

# Electronic Components

SET ETRON Index Close: 19/3/2024 8,273.18 -171.90 / -2.04% Bt1,069mn  
 Bloomberg ticker: SETETRON



## Soft 1H24, with strong 2H24 recovery

Although we believe 1H24 sector earnings will be soft due to weak demand in the EV market (price war and subsidy cuts in the EU) and a weak Outsourced Semiconductor Assembly & Test (OSAT) business, we expect sector earnings to begin to recover in 2Q24, with strong recovery in 2H24, driven by a solid outlook for the EV market and the replacement cycle for AI smartphones and AI PCs, plus capacity expansion in the sector. KCE is our top pick in the sector for two reasons: 1) we expect its 2024 net profit to grow 32% (higher than peers); and 2) its valuation is still at a discount vs its 5-year historical average PE of 32.6x.

### Positive outlook for electronic components in 2024 despite several challenges.

Thailand's Semiconductor Industry Association (SIA) expects semiconductor sales to achieve double-digit growth in 2024. IDC and Gartner also forecast growth in global semiconductor revenue of 17-20% in 2024 to US\$624bn. Driving growth are the recovery of the consumer electronics market and the booming AI industry and its entry into the AI smartphone and AI PC replacement cycle. We expect to see a clearer picture of this cycle in 2H24.

**Global new car market to remain supported by growth in EVs.** Despite a dull macroeconomic backdrop and slower growth for EVs, both S&P Global Mobility and ING research forecast growth in 2024 global new car sales: the former at 2.8% and the latter at 2.6%. Backing this growth is projected EV global sales growth of 25-30% in 2024 (Bloomberg NEF forecasts).

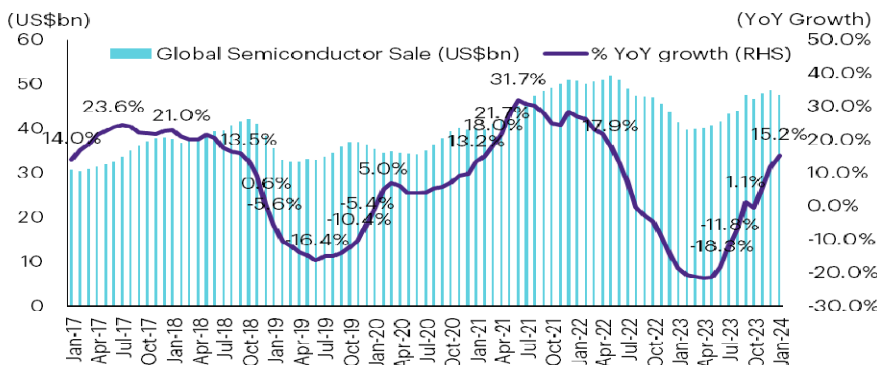
**Smartphone market expected to resume growth in 2024.** Canalis forecasts global smartphone shipments to grow 4% and IDC expects 2.8% growth in 2024. This growth will be spurred by the use of AI in smartphones that will lead to a new upgrade cycle in 2024.

**Thai electronics sector earnings to be sluggish in 1H24 but grow in 2H24.** Based on the good outlook for semiconductor sales, global car sales, and smartphone shipments in 2024, we believe sector earnings will begin to improve in 2Q24 and show strong recovery in 2H24. Behind this growth will be strong demand from new AI smartphones and the AI PC replacement cycle, coupled with improved EV sales. Additionally, capacity expansions by KCE (utilizing new laser drill machines), DELTA (commercially operating its DELTA Plant 8) and HANA (increasing its silicon carbide machines) will contribute to the upward momentum of earnings in 2H24.

**Top picks.** KCE is our top pick in the sector due to: 1) strong profit growth: we expect KCE's 2024 net profit to grow 32%, far above our projected growth of 3.4% for DELTA and 11% for HANA; and 2) attractive valuation: KCE's valuation is discounted against its 5-year historical average PE ratio of 32.6x, currently trading at a PE of only 21.1x for 2024, which is below -1SD of its PE mean.

**Key risks** are changes in customer purchasing power, prolonged geopolitical unrest, resumption of the US-China tech war and exchange rate volatility. Key ESG risks are labor management and suppliers (S).

### Global semiconductor sales grew 15.2% YoY in January 2024



Source: Statista and InnovestX Research

### Valuation summary

	Rating	Price (Bt)	TP (Bt)	ETR (%)	P/E (x) 24F	P/BV (x) 25F	P/BV (x) 24F	P/BV (x) 25F
DELTA	Neutral	66.8	70.0	5.6	43.7	38.1	10.3	8.7
HANA	Outperform	37.8	42.0	15.4	17.1	15.6	1.2	1.1
KCE	Outperform	38.8	52.0	36.2	20.2	18.9	3.0	2.8
<b>Average</b>					<b>27.024.2</b>	<b>4.8</b>	<b>4.2</b>	

