

Hong Kong

Overweight (no change)

Highlighted Companies

ASM Pacific Technology Ltd
ADD, TP HK\$134.0, HK\$75.8 close

ASM Pacific Technology (ASMP) will benefit from significant semi-self-sufficiency in China due to its solid supplier status and strong customer base. The company should enjoy rising sales for equipment for advanced packaging, driven by automotive, mini LED, IoT and industrials applications.

Will Semiconductor Ltd-A
ADD, TP Rmb345.0, Rmb170.5 close

We expect Will Semiconductor (Will Semi) to continue to gain market share in the handset CMOS image sensor (CIS) and automotive CIS markets, underpinned by its continual sophisticated high-end new product launches and domestic supplier advantage.

Xiaomi Corporation
ADD, TP HK\$27.50, HK\$12.36 close

We think Xiaomi Corporation will continue to gain global smartphone market share in 2022F and 2023F on rapid overseas shipment growth, as well as the monetisation of its Mi user interface (MIUI) ecosystem

Summary Valuation Metrics

P/E (x)	Dec-22F	Dec-23F	Dec-24F
ASM Pacific Technology Ltd	8.66	7.85	7.66
Will Semiconductor Ltd-A	30.24	24.69	20.98
Xiaomi Corporation	9.23	7.80	7.11

P/BV (x)	Dec-22F	Dec-23F	Dec-24F
ASM Pacific Technology Ltd	1.98	1.76	1.59
Will Semiconductor Ltd-A	7.51	5.91	4.73
Xiaomi Corporation	1.98	1.59	1.33

Dividend Yield	Dec-22F	Dec-23F	Dec-24F
ASM Pacific Technology Ltd	5.78%	6.37%	6.52%
Will Semiconductor Ltd-A	0.33%	0.41%	0.48%
Xiaomi Corporation	0.00%	0.00%	0.00%

Technology - Handsets

Tech & EV Corporate Day key takeaways

- Key takeaway from CGS-CIMB Tech & EV Conference: strong China smartphone industry recovery in 2H22F, despite weak 1H22F sales.
- Automotive applications will be the key growth driver in FY22F, on relative weak smartphone outlook in 1H22, no thanks to Omicron outbreak in China.
- Maintain Overweight on China smartphone sector on better 2H22F outlook.

Tech & EV Corporate Day takeaway on smartphone space

We hosted CGS-CIMB Tech & EV Virtual Conference 2022 on 7-8 Apr. We had 26 companies, including Will Semiconductor (Will Semi, 603501 CH, Add), Xiaomi (1810 HK, Add) and ASMP (522 HK, Add), joining the event. We had over 280 investors across the region participating in over 600 meetings during the event.

Handset market to remain weak in 1H22F but to strengthen in 2H22F

Handset shipments remained weak in 1Q22 due to: 1) persistent chip shortages, 2) Omicron outbreak in China, and 3) lack of new model launches. Will Semi expects its handset smartphone shipments to improve in 3Q22F as domestic supply chain improves and China smartphone sales recover. Will Semi expects handset spec-upgrades to accelerate in 2H22F on sustainable megapixel migration in the mid-to-high-end 5G phone segment and declining component costs, while Xiaomi expects solid smartphone shipment growth of 10%+ in 2022F, led by the premium segment, Southeast Asia, and the EU and LATAM markets, and easing of chip shortages. Overall, the smartphone industry should see strong recovery in 2H22F, on the back of easing chip shortages and new wave of new models launches.

Automotive segment to become key growth driver in FY22F

Will Semi and ASMP expect strong demand from automotive applications in 2022-23F due to fast-growing advanced driver-assistance system (ADAS) development and rising shipment among Chinese EV makers. Will Semi expects handset CIS volume shipment to remain flattish in FY22F on slow spec-upgrades but automotive CIS to see strong shipment growth (over 30% yoy), underpinned by sustainable market share gain in the supply chain for global tier-1 automakers. ASMP believes that automotive electrification will be its multi-year growth driver, given that the company is able to provide comprehensive solutions, including surface mount technology (SMT), advanced packaging (AP), CIS, advanced display and power module solutions. Xiaomi said the company has spent over Rmb10bn in the past 18 months building up its R&D team with over 1,000 engineers and investing in over 60 EV-related companies in China. Xiaomi said that it will be very disciplined with its EV spending (below Rmb4.5bn p.a.) and expects to launch its first smart EV in 2024F.

