

Q-Tech (1478 HK)

1H23 profit warning; Maintain BUY on 2H gradual recovery

We believe Q-Tech's 1H23 profit warning is within market expectation given 1H23 CCM shipment decline of 20% YoY, while 60-80% earnings decline is below our/market estimates, due to lower GPM and higher R&D expense for non-smartphone business. Looking into 2H23E, we are positive on supply chain restocking for demand recovery and product launches in 3Q23E, and we believe Q-tech is set to benefit from spec upgrade and industry recovery in 2H23E. We lowered our FY23-25E EPS by 16-31% to factor in 1H23 results and improving outlook in 2H23E. Trading at 8.7x/5.5x FY23/24E P/E, we think the stock is attractive, considering the worst is behind with business recovery in 2H23E. Maintain BUY with new TP of HK\$3.59, based on same 10x FY23E P/E.

■ **1H23 profit warning on industry weakness and lower GPM.** Q-Tech preannounced 1H23 net profit decline of 60-80% YoY (RMB33.1-66.2mn), below our/consensus expectations, mainly due to: 1) CCM shipment decline on weak smartphone demand; 2) GPM pressure on lower UTR and unfavourable FX; 3) higher R&D expense for auto CCM and domain controllers' business. 1H23 mobile CCM shipment dropped 21% YoY, driven by 30% YoY decline in below 32MP CCM, partly offset by 3% YoY growth in 32MP+ CCM shipment. Overall, we estimate revenue/net profit decline of 18%/65% YoY in 1H23.

■ **2H23E Outlook: Expect CCM ASP/margin recovery on spec upgrade and better utilization.** We believe the worst is likely over for Chinese smartphone market and supply chain will start restocking for Android product launches in 3Q23E. In addition, we are positive on spec upgrade trend in 2H23E (larger resolution, OIS and periscope), driving ASP/GPM recovery. As such, we expect higher mix of 32MP+ CCM of 37% (vs. 28.5% in FY22) and mobile CCM revenue growth of 13.8% YoY in 2H23E driven by spec upgrade across high/mid/low-end model. We also expect GPM to improve to 8.5% in 2H23E (vs. 5.5% in 1H23) given rising utilization and less FX headwinds.

■ **IoT and auto CCM the bright spots.** Despite sluggish smartphone demand, we are positive on non-smartphone CCM (IoT and auto) to drive growth in 2H23/FY24E. We expect non-smartphone revenue in FY23E to grow 108% YoY (vs. mgmt. guidance of 50%+) given IoT products (DJI drone, smart watch and sweeping robots) shipment ramp-up and strong auto CCM demand.

■ **Worst is likely behind; Maintain BUY with new TP of HK\$3.59.** We believe Q-tech will benefit from inventory restocking and spec upgrade across all models in 3Q23E. The stock is currently trading at 8.7x/5.5x FY23/24E P/E (close to 1-sd below 10-year avg. fwd. P/E), which is attractive in our view. We maintain BUY with new TP of HK\$3.59, based on same 10x FY23E P/E.

Earnings Summary

(YE 31 Dec)	FY21A	FY22A	FY23E	FY24E	FY25E
Revenue (RMB mn)	18,663	13,759	12,985	14,247	17,236
YoY growth (%)	7.3	(26.3)	(5.6)	9.7	21.0
Net profit (RMB mn)	862.8	170.2	352.4	553.5	756.1
EPS (Reported) (RMB)	0.73	0.15	0.30	0.47	0.64
YoY growth (%)	1.8	(80.2)	105.3	57.1	36.6
Consensus EPS (RMB)	0.74	0.15	0.27	0.47	0.65
P/E (x)	15.3	31.4	10.1	6.4	4.7
P/B (x)	2.8	1.1	0.7	0.6	0.6
Yield (%)	0.0	0.0	2.0	3.1	4.3
ROE (%)	20.3	3.6	7.2	10.5	13.0
Net gearing (%)	(0.8)	26.6	31.2	14.1	14.5

Source: Company data, Bloomberg, CMBIGM estimates

BUY (Maintain)

Target Price **HK\$3.59**
 (Previous TP) **HK\$5.20)**
Up/Downside **15.3%**
Current Price **HK\$3.11**

