

Technology - Handsets

Huawei's return sparks spec upgrade cycle



- Smartphone sales growth, high-end phone sales acceleration, new upgrade cycle, and non-smartphone revenue growth are the sector's key drivers.
- We expect Huawei's upcoming new models with innovative features to spark a new wave of device spec upgrades, boosting high-end phone sales.
- We upgrade the China smartphone sector from Neutral to Overweight. Our sector top picks are Xiaomi, AAC Tech, and Sunny Optical, in that order.

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China

Overweight (previously Neutral)

Highlighted Companies

AAC Technologies
ADD, TP HK\$24.30, HK\$21.50 close

We think AAC Technologies will benefit from the potential acoustic/haptic spec upgrades in the iPhone 16 series due to its solid market share in the supply chain. It is expanding its precision mechanics production following metal casing order wins. We believe its optics profitability would improve in FY24F on higher sales of Chinese branded smartphones.

Sunny Optical Technology
ADD, TP HK\$88.00, HK\$64.00 close

We believe Sunny Optical Technology's net profit would rebound strongly in FY24-25F on resumption of shipment growth of handset camera modules/lens, as well as strong vehicle lens shipment growth, due to its leading market share in handset camera modules/lens and vehicle lens.

Xiaomi Corporation
ADD, TP HK\$21.50, HK\$15.08 close

We expect Xiaomi Corporation to deliver solid 5%/21% EPS growth in FY24F/25F, driven by a steady recovery in smartphone shipments, rising IoT revenue, and improved Internet services' GPM outlook. Although we think the EV business' net losses could widen in FY24-25F due to a lack of economies of scale, we expect its market share to continue rising, allowing the EV business to achieve profitability in FY26F.

Summary Valuation Metrics

P/E (x)	Dec-23F	Dec-24F	Dec-25F
AAC Technologies	20.73	14.96	13.01
Sunny Optical Technology	35.30	17.92	12.84
Xiaomi Corporation	17.58	19.40	17.49

P/BV (x)	Dec-23F	Dec-24F	Dec-25F
AAC Technologies	1.04	0.98	0.92
Sunny Optical Technology	3.04	2.72	2.38
Xiaomi Corporation	1.78	1.45	1.20

Dividend Yield	Dec-23F	Dec-24F	Dec-25F
AAC Technologies	0.73%	1.01%	1.16%
Sunny Optical Technology	0.57%	1.12%	1.56%
Xiaomi Corporation	0.00%	0.00%	0.00%

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- We expect Huawei's upcoming new models with innovative features to spark a new wave of device spec upgrades, boosting high-end phone sales.
- We upgrade the China smartphone sector from Neutral to Overweight. Our sector top picks are Xiaomi, AAC Tech, and Sunny Optical, in that order.

Upgrade China smartphone sector from Neutral to Overweight

We upgrade our rating for the China smartphone sector from Neutral to Overweight amid new growth drivers, including: 1) the resumption of global smartphone shipments growth, 2) an acceleration in high-end phone sales, 3) the emergence of a new specification upgrade cycle, and 4) rising non-smartphone revenues.

Emerging markets' growth augurs well for Chinese brands

We estimate global smartphone shipments to rise by 5% yoy to 1.24bn units in 2024F (2023F: -4% yoy), amid improved consumer sentiment and the 4G-to-5G migration in emerging markets. Meanwhile, we project China smartphone shipments to increase 5% yoy to 277m units. We forecast Chinese brands Xiaomi/Oppo/Vivo/Huawei to deliver smartphone shipment growth rates of 12%/8%/16%/75% yoy to 165m/117m/100m/65m units in 2024F, stronger than Samsung's 2% and Apple's 4% as the Chinese brands have a greater presence in emerging regions and higher market share in China.