Reiterate Overweight on China smartphone sector

We maintain Overweight on the China smartphone sector as we believe Chinese handset brands' shipment growth in 2022F and 2023F remains intact (Fig 1), despite poor China smartphone sales in 1H22F. We also expect handset spec-upgrades to accelerate in 2H22F and onwards, underpinned by improving supply chain constraints and declining component costs. Our sector top picks are Will Semi, Xiaomi and Sunny Optical (2382 HK, Add). We Add Xiaomi to our conviction buy list due to its stable smartphone shipment outlook and enhanced profitability in its Internet services business. We remove Sunny Optical from conviction buy due to the short-term headwinds in smartphones, although we are very positive on its market position in the vehicle camera industry.

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Figure 1: Top 5 handset brands' shipments (2017 to 2023F)

Smartphone shipments - global							
No. of units (million)	2017	2018	2019	2020	2,021	2022F	2023F
Xiaomi	96	119	125	145	190	218	255
Opportunity #	121	119	117	112	144	163	182
Vivo	101	102	114	109	131	148	172
Samsung	318	292	297	256	273	295	280
Apple	216	206	196	201	238	247	240
China top-3 (XOV)	317	340	355	366	465	529	609
yoy change (%)							
Xiaomi	55%	24%	5%	17%	31%	14%	17%
Opportunity #	30%	-1%	-2%	-4%	28%	14%	12%
Vivo	40%	2%	11%	-5%	21%	13%	16%
Samsung	3%	-8%	2%	-14%	7%	8%	-5%
Apple	0%	-4%	-5%	3%	18%	4%	-3%
China top-3 (XOV)	40%	7%	4%	3%	27%	14%	15%

SOURCES: CGS-CIMB RESEARCH ESTIMATE, COUNTERPOINT

Tech & EV Corporate Day key takeaway

ASM Pacific Technology's (ASMPT) meetings' key takeaway >

- Management did not provide guidance for FY22F revenue. It believes ASMPT will outpace the industry growth rate on strong Chinese customer demand. Industry surveyors forecast a 4% yoy revenue growth in packaging and semi in 2022F for ASMPT.
- Management expects AP to be the key earnings growth driver in FY22-24F, on strong demand from downstream applications for automotive, consumer electronic and industrials
- ASMPT was the global leader in thermo-compression bonding (TCB) tools and shipped 250 units in FY21. Management expects robust TCB revenue growth in FY22F, driven by high performance computers (HPC) and high bandwidth memory. ASMPT also has a partnership with EVG, an Australian company, to develop hybrid bonder solutions.
- Management believes automotive electrification will be a multi-year growth driver for ASMPT. ASMPT provides comprehensive solutions to the automotive market, including SMT, AP, CIS, advanced display, power module solutions etc., from wire bonding/die bonding, laser dicing/grooving, TCB and SMT machines.
- ASMPT is the first mover in the mini LED/micro LED industry and had 17 mini LED customers in FY21. Management believes ASMPT will benefit from demand for LED TVs and big-sized outdoor video wall and gaming consoles, as ASMPT is able to provide the best-in-class tools for its customers.
- Its CIS business softened in FY21 due to: 1) chip shortages and 2) downgrade in camera specifications on higher component costs in 5G chips. Management said active alignment machine demand to remain strong for new camera features in FY22F. ASMPT bought US auto sensor equipment maker Automation Engineering, Inc (AEi) in Sep 2021 and expects to enter the auto CIS, drone and surveillance markets.