Source: InnovestX Research

### Price performance

(%)	Absolute			Relative to SET		
	1M	3M	12M	1M	3M	12M
DELTA	(10.7)	(25.6)	(31.9)	(10.8)	(24.7)	(23.4)
HANA	(12.7)	(28.4)	(19.7)	(12.8)	(27.5)	(9.6)
KCE	(0.6)	(29.9)	(8.3)	(0.7)	(29.0)	3.2

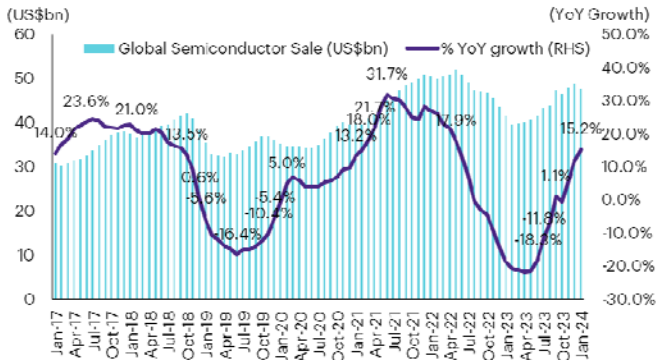
Source: SET and InnovestX Research

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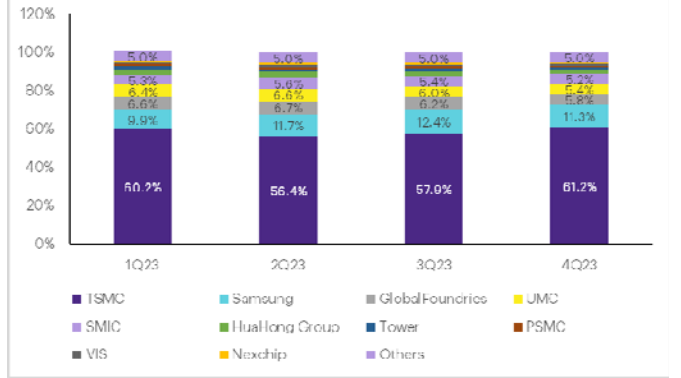
**Global semiconductor sales continue to grow YoY but slip MoM.** The SIA reports that global semiconductor sales in January 2024 increased by 15.2% YoY but fell 3.9% MoM to US\$48.7bn. We believe the MoM decline is likely due to seasonality, as the past three years have shown a similar slowdown in January and February. Despite this short-term dip, the SIA expects semiconductor sales to achieve double-digit growth in 2024. International Data Corporation (IDC) and Gartner also forecast global semiconductor revenue to grow 17-20% in 2024, underwritten by the recovery of the consumer electronics market and the booming AI industry.

**Figure 1: Global semiconductor sales grew 15.2% YoY in January 2024**



Source: Statista and InnovestX Research

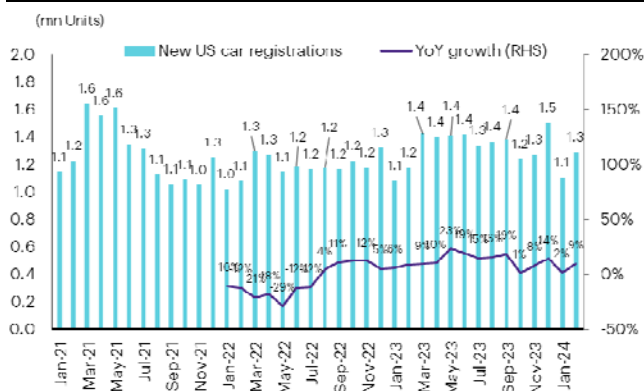
**Figure 2: Semiconductor foundries revenue share worldwide still dominate with TSMC and Samsung**



Source: Statista and InnovestX Research

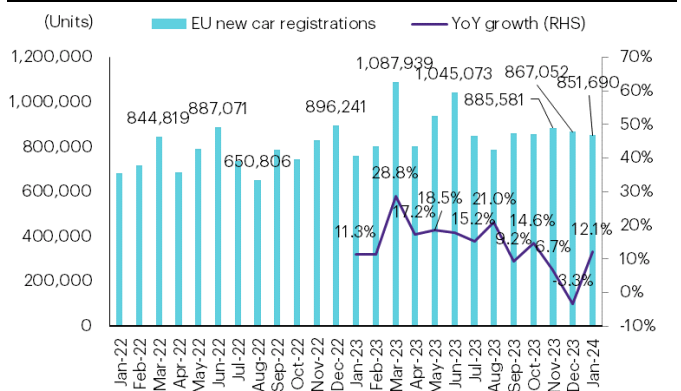
**Global new car market to be supported by growth in EVs.** In 2023, global automotive sales saw strong growth of 10.8% according to Moody's and ING research. Breaking this down, sales grew 12.4% in the United States, 11.0% in China and 13.7% in Europe. Despite a dull macroeconomic backdrop and slower growth expected for EVs, ING forecasts a 2.6% increase in global car sales to 92.2mn units in 2024. Similarly, S&P Global Mobility expects global new car sales to reach 88.3mn vehicles in 2024, growth of 2.8%. In January 2024, new car registrations grew 9% in the EU and 12.1% in the US. However, China saw a 20% YoY decline in new car registrations, likely due to seasonal factors.