China Technology

Alex NG

(852) 3900 0881
 alexng@cmbi.com.hk

Hanqing LI

lihanqing@cmbi.com.hk

Stock Data

Mkt Cap (HK\$ mn)	3,863.1
Avg 3 mths t/o (HK\$ mn)	3.7
52w High/Low (HK\$)	5.62/2.90
Total Issued Shares (mn)	1185.0

Source: FactSet

Shareholding Structure

HE Ningning	63.6%
Harvest Fund Management Co Ltd	2.7%

Source: HKEx

Share Performance

	Absolute	Relative
1-mth	-3.8%	1.3%
3-mth	-21.4%	-14.7%
6-mth	-36.7%	-27.8%

Source: FactSet

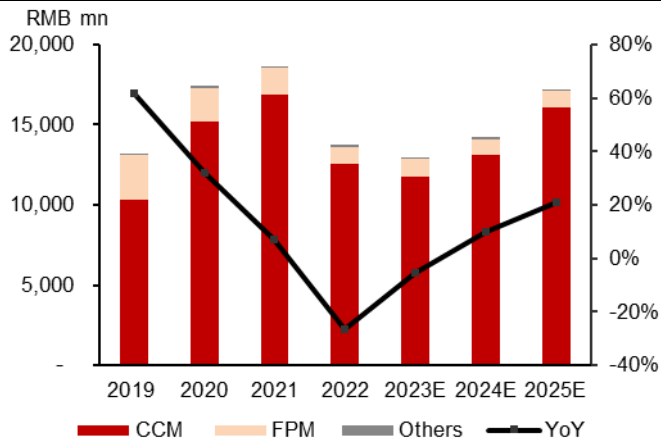
12-mth Price Performance



Source: FactSet

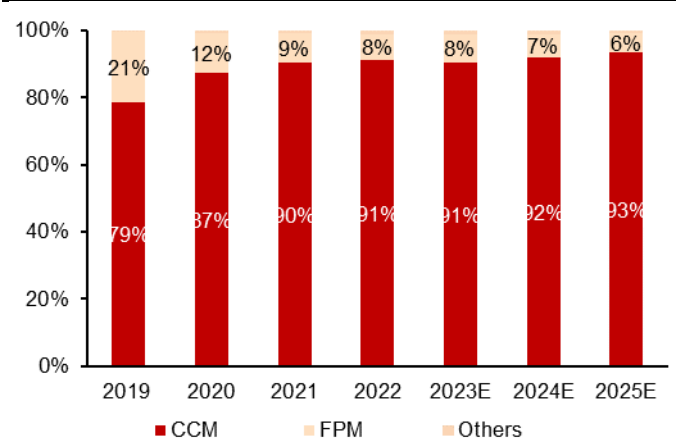
Focus Charts

Figure 1: Revenue growth trend



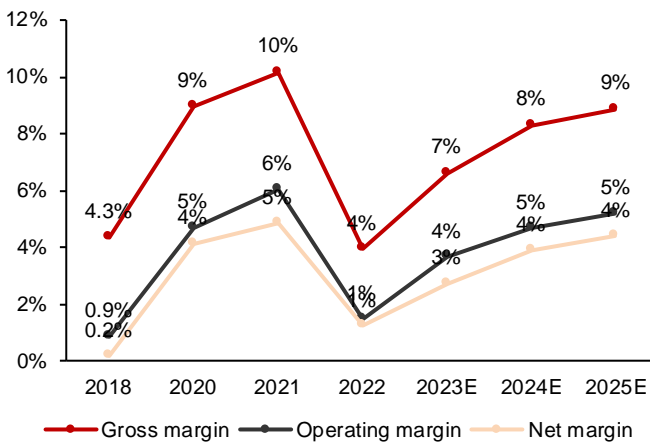
Source: Company data, CMBIGM estimates

Figure 2: Revenue breakdown



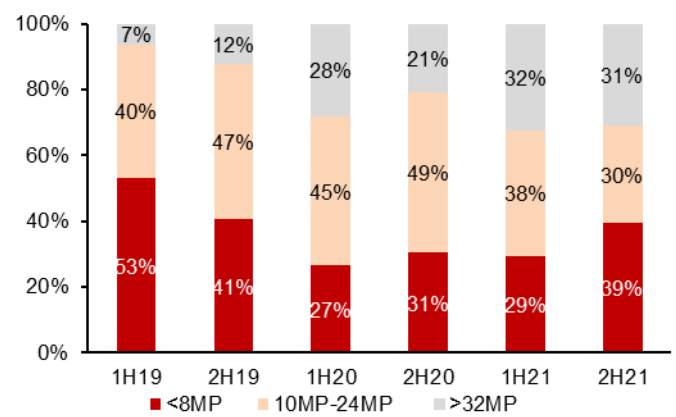
Source: Company data, CMBIGM estimates

Figure 3: Margins trend



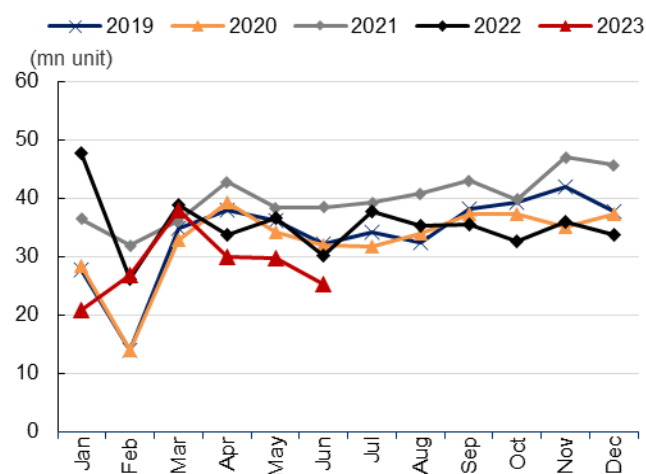
Source: Company data, CMBIGM estimates