Will Semiconductor's meetings' key takeaway >

- Management believes automotive CIS would lead its FY22F earnings growth, offset by weak handset CIS demand.
- **Smartphone:** In view of weak smartphone demand in the short term due to persistent chip shortages, Will Semi will focus on the high-end segment to drive handset CIS ASPs and margins. However, the company is likely to push down the price for its old products in the mid-range segment to drive handset CIS volume. Overall, the company expects stronger customer demand in 2H22F due to customers' new model launches.
- **Automotive:** Management believes automotive CIS will be the key earnings growth driver for the company in FY22F and FY23F, due to accelerating of the automotive camera market, thanks to ADAS development and strong Chinese EV automakers' shipments. Will Semi continues to maintain good relationships with top-tier European automakers, while it gained very good traction in the US and China from recent design wins. Management expects very stable demand growth in the next 5 years in the automotive CIS market, underpinned by its solutions-based and advanced technologies. Will Semi has entered the supplier chain for Chinese EV makers, although the volume is still small in FY21.
- **Touch/Display Integration (TDDI) business:** Will Semiconductor will start to provide OLED drivers for smartphones and expects to deliver

better-than-industry growth rate as it is gaining market share in the domestic supply chain for Chinese handset brands.

- **AR/VR CIS:** Will Semi is very excited with its AR/VR development and expects it to become the next growth driver for the company in FY23F and onwards, thanks to the rapidly growing AR/VR market. Will Semi has been increasing R&D expenses and leveraging its existing expertise to develop new products.

Xiaomi Corporation's meetings' key takeaway >

- Xiaomi's management remains confident of achieving a 10%+ yoy smartphone shipment growth in 2022F, underpinned by continual market share gain in Southeast Asia, Western Europe and LATAM markets, as well as overseas premium segment. However, management reveals that smartphone GPM could come down slightly to c.10-12% in FY22F (vs. c.13% in FY21) due to an increase in marketing and promotional expenses. Management guides for slow shipment growth in 1H22F due to weak smartphone sales in China on the Omicron outbreak and chip shortages, but it expects strong shipment growth in 2H22F, supported by the new wave of new model launches and easing chip shortages.
- Management said Xiaomi will continue to increase its R&D expenses for the premium segment to penetrate the China and overseas premium markets. Management believes that the smartphone ASP's upward trend would be sustainable on rising contribution from the premium segment. It also expects stronger premium phone sales to drive APRU growth in Internet services as premium users always spend more screen time and money on pre-installed apps compared with low-end smartphone users.
- Management expects its Internet services segment to achieve 20%+ revenue growth and maintain 70%+ GPM in FY22F, driven by high-margin advertising businesses, such as pre-installed apps and browser services, as well as the fast-growing premium user segment.
- Management emphasised that Xiaomi will be very discipline in its spending on EV development; it guides for FY22F EV R&D to be approx. Rmb3.5bn-4.5bn. Xiaomi has spent over Rmb10bn in the past 18 months to set up an R&D team with over 1,000 engineers and acquire more than 60 EV-related companies for its domestic EV supply chain. Management said Xiaomi targets to launch its first EV in 2024F.

