target price (x)	2.8	3.6	4.2	2.9	1.9
P/BV (x)	0.5	0.5	0.5	0.5	0.5
P/BV - at target price (x)	0.6	0.7	0.6	0.6	0.6
P/CFO (x)	4.5	2.9	7.0	6.2	5.1
Price/sales (x)	0.5	0.6	0.7	0.7	0.7
Dividend yield (%)	6.2	4.6	2.1	2.6	4.1
FCF Yield (%)	1.4	39.7	10.8	14.1	17.2
(Bt)					
Normalized EPS	2.4	1.2	0.7	0.9	1.3
EPS	2.1	(0.7)	0.8	0.9	1.3
DPS	1.0	0.8	0.3	0.4	0.7
BV/share	32.9	30.6	30.8	31.3	32.0
CFO/share	3.6	5.7	2.3	2.6	3.2
FCF/share	0.2	6.4	1.7	2.3	2.8

Sources: Company data, Thanachart estimates

Attractive PE, in our view

FINANCIAL RATIOS

FY ending Dec	2023A	2024A	2025F	2026F	2027F
Growth Rate					
Sales (%)	(3.7)	(5.2)	(17.6)	3.0	3.0
Net profit (%)	(16.2)	na	na	7.4	55.1
EPS (%)	(18.3)	na	na	7.4	55.1
Normalized profit (%)	(16.3)	(46.6)	(45.1)	28.8	55.1
Normalized EPS (%)	(18.3)	(50.3)	(45.1)	28.8	55.1
Dividend payout ratio (%)	50.3	(104.8)	50.0	50.0	50.0
Operating performance					
Gross margin (%)	12.4	8.8	7.8	9.2	11.2
Operating margin (%)	6.2	2.0	(0.2)	1.8	3.8
EBITDA margin (%)	12.7	9.2	8.8	10.7	12.5
Net margin (%)	7.7	4.3	3.0	3.6	5.4
D/E (incl. minor) (x)	0.1	0.0	0.0	0.0	0.0
Net D/E (incl. minor) (x)	(0.2)	(0.4)	(0.4)	(0.4)	(0.4)
Interest coverage - EBIT (x)	31.1	7.8	na	93.2	270.1
Interest coverage - EBITDA (x)	63.9	35.4	148.7	545.6	885.7
ROA - using norm profit (%)	6.2	3.2	1.9	2.4	3.8
ROE - using norm profit (%)	7.6	3.8	2.2	2.8	4.2
DuPont					
ROE - using after tax profit (%)	7.6	3.8	2.2	2.8	4.2
- asset turnover (x)	0.8	0.7	0.6	0.7	0.7
- operating margin (%)	8.2	4.9	3.4	4.1	6.2
- leverage (x)	1.2	1.2	1.2	1.1	1.1
- interest burden (%)	97.6	94.7	98.3	99.5	99.8
- tax burden (%)	95.9	92.5	88.0	88.0	88.0
WACC (%)	15.8	15.8	15.8	15.8	15.8
ROIC (%)	7.5	2.1	(0.2)	2.0	4.4
NOPAT (Bt m)	1,544	465	(32)	338	727
invested capital (Bt m)	21,900	17,564	17,091	16,570	15,757

Sources: Company data, Thanachart estimates

ESG Information - Third Party Terms

www.Settrade.com

SETTRADE: You acknowledge that the use of data, information or service displayed and/or contained in this website may require third party's data, content or software which is subject to the terms of third party provider. By accessing and/or using of such certain data, you acknowledge and agree to comply with and be bound by the applicable third party terms specified below.

ESG Scores by Third Party data from www.SETTRADE.com

1. MSCI (CCC- AAA)
2. ESG Book (0-100)
3. Refinitiv (0-100)
4. S&P Global (0-100)
5. Moody's ESG Solutions (0-100)
6. SET ESG Rating (BBB-AAA)

SETESG Index (SETESG)

The SETESG Index reflects the price movement of stock of companies that have sustainable business practices which consider environmental, social and governance (ESG) aspect.