Competition heats up as Huawei makes a comeback in FY24F

We think that Huawei's return to the market would result in the smartphone market becoming more competitive in 2024F, especially in China. We believe that Huawei's Mate 60 launch (in Sep 2023) should lead to a new wave of device specification upgrades (spec upgrades), especially in cameras, and inspire more innovative features in upcoming new phone models. In our view, this will cause ongoing bill of material (BOM) cost to rise and a new replacement cycle in China, accelerating high-end phone sales.

Larger contributions from high-margin non-handset components

In FY24F, we expect component manufacturers' revenue from automotives to rise by 52% yoy on average and revenue from AR/VR to rise by 100% yoy. In contrast, we expect component manufacturers' revenue from smartphones to rise 14% yoy in FY24F, making up 11% of component manufacturers' average revenue. As automotive and AR/VR components have longer product cycles and more consistent demand/supply dynamics, their GPMs are generally 5-10% higher than smartphone components'. Hence, we expect higher profitability from manufacturing automotive and AR/VR components in FY24-25F.

Valuation de-rating completed

After more than 30 months of downward EPS revisions and share price corrections, the China smartphone sector's valuation de-rating has ended, in our view. We believe that Bloomberg consensus FY23F/24F EPS forecasts have stabilised since Oct 23 as global smartphone sales posted a yoy increase. The sector is now trading at an attractive level of c.16x FY24F P/E on a +90% EPS recovery (vs. -28% in FY23F), amid rising smartphone shipments and high-end component orders.

Upgrade to Overweight; top picks are Xiaomi, AAC Tech, Sunny

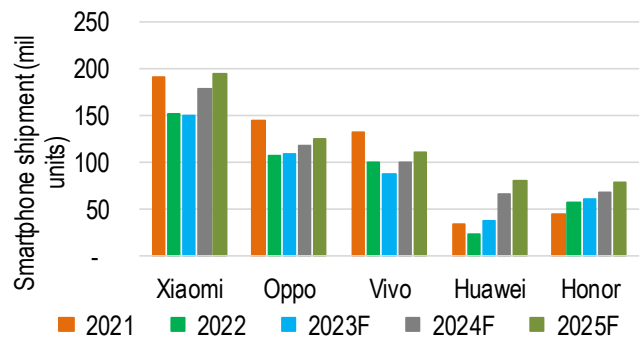
We upgrade the sector to Overweight from Neutral as we see several growth drivers emerging as well as the sector's attractive valuation at c.16x FY24F P/E, a 25% discount to its peak valuation at the end of 2017. Our sector top picks are Xiaomi, AAC Tech, Sunny Optical, in that order. We like Xiaomi's solid earnings outlook as its smartphone shipments recover, while its electric vehicle (EV) business has great potential. We are positive on AAC Tech benefiting from iPhone 16 acoustic/haptic spec upgrades due to its solid supplier status. We also expect Sunny Optical to see strong vehicle lens shipments growth, as well as shipments recovery in handset camera module/lens. Sector re-rating catalysts include strong shipments, strong spec upgrades in new smartphone models, and rapid revenue growth in automotive electronics. Key downside risks: sluggish shipment improvements, poor spec upgrades, sustained weak high-end phone sales, and slower Chinese EV sales.

KEY CHARTS

Chinese brands (XOVH) deliver strong smartphone shipment growth in 2024F >

The top-tier Chinese brands should outpace Samsung and Apple's smartphone shipment growth, in our view, as the Chinese brands have a stronger presence in emerging markets and offer more affordable high-performance phones. We forecast Xiaomi/Oppo/Vivo/Huawei (XOVH) smartphone shipments to grow 12%/8%/16%/75% yoy in 2024F to 165m/117m/110m/65m units.