Figure 4: CCM shipment mix



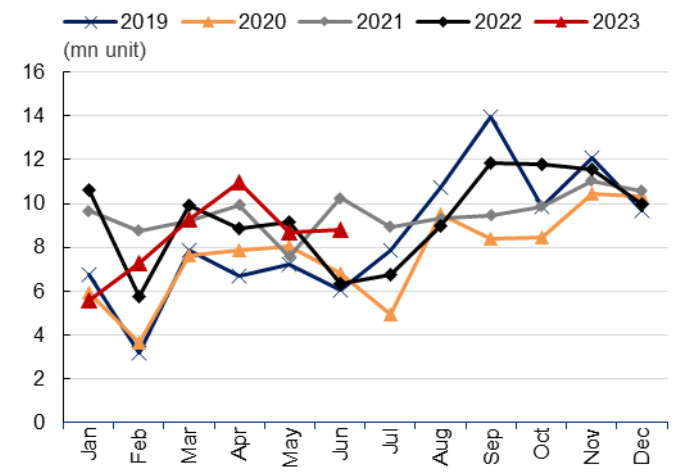
Source: Company data, CMBIGM estimates

Figure 5: CCM monthly shipment



Source: Company data, CMBIGM estimates

Figure 6: FPM monthly shipment



Source: Company data, CMBIGM estimates

Earnings Revision

Figure 7: Earnings revision

(RMB mn)	New			Old			Change (%)		
	FY23E	2024E	2025E	FY23E	FY24E	FY25E	FY23E	FY24E	FY25E
Revenue	12,985	14,247	17,236	15,080	16,658	20,036	-14%	-14%	-14%
Gross profit	861	1,185	1,530	1,180	1,427	1,807	-27%	-17%	-15%
Operating profit	475	665	892	622	811	1,065	-24%	-18%	-16%
Net profit	352	554	756	511	688	905	-31%	-20%	-16%
EPS (RMB)	29.8	46.8	63.9	43.1	58.1	76.4	-31%	-20%	-16%
Gross margin	6.6%	8.3%	8.9%	7.2%	8.6%	9.0%	-0.5 ppt	-0.3 ppt	-0.1 ppt
Operating margin	3.7%	4.7%	5.2%	4.1%	4.9%	5.3%	-0.5 ppt	-0.2 ppt	-0.1 ppt
Net Margin	2.7%	3.9%	4.4%	3.4%	4.1%	4.5%	-0.7 ppt	-0.2 ppt	-0.1 ppt