**Figure 3: US new car registrations rose 9% YoY in Jan 2024**



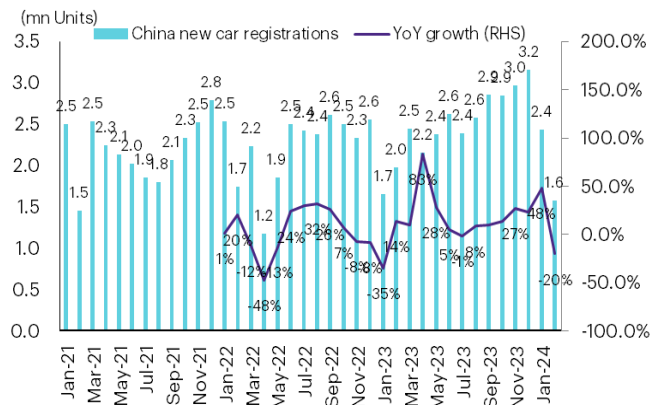
Source: countryeconomy, and InnovestX Research

**Figure 4: EU new car registrations grew 12.1% YoY in Jan 2024**



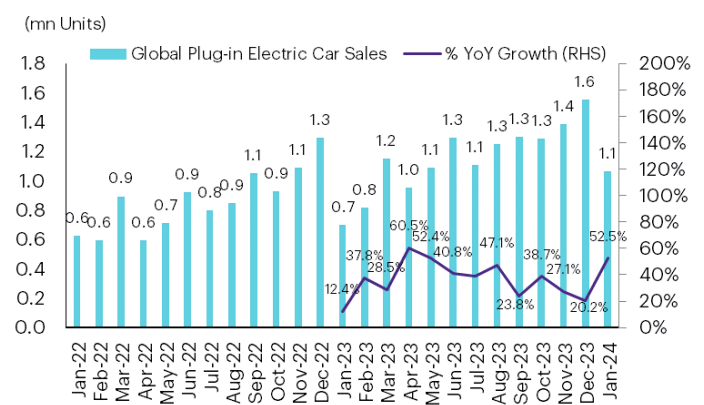
Source: The European Automobile Manufacturers' Association, and InnovestX Research

**Figure 5: China new car registrations fell 20% YoY in Jan 2024 on seasonality**



Source: TradingEconomic, and InnovestX Research

**Figure 6: Global plug-in electric car sales still grew 52.5% YoY in Jan 2024**



Source: InsideEVs.com and InnovestX Research

In January 2024, global EV sales surged 52.5% YoY to 1.1mn units. However, this represented a fall of 26% MoM after Germany stopped its subsidies, France tightened its subsidy requirements and on seasonally weaker sales in China.

Despite this short-term dip, Bloomberg NEF forecasts global EV sales growth of 25-30% YoY in 2024. BYD, the world's second-largest manufacturer of battery electric vehicles (BEVs) by market share, announced a 2024 sales target of 4.2mn units, a 40% YoY increase from the 3mn units sold in 2023.

A key factor to watch is the potential price war on new EV models that could lead buyers to delay purchases in hopes of lower prices later. We expect EV prices to decline in 2024 due to efforts by Contemporary Amperex Technology (CATL) and BYD to slash battery costs, hoping to cut battery prices by as much as 50% this year. This could mean battery packs will cost half as much at end-2024 than they were at end-2023. In numbers, this means the cost of a 60-kWh battery could drop from US\$6,776 now to US\$3,388 by year's end, saving EV manufacturers over US\$3,000 per vehicle. The lower prices for batteries should translate to lower overall EV prices. In today's price-cutting environment, we anticipate some delayed demand in 1H24 as prices begin to stabilize. Once prices stabilize, demand is expected to get back to rapid growth.

**Smartphone market poised for growth in 2024.** After two years of a global decline in smartphone shipments, several market forecasters predict a return to growth in 2024. Canalis expects global smartphone shipments to rise 4% to reach 1.17bn units in 2024, and projects 1.25bn units by 2027, a CAGR (2023-2027) of 2.6%. IDC forecasts worldwide smartphone shipments to reach 1.20bn units in 2024, representing a 2.8% growth.