SET Index, SET50 Index, SET100 Index and all indices calculated by the Stock Exchange of Thailand ("SET") (collectively called "SET Index Series") are the registered trademarks/service marks solely owned by, and proprietary to SET. Any unauthorized use of SET Index Series is strictly prohibited. All information provided is for information purposes only and no warranty is made as to its fitness for purpose, satisfactory quality or otherwise. Every effort has been made to ensure that all information given is accurate, but no responsibility or liability (including in negligence) can be accepted by SET for errors or omissions or for any losses arising from the use of this information.

SET ESG Index (SET ESG)

Currently, long-term investment guidelines abroad are beginning to focus on investing in companies that have sustainable business practices. which considers environmental, social and governance factors (Environmental, Social and Governance or ESG) of the company in making investment decisions along with analyzing the company's financial data.

Stock Exchange Has prepared the results of evaluating sustainable stocks which are stocks of listed companies (SETESG Rating) as an alternative for investors who want to invest in stocks of listed companies that are outstanding in ESG, including to support listed companies with operations. sustainable business Taking into account all stakeholders in both social and environmental aspects. There is a management process to create sustainability for the organization, such as risk management. Supply chain management and innovation development. Therefore, the SETESG index was created to be an index that reflects the price movement of a group of securities. of companies with sustainable business operations that meet the required size and liquidity criteria

ESG Book's Disclaimer

Arabesque S-Ray GmbH, also trading as "ESG Book", is a limited liability company (Gesellschaft mit beschränkter Haftung) incorporated in Frankfurt am Main and organised under the laws of Germany with registered number HRB 113087 in the commercial register of the local court with its seat and business address at Zeppelinallee 15, 60325 Frankfurt am Main, Germany (hereinafter "ESG Book"). ESG Book, with its UK branch and local subsidiaries, is a provider of sustainability data and advisory services and operates the sustainability data platform ESG Book. ESG Book does not offer any regulated financial services nor products. This document is provided on a confidential basis by ESG Book and is for information purposes only; accordingly, it is not a solicitation or an offer to buy any security or instrument or to participate in any trading activities nor should it be construed as a recommendation or advice on the merits of investing in any financial product. THIRD PARTY INFORMATION. Certain information contained in this document has been obtained from sources outside ESG Book. While such information is believed to be reliable for the purposes used herein, no representations are made as to the accuracy or completeness thereof and neither ESG Book nor its affiliates take any responsibility for such information. To the extent this document contains any links to third party websites, such links are provided as a convenience and for informational purposes only; they do not constitute an endorsement or an approval by ESG Book of any of the products, services or opinions of the corporations or organization or individual operating such third party websites. ESG Book bears no responsibility for the accuracy, legality or content of the external site or for that of subsequent links. RELIANCE – ESG Book makes no representation or warranty, express or implied, as to the accuracy or completeness of the information contained herein, and accepts no liability for any loss, of whatever kind, howsoever arising, in relation thereto, and nothing contained herein should be relied upon. CONFIDENTIALITY. This document contains highly confidential information regarding ESG Book's strategy and organization. Your acceptance of this document constitutes your agreement to keep confidential all the information contained in this document, as well as any information derived by you from the information contained in this document and not disclose any such information to any other person. This document may not be copied, reproduced, in any way used or disclosed or transmitted, in whole or in part, to any other person.

MSCI ESG Research LLC

"Certain information @2021 MSCI ESG Research LLC. Reproduced by permission"

"Although [User ENTITY NAME's] information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the "ESG Parties"), obtain information (the "Information") from sources they consider reliable, none of the ESG Parties warrants or guarantees the originality, accuracy and/or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose. The Information may only be used for your internal use, may not be reproduced or redisseminated in any form and may not be used as a basis for, or a component of, any financial instruments or products or indices. Further, non of the Information can in and of itself be used to determine which securities to buy or sell or when to buy or sell them. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data herein, or any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages."