Source: Company data, CMBIGM estimates

Figure 8: CMBI estimates vs consensus

(RMB mn)	CMBI			Consensus			Diff (%)		
	FY23E	2024E	2025E	FY23E	FY24E	FY25E	FY23E	FY24E	FY25E
Revenue	12,985	14,247	17,236	14,077	15,699	17,786	-8%	-9%	-3%
Gross profit	861	1,185	1,530	874	1,204	1,528	-2%	-2%	0%
Operating profit	475	665	892	354	590	836	34%	13%	7%
Net profit	352	554	756	320	541	768	10%	2%	-2%
EPS (RMB)	29.8	46.8	63.9	27.4	46.9	65.4	9%	0%	-2%
Gross margin	6.6%	8.3%	8.9%	6.2%	7.7%	8.6%	0.4 ppt	0.7 ppt	0.3 ppt
Operating margin	3.7%	4.7%	5.2%	2.5%	3.8%	4.7%	1.1 ppt	0.9 ppt	0.5 ppt
Net Margin	2.7%	3.9%	4.4%	2.3%	3.4%	4.3%	0.4 ppt	0.4 ppt	0.1 ppt

Source: Company data, CMBIGM estimates

Figure 9: P&L forecast

RMB mn	FY20	FY21	FY22	1H23E	2H23E	FY23E	FY24E	FY25E
Revenue	17,400	18,663	13,759	5,792	7,193	12,985	14,247	17,236
...YoY	32.1%	7.3%	-26.3%	-18.4%	7.9%	-5.6%	9.7%	21.0%
Cost of sales	-15,630	-16,901	-13,218	-5,472	-6,653	-12,125	-13,062	-15,706
Gross profit	1,771	1,762	541	320	541	861	1,185	1,530
GPM (%)	10.2%	9.4%	3.9%	5.5%	7.5%	6.6%	8.3%	8.9%
...YoY	50.1%	-0.5%	-69.3%	-14.9%	226.7%	59.0%	37.7%	29.1%
SG&A	-179	-184	-156	-61	-68	-129	-150	-172
...% of rev	-1.0%	-1.0%	-1.1%	-1.1%	-1.0%	-1.0%	-1.1%	-1.0%
R&D	-590	-642	-470	-214	-201	-416	-470	-569
...% of rev	-3.4%	-3.4%	-3.4%	-3.7%	-2.8%	-3.2%	-3.3%	-3.3%
Operating profit	1,046	1,039	204	103	372	475	665	892
OPM (%)	6.0%	5.6%	1.5%	1.8%	5.2%	3.7%	4.7%	5.2%
...YoY	68.9%	-0.7%	-80.4%	-44.1%	1866.6%	133.3%	40.0%	34.2%
Profit of associates.	(23)	(52)	(37)	-10	-5	(15)	20	30
Net profit	840	863	170	57	295	352	554	756
NPM (%)	4.8%	4.6%	1.2%	1.0%	4.1%	2.7%	3.9%	4.4%
...YoY	54.9%	2.7%	-80.3%	-65.4%	6179.8%	107.0%	57.1%	36.6%

Source: Company data, CMBIGM estimates

Figure 10: Revenue breakdown

RMB mn	FY19	FY20	FY21	FY22E	1H23E	2H23E	FY23E	FY24E
CCM Revenue	10,360	15,202	16,875	12,561	5,222	6,538	11,760	13,099
...YoY	65%	47%	11%	-26%	-20%	8%	-6%	11%
Shipment (mn)	406	392	479	424	170	203	373	404
...YoY	54%	-3%	22%	-12%	-20%	-4%	-12%	8%
ASP (Rmb)	25.5	38.7	35.2	29.6	30.7	32.1	31.5	32.4
...YoY	7%	52%	-9%	-16%	1%	12%	6%	3%
FPM Revenue	2,759	2,101	1,675	1,064	528	563	1,091	1,014
...YoY	51%	-24%	-20%	-37%	-4%	10%	3%	-7%
Shipment (mn)	102	92	115	112	51	67	118	123
...YoY	-5%	-10%	25%	-3%	0%	10%	5%	5%
ASP (Rmb)	27.1	22.8	14.6	9.5	10.4	7.0	9.3	8.2
...YoY	58%	-16%	-36%	-35%	-4%	-17%	-3%	-12%
Others	51	97	112	134	42	92	134	134
...YoY	66%	91%	16%	19%	0%	0%	0%	0%
Total	13,170	17,400	18,663	13,759	5,792	7,193	12,985	14,247
...YoY	62%	32%	7%	-26%	-18%	8%	-6%	10%

