

# HANA MICROELECTRONICS

THAILAND / ELECTRONIC COMPONENT

# HANA TB

# HOLD

## SiC to support long-term growth

- Management guides 1H23 IC revenue to drop by 15%-18% y-y.
- HANA still sees strong demand for SiC, but revised down 2023-24 SiC revenue target by 10%-20% due to supply constraints.
- Recommend HOLD call with TP of THB60.

TARGET PRICE	THB60.00
CLOSE	THB54.50
UP/DOWNSIDE	+10.1%
TP vs CONSENSUS	-0.8%

### One of the leading electronic manufacturing service providers

HANA provides electronic manufacturing services to OEM customers, manufacturing products based on the customer's specifications and designs. In 2022, HANA's revenue contribution came from printed circuit board assembly (PCBA; 56% of total revenue), followed by integrated circuits (IC; 38%), radio frequency identification (RFID; 5%), and silicon carbide (SiC; 1%).

### Negative view on 1H23

We have a negative view from the analyst meeting on 3 Mar-23. Management guides 1H23 IC revenue to drop by 15%-18% y-y, due to a global recession. We think its 1Q23 gross margin will slightly drop q-q due to a stronger THB and higher energy costs. We expect a 1Q23 core profit of THB504m (-9% q-q, +26% y-y).

### Revised SiC revenue down 10%-20% from previous target

Though Tesla plans to reduce SiC consumption by using 75% less power electronics, HANA still sees strong demand for SiC in various products such as EV cars, PV inverters, data centres, EV charging stations, etc. It has decided to expand its SiC capacity with capex of USD100m. However, HANA revised down its 2023 SiC revenue target by 10%-20% to USD30m-33m (vs USD35m-40m in the previous analyst meeting) and 2024 target to USD60m (vs USD75m), due to supply constraints.

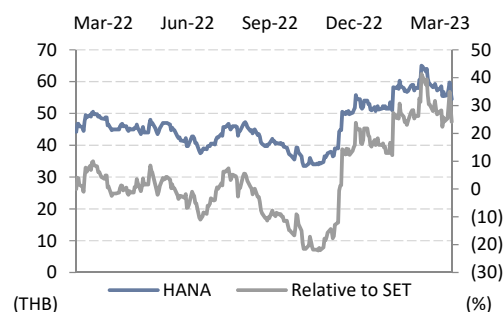
### Recommend HOLD; share price has limited upside

For 2023, we have a cautious outlook on mobile and computer segment demand due to a high base and concerns over a global recession. We project 2023 core profit growth at only 0.7% y-y, based on revenue growth of 4% y-y and expected SiC revenue of USD30m, in line with management's target – the SiC revenue contribution would rise to 3.7% (vs 1.6% in 2022). We recommend HOLD for HANA with a TP of THB60, based on 20x 2023E P/E. The current share price has a limited upside. HANA will request approval for a capital increase via private placement under a general mandate for an amount not exceeding 80.487 million shares at the AGM on 28 Apr-23. This report represents a continuation of FSSIA's coverage of HANA, which was previously published under FSS Research.

### KEY STOCK DATA

YE Dec (THB m)	2022	2023E	2024E	2025E
Revenue	27,167	26,589	28,259	30,589
Net profit	2,102	2,415	2,621	2,988
EPS (THB)	2.61	3.00	3.26	3.71
vs Consensus (%)	-	16.3	6.2	2.5
EBITDA	4,054	4,224	4,583	4,930
Core net profit	2,398	2,415	2,621	2,988
Core EPS (THB)	2.98	3.00	3.26	3.71
EPS growth (%)	5.4	0.7	8.5	14.0

Core P/E (x)	18.3	18.2	16.7	14.7
Dividend yield (%)	1.8	2.8	3.0	3.4
EV/EBITDA (x)	10.0	9.7	9.0	8.4
Price/book (x)	1.8	1.7	1.7	1.6
Net debt/Equity (%)	(14.1)	(11.5)	(9.7)	(9.8)
ROE (%)	10.2	9.9	10.2	11.1



Share price performance	1 Month	3 Month	12 Month
Absolute (%)	(15.8)	0.0	11.2
Relative to country (%)	(11.6)	2.2	17.4
Mkt cap (USD m)	1,264		
3m avg. daily turnover (USD m)	20.5		
Free float (%)	58		
Major shareholder	OMAC and related companies (32%)		
12m high/low (THB)	65.00/32.75		
Issued shares (m)	1,020.00		

Sources: Bloomberg consensus; FSSIA estimates


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### Investment thesis

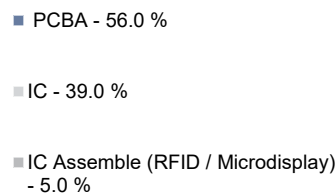
The company provides electronic manufacturing services to original equipment manufacturers (OEM), manufacturing products based on the customer's specifications and designs. HANA's strengths are: 1) its products can support a wider range of end applications such as telecommunications, computers, consumer products, automobiles, radio frequency identification (RFID), and medical products; and 2) it has diversified production plants. Aside from that, HANA is improving its own technology and new products called silicon carbide (SiC) to satisfy customer demand. We have a bullish view on its SiC demand for the EV industry in the long term.

### Company profile

HANA is one of South East Asia's leading independent electronics manufacturing service providers. The company produces PCBA, IC, assembles and tests micro-displays, and RFID. The company's headquarters are in Bangkok and there are six manufacturing facilities in Thailand, China, the USA, Cambodia, and South Korea. In 2022, Its revenue contribution came mainly from PCBA (56% of total revenue), followed by IC (38%), RFID (5%), and SiC (1%).

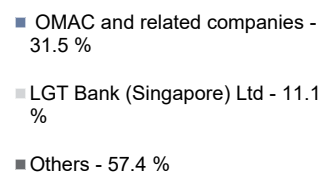
[www.hanagroup.com](http://www.hanagroup.com)

### Principal activities (revenue, 2022)



Source: Hana Microelectronics

### Major shareholders



Source: Hana Microelectronics

### Catalysts

Potential catalysts for HANA's earnings growth in 2023 are 1) a stronger global economy and a consumption recovery; 2) a decline in raw material costs; and 3) a faster-than-expected capacity expansion.

### Risks to our call

Downside and upside risks to our P/E-based TP include 1) a slower or faster-than-expected consumption recovery; 2) a potential rise or fall in raw material costs; and 3) a stronger or weaker-than-expected THB against USD.

### Event calendar

Date	Event
May 2023	1Q23 results announcement

### Key assumptions

	2023E	2024E	2025E
USD total revenue (USD m)	806	856	927
SiC revenue (USD m)	30	60	100
FX rate (USD/THB)	33	33	33
THB revenue growth (%)	(2.1)	6.3	8.2
Gross margin (%)	13.5	13.7	13.8

Source: FSSIA estimates

### Earnings sensitivity

- For every 1% increase in USD revenue, we estimate 2023 net profit to rise by 0.9%, and vice versa, all else being equal.
- For every THB1/USD increase, we estimate 2023 net profit to fall by 6.8%, and vice versa, all else being equal.
- For every 0.5% increase in GPM, we estimate 2023 net profit to rise by 5.7%, and vice versa, all else being equal.
- For every 0.2% increase in SG&A, we estimate 2023 net profit to fall by 1.3%, and vice versa, all else being equal.

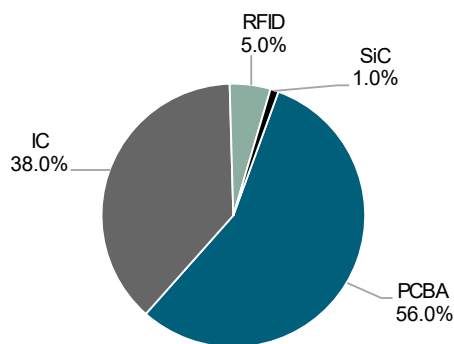
Source: FSSIA estimates

## One of South East Asia’s leading electronic manufacturing service providers

HANA was established in 1978 and listed on the SET in 1993. The company provides electronic manufacturing services to OEM customers, manufacturing products based on the customer’s specifications and designs. HANA’s operations are primarily the assembly of components, sub-assemblies, and small electronic finished products. The major product groups are printed circuit board assembly (PCBA), integrated circuit (IC) assembly and testing, radio frequency identification (RFID) & micro-display, and silicon carbide (SiC). Its factories are located in Thailand, China, the USA, Cambodia and South Korea.

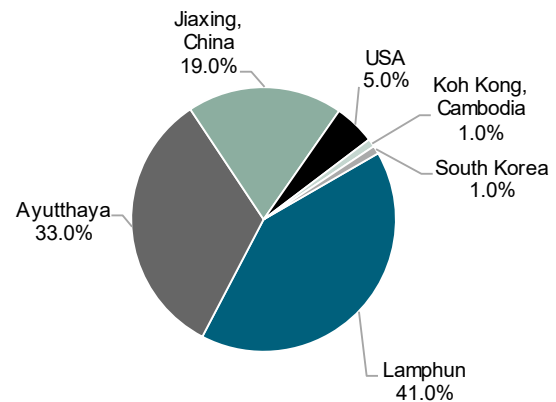
In 2022, HANA’s revenue contribution came from PCBA (56% of total revenue), followed by IC (38%), RFID (5%) and SiC (1%). HANA group has four business segments, which are as follows:

**Exhibit 1: Total revenue breakdown by product in 2022**



Source: HANA

**Exhibit 2: Total revenue breakdown by plant location in 2022**



Source: HANA

### 1. **Printed circuit board assembly (PCBA)**

PCBA is the process of assembling ICs and other electronic components on a printed circuit board which holds electronic parts to create a useful electronic circuit. The PCBA operations are located in Lamphun province, Thailand; Jiaxing city, China; and Koh Kong city in Cambodia.