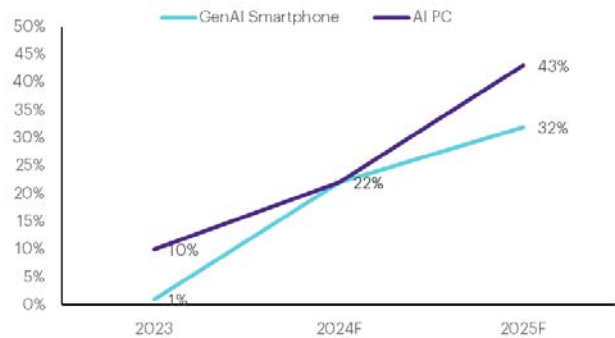
**Generative AI integration fuels upgrade cycle.** Driving growth will be the integration of generative AI in smartphones, which, according to Qualcomm CEO Cristiano Amon, will start "a new upgrade cycle" in 2024. The first AI smartphone launched, the Samsung Galaxy S24 series equipped with Gemini Pro and Imagen 2 on Vertex AI, saw an 8% YoY growth in units sold in the first three weeks of its global availability. Gartner predicts that worldwide shipments of AI PCs and generative AI (GenAI) smartphones will total 295mn units by the end of 2024, up from 29mn units in 2023. This represents a significant increase, accounting for 22% of both basic and premium smartphones and 22% of all PCs in 2024.

**Figure 7: Global smartphone shipment forecasts**



Source: Canalys, and InnovestX Research

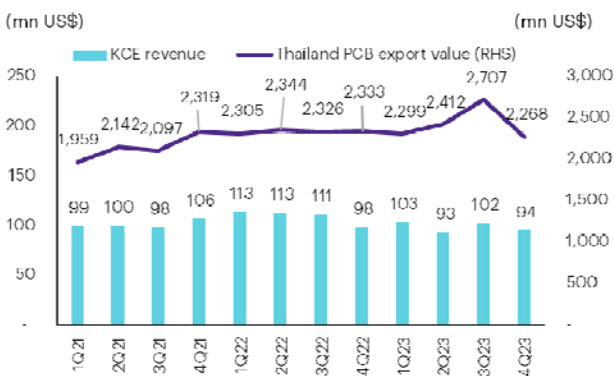
**Figure 8: World AI PC and GenAI smartphone market share in 2023-25F**



Source: Gartner, and InnovestX Research

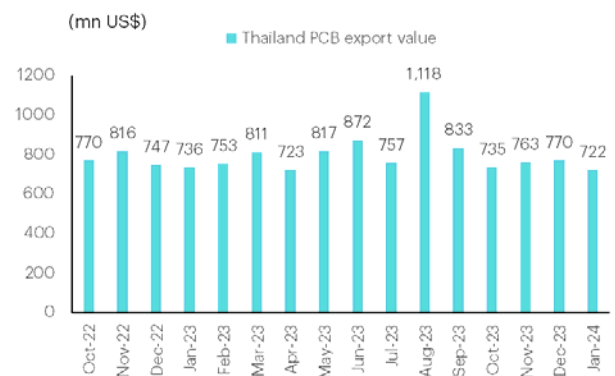
**Thai Jan 2024 data suggest overall electronics demand remains weak.** This is reflected in recently released data that shows a decline in Thailand's printed circuit board (PCB) exports on a MoM basis. The export value of PCBs fell to US\$722mn in January 2024 from US\$770mn in December 2023. Our study indicates PCB export values have a strong positive correlation with KCE's revenue (in US dollars) as KCE is a major exporter of PCBs, particularly for the automotive industry.

**Figure 9: KCE's revenue vs Thai PCB export value**



Source: Company data, Ministry Of Commerce, and InnovestX Research

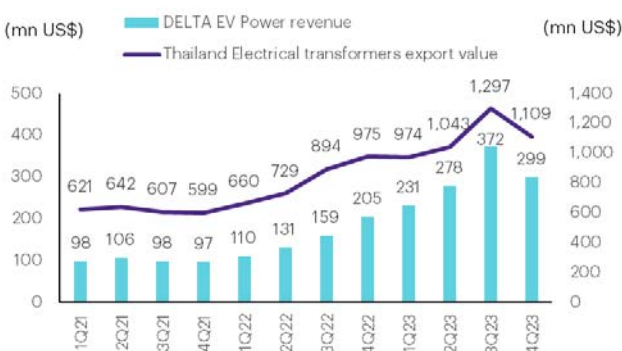
**Figure 10: Thai PCB export value (monthly)**



Source: Ministry Of Commerce, and InnovestX Research

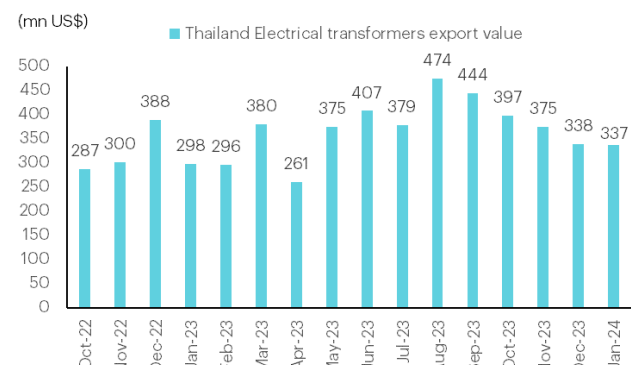
We also observe a slightly weaker MoM trend in the export value of electrical transformers, which were US\$337mn in January 2024. This suggests that contribution to DELTA's revenue from EV power products may be sluggish in 1Q24F. Based on our analysis, the export value of electrical transformers has a strong positive correlation with DELTA's exports of EV power products to Europe and the US.