Source: Company data, CMBIGM estimates

Valuation

Maintain BUY with new TP of HK\$3.59 (15.0% upside)

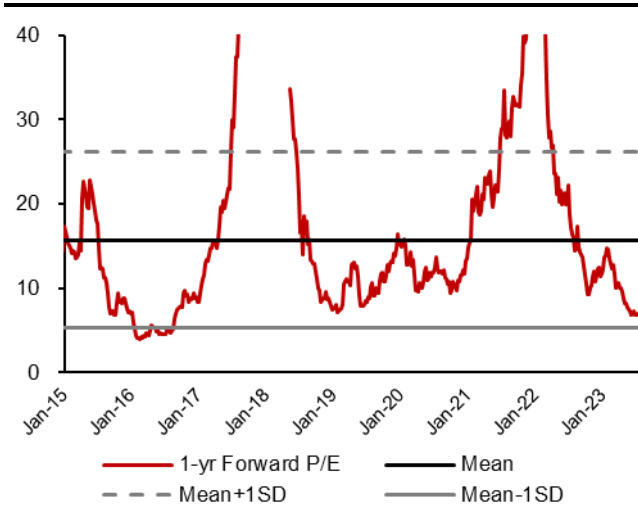
Our new TP of HK\$3.59 is still based on 10x FY23E PE. We remain positive on non-handset CCM (including automotive and AR/VR) to drive earnings growth in the long run. Upcoming catalysts include shipment recovery, product launches and non-smartphone CCM order wins.

Figure 11: Peers' valuation

Company	Ticker	Rating	Market Cap US\$(mn)	Price (LC)	TP (LC)	Up/Down -side	P/E (x)		P/B (x)		ROE (%)	
							FY23E	FY24E	FY23E	FY24E	FY23E	FY24E
Q tech	1478 HK	Buy	474	3.11	3.59	15%	8.7	5.5	0.6	0.6	7.2	10.5
FIT Hon Teng	6088 HK	Buy	1,306	1.40	2.18	56%	8.8	7.1	0.5	0.5	5.6	6.7
AAC Tech	2018 HK	Hold	2,825	18.42	15.58	-15%	16.9	15.2	0.9	0.9	5.2	5.7
Sunny Optical	2382 HK	Hold	11,102	79.10	86.75	10%	24.1	20.9	3.2	2.9	13.4	14.1
Tongda	698 HK	Buy	107	0.09	0.20	133%	2.4	2.2	0.1	0.1	2.9	4.7
BYDE	285 HK	Buy	7,727	26.80	31.67	18%	14.4	11.7	1.8	1.6	12.1	13.3
TK Group	2283 HK	Buy	151	1.42	3.38	138%	2.7	3.6	0.6	0.6	20.7	17.8
FIH	2038 HK	NR	841	0.83	NA	NA	21.2	10.6	0.5	0.5	2.2	4.4
Truly	732 HK	NR	396	0.98	NA	NA	-	-	-	-	-	-
SMIC	981 HK	NR	28,500	19.56	NA	NA	19.9	14.1	1.0	0.9	3.8	4.5
YOFC	6869 HK	NR	2,537	11.88	NA	NA	6.1	5.4	0.7	0.7	12.6	12.8
Ju Teng	3336 HK	NR	187	1.22	NA	NA	-	-	-	-	-	-
Cowell	1415 HK	NR	1,670	15.36	NA	NA	16.8	11.8	3.7	2.8	23.6	26.7
Average							13.3	10.2	1.2	1.1	9.8	10.8