Score range	Description
CCC - B	LAGGARD: A company lagging its industry based on its high exposure and failure to manage significant ESG risks
BB - BBB - A	AVERAGE : A company with a mixed or unexceptional track record of managing the most significant ESG risks and opportunities relative to industry peers
AA - AAA	LEADER: A company leading its industry in managing the most significant ESG risks and opportunities

The Dow Jones Sustainability Indices (DJSI)

The Dow Jones Sustainability Indices (DJSI) are a family of best-in-class benchmarks for investors who have recognized that sustainable business practices are critical to generating long-term shareholder value and who wish to reflect their sustainability convictions in their investment portfolios. The family was launched in 1999 as the first global sustainability benchmark and tracks the stock performance of the world's leading companies in terms of economic, environmental and social criteria. Created jointly by S&P Dow Jones Indices and SAM, the DJSI combine the experience of an established index provider with the expertise of a specialist in Sustainable Investing to select the most sustainable companies from across 61 industries. The indices serve as benchmarks for investors who integrate sustainability considerations into their portfolios, and provide an effective engagement platform for investors who wish to encourage companies to improve their corporate sustainability practices.

S&P Global Market Intelligence

Copyright © 2021, S&P Global Market Intelligence (and its affiliates as applicable). Reproduction of any information, opinions, views, data or material, including ratings ("Content") in any form is prohibited except with the prior written permission of the relevant party. Such party, its affiliates and suppliers ("Content Providers") do not guarantee the accuracy, adequacy, completeness, timeliness or availability of any Content and are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, or for the results obtained from the use of such Content. In no event shall Content Providers be liable for any damages, costs, expenses, legal fees, or losses (including lost income or lost profit and opportunity costs) in connection with any use of the Content. A reference to a particular investment or security, a rating or any observation concerning an investment that is part of the Content is not a recommendation to buy, sell or hold such investment or security, does not address the suitability of an investment or security and should not be relied on as investment advice. Credit ratings are statements of opinions and are not statements of fact.

ESG risk combines the concepts of management and exposure to arrive at an absolute assessment of ESG risk. We identify five categories of ESG risk severity that could impact a company's enterprise value

Moody's ESG Solutions

© 2022 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS,

ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$5,000,000. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

Additional terms for Hong Kong only: Any Second Party Opinion or other opinion that falls within the definition of "advising on securities" under the Hong Kong Securities and Futures Ordinance ("SFO") is issued by Vigeo Eiris Hong Kong Limited, a company licensed by the Hong Kong Securities and Futures Commission to carry out the regulated activity of advising on securities in Hong Kong. This Second Party Opinion or other opinion that falls within the definition of "advising on securities" under the SFO is intended for distribution only to "professional investors" as defined in the SFO and the Hong Kong Securities and Futures (Professional Investors) Rules. This Second Party Opinion or other opinion must not be distributed to or used by persons who are not professional investors.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY550,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

Refinitiv ESG

These Terms of Use govern your access or use of the ESG information and materials on the Refinitiv website and any AI powered voice assistance software ("Refinitiv ESG Information"). 2020© Refinitiv. All rights reserved. Refinitiv ESG Information is proprietary to Refinitiv Limited and/or its affiliates ("Refinitiv").

The Refinitiv ESG Information is for general informational and non-commercial purposes only. Reproduction, redistribution or any other form of copying or transmission of the Refinitiv ESG Information is prohibited without Refinitiv's prior written consent.

All warranties, conditions and other terms implied by statute or common law including, without limitation, warranties or other terms as to suitability, merchantability, satisfactory quality and fitness for a particular purpose, are excluded to the maximum extent permitted by applicable laws. The Refinitiv ESG Information is provided "as is" and Refinitiv makes no express or implied warranties, representations or guarantees concerning the accuracy, completeness or currency of the information in this service or the underlying Third Party Sources (as defined below). You assume sole responsibility and entire risk as to the suitability and results obtained from your use of the Refinitiv ESG Information.