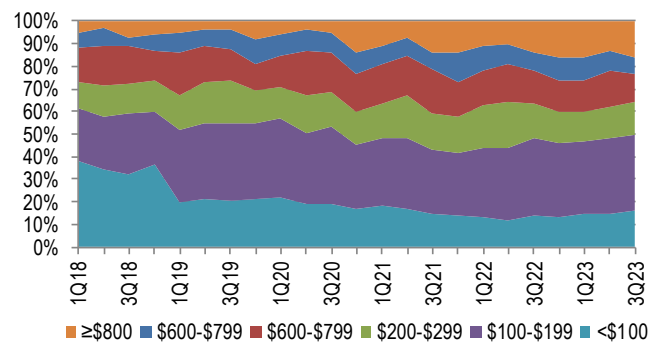
Chinese handset brands shipment forecasts, by year (2021 to 2025F)



High-end phones sales likely to accelerate in 2024F >

Huawei's recent return to the smartphone market with its Mate 60 5G series in Sep 23 is likely to boost high-end phone sales, in our view, owing to Huawei's higher sales volume in high-end and flagship models compared to Xiaomi, Oppo, and Vivo. We expect a new high-end phone replacement cycle and consumer pursuit of innovative features in high-end phones to start due to keener competitions.

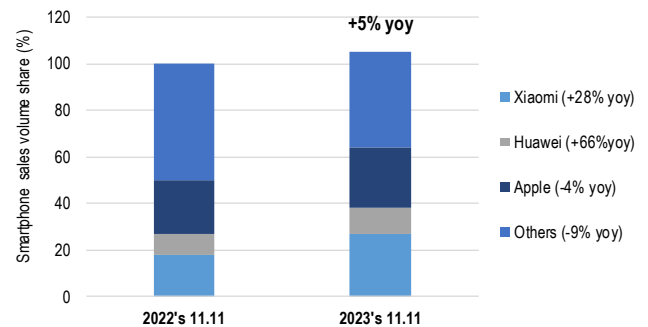
Smartphone shipments in price segments, by quarter (1Q18 to 3Q23)



New spec upgrades cycle emerges in 2024F >

Huawei's return to the smartphone market should trigger competition and accelerate spec upgrades, in our view. We believe Chinese handset brands would become more aggressive with innovative features in their upcoming new models as a result of increased competition. Huawei's Mate 60 series and Xiaomi 14 launched in Sep 23 boosted the China's two-week Singles Day festival (11.11) in Nov 23.

China's 11.11 festival smartphone sell-through yoy growth



China smartphone sector trades at c.16x FY24F P/E >

China smartphone sector has completed its valuation de-rating after more than 30 months of downward EPS revisions and share price corrections, in our view.

The sector is now trading at attractive level of c.16x FY24F P/E on a +90% EPS recovery (vs. -28% in FY23F), underpinned by improving customers' smartphone shipments growth and high-end component order increases, in our view.

Prospective P/E vs. Share Price performance (1 Jan 2017 to 29 Dec 2023)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT, BLOOMBERG

Huawei's return sparks spec upgrade cycle

Investment view

Upgrade China smartphone sector from Neutral to Overweight ►

Upgrade China smartphone sector from Neutral to Overweight. We upgrade our rating for the China smartphone sector from Neutral to Overweight as we see new growth drivers for the global smartphone market emerging, including: 1) the resumption of global smartphone shipments growth, 2) an acceleration in high-end smartphone sales, 3) the commencement of a new specification upgrade (spec upgrade) cycle, and 4) increased revenue contributions from automotive and augmented reality/virtual reality (AR/VR) components.