### 2. **Integrated circuit (IC) assembly and testing**

ICs are semiconductor chips consisting of circuit components such as resistors, capacitors, inductors, transistors, diodes, etc., which are connected with wires. Electronic circuits are developed in a smaller size but with more power and greater safety in order to incorporate them into devices. The IC operations are located in Ayutthaya province, Thailand and Jiaxing city, China, where its business includes IC packaging and assembly and electronic contract manufacturing services.

### 3. **RFID & micro-display**

A micro-display is a device used for transferring electrical signals to high-resolution visual images that can be highly magnified. These products can be liquid crystal on silicon (LCOS), microelectromechanical systems (MEMS), or high-temperature polysilicon (HTP)-based devices, and are incorporated in a wide variety of products such as virtual and augmented reality goggles, multimedia projectors, adaptive optics, and telecommunication devices.

RFID is used to transfer information in a fast, wireless mode. The company manufactures passive tags which can be queried by a reader. The tags are programmed with identification, security, and other historical information that is of interest in the particular application.

**4. Silicon & silicon carbide (SiC) power management devices**

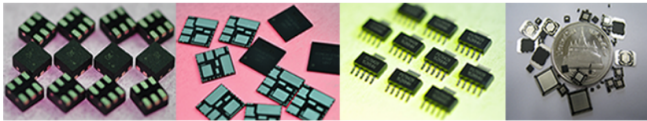
SiC is a new material compound of silicon and carbon which can operate at very high temperatures, allowing much higher voltage and high switching frequency with lower power losses than traditional silicon semiconductors. It is suited to power applications for smarter power designs in a broad range of high-end consumer electronics, consumer white goods, telecommunications, cloud computing, and especially EV-inverters/on-board chargers and renewable energy (solar and wind sectors), where faster recharging speeds are required.

HANA has invested the necessary equipment to mass produce products for silicon & SiC power management devices through its subsidiary Power Master Semiconductor in South Korea. This should support the growth of HANA's existing IC assembly & testing business for entry into the fast-growing market for EV cars, EV chargers and other power management devices.

**Exhibit 3: Example of IC packaging products**

Hana Ayutthaya presently provides manufacturing services for the following products:

- IC assembly and Final test
- Wafer Test
- 12 " Wafer capability
- Die Sort Visual
- Soft solder die bonder
- Ag Wire, Cu Wire, Cu Clip, Al Ribbon bonding
- Al Heavy wedge bonding
- Flipchip with Cu pillar bump
- Auto Visual Inspection
- TO Can
- Optical Sensors technology
- Proximity Sensor
- UV Sensor
- Automotive Sensor
- MEMS Sensor
- Smart card chips
- Analog / Linear Devices test
- Logic and Memory Devices test
- Mixed-Signal Devices test
- Power MOSFET and Transistor (Discrete) test
- Opto-Coupler Devices and High Voltage
- ASIC (Application Specific IC)
- MEMS, SENSORS and SIP
- RF Test



Source: HANA

**Exhibit 4: Examples of products from the Jiaying plant**

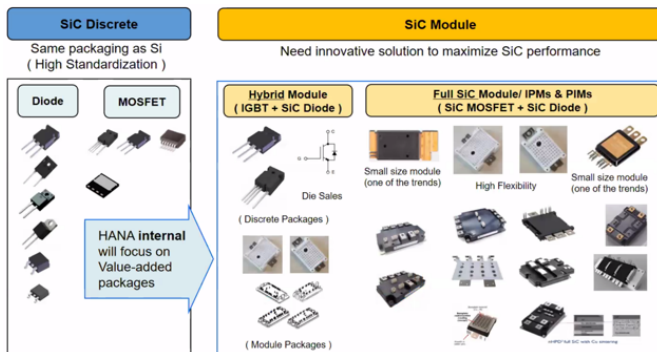
Hana Jiaying presently provides manufacturing services for the following products:

- RFID Readers and Devices
- Smart Cards and RFID Tags
- Modules for Electronic Locks
- Touch Pads for Computer and Smart Phone
- Computer and Data Security Devices
- IoT ( Internet-of-things ) Devices
- Medical Sensors and Devices
- Automotive Sensors and Electronic Devices
- Optical Sensors and Devices
- Home Appliance and Industrial Control / Display Modules
- Wearable Devices
- Automotive LED
- Consumer and Industrial High Power LED
- Bluetooth Low Energy Devices
- Packaging and Test Service: Wafer Probing, WL CSP, OFN/DFN/LGA, Flip Chip, SOT/TSOT23, SC70/82, MSOP, TO, SIP, MEMS, IGBT and SiC Modules.



Source: HANA

**Exhibit 5: SiC products**



Source: HANA

**Exhibit 6: Examples of products from the Cambodia plant**



Source: HANA

## 2022 revenue hit a record high

HANA reported a 4Q22 net profit of THB1.07b. Excluding a large FX gain and derivative gain, its core profit was equal to THB553m (-34% q-q, +42%y-y). The q-q drop was from the low season and stronger THB. 4Q22 THB total revenue saw solid growth at 14% y-y, thanks to the weaker THB than in 4Q21. HANA's 4Q22 USD revenue was USD197m (-4.8% q-q, +6.5% y-y). Its 4Q22 gross margin fell sharply to 13.4% from 15.5% in 3Q22, due to the stronger THB and higher raw material costs.

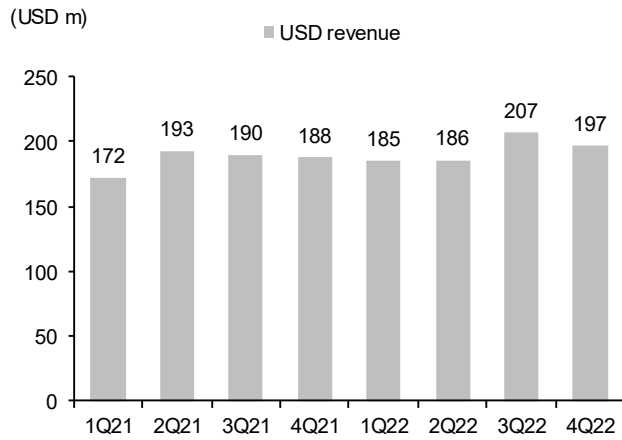
The company's 2022 total revenue hit a record high of USD775m (+4.3% y-y) and THB27.2b (+14% y-y), due to higher order purchases in all product segments. In particular, its new SiC product revenue increased from THB50m in 2021 to THB272m in 2022. Also, China revenue saw solid growth at 21% y-y, which accounted for 19% of total revenue. HANA's 2022 net profit amounted to THB2.1b (+36% y-y). Excluding extra items, its core profit was equal to THB2.4b (+5.4% y-y).

### Exhibit 7: 4Q22 earnings results

	4Q21	1Q22	2Q22	3Q22	4Q22	----- Change -----		2021	2022	Change
	(THB m)	(THB m)	(THB m)	(THB m)	(THB m)	(q-q%)	(y-y%)	(THB m)	(THB m)	(y-y%)
Sales	6,260	6,107	6,390	7,545	7,125	(5.6)	13.8	23,780	27,167	14.2
Cost of sales	5,587	5,445	5,512	6,378	6,171	(3.2)	10.5	20,493	23,506	14.7
Gross profit	673	663	878	1,167	954	(18.3)	41.6	3,287	3,661	11.4
SG&A	362	381	401	408	505	23.9	39.4	1,423	1,695	19.1
Operating profit	311	282	477	759	449	(40.9)	44.2	1,864	1,966	5.5
Interest expense	2.7	1.5	2.7	2.5	5.9	133.9	115.2	7.5	12.5	67.0
Tax expense	11	15	15	46	31	(32.0)	178.8	53	107	103.7
Reported net profit	(56)	365	245	417	1,075	158.1	nm	1,545	2,102	36.0
Core profit	391	399	603	843	553	(34.4)	41.5	2,274	2,398	5.4
<b>Key ratios (%)</b>						<b>(ppt)</b>	<b>(ppt)</b>			
Gross margin	10.8	10.8	13.7	15.5	13.4	(2.1)	2.6	13.8	13.5	(0.3)
SG&A to sales	5.8	6.2	6.3	5.4	7.1	1.7	1.3	6.0	6.2	0.3
Operating margin	5.0	4.6	7.5	10.1	6.3	(3.8)	1.3	7.8	7.2	(0.6)
Net margin	(0.9)	6.0	3.8	5.5	15.1	9.6	16.0	6.5	7.7	1.2
Core margin	6.2	6.5	9.4	11.2	7.8	(3.4)	1.5	9.6	8.8	(0.7)
<b>Operating statistics (THB m)</b>										
PCBA - Lamphun	2,447	2,759	2,603	2,963	2,814	(5.0)	15.0	10,196	11,139	9.2
PCBA - Jiaxing	943	710	838	1,189	1,066	(10.3)	13.1	3,121	3,803	21.9
PCBA - Cambodia	72	73	74	75	76	1.3	5.6	108	272	151.5
IC - Ayutthaya	2,227	2,010	2,275	2,464	2,217	(10.0)	(0.4)	8,182	8,965	9.6
IC - Jiaxing	301	286	301	384	388	1.0	28.7	1,162	1,358	16.9
HMT - USA	282	263	312	370	414	12.0	47.0	962	1,358	41.2
IC - South Korea	0	41	31	109	91	(17.2)	nm	50	272	443.3