The Refinitiv ESG Information does not amount to financial, legal or other professional advice, nor does it constitute: (a) an offer to purchase shares in the funds referred to; or (b) a recommendation relating to the sale and purchase of instruments; or (c) a recommendation to take any particular legal, compliance and/or risk management decision. Investors should remember that past performance is not a guarantee of future results.

The Refinitiv ESG Information will not be used to construct or calculate and index or a benchmark, used to create any derivative works or used for commercial purposes. Refinitiv's disclaimer in respect of Benchmark Regulations applies to the Refinitiv ESG Information.

No responsibility or liability is accepted by Refinitiv its affiliates, officers, employees or agents (whether for negligence or otherwise) in respect of the Refinitiv ESG Information, or for any inaccuracies, omissions, mistakes, delays or errors in the computation and compilation of the Refinitiv ESG Information (and Refinitiv shall not be obliged to advise any person of any error therein). For the avoidance of doubt, in no event will Refinitiv have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) relating to any use of the Refinitiv ESG Information.

You agree to indemnify, defend and hold harmless Refinitiv from and against any claims, losses, damages, liabilities, costs and expenses, including, without limitation, reasonable legal and experts' fees and costs, as incurred, arising in any manner out of your use of, or inability to use, any Information contained on the Refinitiv web site or obtained via any AI powered voice assistance software.

You represent to us that you are lawfully able to enter into these Terms of Use. If you are accepting these Terms of Use for and on behalf of an entity such as the company you work for, you represent to us that you have legal authority to bind that entity.

By accepting these Terms of Use you are also expressly agreeing to the following Refinitiv's website Terms of Use.

Refinitiv ESG scores are derived from third party publicly available sources ("Third Party Sources") and are formulated on the basis of Refinitiv own transparent and objectively applied methodology. Refinitiv's ESG Information methodology can be accessed here.

Score range	Description	
0 to 25	First Quartile	Scores within this range indicates poor relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly.
> 25 to 50	Second Quartile	Scores within this range indicates satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly.
> 50 to 75	Third Quartile	Scores within this range indicates good relative ESG performance and above average degree of transparency in reporting material ESG data publicly.
> 75 to 100	Fourth Quartile	Score within this range indicates excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly.

CG Report : by Thai Institute of Directors Association (Thai IOD), Established in December 1999, the Thai IOD is a membership organization that strives to promote professionalism in directorship. The Thai IOD offers directors certification and professional development courses, provides a variety of seminars, forums and networking events, and conducts research on board governance issues and practices. Membership comprises board members from companies ranging from large publicly listed companies to small private firms.

90-100	▲▲▲▲▲	Excellent
80-89	▲▲▲▲	Very Good
70-79	▲▲▲	Good
60-69	▲▲	Satisfactory
50-59	▲	Pass
Below		N/A

General Disclaimers And Disclosures:

This report is prepared and issued by Thanachart Securities Public Company Limited (TNS) which is owned 99.97% by TMBThanachart Bank Public Company Limited (TTB) as a resource only for clients of TNS, TMBThanachart Bank Public Company Limited (TTB) and its group companies. Copyright © Thanachart Securities Public Company Limited. All rights reserved. The report may not be reproduced in whole or in part or delivered to other persons without our written consent.

This report is prepared by analysts who are employed by the research department of TNS. While the information is from sources believed to be reliable, neither the information nor the forecasts shall be taken as a representation or warranty for which TNS or TTB or its group companies or any of their employees incur any responsibility. This report is provided to you for informational purposes only and it is not, and is not to be construed as, an offer or an invitation to make an offer to sell or buy any securities. Neither TNS, TTB nor its group companies accept any liability whatsoever for any direct or consequential loss arising from any use of this report or its contents.

The information and opinions contained herein have been compiled or arrived at from sources believed reliable. However, TNS, TTB and its group companies make no representation or warranty, express or implied, as to their accuracy or completeness. Expressions of opinion herein are subject to change without notice. The use of any information, forecasts and opinions contained in this report shall be at the sole discretion and risk of the user.