Figure 2: Peer comparison

Company	Bloomberg		Price	Target Price	Market	P/E (x)		3-year		P/BV (x)		Recurring ROE (%)		EV/EBITDA (x)		Dividend Yield (%)	
	Ticker	Recom.	(local curr)	(local curr)	(US\$ m)	CY21F	CY22F	CY23F	CAGR (%)	CY21F	CY22F	CY21F	CY22F	CY21F	CY22F	CY21F	CY22F
Handset vendors																	
Lenovo Group	992 HK	Add	8.12	13.78	12,474	7.9	6.1	5.5	38.5%	3.2	2.4	42.7%	44.5%	3.2	2.2	5.1%	5.8%
Xiaomi	1810 HK	Add	12.36	27.00	39,388	11.7	10.8	8.7	30.5%	1.8	2.0	16.2%	17.6%	9.5	6.6	0.0%	0.0%
Samsung Electronics	005930 KS	Add	67,900	106,000	330,894	12.7	9.9	n.a.	n.a.	1.5	1.3	12.5%	14.4%	4.4	3.4	2.9%	n.a.
Apple	AAPL US	Not Rated	170.09	N/A	2,775,774	30.5	27.7	25.9	22.4%	47.2	37.0	143.7%	142.3%	22.5	20.4	0.5%	0.5%
Average						15.7	13.6	13.4	30.5%	13.4	10.7	53.8%	54.7%	9.9	8.1	2.1%	2.1%
Handset components - Acoustic																	
AAC Technologies	2018 HK	Reduce	16.72	16.73	2,578	12.1	13.6	9.8	6.3%	0.8	1.0	6.2%	6.4%	5.2	6.0	1.2%	1.1%
GoerTek Inc	002241 CH	Not Rated	32.12	N/A	17,227	24.8	19.3	15.3	36.8%	4.4	3.4	18.9%	18.2%	15.3	12.2	0.7%	0.8%
Average						18.4	16.4	12.5	21.5%	2.6	2.2	12.6%	12.3%	10.3	9.1	0.9%	1.0%
Handset components - Casings / EMS																	
BYD Electronic	285 HK	Not Rated	15.00	N/A	4,312	9.4	9.0	6.4	-7.7%	1.1	1.0	12.1%	11.9%	5.4	4.8	1.1%	1.3%
Tongda Group	698 HK	Hold	0.14	0.28	170	2.6	2.6	2.1	6.3%	0.1	0.1	5.6%	6.5%	2.2	1.7	5.8%	5.7%
Lens Technology	300433 CH	Add	10.58	33.55	8,268	9.9	7.8	6.5	n.a.	1.0	1.0	11.1%	12.6%	5.5	4.4	2.5%	3.2%
Luxshare Precision	002475 CH	Not Rated	27.85	N/A	30,973	25.6	18.6	14.7	22.6%	5.5	4.4	22.4%	24.9%	17.0	12.1	0.5%	0.5%
Shezhen Everwin in Precision	300115 CH	Not Rated	8.72	N/A	1,644	37.9	9.5	6.8	30.8%	1.6	1.4	0.7%	13.7%	N/A	N/A	0.5%	1.5%
Nanofilm Technologies	NANO SP	Add	2.83	3.50	1,365	30.0	23.1	18.9	17.8%	4.3	3.8	14.5%	17.6%	18.9	15.3	0.7%	1.1%
Catcher Technology	2474 TT	Not Rated	144.50	N/A	3,626	14.5	12.8	11.9	-20.7%	0.7	0.7	5.2%	5.5%	N/A	1.1	7.2%	7.1%
Jabil	JBL US	Not Rated	57.52	N/A	8,123	10.4	7.9	7.5	40.4%	3.9	3.2	41.7%	44.3%	4.5	3.8	0.6%	0.6%
Average						17.5	11.4	9.4	12.8%	2.3	1.9	14.2%	17.1%	8.9	6.2	2.4%	2.6%
Handset components - Displays																	
BOE Technology	000725 CH	Add	4.08	8.50	24,490	7.1	9.0	8.9	50.0%	1.3	1.2	18.1%	13.5%	4.6	4.9	7.0%	4.4%
Tianma Microelectronics	000050 CH	Add	9.92	20.26	3,831	11.8	9.3	8.1	16.8%	0.7	0.6	5.9%	7.1%	7.4	6.4	0.8%	1.1%
LG Display	034220 KS	Reduce	18,500	18,000	5,404	4.8	9.5	7.6	n.a.	0.5	0.5	11.3%	5.2%	1.9	2.2	0.0%	0.0%
Average						7.9	9.2	8.2	33.4%	0.8	0.8	11.8%	8.6%	4.6	4.5	2.6%	1.9%
Handset components - Opticals																	
Cowell Holdings	1415 HK	Add	7.28	12.05	775	11.8	10.9	8.3	14.4%	2.5	1.9	23.5%	19.7%	6.8	6.8	0.0%	0.0%
Q Technology	1478 HK	Add	5.51	10.56	833	6.0	5.9	5.1	9.6%	1.1	1.0	20.5%	17.6%	3.0	2.3	0.0%	0.0%
Sunny Optical Tech	2382 HK	Add	106.50	177.20	14,902	19.0	17.1	13.1	17.0%	4.4	3.8	26.3%	25.0%	12.0	9.5	1.1%	1.2%
O-Film Tech	002456 CH	Not Rated	6.34	N/A	3,243	13.3	18.2	16.7	6.4%	2.0	2.0	1.9%	4.1%	15.0	9.4	0.0%	0.4%
Will Semiconductor	603501 CH	Add	170.50	345.00	23,492	31.4	30.2	24.7	34.0%	9.4	7.5	34.1%	27.6%	24.2	20.7	0.3%	0.3%
Largan Precision	3008 TT	Not Rated	1,610	N/A	7,426	11.5	11.4	10.7	-7.0%	1.5	1.4	13.5%	12.5%	3.8	3.8	4.8%	4.1%
LG Innotek	011070 KS	Add	368,500	360,000	7,119	10.3	9.9	9.0	n.a.	2.6	2.1	29.3%	23.5%	4.9	4.8	0.7%	0.7%
SEMCO	009150 KS	Add	156,000	195,000	9,512	10.9	9.9	9.1	n.a.	1.8	1.5	17.7%	16.6%	5.9	4.8	0.9%	0.9%
Average						14.3	14.2	12.1	12.4%	3.2	2.6	20.9%	18.3%	9.4	7.8	1.0%	0.9%
Handset components - others																	
Avary Holding Shenzhen	002938 CH	Not Rated	27.25	N/A	9,931	18.4	15.3	13.7	14.9%	2.7	2.4	14.0%	15.0%	10.8	8.4	2.0%	1.3%
Shenzhen Goodix Technology	603160 CH	Reduce	63.67	92.00	4,589	29.3	23.6	20.3	n.a.	3.2	2.7	11.4%	12.5%	37.3	23.5	0.4%	0.5%
Sunwoda Electronics	300207 CH	Not Rated	23.61	N/A	6,371	39.6	21.6	16.4	47.0%	4.8	4.1	12.0%	17.5%	18.9	12.9	0.3%	0.4%
Universal Scientific Industrial	601231 CH	Add	11.18	21.25	3,883	13.1	11.1	9.5	n.a.	1.9	1.8	14.6%	16.4%	8.8	6.7	4.5%	5.4%
Delta Electronics Inc	2308 TT	Not Rated	250.50	N/A	22,373	23.8	21.7	17.8	12.6%	4.1	3.8	16.7%	17.0%	13.7	12.2	2.4%	2.5%
Pegatron	4938 TT	Not Rated	70.80	N/A	6,497	10.3	10.3	9.7	-4.6%	1.1	1.1	10.6%	10.2%	6.6	5.4	6.3%	6.8%
Zhen Ding Technology	4958 TT	Not Rated	106.00	N/A	3,452	10.8	9.4	8.5	11.6%	1.3	1.1	10.7%	11.2%	4.8	4.1	4.4%	5.1%
Average						20.8	16.1	13.7	16.3%	2.7	2.4	12.9%	14.3%	14.4	10.5	2.9%	3.2%