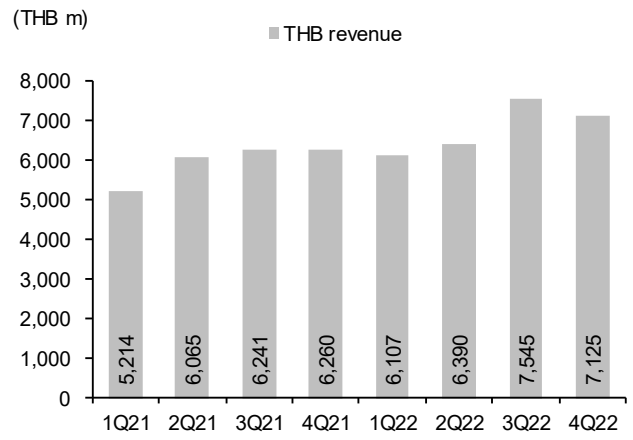
Source: HANA

**Exhibit 8: USD total revenue**



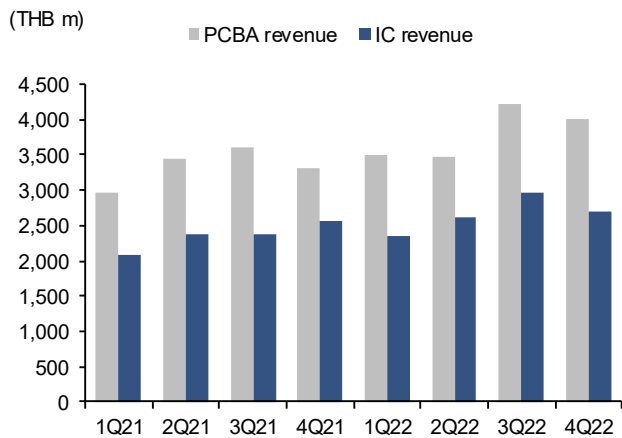
Source: HANA

**Exhibit 9: THB total revenue**



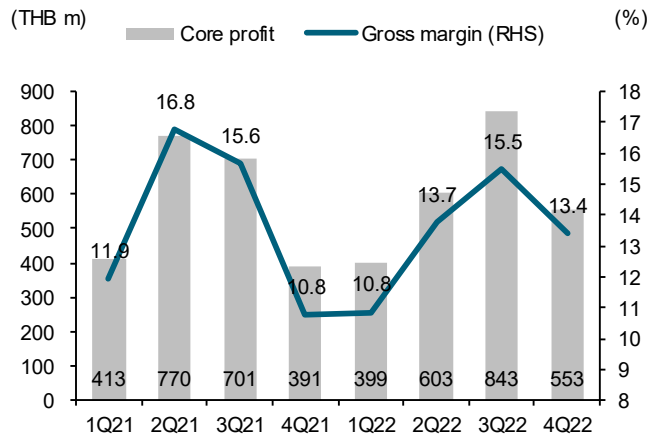
Source: HANA

**Exhibit 10: Revenue breakdown by PCBA and IC**



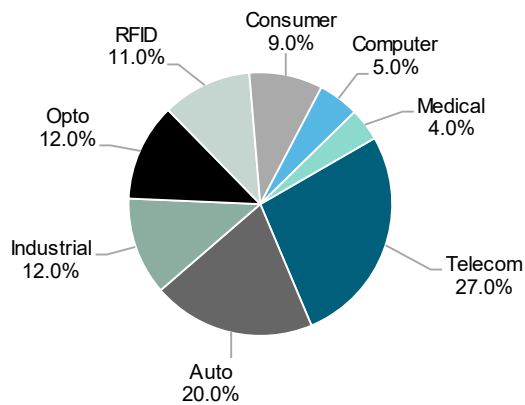
Source: HANA

**Exhibit 11: Quarterly core profit and gross margin**



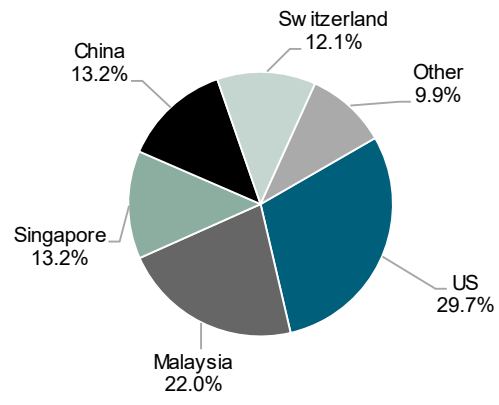
Source: HANA

**Exhibit 12: Revenue breakdown by end application in 2022**



Source: HANA

**Exhibit 13: Revenue breakdown by destination in 2022**



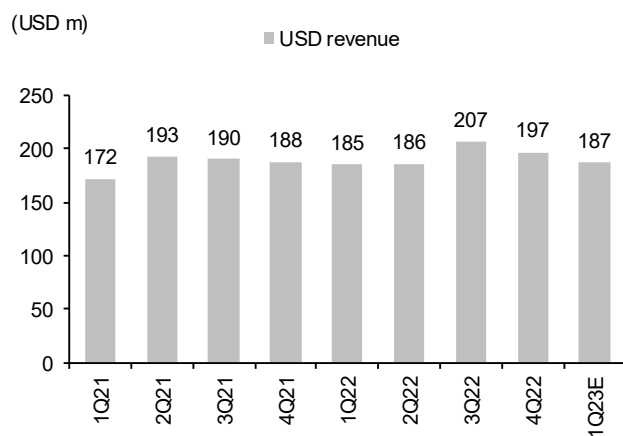
Source: HANA



## Negative view on 1H23; revised down SiC revenue

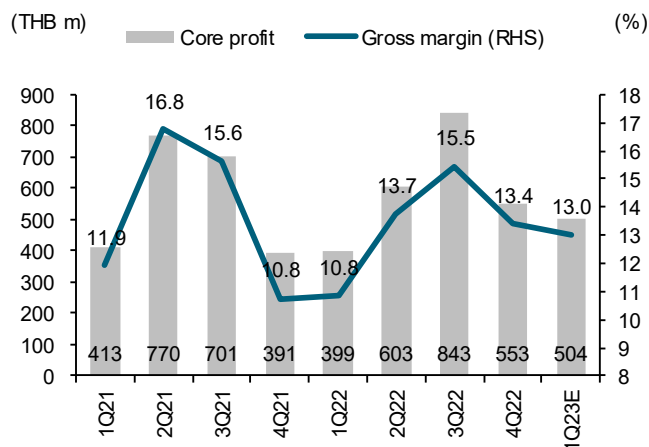
We have a negative view from the analyst meeting on 3 Mar-23. In the short term, management guides 1H23 IC revenue to drop by 15%-18% y-y due to a global recession, which would impact IC for consumer products such as computers and mobile products. Meanwhile, its PCBA should grow moderately by single digits, and we expect SiC revenue growth to accelerate from the low base last year. We think its 1Q23 gross margin will slightly drop to 13% from 13.4% in 4Q22, but rise from the low base at 10.8% in 1Q22. The q-q drop should come from a stronger THB and higher energy costs. Overall, we expect a 1Q23 core profit of THB504m (-9% q-q, +26% y-y).

Exhibit 14: 1Q23 USD revenue projection



Sources: HANA, FSSIA estimates

Exhibit 15: 1Q23 core profit and gross margin projections

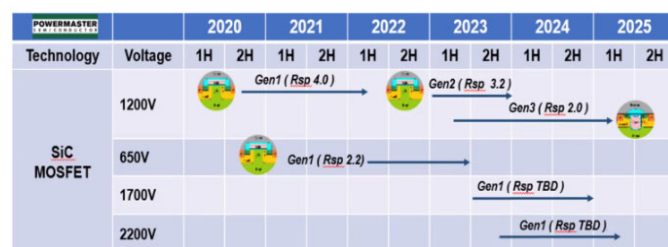


Sources: HANA, FSSIA estimates

We have a cautious view on consumer products such as telecoms and the computer segment due to the high base and concerns over a global recession. In addition, the company plans to exit from laptop touch-pad assembly in mid-2023. We have a bullish view on its SiC demand for the EV industry in the long term. Though Tesla plans to reduce SiC consumption by using 75% less power electronics, management mentioned that SiC is a key material and can create a high level of efficiency for electronic devices. In particular, SiC is not only used for EV car components, but also for PV inverters, data centres, EV charging stations, etc. Management mentioned that some research houses forecast the global SiC market value to grow at a 46% CAGR to USD7b in 2025 from USD2.3b in 2022, consisting of automotive and industrial segment exposure at 68% and 32%, respectively.