- 1) Resumption of global smartphone shipments growth, with Chinese brands growing at a faster rate.** We estimate global smartphone shipments returning to positive growth of 5% yoy to 1.24bn units in 2024F, after contracting by 4% yoy in 2023F, mainly driven by improved consumer sentiment and the 4G-to-5G migration in emerging markets, including India, Latin America (LATAM), Southeast Asia (SEA), and Africa. Meanwhile, we project China smartphone shipments to increase by 5% yoy to 277m units. We expect Chinese brands to outperform Samsung (005930 KS, Add) and Apple (APLL US, Not Rated) in terms of shipments growth, as the Chinese brands have a stronger presence in emerging markets and offer more affordable high-performance phones. We expect Xiaomi's (1810 HK, Add), Oppo's (Unlisted), Vivo's (Unlisted), and Huawei's (Unlisted) 2024F smartphone shipments to grow by 12%, 8%, 16% and 75% yoy, respectively, to 165m, 117m, 100m, and 65m units, due to: 1) a strong recovery in emerging markets, 2) the new high-end phone replacement cycle in China, and 3) more innovative new model launches.
- 2) High-end smartphone sales to accelerate, catalysed by Huawei's return.** We believe Huawei's return to the smartphone market with the launch of the Mate 60 5G model would boost high-end phone sales and intensify competition in China's smartphone market in 2024F. As a result, we expect high-end phone sales to grow at a faster rate of c.12% in 2024F, vs. global smartphone sales growth of 5% and China's 5%. We also expect Chinese handset players to launch phone models with more innovative features to maintain their competitiveness, resulting in increased competition and higher demand for sophisticated high-end components, particularly in cameras. This should drive continual BOM cost increase in camera-related components and a new replacement cycle in China, in our view.
- 3) A new spec upgrade cycle should start in 2024F, particularly in cameras and displays.** We believe handset brands are becoming more aggressive in offering innovative features in their upcoming new models, as a result of fiercer competition triggered by Huawei's new models that offer more innovative features. We anticipate that the camera and display would continue to be the principal spec upgrade components, resulting in continued ASP improvement. Meanwhile, handset brands are also finding that the lower prices for the key components allow them to use more of these sophisticated

components to improve their phones' features and enhance their competitiveness, in our view.

- 4) **Larger revenue contributions from high-margin non-handset components, leading to GPM improvements.** We believe that revenue in the non-handset businesses of automotive electronics and AR/VR products (non-handset components) would accelerate in 2024-25F, owing to rising advanced driver assistance system (ADAS) adoption in the global EV market and the Vision Pro launches.

We expect revenue from automotive electronics to climb 52% yoy in 2024F on average among component manufacturers, and revenue from AR/VR products to increase 100% in 2024F, outpacing the 14% growth in smartphone-related revenue. Given that automotive electronics and AR/VR products have longer product cycles and a more stable demand/supply dynamic than smartphones, their GPMs are generally 5-10% higher than smartphone components. Hence, we believe handset component makers would benefit from increased revenue from automotive and AR/VR components in 2024-25F.

Sector valuation >

Valuation de-rating completed. We believe the China smartphone sector has completed its valuation de-rating after more than 30 months of downward EPS revisions and share price corrections. We believe that Bloomberg consensus' FY23F/24F EPS forecasts have stabilised since Oct 2023 as global smartphone sales posted yoy growth in Oct, Nov and Dec 2023. The sector is now trading at c.16x 2024F P/E, on a +90% EPS recovery (vs. -28% in 2023F), underpinned by improving customers' smartphone shipment growth and high-end component order increases. We also estimate a 21% increase in China's smartphone sector EPS in 2025F, driven by rapid sales growth in the high-margin non-handset category, which includes automotive components and AR/VR products.

Sector valuation at c.16x 2024F P/E appears attractive. We believe the current sector valuation of c.16x 2024F P/E is attractive as it is just slightly higher than the 5-year average of 15.4x (2019-23) and represents a 25% discount to its peak valuation of c.21x at the end of 2017, owing to a strong earnings recovery forecast and probable sector EPS upward revision due to higher-than-expected high-end phone sales and spec upgrades in the upcoming flagship model launches.

Recommendation >

Upgrade China smartphone sector from Neutral to Overweight. We upgrade our rating for the China smartphone sector from Neutral to Overweight, due to: 1) global smartphone shipment recovery, 2) faster high-end smartphone shipments growth, 3) a new spec upgrade cycle, and 4) profit margin improvements from higher capacity utilisation, increasing ASP, and rising contributions from non-smartphone segments (automotive and AR/VR).