**Figure 11: DELTA's EV power revenue vs Thai electronic transformer export value**



Source: Company data, Ministry of Commerce, and InnovestX Research

**Figure 12: Thai electrical transformer export value (monthly)**



Source: Ministry of Commerce, and InnovestX Research

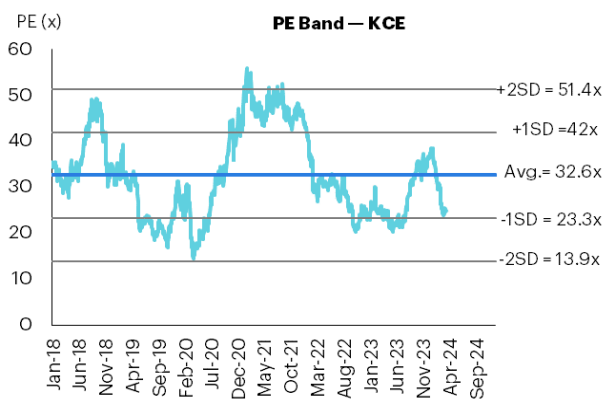
**Expect Thai electronics earnings to be soft in 1H24 but resume growth in 2H24.** This expectation is based on good forecasts for semiconductor sales, global car sales, and smartphone shipments in 2024. We believe sector earnings will gradually improve starting in 2Q24, with strong growth expected in 2H24, underwritten by strong demand for new AI smartphones and AI PCs, along with a rise in EV sales. Contributing to the good earnings momentum will be capacity expansions by KCE (utilizing its new laser drill machines), DELTA (commercially operating its DELTA Plant 8) and HANA (more silicon carbide machines).

**Top pick is KCE.** KCE (TP Bt52.0 based on its 5-year PE mean) is our top pick in the sector. We expect its net profit to grow 32% in 2024, exceeding our projected growth of 3.4% for DELTA and 11.0% for HANA. Behind the strong growth is recovery in demand for automotive-related products after inventories were depleted and on lower copper (a raw material) costs. We expect KCE to see revenue growth in 2H24 after signing new customers for high-margin multilayer PCB and HDI products. Additionally, valuation is attractive, currently trading at a PE ratio of only 21.1x for 2024, which is -1SD below its 5-year PE mean of 32.6x.

**HANA.** HANA's share price (TP Bt42.00 based on its 5-year PE mean of 19x) appears to have already priced in the many negatives. However, it is poised for growth with an upcoming expansion in silicon carbide (SiC) production capacity. SiC products are highly sought-after and bring high gross margins. HANA plans to ramp up its high energy implanted ignition (HEI) machines significantly, from just one machine in 4Q23 to five by 1Q25 (adding one machine per quarter). This expansion is expected to drive the SiC business to EBITDA breakeven within 2024, with a projected revenue range of US\$50-55mn (INVX estimates US\$50mn in 2024). Despite these solid growth prospects, HANA is currently trading at an attractive valuation, with a 2024 PE ratio of only 17.3x (below its 5-year average of 19.1x). We maintain our Outperform rating on HANA.

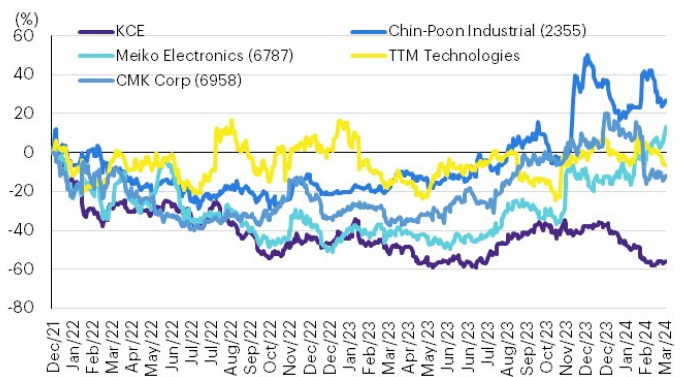
**DELTA.** We cut our TP to Bt70.0, based on its PE mean of 45.6x from Bt79.5 (+0.5SD of its PE mean). Share price has already come down quite a bit to reflect the negative news. DELTA targets revenue growth of 10-20% driven by hopes for 30-50% growth in EV power sales after DELTA plant No. 8 starts commercial operations. It is currently trading at a 2024 PE of 44.2x, which is close to its average PE of 45.6x. Therefore, we maintain our Neutral recommendation.