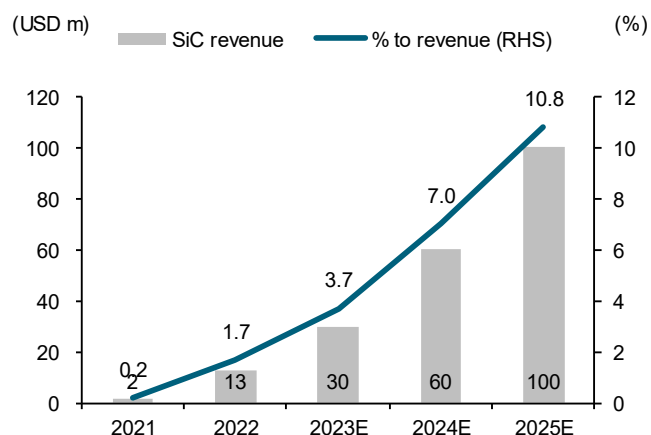
Aside from that, management still sees strong demand for SiC from its customers, and has decided to expand its SiC capacity with capex of USD100m in 2023. However, HANA revised down its 2023-24 SiC revenue targets by 10%-20% to USD30m-33m (vs USD35m-40m in previous analyst meeting) and USD60m (vs USD75m), respectively. The main reason is supply constraints, which have led to a longer-than-expected lead time for equipment of around 6-18 months. We expect the company to outgrow the market in the medium term as it ramps up capacity to support the strong demand. HANA reiterated its target to achieve EBITDA and net profit breakeven in mid-2023 and 2025, respectively.

Exhibit 16: HANA's SiC technology roadmap



Source: HANA

Exhibit 17: SiC revenue projections



Sources: HANA, FSSIA estimates

We project 2023 core profit growth at only 0.7% y-y, based on our moderate revenue assumption of USD806m (+4% y-y). The expected SiC revenue of USD30m is in line with management's target, with the revenue contribution rising to 3.7% of total revenue in 2023 (vs 1.6% in 2022). Our FX assumption is THB33/USD, hence, we forecast 2023 THB revenue of THB26.6b (-2.1% y-y). In addition, we expect to see stronger profits in 2Q23-3Q23 due to the high season and a higher SiC production level.

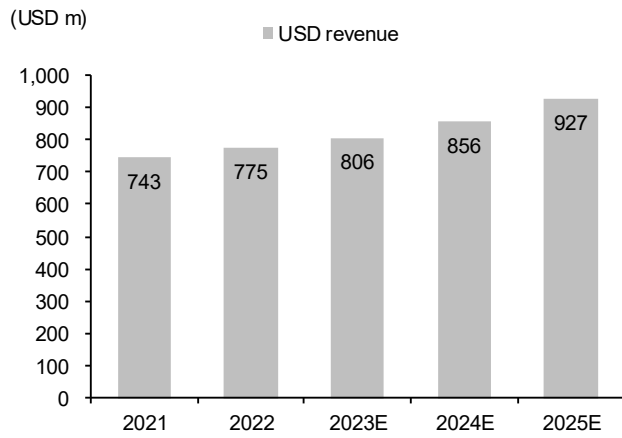
Exhibit 18: Key assumptions for HANA

Assumptions	Actual	Forecast			% Growth		
	2022A	2023E	2024E	2025E	2023E	2024E	2025E
USD total revenue (USD m)	775	806	856	927	4.0	6.3	8.2
SiC revenue (USD m)	13	30	60	100	130.8	100.0	66.7
FX rate (THB/USD)	35	33	33	33	(6.0)	0.0	0.0
THB total revenue (THB m)	27,167	26,589	28,259	30,589	(2.1)	6.3	8.2
Gross profit (THB m)	3,661	3,589	3,871	4,221	(2.0)	7.9	9.0
Gross margin (%)	13.5	13.5	13.7	13.8	0.0	0.2	0.1
SG&A expenses (THB m)	1,695	1,648	1,752	1,897	(2.7)	6.3	8.2
SG&A to sales (%)	6.2	6.2	6.2	6.2	(0.0)	0.0	0.0
Reported net profit (THB m)	2,102	2,415	2,621	2,988	14.9	8.5	14.0
Net margin (%)	7.7	9.1	9.3	9.8	1.3	0.2	0.5
Core profit (THB m)	2,398	2,415	2,621	2,988	0.7	8.5	14.0
Core margin (%)	8.8	9.1	9.3	9.8	0.3	0.2	0.5

Source: FSSIA estimates

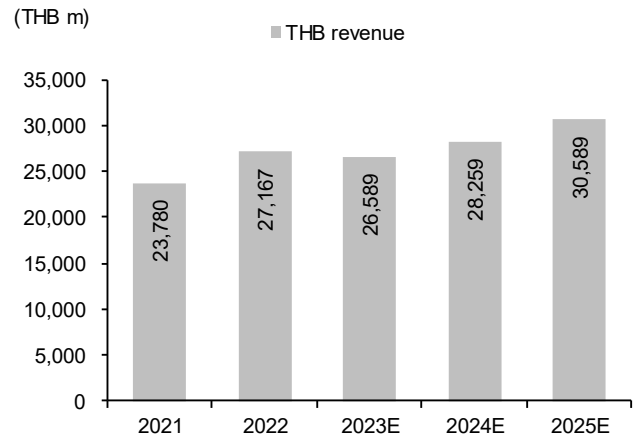


**Exhibit 19: USD revenue projections**



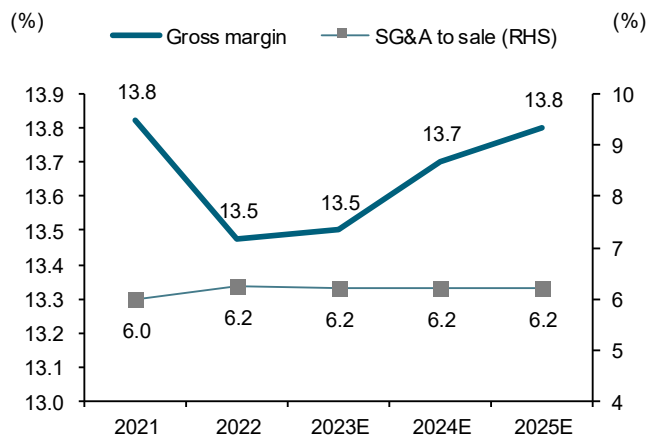
Source: FSSIA estimates

**Exhibit 20: THB revenue projections**



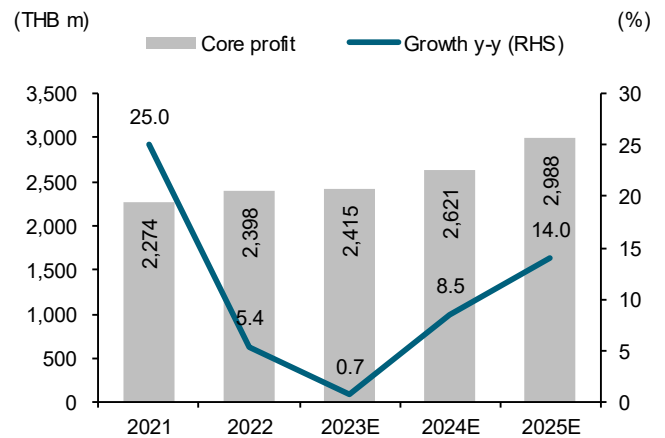
Source: FSSIA estimates

**Exhibit 21: Profitability projections**



Source: FSSIA estimates

**Exhibit 22: Core profit projections**



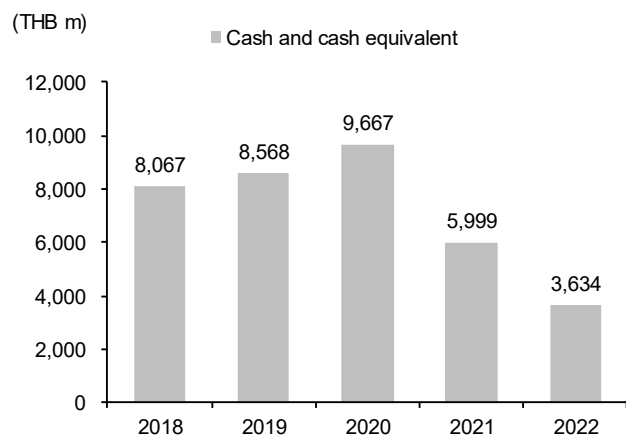
Source: FSSIA estimates

## Valuation

We recommend HOLD for HANA with a TP of THB60, based on 20x 2023E P/E, in line with its five-year historical average. In the short term, there are no catalysts for HANA’s share price due to 1) the poor outlook in 1H23; 2) a stronger THB; and 3) SiC supply constraints. While the current share price has a limited upside, it is trading at 18x 2023E P/E, higher than its regional peers.

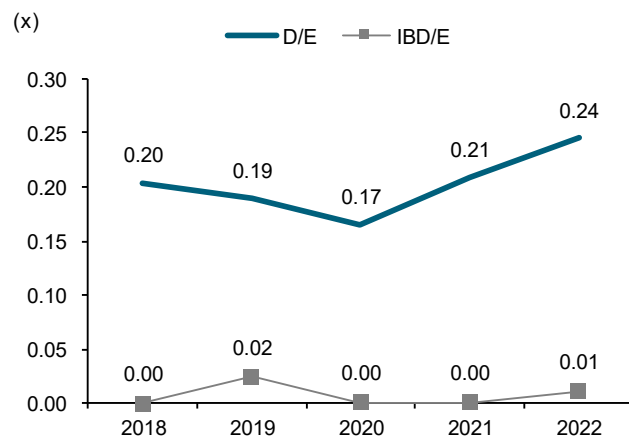
HANA announced a 2H22 DPS of THB0.5, implying a dividend yield of 0.9%. The board of directors approved a capital increase via private placement (PP) under a general mandate for an amount not exceeding 80.487 million shares (10% of total shares). If a PP is offered, the company will allocate the newly issued shares to institutional investors and/or up to 50 other investors within the 12-month period. The purpose of the PP approval request is for SiC expansion investment. However, the company will explore all possible options for financing this expansion.