Sector top picks are Xiaomi, AAC Tech and Sunny Optical. The order of our China smartphone sector top picks is Xiaomi Corporation (Xiaomi, 1810 HK, Add), AAC Technologies (AAC Tech, 2018 HK, Add), and Sunny Optical Technology (Sunny Optical, 2382 HK, Add). We expect them to deliver better earnings growth in FY24F and FY25F amid market share gains in the domestic supply chain, owing to continuous innovative new product launches, increasing production capacity, and robust revenue growth in automotive and AR/VR product segments.

We like Xiaomi's solid earnings outlook as its smartphone shipments recover, while its EV business has great potential, in our view. We expect AAC Tech to benefit from iPhone 16 acoustic/haptic spec upgrades due to its solid supplier

Upgrade China smartphone sector to Overweight

Upgrade China smartphone sector rating to Overweight >

Upgrade China smartphone sector from Neutral to Overweight due to new growth drivers appear in the global smartphone market. We upgrade the China smartphone sector from Neutral to Overweight as we see new growth drivers for the global smartphone market emerging, including 1) the resumption of global smartphone shipments growth, 2) an acceleration of high-end smartphone sales, 3) the commencement of a new specification upgrade (spec upgrade) cycle, and 4) increased contributions from automotive and AR/VR (non-handset) components.

- 1) Resumption of global smartphone shipments growth, with Chinese brands growing at a faster rate.** We estimate global smartphone shipments will resume positive growth in 2024F, at 5% yoy to 1.24bn units, due to improved consumer sentiment in emerging markets, including India, LATAM, Africa, and SEA. Meanwhile, we project China smartphone shipments to increase by 5% yoy to 277m units.

We think Chinese smartphone brands such as Xiaomi, Oppo, Vivo, and Huawei (XOVH), will deliver higher sales growth (in the double-digits) compared to their overseas peers such as Apple and Samsung Electronics due to their stronger presence in these markets.

- 2) High-end smartphone sales to accelerate, catalysed by Huawei's return.** Huawei had been a top Chinese smartphone innovator prior to Oct 2020 before its lead was severely hampered by the shortage of powerful chips, in our view. With Huawei's shipments declining sharply starting 4Q20, coupled with the Covid-19 pandemic impact as well as global supply chain issues, most handset OEMs had since curtailed innovation, using fewer high-end components owing to decreased competition and weak consumer demand for high-end smartphones.

Huawei's return to the market with new high-end flagship models (Huawei launched 5G-compatible Mate-60 at Sep 2023) could change all that, with competition for more innovative phones likely to intensify. We think the use of more sophisticated high-end components that will inevitably result from this increased competition will lead to stronger sales for among domestic handset manufacturers in 2024-25F, driving handset components ASP recovery, particularly in camera-related components.

- 3) A new spec upgrade cycle starting again, particularly in cameras and displays.** We believe handset brands are becoming more aggressive in offering innovative features in their upcoming new models as a result of fiercer competition triggered by Huawei's upcoming P series launch in Mar 24 and Mate series launch in Sep 24. Meanwhile, handset brands are also finding the lower prices for components, allow them to use more of these sophisticated components to improve their phones' features and enhance their competitiveness.

- 4) Higher contributions from automotive and AR/VR (non-handset components), leading to GPM improvements.** We believe that revenue will accelerate in the non-handset businesses of automotive electronics and AR/VR products in FY24-25, owing to rising ADAS adoption in the global EV market and the Vison Pro launches. Given that automotive electronics and AR/VR products have longer product cycles and enjoy a more stable demand/supply dynamic, we think these products will offer at least 5-10% pts higher GPM than that of smartphone components.