SOURCES: CGS-CIMB RESEARCH, BLOOMBERG (PRICE AS AT 11 APRIL 2022)

Environmental, Social and Governance in China smartphone sector

ESG in a nutshell



We are of the view that the China smartphone sector has medium ESG risk. Based on the combined ESG scores by Refinitiv, the companies under our coverage had 2 A- to A+, 3 B- to B+, 3 C- to C+, and 1 D- to D+ ratings as of 2020 (Fig 3). Handset players and component manufacturers face potential ESG challenges due to: 1) their large supply chain across multiple jurisdictions, 2) government scrutiny in the technology sector, and 3) geopolitical conflicts in the technology sector. Firstly, component manufacturers: a) rely on raw material supply globally and manufacture their products not only in China but also in India, Vietnam, etc, and b) ship smartphones, artificial intelligence of things (AIoT) and other lifestyle products and Internet services, across the globe. Therefore, ensuring good practices in environmental protection, business ethics and labour practices in each jurisdiction is a potential challenge. Secondly, Beijing has intensified the scrutiny of the technology sector over security concerns. Global handset manufacturers, for example Xiaomi (1810 HK, Add), ought to stay alert on antitrust, data privacy and information security of users, in our view. Thirdly, handset players and component manufacturers are also exposed to geopolitical risk. Among the companies under our coverage, for example, Xiaomi was embroiled in geopolitical conflicts between the US and China.