**Exhibit 23: HANA’s cash and cash equivalents 2022**



Source: HANA

**Exhibit 24: D/E ratio and IBD/E ratio 2022**



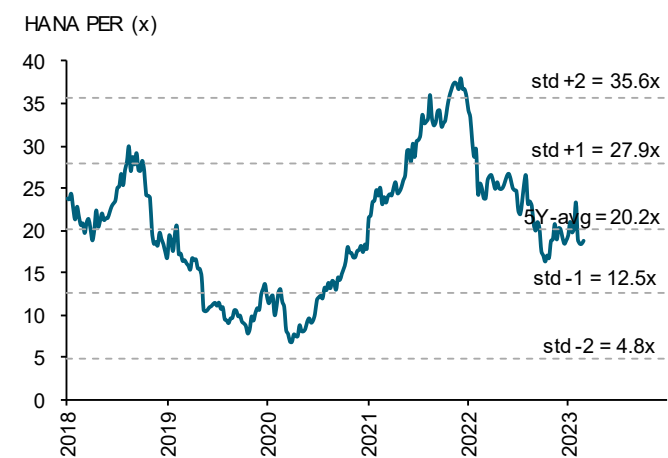
Source: HANA

Exhibit 25: Peers comparison as of 3 Mar-23

Company	Rec	Share price			Market Cap (USD m)	PE		ROE		PBV		EV/EBITDA		
		Current (LCY)	Target (LCY)	Upside (%)		23E (x)	24E (x)	23E (%)	24E (%)	23E (x)	24E (x)	23E (x)	24E (x)	
<b>Thailand</b>														
Delta Electronics (Thailand)*	DELTA TB	REDUCE	976.00	560.00	(43)	35,072	69.8	65.0	29.5	26.9	18.8	16.0	57.0	52.9
KCE Electronics*	KCE TB	HOLD	47.00	50.00	6	1,600	23.4	19.3	17.4	20.0	4.0	3.7	15.0	12.7
Hana Microelectronics*	HANA TB	HOLD	54.50	60.00	10	1,264	18.2	16.7	9.9	10.2	1.7	1.7	9.7	9.0
SVI	SVI TB	n/a	9.40	n/a	n/a	593	12.4	13.0	30.3	22.4	3.2	2.7	12.3	11.9
Cal-Comp Electronics	CCET TB	n/a	2.26	n/a	n/a	360	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Stars Microelectronics	SMT TB	n/a	4.88	n/a	n/a	121	16.0	15.5	15.6	15.4	2.5	2.4	8.2	7.6
<b>Thailand average</b>						<b>39,010</b>	<b>28.0</b>	<b>25.9</b>	<b>20.5</b>	<b>19.0</b>	<b>6.0</b>	<b>5.3</b>	<b>20.4</b>	<b>18.8</b>
<b>Regional</b>														
Taiwan semiconductor	2330 TT	n/a	521.00	n/a	n/a	445,175	13.5	15.6	39.3	27.9	4.6	4.0	8.3	8.3
STmicroelectronics	STM FP	n/a	45.82	n/a	n/a	44,596	12.4	12.1	34.1	26.5	3.7	2.8	7.7	7.1
ROHM	6963 JP	n/a	10,650	n/a	n/a	7,997	17.7	13.0	7.4	9.3	1.3	1.2	7.0	5.4
Infineon	IFX GR	n/a	34.76	n/a	n/a	48,519	18.1	15.6	18.4	17.6	3.3	2.8	10.5	8.9
Mitsubishi electric	6503 JP	n/a	1,573.50	n/a	n/a	24,904	15.9	15.6	7.6	7.0	1.2	1.1	7.4	7.2
On semiconductor	ON US	n/a	77.41	n/a	n/a	33,439	14.7	17.5	39.3	26.6	5.4	4.2	10.2	11.6
<b>Regional average</b>						<b>604,630</b>	<b>15.4</b>	<b>14.9</b>	<b>24.4</b>	<b>19.1</b>	<b>3.2</b>	<b>2.6</b>	<b>8.5</b>	<b>8.1</b>
<b>Overall average</b>						<b>643,640</b>	<b>21.1</b>	<b>19.9</b>	<b>22.6</b>	<b>19.1</b>	<b>4.5</b>	<b>3.9</b>	<b>13.9</b>	<b>13.0</b>

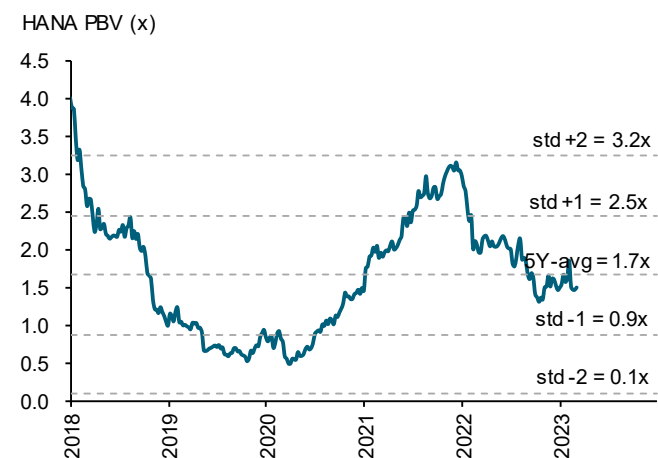
Sources: Bloomberg, \*FSSIA estimates

Exhibit 26: Historical P/E band



Sources: Bloomberg, FSSIA estimates

Exhibit 27: Historical P/BV Band



Sources: Bloomberg, FSSIA estimates

## Financial Statements

### Hana Microelectronics

Profit and Loss (THB m) Year Ending Dec	2021	2022	2023E	2024E	2025E
Revenue	23,780	27,167	26,589	28,259	30,589
Cost of goods sold	(19,192)	(21,876)	(21,194)	(22,433)	(24,313)
<b>Gross profit</b>	<b>4,589</b>	<b>5,291</b>	<b>5,394</b>	<b>5,826</b>	<b>6,276</b>
Other operating income	357	458	479	509	551
Operating costs	(1,423)	(1,695)	(1,648)	(1,752)	(1,897)
<b>Operating EBITDA</b>	<b>3,522</b>	<b>4,054</b>	<b>4,224</b>	<b>4,583</b>	<b>4,930</b>
Depreciation	(1,301)	(1,630)	(1,805)	(1,955)	(2,055)
Goodwill amortisation	0	0	0	0	0
<b>Operating EBIT</b>	<b>2,221</b>	<b>2,425</b>	<b>2,420</b>	<b>2,628</b>	<b>2,875</b>
Net financing costs	106	81	96	102	112
Associates	0	0	0	0	0
Recurring non-operating income	0	0	0	0	0
Non-recurring items	(729)	(296)	0	0	0
<b>Profit before tax</b>	<b>1,598</b>	<b>2,209</b>	<b>2,515</b>	<b>2,730</b>	<b>2,988</b>
Tax	(53)	(107)	(101)	(109)	0
<b>Profit after tax</b>	<b>1,545</b>	<b>2,102</b>	<b>2,415</b>	<b>2,621</b>	<b>2,988</b>
Minority interests	0	0	0	0	0
Preferred dividends	0	0	0	0	0
Other items	-	-	-	-	-
<b>Reported net profit</b>	<b>1,545</b>	<b>2,102</b>	<b>2,415</b>	<b>2,621</b>	<b>2,988</b>
<b>Non-recurring items &amp; goodwill (net)</b>	<b>729</b>	<b>296</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Recurring net profit</b>	<b>2,274</b>	<b>2,398</b>	<b>2,415</b>	<b>2,621</b>	<b>2,988</b>
<b>Per share (THB)</b>					
Recurring EPS *	2.83	2.98	3.00	3.26	3.71
Reported EPS	1.92	2.61	3.00	3.26	3.71
DPS	2.00	1.00	1.50	1.63	1.86
Diluted shares (used to calculate per share data)	805	805	805	805	805
<b>Growth</b>					
Revenue (%)	23.3	14.2	(2.1)	6.3	8.2
Operating EBITDA (%)	21.4	15.1	4.2	8.5	7.6
Operating EBIT (%)	28.6	9.2	(0.2)	8.6	9.4
Recurring EPS (%)	26.5	5.4	0.7	8.5	14.0
Reported EPS (%)	(19.0)	36.0	14.9	8.5	14.0
<b>Operating performance</b>					
Gross margin inc. depreciation (%)	13.8	13.5	13.5	13.7	13.8
Gross margin of key business (%)	13.8	13.5	13.5	13.7	13.8
Operating EBITDA margin (%)	14.8	14.9	15.9	16.2	16.1
Operating EBIT margin (%)	9.3	8.9	9.1	9.3	9.4
Net margin (%)	9.6	8.8	9.1	9.3	9.8
Effective tax rate (%)	3.3	4.9	4.0	4.0	0.0
Dividend payout on recurring profit (%)	70.8	33.6	50.0	50.0	50.0
Interest cover (X)	(20.9)	(29.9)	(25.2)	(25.7)	(25.6)
Inventory days	108.0	136.1	152.0	137.3	135.7
Debtor days	61.5	64.0	66.7	63.1	62.5
Creditor days	55.7	64.0	63.0	52.8	52.2
Operating ROIC (%)	12.1	10.2	9.1	9.2	9.6
ROIC (%)	11.6	9.9	8.8	9.0	9.4
ROE (%)	10.2	10.2	9.9	10.2	11.1
ROA (%)	8.3	8.1	7.9	8.4	9.2
* Pre-exceptional, pre-goodwill and fully diluted					
<b>Revenue by Division (THB m)</b>					
PCBA	13,425	15,214	14,266	14,413	14,546
IC	9,394	10,595	10,870	12,083	13,403
IC Assemble (RFID / Microdisplay)	961	1,358	1,452	1,762	2,639