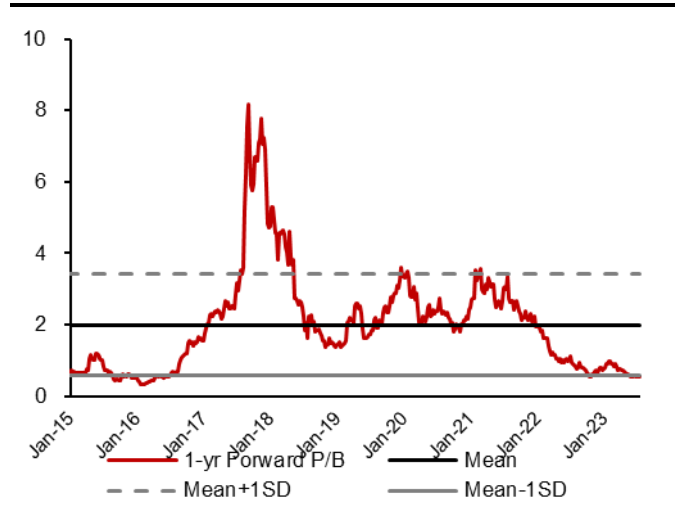
Source: Bloomberg, CMBIGM

Figure 12: 12M forward P/E band



Source: Company data, CMBIGM

Figure 13: 12M forward P/B band



Source: Company data, CMBIGM

Financial Summary

INCOME STATEMENT	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Revenue	17,400	18,663	13,759	12,985	14,247	17,236
Cost of goods sold	(15,630)	(16,901)	(13,218)	(12,125)	(13,062)	(15,706)
Gross profit	1,771	1,762	541	861	1,185	1,530
Operating expenses	(724)	(723)	(338)	(386)	(520)	(638)
Selling expense	(26)	(23)	(14)	(14)	(21)	(26)
Admin expense	(153)	(161)	(142)	(115)	(128)	(147)
R&D expense	(590)	(642)	(470)	(416)	(470)	(569)
Others	44	104	288	159	100	103
Operating profit	1,046	1,039	204	475	665	892
Share of (losses)/profits of associates/JV	(23)	(52)	(37)	(15)	20	30
Others	(54)	(30)	(60)	(55)	(49)	(53)
Pre-tax profit	970	957	107	405	636	869
Income tax	(130)	(94)	63	(53)	(83)	(113)
Minority interest	0	0	0	0	0	0
Net profit	840	863	170	352	554	756

BALANCE SHEET	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Current assets	7,882	9,315	8,594	9,347	9,963	12,920
Cash & equivalents	1,984	1,743	1,349	747	1,751	1,918
Account receivables	3,589	4,446	3,436	4,003	4,159	5,715
Inventories	1,943	2,258	1,184	1,973	1,429	2,662
ST bank deposits	267	811	919	919	919	919
Other current assets	100	57	1,705	1,705	1,705	1,705
Non-current assets	3,521	3,733	3,691	3,705	3,726	3,831
PP&E	2,960	3,144	3,140	3,153	3,175	3,280
Intangibles	4	20	26	26	26	26
Other non-current assets	557	569	525	525	525	525
Total assets	11,403	13,048	12,285	13,052	13,689	16,751
Current liabilities	7,276	8,079	7,249	7,734	7,929	10,385
Short-term borrowings	1,104	1,708	2,616	2,323	2,526	2,805
Account payables	6,013	6,259	4,584	5,362	5,353	7,531
Tax payable	77	49	12	12	12	12
Other current liabilities	82	64	38	38	38	38
Non-current liabilities	0	0	0	0	0	0
Deferred income	138	200	248	248	248	248
Other non-current liabilities	25	0	7	7	7	7
Total liabilities	7,617	8,343	7,518	8,003	8,197	10,654
Share capital	9	9	9	9	9	9
Other reserves	3,776	4,690	4,753	5,035	5,478	6,083
Total shareholders equity	3,786	4,705	4,767	5,049	5,492	6,097
Minority interest	0	0	0	0	0	0
Total equity and liabilities	11,403	13,048	12,285	13,052	13,689	16,751