Having said that, we believe handset players and component manufacturers are on the right track towards social responsibility. Leading handset OEMs, namely Oppo, Vivo and Xiaomi, made donations for social causes across diverse jurisdictions in 2021. Oppo donated 1,000 oxygenators and 500 breathing machines worth c.US\$0.57m to support Covid-19 relief measures in India. Vivo also donated c.US\$0.27m to address oxygen machine in the country. Lei Jun, the co-founder of Xiaomi, donated c.US\$ 2.2bn of shares to philanthropy to support common prosperity in China.

Keep your eye on

Xiaomi has issued US\$400m worth of 4.1% senior “green bonds” due 2051 (debt stock code: 40764), on top of US\$800m worth of 2.875% senior bonds due 2031 (debt stock code: 40763), as of Jul 2021. The proceeds from the green bonds will be used for environmental projects under the “Green Finance Framework” of the company.

Implications

In our view, green bonds are surging in China. Green bonds are a safe source of capital raising for companies amid Beijing’s initiative to reduce massive corporate debts because companies issuing local green bonds are allowed to use up to 50% of the proceeds to repay loans or for working capital. On the back of Beijing’s commitment to carbon neutrality by 2060, it is not surprising that Chinese green bonds set a record in 2021, in which non-financial corporate entities played a significant role (over 55%).

ESG highlights

Our top ESG picks are AAC and Sunny Optical, both of which had combined ESG scores by Refinitiv of A- in 2020. Note that A- is the highest combined ESG score among the handset players under our coverage, as of 2020.

Implications

H-shares tend to receive higher scores than A-shares because HKEX, unlike the Mainland Chinese counterpart, enforces a mandatory ESG reporting requirement under its ESG Reporting Guide. Having said that, in our view, A-shares will catch up in the next few years as: 1) the China Securities Regulatory Commission (CSRC) ramps up disclosure requirements, and 2) investors pressure companies to comply with ESG requirements.

Trends

Enhancing service quality in technology for the disabled is gaining momentum in China, as the 14th Five Year Plan (2021-25) guarantees equal rights for the disabled. The plan was devised to achieve a noticeable progress in common prosperity for the disabled by 2035.

Implications

In our view, a wide range of changes are expected to occur, especially in social security, labour policy, digital services, and so on. When it comes to handsets, the pace of implementing inclusive design will likely be accelerated. Among the companies we cover, Xiaomi is leading in this area. Xiaomi’s MIUI enhances accessibility for visually disabled users, thanks to the Haptic Reproduction User Interface (UI). In our view, other Android-based handset UIs will follow suit going forward.

SOURCES: CGS-CIMB RESEARCH, REFINITIV

Figure 3: ESG ratings of companies under our coverage in China's smartphone sector

Company	Tickers	Combined Scores			"Environmental"			"Social"			"Governance"		
		2018	2019	2020	2018	2019	2020	2018	2019	2020	2018	2019	2020
AAC Technologies Holdings Inc	2018 HK	A-	A-	A-	B	B	B	A	A	A	A	A	A
BOE Technology Group Co.Ltd	000725 CH	B-	B-	B	B+	B+	A-	B	B	A-	C-	C-	C-
Cowell e Holdings Inc	1415 HK	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lens Technology Co.Ltd	300433 CH	C-	C-	C	C	C	C+	C	C-	C	D+	C-	C
Q Technology (Group) Company Ltd	1478 HK	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Shenzhen Goodix Technology Co.Ltd	603160 CH	NA	D	D	NA	D-	D-	NA	D-	D-	NA	C-	C-
Sunny Optical Technology Co.Ltd	2382 HK	B-	B	A-	B-	B	A-	C-	C+	B+	A-	A	A-
Tianma Microelectronics Co. Ltd	000050 CH	B-	B-	B	B	B	B+	B	B-	B-	B-	B-	B-
Tongda Group Holdings Ltd	698 HK	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Universal scientific Industrial Shanghai Co.Ltd	601231 CH	NA	B	B+	NA	A-	A-	NA	B+	A	NA	D+	C-
Will Semiconductor Co. Ltd	603501 CH	NA	D	C	NA	D-	D+	NA	D	C-	NA	C	B-
Xiaomi Corporation	1810 HK	D+	C	C	C	C+	C+	D	C	C	D+	D+	C-
Number of Covered Stocks Scored between (inclusive)													
"A-" to "A+"		1	1	2	0	1	3	1	1	3	2	2	2
"B-" to "B+"		3	4	3	4	4	2	2	3	2	1	1	2
"C-" to "C+"		1	2	3	2	2	2	2	3	3	1	4	5
"D-" to "D+"		1	2	1	0	2	2	1	2	1	2	2	0