Sources: Hana Microelectronics; FSSIA estimates

## Financial Statements

### Hana Microelectronics

Cash Flow (THB m) Year Ending Dec	2021	2022	2023E	2024E	2025E
Recurring net profit	2,274	2,398	2,415	2,621	2,988
Depreciation	1,301	1,630	1,805	1,955	2,055
Associates & minorities	-	-	-	-	-
Other non-cash items	(455)	24	0	0	0
Change in working capital	(2,566)	(2,626)	479	(577)	(814)
<b>Cash flow from operations</b>	<b>554</b>	<b>1,426</b>	<b>4,698</b>	<b>3,999</b>	<b>4,229</b>
Capex - maintenance	-	-	-	-	-
Capex - new investment	(4,026)	(2,821)	(3,500)	(3,000)	(2,000)
Net acquisitions & disposals	-	-	-	-	-
Other investments (net)	(99)	14	3	(33)	26
<b>Cash flow from investing</b>	<b>(4,124)</b>	<b>(2,807)</b>	<b>(3,497)</b>	<b>(3,033)</b>	<b>(1,974)</b>
Dividends paid	(1,382)	(1,191)	(1,229)	(1,311)	(1,494)
Equity finance	0	0	0	0	0
Debt finance	(5)	(2)	5	(1)	(5)
Other financing cash flows	1,282	(107)	107	0	(671)
<b>Cash flow from financing</b>	<b>(106)</b>	<b>(1,300)</b>	<b>(1,116)</b>	<b>(1,311)</b>	<b>(2,170)</b>
Non-recurring cash flows	-	-	-	-	-
Other adjustments	8	316	0	17	23
<b>Net other adjustments</b>	<b>8</b>	<b>316</b>	<b>(571)</b>	<b>17</b>	<b>23</b>
<b>Movement in cash</b>	<b>(3,668)</b>	<b>(2,365)</b>	<b>(486)</b>	<b>(329)</b>	<b>108</b>
Free cash flow to firm (FCFF)	(3,562.70)	(1,368.15)	1,211.39	976.59	2,264.34
Free cash flow to equity (FCFE)	(2,285.87)	(1,174.21)	742.32	981.67	1,601.66

#### Per share (THB)

FCFF per share	(3.49)	(1.34)	1.19	0.96	2.22
FCFE per share	(2.24)	(1.15)	0.73	0.96	1.57
Recurring cash flow per share	3.88	5.03	5.24	5.69	6.27

Balance Sheet (THB m) Year Ending Dec	2021	2022	2023E	2024E	2025E
Tangible fixed assets (gross)	26,004	28,300	31,800	34,800	36,800
Less: Accumulated depreciation	(16,342)	(17,446)	(19,251)	(21,206)	(23,261)
<b>Tangible fixed assets (net)</b>	<b>9,663</b>	<b>10,853</b>	<b>12,549</b>	<b>13,594</b>	<b>13,539</b>
<b>Intangible fixed assets (net)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Long-term financial assets	72	72	72	72	0
Invest. in associates & subsidiaries	-	-	-	-	-
Cash & equivalents	5,999	3,634	3,148	2,819	2,926
A/C receivable	4,553	4,981	4,735	5,032	5,447
Inventories	6,857	9,457	8,191	8,686	9,391
Other current assets	162	171	133	141	153
<b>Current assets</b>	<b>17,570</b>	<b>18,243</b>	<b>16,207</b>	<b>16,678</b>	<b>17,918</b>
Other assets	548	534	532	565	612
<b>Total assets</b>	<b>27,853</b>	<b>29,703</b>	<b>29,360</b>	<b>30,910</b>	<b>32,069</b>
Common equity	23,058	23,862	25,156	26,466	27,289
Minorities etc.	0	0	0	0	0
<b>Total shareholders' equity</b>	<b>23,058</b>	<b>23,862</b>	<b>25,156</b>	<b>26,466</b>	<b>27,289</b>
Long term debt	3	0	6	5	0
Other long-term liabilities	763	813	266	283	306
<b>Long-term liabilities</b>	<b>766</b>	<b>814</b>	<b>272</b>	<b>288</b>	<b>306</b>
A/C payable	3,506	4,161	3,151	3,341	3,612
Short term debt	8	274	250	250	250
Other current liabilities	515	593	532	565	612
<b>Current liabilities</b>	<b>4,029</b>	<b>5,027</b>	<b>3,932</b>	<b>4,156</b>	<b>4,474</b>
<b>Total liabilities and shareholders' equity</b>	<b>27,853</b>	<b>29,703</b>	<b>29,360</b>	<b>30,910</b>	<b>32,069</b>
Net working capital	7,550	9,856	9,377	9,954	10,768
Invested capital	17,833	21,316	22,530	24,185	24,918

\* Includes convertibles and preferred stock which is being treated as debt

#### Per share (THB)

Book value per share	28.65	29.65	31.25	32.88	33.90
Tangible book value per share	28.65	29.65	31.25	32.88	33.90

#### Financial strength

Net debt/equity (%)	(26.0)	(14.1)	(11.5)	(9.7)	(9.8)
Net debt/total assets (%)	(21.5)	(11.3)	(9.8)	(8.3)	(8.3)
Current ratio (x)	4.4	3.6	4.1	4.0	4.0
CF interest cover (x)	(15.3)	(19.3)	(43.3)	(37.9)	(31.0)

Valuation	2021	2022	2023E	2024E	2025E
<b>Recurring P/E (x) *</b>	<b>19.3</b>	<b>18.3</b>	<b>18.2</b>	<b>16.7</b>	<b>14.7</b>
<b>Recurring P/E @ target price (x) *</b>	<b>21.2</b>	<b>20.1</b>	<b>20.0</b>	<b>18.4</b>	<b>16.2</b>
Reported P/E (x)	28.4	20.9	18.2	16.7	14.7
Dividend yield (%)	3.7	1.8	2.8	3.0	3.4
Price/book (x)	1.9	1.8	1.7	1.7	1.6
Price/tangible book (x)	1.9	1.8	1.7	1.7	1.6
EV/EBITDA (x) **	10.8	10.0	9.7	9.0	8.4
EV/EBITDA @ target price (x) **	12.0	11.1	10.7	10.0	9.3
EV/invested capital (x)	2.1	1.9	1.8	1.7	1.7

\* Pre-exceptional, pre-goodwill and fully diluted \*\* EBITDA includes associate income and recurring non-operating income

Sources: Hana Microelectronics; FSSIA estimates

## Corporate Governance report of Thai listed companies 2022

EXCELLENT LEVEL – Score range 90-100											
AAV	BAM	CIMBT	ECL	HENG	LALIN	NEP	PRG	SCC	SPRC	THRE	TTW
ADVANC	BANPU	CK	EE	HMPRO	LANNA	NER	PRM	SCCC	SPVI	THREL	TU
AF	BAY	CKP	EGCO	ICC	LHFG	NKI	PSH	SCG	SSC	TIPCO	TVDH
AH	BBIK	CM	EPG	ICHI	LIT	NOBLE	PSL	SCGP	SSSC	TISCO	TVI
AIRA	BBL	CNT	ETC	III	LOXLEY	NSI	PTG	SCM	SST	TK	TVO
AJ	BCP	COLOR	ETE	ILINK	LPN	NVD	PTA	SCN	STA	TKN	TPWC
AKP	BCPG	COM7	FN	ILM	LRH	NYT	PTTEP	SDC	STEC	TKS	UAC
AKR	BDMS	COMAN	FNS	IND	LST	OISHI	PTTGC	SEAFCO	STGT	TKT	UBIS
ALLA	BEM	COTTO	FPI	INTUCH	MACO	OR	PYLON	SEAOIL	STI	TMILL	UPOIC
ALT	BEYOND	CPALL	FPT	IP	MAJOR	ORI	Q-CON	SE-ED	SUN	TMT	UV
AMA	BGC	CPF	FSMART	IRC	MAKRO	OSP	QH	SELIC	SUSCO	TNDT	VCOM
AMARIN	BGRIM	CPI	FVC	IRPC	MALEE	OTO	QTC	SENA	SUTHA	TNITY	VGI
AMATA	BIZ	CPN	GC	ITEL	MBK	PAP	RABBIT	SENAJ	SVI	TOA	VIH
AMATAV	BKI	CRC	GEL	IVL	MC	PCSGH	RATCH	SGF	SYMC	TOP	WACOAL
ANAN	BOL	CSS	GFPT	JTS	MCOT	PDG	RBF	SHR	SYNTEC	TPBI	WAVE
AOT	BPP	DDD	GGC	JWD	METCO	PDJ	RS	SICT	TACC	TQM	WHA
AP	BRR	DELTA	GLAND	K	MFEC	PG	S	SIRI	TASCO	TRC	WHAUP
APURE	BTS	DEMCO	GLOBAL	KBANK	MINT	PHOL	S&J	SIS	TCAP	TRUE	WICE
ARIP	BTW	DOHOME	GPI	KCE	MONO	PLANB	SAAM	SITHAI	TEAMG	TSC	WINNER
ASP	BWG	DRT	GPSC	KEX	MOONG	PLANET	SABINA	SMPC	TFMAMA	TSR	XPG
ASW	CENTEL	DTAC	GRAMMY	KGI	MSC	PLAT	SAMART	SNC	THANA	TSTE	ZEN
AUCT	CFRESH	DUSIT	GULF	KKP	MST	PORT	SAMTEL	SONIC	THANI	TSTH	
AWC	CGH	EA	GUNKUL	KSL	MTC	PPS	SAT	SORKON	THCOM	TTA	
AYUD	CHEWA	EASTW	HANA	KTB	MVP	PR9	SC	SPALI	THG	TTB	
BAFS	CHO	ECF	HARN	KTC	NCL	PREB	SCB	SPI	THIP	TTCL	