**Figure 13: KCE's PE BAND**



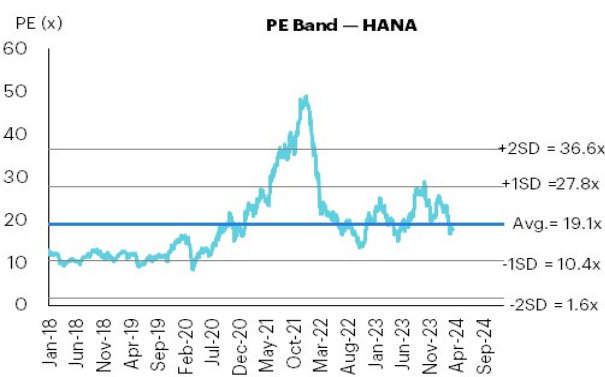
Source: InnovestX Research

**Figure 14: KCE still laggard compared with Auto PCB peers**



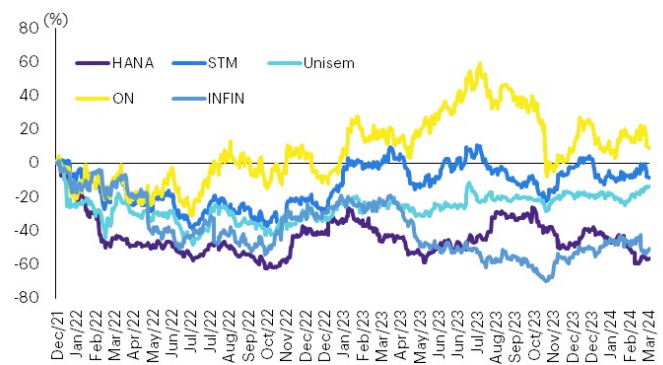
Source: Bloomberg, and InnovestX Research

**Figure 15: HANA's PE BAND**



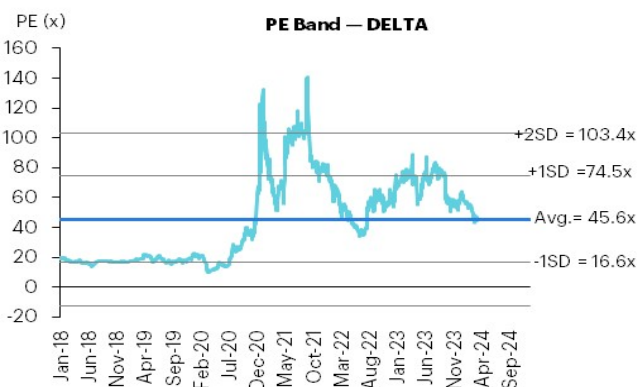
Source: InnovestX Research

**Figure 16: HAHA's share price also laggard peers**



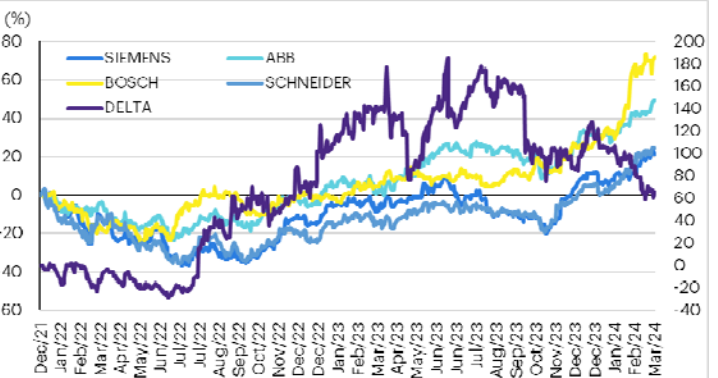
Source: Bloomberg, InnovestX Research

**Figure 17: DELTA's PE BAND**



Source: InnovestX Research

**Figure 18: DELTA's Share price underperformed peers in the past 3-4 months on weaker-than-expected 4Q23 earnings**



Source: Bloomberg, InnovestX Research

**Figure 19: Valuation summary** (price as of Mar 19, 2024)

	Rating	Price (Bt/Sh)	Target (Bt/Sh)	ETR (%)	P/E (x)			EPS growth (%)			P/BV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
					23A	24F	25F	23A	24F	25F	23A	24F	25F	23A	24F	25F	23A	24F	25F	23A	24F	25F
DELTA	Neutral	66.75	70.0	5.6	46.9	43.7	38.1	22	7	15	12.3	10.3	8.7	29	26	25	0.7	0.7	0.8	37.0	35.8	31.8
HANA	Outperform	37.75	42.0	15.4	15.2	17.1	15.6	(16)	(11)	9	1.1	1.2	1.1	8	7	7	2.6	4.1	4.5	10.9	9.8	9.4
KCE	Outperform	38.75	52.0	36.2	29.2	20.2	18.9	(31)	45	7	3.3	3.0	2.8	12	16	15	1.5	2.0	2.1	15.8	12.8	12.8
<b>Average</b>					<b>30.4</b>	<b>27.0</b>	<b>24.2</b>	<b>(9)</b>	<b>14</b>	<b>10</b>	<b>5.6</b>	<b>4.8</b>	<b>4.2</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>1.6</b>	<b>2.3</b>	<b>2.5</b>	<b>21.2</b>	<b>19.5</b>	<b>18.0</b>

Source: InnovestX Research

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**CG Rating 2023 Companies with CG Rating**