TNS, TTB and its group companies perform and seek to perform business with companies covered in this report. TNS, TTB, its group companies, their employees and directors may have positions and financial interest in securities mentioned in this report. TNS, TTB or its group companies may from time to time perform investment banking or other services for, or solicit investment banking or other business from, any entity mentioned in this report. Therefore, investors should be aware of conflict of interest that may affect the objectivity of this report.

Disclosure of Interest of Thanachart Securities**Investment Banking Relationship**

Within the preceding 12 months, Thanachart Securities has lead-managed public offerings and/or secondary offerings (excluding straight bonds) of the securities of the following companies:

Note: Thanachart Securities Public Company Limited (TNS) acts as an underwriter of “Debentures of Advanced Info Service Public Co. Ltd.(ADVANC) No. 1/2025 (B.E. 2568) tranche 1”, therefore investors need to be aware that there could be conflicts of interest in this research.

Note: Thanachart Securities Public Company Limited (TNS) acts as an underwriter of “Debentures of PTT Global Chemical Public Co. Ltd.(PTTGC) No. 1/2025 (B.E. 2568) tranche 1”, therefore investors need to be aware that there could be conflicts of interest in this research.

Recommendation Structure:

Recommendations are based on absolute upside or downside, which is the difference between the target price and the current market price. If the upside is 10% or more, the recommendation is BUY. If the downside is 10% or more, the recommendation is SELL. For stocks where the upside or downside is less than 10%, the recommendation is HOLD. Unless otherwise specified, these recommendations are set with a 12-month horizon. Thus, it is possible that future price volatility may cause a temporary mismatch between upside/downside for a stock based on the market price and the formal recommendation.

For sectors, an "Overweight" sector weighting is used when we have BUYs on majority of the stocks under our coverage by market cap. "Underweight" is used when we have SELLs on majority of the stocks we cover by market cap. "Neutral" is used when there are relatively equal weightings of BUYs and SELLs.

Thanachart Securities Pcl.

Research Team

18 Floor, MBK Tower

444 Phayathai Road, Pathumwan Road, Bangkok 10330

Tel: 662 - 779-9119

Email: thanachart.res@thanachartsec.co.th

Pimpaka Nichgaroon, CFA

Head of Research, Strategy
pimpaka.nic@thanachartsec.co.th

Nuttapop Prasitsuksant

Telecom, Utilities
nuttapop.pra@thanachartsec.co.th

Rata Limsuthiwanpoom

Auto, Industrial Estate, Media, Prop. Fund
rata.lim@thanachartsec.co.th

Siriporn Arunothai

Small Cap, Healthcare, Hotel
siriporn.aru@thanachartsec.co.th

Sittichet Rungrassameephat

Analyst, Retail Market Strategy
sittichet.run@thanachartsec.co.th

Adisak Phupiphatirungul, CFA

Retail Market Strategy
adisak.phu@thanachartsec.co.th

Pattadol Bunnak

Electronics, Food & Beverage, Shipping
pattadol.bun@thanachartsec.co.th

Rawisara Suwanumphai

Bank, Finance
rawisara.suw@thanachartsec.co.th

Yupapan Polpornprasert

Energy, Petrochemical
yupapan.pol@thanachartsec.co.th

Thaloengsak Kucharoenpaisan

Analyst, Retail Market Strategy
thaloengsak.kuc@thanachartsec.co.th

Pattarawan Wangmingmat

Senior Technical Analyst
pattarawan.wan@thanachartsec.co.th

Phannarai Tiypittayarut

Property, Retail
phannarai.von@thanachartsec.co.th

Saksid Phadthananarak

Construction, Transportation
saksid.pha@thanachartsec.co.th

Witchanan Tambamroong

Technical Analyst
witchanan.tam@thanachartsec.co.th

Nariporn Klangpremchitt, CISA

Analyst, Retail Market Strategy
nariporn.kla@thanachartsec.co.th