VERY GOOD LEVEL – Score range 80-89											
2S	ASIMAR	CHOTI	ESSO	INSURE	LH	NRF	PROEN	SCI	SR	TMC	UMI
7UP	ASK	CHOW	ESTAR	IRCP	LHK	NTV	PROS	SCP	SRICHA	TMD	UOBKH
ABM	ASN	CI	FE	IT	M	NUSA	PROUD	SE	SSF	TMI	UP
ACE	ATP30	CIG	FLOYD	ITD	MATCH	NWR	PSG	SECURE	SSP	TNL	UPF
ACG	B	CITY	FORTH	J	MBAX	OCC	PSTC	SFLEX	STANLY	TNP	UTP
ADB	BA	CIVIL	FSS	JAS	MEGA	OGC	PT	SFP	STC	TNR	VIBHA
ADD	BC	CMC	FTE	JCK	META	ONEE	PTC	SFT	STPI	TOG	VL
AEONTS	BCH	CPL	GBX	JCKH	MFC	PACO	QLT	SGP	SUC	TPA	VPO
AGE	BE8	CPW	GCAP	JMT	MGT	PATO	RCL	SIAM	SVOA	TPAC	VRANDA
AHC	BEC	CRANE	GENCO	JR	MICRO	PB	RICHY	SINGER	SVT	TPCS	WGE
AIE	BH	CRD	GJS	KBS	MILL	PICO	RJH	SKE	SWC	TIPLI	WIHK
AIT	BIG	CSC	GTB	KCAR	MTSIB	PIMO	ROJNA	SKN	SYNEX	TIPIP	WIN
ALUCON	BJC	CSP	GYT	KGEN	MK	PIN	RPC	SKR	TAE	TPLAS	WINMED
AMANAH	BJCHI	CV	HEMP	KIAT	MODERN	PJW	RT	SKY	TAKUNI	TPS	WORK
AMR	BLA	CWT	HPT	KISS	MTI	PL	RWI	SLP	TCC	TQR	WP
APCO	BR	DCC	HTC	KK	NATION	PLE	S11	SMART	TCMC	TRITN	XO
APCS	BRI	DHOUSE	HUMAN	KOOL	NCAP	PM	SA	SMD	TFG	TRT	YUASA
AQUA	BROOK	DITTO	HYDRO	KTIS	NCH	PMTA	SABUY	SMIT	TFI	TRU	ZIGA
ARIN	BSM	DMT	ICN	KUMWEL	NDR	PPP	SAK	SMT	TFM	TRV	
ARROW	BYD	DOD	IFS	KUN	NETBAY	PPPM	SALEE	SNNP	TGH	TSE	
AS	CBG	DPAINT	IIG	KWC	NEX	PRAPAT	SAMCO	SNP	TIDLOR	TVT	
ASAP	CEN	DV8	IMH	KWM	NINE	PRECHA	SANKO	SO	TIGER	TWP	
ASEFA	CHARAN	EASON	INET	L&E	NNCL	PRIME	SAPPE	SPA	TIPH	UBE	
ASIA	CHAYO	EFORL	INGRS	LDC	NOVA	PRIN	SAWAD	SPC	TITLE	UEC	
ASIAN	CHG	ERW	INSET	LEO	NPK	PRINC	SCAP	SPCG	TM	UKEM	

GOOD LEVEL – Score range 70-79											
A	BEAUTY	CMAN	EMC	HL	KWI	MORE	PF	RSP	SUPER	TOPP	VARO
A5	BGT	CMO	EP	HTECH	KYE	MPIC	PK	SIMAT	TC	TPCH	W
AI	BLAND	CMR	EVER	IHL	LEE	MUD	PPM	SISB	TCCC	TPOLY	WFX
ALL	BM	CPANEL	F&D	INOX	LPH	NC	PRAKIT	SK	TCJ	TRUBB	WPH
ALPHAX	BROCK	CPT	FMT	JAK	MATI	NEWS	PTECH	SOLAR	TEAM	TTI	YGG
AMC	BSBM	CSR	GIFT	JMART	M-CHAI	NFC	PTL	SPACK	THE	TYCN	
APP	BTNC	CTW	GLOCON	JSP	MCS	NSL	RAM	SPG	THMUI	UMS	
AQ	CAZ	D	GLORY	JUBILE	MDX	NV	ROCK	SQ	TKC	UNIQ	
AU	CCP	DCON	GREEN	KASET	MENA	PAF	RP	STARK	TNH	UPA	
B52	CGD	EKH	GSC	KCM	MJD	PEACE	RPH	STECH	TNPC	UREKA	

**Disclaimer:**

The disclosure of the survey results of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the Market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information.

The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey results may be changed after that date. FSS International Investment Advisory Company Limited does not confirm nor certify the accuracy of such survey results.

\* CGR scoring should be considered with news regarding wrong doing of the company or director or executive of the company such unfair practice on securities trading, fraud, and corruption SEC imposed a civil sanction against insider trading of director and executive

Sources: Thai Institute of Directors Association (IOD); FSSIA's compilation; data as of 26 October 2021



## Anti-corruption Progress Indicator

CERTIFIED										
2S	BCPG	CPI	GCAP	JR	MCOT	PHOL	RABBIT	SNC	THANI	TTCL
7UP	BE8	CPL	GEL	K	META	PK	RATCH	SNP	THCOM	TU
ADVANC	BEC	CPN	GFPT	KASET	MFC	PL	RML	SORKON	THIP	TVDH
AF	BEYOND	CRC	GGC	KBANK	MFEC	PLANB	RWI	SPACK	THRE	TVI
AI	BGC	CSC	GJS	KBS	MILL	PLANET	S&J	SPALI	THREL	TVO
AIE	BGRIM	DCC	GPI	KCAR	MINT	PLAT	SAAM	SPC	TIDLOR	TWPC
AIRA	BKI	DELTA	GPSC	KCE	MONO	PM	SABINA	SPI	TIPCO	UBE
AJ	BLA	DEMCO	GSTEEL	KGEN	MOONG	PPP	SAPPE	SPRC	TISCO	UBIS
AKP	BPP	DIMET	GULF	KGI	MSC	PPPM	SAT	SRICHA	TKS	UEC
AMA	BROOK	DRT	GUNKUL	KKP	MST	PPS	SC	SSF	TKT	UKEM
AMANAHA	BRR	DTAC	HANA	KSL	MTC	PR9	SCB	SSP	TMILL	UOBKH
AMATA	BSBM	DUSIT	HARN	KTB	MTI	PREB	SCC	SSSC	TMT	UPF
AMATAV	BTS	EA	HEMP	KTC	NEP	PRG	SCCC	SST	TNITY	UV
AP	BWG	EASTW	HENG	KWI	NINE	PRINC	SCG	STA	TNL	VGI
APCS	CEN	EGCO	HMPRO	L&E	NKI	PRM	SCGP	STGT	TNP	VIH
AS	CENDEL	EP	HTC	LANNA	NOBLE	PROS	SCM	STOWER	TNR	WACOAL
ASIAN	CFRESH	EPG	ICC	LH	NOK	PSH	SCN	SUSCO	TOG	WHA
ASK	CGH	ERW	ICHI	LHFG	NSI	PSL	SEAOIL	SVI	TOP	WHAUP
ASP	CHEWA	ESTAR	IFS	LHK	NWR	PSTC	SE-ED	SYMC	TOPP	WICE
AWC	CHOTI	ETE	III	LPN	OCC	PT	SELIC	SYNTEC	TPA	WIIK
AYUD	CHOW	FE	ILINK	LRH	OGC	PTG	SENA	TAE	TPCS	XO
B	CIG	FNS	INET	M	ORI	PTT	SGP	TAKUNI	TPP	YUASA
BAFS	CIMBT	FPI	INSURE	MAJOR	PAP	PTTEP	SINGER	TASCO	TRU	ZEN
BAM	CM	FPT	INTUCH	MAKRO	PATO	PTTGC	SIRI	TCAP	TRUE	ZIGA
BANPU	CMC	FSMART	IRC	MALEE	PB	PYLON	SITHAI	TCMC	TSC	
BAY	COM7	FSS	IRPC	MATCH	PCSGH	Q-CON	SKR	TFG	TSTE	
BBL	COTTO	FTE	ITEL	MBAX	PDG	QH	SMIT	TFI	TSTH	
BCH	CPALL	GBX	IVL	MBK	PDJ	QLT	SMK	TFMAMA	TTA	
BCP	CPF	GC	JKN	MC	PG	QTC	SMPC	TGH	TTB	
DECLARED										
AH	CHG	DHOUSE	EVER	J	KUMWEL	NRF	RS	SUPER	TQM	VIBHA
ALT	CI	DOHOME	FLOYD	JMART	LDC	NUSA	SAK	SVT	TRT	W
APCO	CPR	ECF	GLOBAL	JMT	MEGA	OR	SIS	TKN	TSI	WIN
ASW	CPW	EKH	ILM	JTS	NCAP	PIMO	SSS	TMD	VARO	
B52	DDD	ETC	INOX	KEX	NOVA	PLE	STECH	TMI	VCOM	