**Companies with Excellent CG Scoring**

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2S, A5, AAI, AIE, ALUCON, AMR, APURE, ARIN, AS, ASIA, ASIAN, ASIMAR, ASN, AURA, BR, BSBM, BTG, CEN, CGH, CH, CHIC, CI, CIG, CMC, COMAN, CSP, DOD, DPAINT, DV8, EFORL, EKH, ESSO, ESTAR, EVER, FORTH, FSMART, FTI, GEL, GPI, HEALTH, HUMAN, IFS, INSET, IT, J, JCKH, JDF, JKN, JMART, JUBILE, K, KCAR, KGI, KIAT, KISS, KK, KTIS, KWC, KWM, LDC, LEO, LHK, MACO, METCO, MICRO, MK, MVP, NCAP, NOVA, NTSC, PACO, PIN, PQS, PREB, PRI, PRIME, PROEN, PROS, PROUD, PSTC, PTECH, PYLON, RCL, SALEE, SANKO, SCI, SCN, SE, SE-ED, SFLEX, SINGER, SKN, SONIC, SORKON, SPVI, SSP, SST, STANLY, STP, SUPER, SVOA, SWC, TCC, TEKA, TFM, TMILL, TNP, TPLAS, TPOLY, TRC, TRU, TRUBB, TSE, VRANDA, WAVE, WFX, WIJK, WIN, WP, XO

**Companies with Good CG Scoring**

24CS, AMANAH, AMARC, AMC, APP, ASAP, BCT, BE8, BIG, BIOTEC, BLESS, BSM, BVG, CAZ, CCET, CHARAN, CHAYO, CHOTI, CITY, CMAN, CMR, CRANE, CWT, DHOUSE, DTCENT, EASON, FNS, FTE, GIFT, GJS, GTB, GTV, GYT, HL, HTECH, HYDRO, IIG, INGRS, INSURE, IRCP, ITD, ITNS, JCK, JMT, JR, JSP, KBS, KGEN, KJL, L&E, LEE, MASTER, MBAX, MEB, MENA, META, MGT, MITSIB, MJD, MOSHI, MUD, NATION, NNCL, NPK, NSL, NV, OGC, PAF, PCC, PEACE, PICO, PK, PL, PLANET, PLE, PMTA, PPM, PRAKIT, PRAPAT, PRECHA, PRIN, PSG, RABBIT, READY, RJH, RSP, RWI, S11, SAAM, SAF, SAMCO, SAWAD, SCAP, SCP, SIAM, SKE, SKY, SMART, SMD, SMIT, SOLAR, SPA, STECH, STPI, SVR, TC, TCCC<sup>3</sup>, TEAM, TFI, TIGER, TITLE, TKC, TMI, TNH, TPA, TPAC, TRITN, UBA, UMI, UMS, UTP, VARO, VPO, W, WARRIX, WORK, WPH, YONG, ZIGA

**Corporate Governance Report**

The material contained in this publication is for general information only and is not intended as advice on any of the matters discussed herein. Readers and others should perform their own independent analysis as to the accuracy or completeness or legality of such information. The Thai Institute of Directors, its officers, the authors and editor make no representation or warranty as to the accuracy, completeness or legality of any of the information contained herein. By accepting this document, each recipient agrees that the Thai Institute of Directors Association, its officers, the authors and editor shall not have any liability for any information contained in, or for any omission from, this publication.

The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey result may be changed after that date. InnovestX Securities Company Limited does not conform nor certify the accuracy of such survey result.

To recognize well performers, the list of companies attaining "Good", "Very Good" and "Excellent" levels of recognition (Not including listed companies qualified in the "no announcement of the results" clause from 1 January 2022 to 31 October 2023) is publicized.

<sup>1</sup>OISHI was voluntarily delisted from the Stock Exchange of Thailand, effectively on September 6, 2023

<sup>2</sup>SFP was voluntarily delisted from the Stock Exchange of Thailand, effectively on July 19, 2023

<sup>3</sup>TCCC was voluntarily delisted from the Stock Exchange of Thailand effectively on August 25, 2023

**Anti-corruption Progress Indicator**

**Certified (ได้คุ้มครอง)**

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

**Declared (ประกาศเจตนา)**

ACE, ADB, ALT, AMC, ASW, BLAND, BTG, BYD, CAZ, CBG, CV, DEXON, DMT, EKH, FSX, GLOBAL, GREEN, ICN, IHL, ITC, J, JMART, JMT, LEO, LH, MENA, MITSIB, MODERN, NER, NEX, OSP, PEER, PLUS, POLY, PQS, PRIME, PROEN, PRTR, RBF, RT, SA, SANKO, SCB, SENX, SFLEX, SIS, SKE, SM, SVOA, TBN, TEGH, TIPH, TKN, TPAC, TPLAS, TQM, TRUE, W, WPH, XPG