CASH FLOW	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec (RMB mn)						
Operating						
Profit before taxation	970	957	107	405	636	869
Depreciation & amortization	413	544	640	636	691	757
Change in working capital	2,177	(1,017)	324	(577)	379	(611)
Others	0	0	0	0	0	0
Net cash from operations	3,604	1,596	1,194	466	1,672	955
Investing						
Capital expenditure	(523)	(1,558)	(1,149)	(649)	(712)	(862)
Others	0	0	0	0	0	na
Net cash from investing	(696)	(880)	(1,149)	(649)	(712)	(862)
Financing						
Dividend paid	(107)	0	0	(70)	(111)	(151)
Net borrowings	(1,015)	604	908	(293)	204	278
Others	(193)	(1,546)	(60)	(55)	(49)	(53)
Net cash from financing	(1,315)	(942)	848	(419)	44	74
Net change in cash						
Cash at the beginning of the year	412	1,984	1,743	1,349	747	1,751
Exchange difference	(21)	(14)	(1,288)	0	0	0
Cash at the end of the year	1,984	1,743	1,349	747	1,751	1,918
GROWTH	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Revenue	32.1%	7.3%	(26.3%)	(5.6%)	9.7%	21.0%
Gross profit	50.1%	(0.5%)	(69.3%)	59.0%	37.7%	29.1%
Operating profit	68.9%	(0.7%)	(80.4%)	133.3%	40.0%	34.2%
Net profit	54.9%	2.7%	(80.3%)	107.0%	57.1%	36.6%
PROFITABILITY	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Gross profit margin	10.2%	9.4%	3.9%	6.6%	8.3%	8.9%
Operating margin	6.0%	5.6%	1.5%	3.7%	4.7%	5.2%
Return on equity (ROE)	25.3%	20.3%	3.6%	7.2%	10.5%	13.0%
GEARING/LIQUIDITY/ACTIVITIES	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
Net debt to equity (x)	(0.2)	(0.0)	0.3	0.3	0.1	0.1
Current ratio (x)	1.1	1.2	1.2	1.2	1.3	1.2
Receivable turnover days	89.2	78.6	104.5	104.5	104.5	104.5
Inventory turnover days	45.0	45.4	47.5	47.5	47.5	47.5
Payable turnover days	139.5	132.5	149.7	149.7	149.7	149.7
VALUATION	2020A	2021A	2022A	2023E	2024E	2025E
YE 31 Dec						
P/E	12.8	15.3	31.4	10.1	6.4	4.7
P/B	2.8	2.8	1.1	0.7	0.6	0.6
Div yield (%)	5.4	0.0	0.0	2.0	3.1	4.3
EV	3,785.8	4,705.2	4,767.4	5,049.3	5,492.1	6,097.0
EV/Sales	0.2	0.3	0.3	0.4	0.4	0.4

Source: Company data, CMBIGM estimates. Note: The calculation of net cash includes financial assets.

Disclosures & Disclaimers

Analyst Certification

The research analyst who is primary responsible for the content of this research report, in whole or in part, certifies that with respect to the securities or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about the subject securities or issuer; and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific views expressed by that analyst in this report.

Besides, the analyst confirms that neither the analyst nor his/her associates (as defined in the code of conduct issued by The Hong Kong Securities and Futures Commission) (1) have dealt in or traded in the stock(s) covered in this research report within 30 calendar days prior to the date of issue of this report; (2) will deal in or trade in the stock(s) covered in this research report 3 business days after the date of issue of this report; (3) serve as an officer of any of the Hong Kong listed companies covered in this report; and (4) have any financial interests in the Hong Kong listed companies covered in this report.

CMBIGM Ratings

BUY	: Stock with potential return of over 15% over next 12 months
HOLD	: Stock with potential return of +15% to -10% over next 12 months
SELL	: Stock with potential loss of over 10% over next 12 months
NOT RATED	: Stock is not rated by CMBIGM
OUTPERFORM	: Industry expected to outperform the relevant broad market benchmark over next 12 months
MARKET-PERFORM	: Industry expected to perform in-line with the relevant broad market benchmark over next 12 months
UNDERPERFORM	: Industry expected to underperform the relevant broad market benchmark over next 12 months

CMB International Global Markets Limited

Address: 45/F, Champion Tower, 3 Garden Road, Hong Kong. Tel: (852) 3900 0888 Fax: (852) 3900 0800

CMB International Global Markets Limited ("CMBIGM") is a wholly owned subsidiary of CMB International Capital Corporation Limited (a wholly owned subsidiary of China Merchants Bank)

Important Disclosures

There are risks involved in transacting in any securities. The information contained in this report may not be suitable for the purposes of all investors. CMBIGM does not provide individually tailored investment advice. This report has been prepared without regard to the individual investment objectives, financial position or special requirements. Past performance has no indication of future performance, and actual events may differ materially from that which is contained in the report. The value of, and returns from, any investments are uncertain and are not guaranteed and may fluctuate as a result of their dependence on the performance of underlying assets or other variable market factors. CMBIGM recommends that investors should independently evaluate particular investments and strategies, and encourages investors to consult with a professional financial advisor in order to make their own investment decisions.