SOURCES: CGS-CIMB RESEARCH, REFINITIV

Figure 4: Chinese green securities by issuer (2016-21E), estimates by S&P Global

Mix %	2016	2017	2018	2019	2020	2021E
Financial Corporates	53.9%	52.9%	62.1%	46.4%	16.9%	24.1%
Government-Backed Entities	11.6%	14.7%	14.3%	17.8%	48.7%	12.6%
Non-Financial Corporates	10.1%	17.1%	20.1%	30.7%	26.0%	55.1%
Development Bank	24.5%	15.4%	2.8%	5.1%	3.3%	8.1%
Others	0.0%	0.0%	0.7%	0.1%	5.1%	0.1%

SOURCES: CGS-CIMB RESEARCH, CLIMATE BONDS INITIATIVE, S&P GLOBAL

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Distribution of stock ratings and investment banking clients for quarter ended on 31 December 2021		
619 companies under coverage for quarter ended on 31 December 2021		
	Rating Distribution (%)	Investment Banking clients (%)
Add	71.1%	1.5%
Hold	21.8%	0.0%
Reduce	7.1%	0.0%

Corporate Governance Report of Thai Listed Companies (CGR). CG Rating by the Thai Institute of Directors Association (Thai IOD) in 2021, Anti-Corruption 2021

ADVANC – Excellent, Certified, **AMATA** – Excellent, Certified, **ANAN** – Excellent, n/a, **AOT** – Excellent, n/a, **AP** – Excellent, Certified, **ASP** – Excellent,