**N/A**

24CS, 3K-BAT, A, A5, AAV, ABM, ACAP, ACC, ACG, ADD, ADVICE, AEONTS, AFC, AGE, AHC, AIT, AJA, AKR, AKS, ALL, ALLA, ALPHAX, ALUCON, AMARC, AMARIN, AMR, ANAN, ANI, AOT, APCO, APEX, APP, APURE, AQUA, ARIN, ARIP, ARROW, ASAP, ASEFA, ASIA, ASIMAR, ASN, ATP30, AU, AUCT, AURA, B52, BA, BBIK, BC, BCT, BDMS, BEAUTY, BEM, BGT, BH, BIG, BIOTEC, BIS, BIZ, BJC, BJCHI, BKD, BKGI, BLC, BLESS, BLISS, BM, BOL, BR, BRI, BROCK, BSM, BSRC, BTNC, BTW, BUI, BVG, CCET, CCP, CEYE, CGD, CH, CHARAN, CHASE, CHAYO, CHG, CHIC, CHO, CI, CITY, CIVIL, CK, CKP, CMAN, CMO, CMR, CNT, COCOCO, COLOR, COMAN, CPANEL, CPH, CPR, CPT, CRANE, CRD, CREDIT, CSP, CSR, CSS, CTW, CWT, D, DCON, DDD, DHOUSE, DITTO, DOD, DPAINT, DTCENT, DTICI, DV8, EASON, ECL, EE, EFORL, EMC, ETL, EURO, EVER, F&D, FANCY, FE, FLOYD, FMT, FN, FORTH, FTI, FVC, GABLE, GENCO, GFC, GIFT, GL, GLAND, GLOCON, GLORY, GRAMMY, GRAND, GSC, GTB, GTV, GYT, HEALTH, HFT, HL, HPT, HTECH, HUMAN, HYDRO, I2, IFEC, IIG, IMH, IND, INGRS, INSET, IP, IRC, IRCP, IT, ITD, ITNS, ITTHI, JAK, JCK, JCKH, JCT, JDF, JPARK, JSP, JUBILE, K, KAMART, KC, KCG, KCM, KDH, KEX, KIAT, KISS, KJL, KK, KKC, KLINIQ, KOOL, KTIS, KTMS, KUMWEL, KUN, KWC, KWI, KWM, KYE, LALIN, LDC, LEE, LIT, LOXLEY, LPH, LST, MANRIN, MASTER, MATI, MCA, M-CHAI, MCS, MDX, MEB, MEGA, METCO, MGC, MGI, MGT, MICRO, MIDA, MJD, MK, ML, MORE, MOSHI, MTW, MUD, MVP, NAM, NAT, NC, NCH, NCL, NDR, NETBAY, NEW, NEWS, NFC, NL, NNCL, NOK, NOVA, NPK, NSL, NTSC, NTV, NUSA, NV, NVD, NYT, OHTL, ONEE, ORN, PACE, PACO, PAF, PANEL, PCC, PEACE, PERM, PF, PHG, PICO, PIN, PJW, PLE, PLT, PMTA, POLAR, PORT, POST, PPM, PRAKIT, PRAPAT, PRECHA, PRI, PRIN, PRO, PROUD, PSG, PSP, PTC, PTL, RAM, RCL, READY, RICHY, RJH, ROCK, ROCTEC, ROH, ROJNA, RP, RPC, RPH, RSP, S, S11, SABUY, SAF, SAFARI, SAFE, SALEE, SAM, SAMART, SAMCO, SAMTEL, SAUCE, SAV, SAWAD, SAWANG, SBNEXT, SCAP, SCGD, SICI, SCL, SCP, SDC, SE, SEAFCO, SECURE, SFT, SGF, SHANG, SHR, SIAM, SICT, SIMAT, SINGER, SINO, SISB, SJWD, SK, SKN, SKY, SLM, SLP, SMART, SMD, SMT, SNNP, SO, SOLAR, SONIC, SPA, SPCG, SPG, SPVI, SQ, SR, SRS, SSC, STANLY, STARK, STC, STEC, STECH, STHAI, STI, STP, STPI, SUC, SUN, SUPER, SUTHA, SVR, SVT, SWC, SYNEX, TACC, TAN, TAPAC, TC, TCC, TCJ, TCOAT, TEAM, TEAMG, TEKA, TFM, TGPRO, TH, THAI, THANA, THE, THG, THMUJ, TIGER, TITLE, TK, TKC, TLI, TM, TMC, TMI, TMW, TNDT, TNH, TNPC, TOA, TPBI, TPCH, TPIPL, TPIPP, TPL, TPOLY, TPP, TPS, TQR, TR, TRC, TRITN, TRP, TRUBB, TRV, TSE, TTI, TTT, TTW, TURTLE, TVH, TVT, TWP, TWZ, TYCN, UAC, UBA, UMI, UMS, UNIQ, UP, UPF, UPOIC, UREKA, UTP, UVAN, VARO, VIBHA, VL, VNG, VPO, VRANDA, WARRIX, WAVE, WELL, WFX, WGE, WIN, WINDOW, WINMED, WINNER, WORK, WORLD, WP, YGG, YONG, ZAA

**Explanations**

Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of November 1, 2023) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.