### Level

Certified	This level indicates practical participation with thoroughly examination in relation to the recommended procedures from the audit committee or the SEC's certified auditor, being a certified member of Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) or already passed examination to ensure independence from external parties.
Declared	This level indicates determination to participate in the Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC)

### Disclaimer:

The disclosure of the Anti-Corruption Progress Indicators of a listed company on the Stock Exchange of Thailand, which is assessed by Thaipat Institute, is made in order to comply with the policy and sustainable development plan for the listed companies of the Office of the Securities and Exchange Commission. Thaipat Institute made this assessment based on the information received from the listed company, as stipulated in the form for the assessment of Anti-corruption which refers to the Annual Registration Statement (Form 56-1), Annual Report (Form 56-2), or other relevant documents or reports of such listed company. The assessment result is therefore made from the perspective of Thaipat Institute that is a third party. It is not an assessment of operation and is not based on any inside information. Since this assessment is only the assessment result as of the date appearing in the assessment result, it may be changed after that date or when there is any change to the relevant information. Nevertheless, FSS International Investment Advisory Company Limited does not confirm, verify, or certify the accuracy and completeness of the assessment results.

Note: Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of 26 October 2021) are categorised into: 1) companies that have declared their intention to join CAC, and; 2) companies certified by CAC.

Sources: The Securities and Exchange Commission, Thailand; \* FSSIA's compilation

## GENERAL DISCLAIMER

### ANALYST(S) CERTIFICATION

#### Sureeporn Teewasuwet FSS International Investment Advisory Securities Co., Ltd

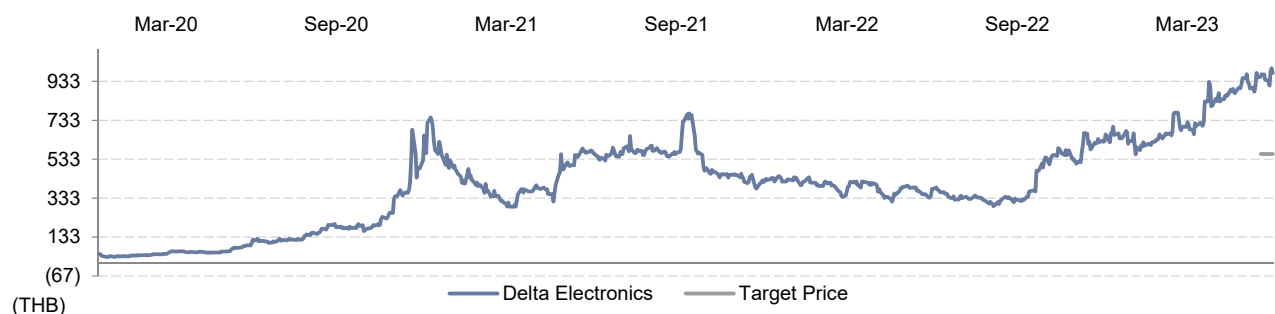
The individual(s) identified above certify(ies) that (i) all views expressed in this report accurately reflect the personal view of the analyst(s) with regard to any and all of the subject securities, companies or issuers mentioned in this report; and (ii) no part of the compensation of the analyst(s) was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed herein.

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#### History of change in investment rating and/or target price

##### Delta Electronics (DELTA TB)



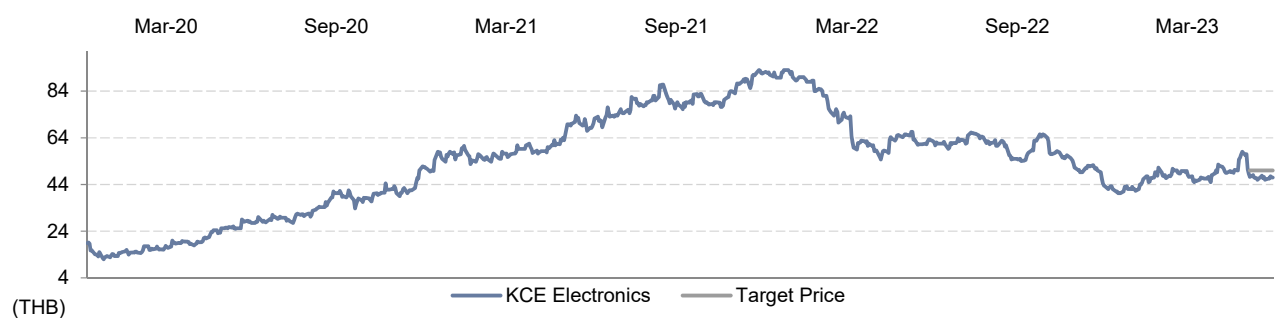
Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
17-Feb-2023	REDUCE	560.00	-	-	-	-	-	-

Sureeporn Teewasuwet started covering this stock from 17-Feb-2023

Price and TP are in local currency

Source: FSSIA estimates

##### KCE Electronics (KCE TB)



Date	Rating	Target price	Date	Rating	Target price	Date	Rating	Target price
09-Feb-2023	HOLD	50.00	-	-	-	-	-	-

Sureeporn Teewasuwet started covering this stock from 09-Feb-2023

Price and TP are in local currency

Source: FSSIA estimates

Company	Ticker	Price	Rating	Valuation & Risks
Hana Microelectronics	HANA TB	THB 54.50	HOLD	Downside and upside risks to our P/E-based TP include 1) a slower or faster-than-expected consumption recovery; 2) a potential rise or fall in raw material costs; and 3) a stronger or weaker-than-expected THB against USD.
Delta Electronics	DELTA TB	THB 976.00	REDUCE	Upside risks to our P/E-based TP include 1) higher-than-expected global EV car sales; 2) lower-than-expected raw material costs; and 3) a weaker-than-expected THB against USD.
KCE Electronics	KCE TB	THB 47.00	HOLD	Downside and upside risks to our P/E-based TP include 1) a slower or faster-than-expected automotive recovery; 2) a potential rise or fall in raw material costs; and 3) a stronger or weaker-than-expected THB against USD.

Source: FSSIA estimates

#### Additional Disclosures

Target price history, stock price charts, valuation and risk details, and equity rating histories applicable to each company rated in this report is available in our most recently published reports. You can contact the analyst named on the front of this note or your representative at Finansia Syrus Securities Public Company Limited

FSSIA may incorporate the recommendations and target prices of companies currently covered by FSS Research into equity research reports, denoted by an 'FSS' before the recommendation. FSS Research is part of Finansia Syrus Securities Public Company Limited, which is the parent company of FSSIA.

All share prices are as at market close on 03-Mar-2023 unless otherwise stated.

## RECOMMENDATION STRUCTURE

### Stock ratings

Stock ratings are based on absolute upside or downside, which we define as  $(\text{target price}^* - \text{current price}) / \text{current price}$ .

BUY (B). The upside is 10% or more.

HOLD (H). The upside or downside is less than 10%.

REDUCE (R). The downside is 10% or more.

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 market price and the formal recommendation.

\* In most cases, the target price will equal the analyst's assessment of the current fair value of the stock. However, if the analyst doesn't think the market will reassess the stock over the specified time horizon due to a lack of events or catalysts, then the target price may differ from fair value. In most cases, therefore, our recommendation is an assessment of the mismatch between current market price and our assessment of current fair value.

### Industry Recommendations

**Overweight.** The analyst expects the fundamental conditions of the sector to be positive over the next 12 months.

**Neutral.** The analyst expects the fundamental conditions of the sector to be maintained over the next 12 months.

**Underweight.** The analyst expects the fundamental conditions of the sector to be negative over the next 12 months.

### Country (Strategy) Recommendations

**Overweight (O).** Over the next 12 months, the analyst expects the market to score positively on two or more of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

**Neutral (N).** Over the next 12 months, the analyst expects the market to score positively on one of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.

**Underweight (U).** Over the next 12 months, the analyst does not expect the market to score positively on any of the criteria used to determine market recommendations: index returns relative to the regional benchmark, index sharpe ratio relative to the regional benchmark and index returns relative to the market cost of equity.