n/a, **AWC** – Excellent, Declared, **AU** – Good, n/a, **BAM** – Very Good, Certified, **BAY** – Excellent, Certified, **BBL** – Excellent, Certified, **BCH** – Very Good, Certified, **BCP** - Excellent, Certified, **BCPG** – Excellent, Certified, **BDMS** – Excellent, n/a, **BEAUTY** – Good, n/a, **BEM** – Excellent, n/a **BH** - Good, n/a, **BJC** – Very Good, n/a, **BLA** – Very Good, Certified, **BTS** - Excellent, Certified, **CBG** – Very Good, n/a, **CCET** – n/a, n/a, **CENTEL** – Excellent, Certified, **CHAYO** – Very Good, n/a, **CHG** – Very Good, n/a, **CK** – Excellent, n/a, **COM7** – Excellent, Certified, **CPALL** – Excellent, Certified, **CPF** – Excellent, Certified, **CPN** - Excellent, Certified, **CPNREIT** – n/a, n/a, **CRC** – Excellent, Declared, **DELTA** - Excellent, Certified, **DDD** – Excellent, n/a, **DIF** – n/a, n/a, **DOHOME** – Very Good, Declared, **DREIT** – n/a, n/a, **DTAC** – Excellent, Certified, **ECL** – Excellent, Certified, **EGCO** - Excellent, Certified, **EPG** – Excellent, Certified, **ERW** – Very Good, Certified, **GFPT** - Excellent, Certified, **GGC** – Excellent, Certified, **GLOBAL** – Excellent, n/a, **HANA** - Excellent, Certified, **HMPRO** - Excellent, Certified, **HUMAN** – Good, n/a, **ICHI** – Excellent, Certified, **III** – Excellent, Declared, **INTUCH** - Excellent, Certified, **IRPC** – Excellent, Certified, **ITD** – Very Good, n/a, **IVL** - Excellent, Certified, **JASIF** – n/a, n/a, **JKN** – n/a, Certified, **JMT** – Very Good, n/a, **KBANK** - Excellent, Certified, **KCE** - Excellent, Certified, **KEX** – Very Good, Declared, **KKP** – Excellent, Certified, **KSL** – Excellent, Certified, **KTB** - Excellent, Certified, **KTC** – Excellent, Certified, **LH** - Excellent, n/a, **LPN** – Excellent, Certified, **M** – Very Good, Certified, **MAKRO** – Excellent, Certified, **MC** – Excellent, Certified, **MEGA** – Very Good, n/a, **MINT** - Excellent, Certified, **MTC** – Excellent, Certified, **NETBAY** – Very Good, n/a, **NRF** – Very Good, Declared, **OR** – Excellent, n/a, **ORI** – Excellent, Certified, **OSP** – Excellent, n/a, **PLANB** – Excellent, Certified, **PRINC** – Very Good, Certified, **PR9** – Excellent, Declared, **PSH** – Excellent, Certified, **PTT** - Excellent, Certified, **PTTEP** - Excellent, n/a, **PTTGC** - Excellent, Certified, **QH** – Excellent, Certified, **RAM** – n/a, n/a, **RBF** – Very Good, n/a, **RS** – Excellent, Declared, **RSP** – Good, n/a, **S** – Excellent, n/a, **SAK** – Very Good, Declared, **SAPPE** – Very Good, Certified, **SAWAD** – Very Good, n/a, **SCB** - Excellent, Certified, **SCC** – Excellent, Certified, **SCGP** – Excellent, Declared, **SECURE** – n/a, n/a, **SHR** – Excellent, n/a, **SIRI** – Excellent, Certified, **SPA** – Very Good, n/a, **SPALI** - Excellent, Certified, **SPRC** – Excellent, Certified, **SSP** - Good, Certified, **STEC** – Excellent, n/a, **SVI** – Excellent, Certified, **SYNEX** – Very Good, Certified, **TCAP** – Excellent, Certified, **THANI** – Excellent, Certified, **TIDLOR** – n/a, Certified **TISCO** - Excellent, Certified, **TKN** – Very Good, n/a, **TOP** - Excellent, Certified, **TRUE** – Excellent, Certified, **TTB** - Excellent, Certified, **TU** – Excellent, Certified, **TVO** – Excellent, Certified, **VGI** – Excellent, Certified, **WHA** – Excellent, Certified, **WHART** – n/a, n/a, **WICE** – Excellent, Certified, **WORK** – Good, n/a.

- CG Score 2021 from Thai Institute of Directors Association (IOD)

- Companies participating in Thailand's Private Sector Collective Action Coalition Against Corruption programme (Thai CAC) under Thai Institute of Directors (as of August 5, 2021) are categorised into: companies that have declared their intention to join CAC, and companies certified by CAC.

Recommendation Framework

Stock Ratings

Definition:

Add	The stock's total return is expected to exceed 10% over the next 12 months.
Hold	The stock's total return is expected to be between 0% and positive 10% over the next 12 months.
Reduce	The stock's total return is expected to fall below 0% or more over the next 12 months.

The total expected return of a stock is defined as the sum of the: (i) percentage difference between the target price and the current price and (ii) the forward net dividend yields of the stock. Stock price targets have an investment horizon of 12 months.

Sector Ratings

Definition:

Overweight	An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation.
Neutral	A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation.
Underweight	An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation.

Country Ratings

Definition:

Overweight	An Overweight rating means investors should be positioned with an above-market weight in this country relative to benchmark.
Neutral	A Neutral rating means investors should be positioned with a neutral weight in this country relative to benchmark.
Underweight	An Underweight rating means investors should be positioned with a below-market weight in this country relative to benchmark.