This report or any information contained herein, have been prepared by the CMBIGM, solely for the purpose of supplying information to the clients of CMBIGM or its affiliate(s) to whom it is distributed. This report is not and should not be construed as an offer or solicitation to buy or sell any security or any interest in securities or enter into any transaction. Neither CMBIGM nor any of its affiliates, shareholders, agents, consultants, directors, officers or employees shall be liable for any loss, damage or expense whatsoever, whether direct or consequential, incurred in relying on the information contained in this report. Anyone making use of the information contained in this report does so entirely at their own risk.

The information and contents contained in this report are based on the analyses and interpretations of information believed to be publicly available and reliable. CMBIGM has exerted every effort in its capacity to ensure, but not to guarantee, their accuracy, completeness, timeliness or correctness. CMBIGM provides the information, advices and forecasts on an "AS IS" basis. The information and contents are subject to change without notice. CMBIGM may issue other publications having information and/ or conclusions different from this report. These publications reflect different assumption, point-of-view and analytical methods when compiling. CMBIGM may make investment decisions or take proprietary positions that are inconsistent with the recommendations or views in this report.

CMBIGM may have a position, make markets or act as principal or engage in transactions in securities of companies referred to in this report for itself and/or on behalf of its clients from time to time. Investors should assume that CMBIGM does or seeks to have investment banking or other business relationships with the companies in this report. As a result, recipients should be aware that CMBIGM may have a conflict of interest that could affect the objectivity of this report and CMBIS will not assume any responsibility in respect thereof. This report is for the use of intended recipients only and this publication, may not be reproduced, reprinted, sold, redistributed or published in whole or in part for any purpose without prior written consent of CMBIGM.

Additional information on recommended securities is available upon request.

For recipients of this document in the United Kingdom

This report has been provided only to persons (I) falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended from time to time) ("The Order") or (II) are persons falling within Article 49(2) (a) to (d) ("High Net Worth Companies, Unincorporated Associations, etc.") of the Order, and may not be provided to any other person without the prior written consent of CMBIGM.

For recipients of this document in the United States

CMBIGM is not a registered broker-dealer in the United States. As a result, CMBIGM is not subject to U.S. rules regarding the preparation of research reports and the independence of research analysts. The research analyst who is primary responsible for the content of this research report is not registered or qualified as a research analyst with the Financial Industry Regulatory Authority ("FINRA"). The analyst is not subject to applicable restrictions under FINRA Rules intended to ensure that the analyst is not affected by potential conflicts of interest that could bear upon the reliability of the research report. This report is intended for distribution in the United States solely to "major US institutional investors", as defined in Rule 15a-6 under the US, Securities Exchange Act of 1934, as amended, and may not be furnished to any other person in the United States. Each major US institutional investor that receives a copy of this report by its acceptance hereof represents and agrees that it shall not distribute or provide this report to any other person. Any U.S. recipient of this report wishing to effect any transaction to buy or sell securities based on the information provided in this report should do so only through a U.S.-registered broker-dealer.

For recipients of this document in Singapore

This report is distributed in Singapore by CMBI (Singapore) Pte. Limited (CMBISG) (Company Regn. No. 201731928D), an Exempt Financial Adviser as defined in the Financial Advisers Act (Cap. 110) of Singapore and regulated by the Monetary Authority of Singapore. CMBISG may distribute reports produced by its respective foreign entities, affiliates or other foreign research houses pursuant to an arrangement under Regulation 32C of the Financial Advisers Regulations. Where the report is distributed in Singapore to a person who is not an Accredited Investor, Expert Investor or an Institutional Investor, as defined in the Securities and Futures Act (Cap. 289) of Singapore, CMBISG accepts legal responsibility for the contents of the report to such persons only to the extent required by law. Singapore recipients should contact CMBISG at +65 6350 4400 for matters arising from, or in connection with the report.