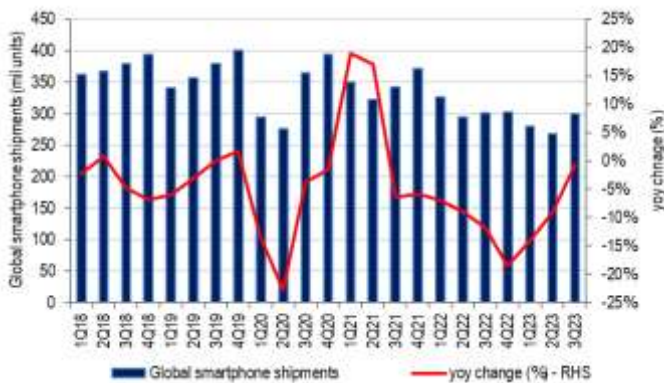
Resumption of global smartphone shipment growth

Global smartphone shipments set to rise in 2024-25F ▶

Global smartphone market faced turbulence in 2020-23. The smartphone industry has had a turbulent few years, with a series of unprecedented events, ranging from the onset of the Covid-19 pandemic in 2020 to supply chain issues and geographical conflicts throughout 2021-22, as well as global inflationary pressures and the US's interest rate hike in 2023, all of which have lengthened the replacement cycles and squeezed global smartphone demand amid weakening consumer sentiment. In 2018, the global smartphone market saw its first annual decline in shipments, signalling a shift in its growth trajectory in the past 10 years (the first iPhone was released by Apple in 2007). Since then, the market had been declining, with the exception of 2021 when it briefly rebounded from a pandemic-hit 2020 (Fig 2 – 4).

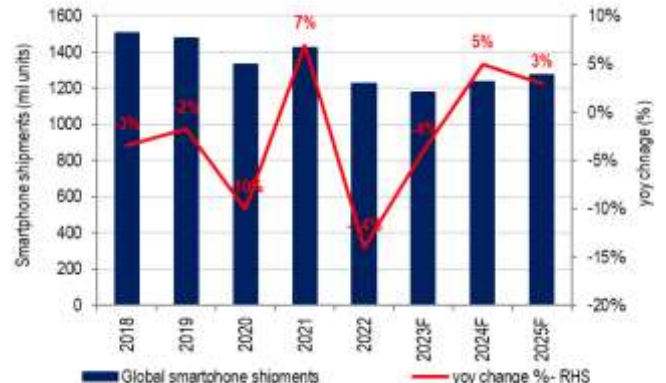
Global smartphone market should grow in 2024-25F. Despite a tumultuous few years in 2020-23, there are a number of reasons why we are turning optimistic about prospects for the global smartphone market in 2024F and 2025F. These include: 1) improving global economic outlook and consumer sentiment, 2) smartphone demand growth in emerging markets due to the potential 4G-to-5G transition, and 3) fierce competition among handset OEMs acting as catalysts for more innovative features in upcoming new phone models, owing to Huawei's return.

Figure 2: Global smartphone shipments, by quarter (1Q18 to 3Q23)



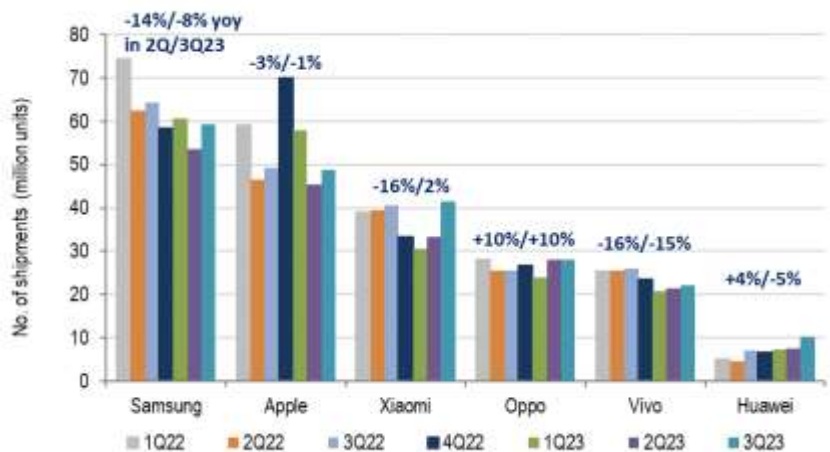
SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 3: Global smartphone shipments, by year (2018 to 2025F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

Figure 4: Major handset brand shipments, by quarter (1Q19 to 3Q23)

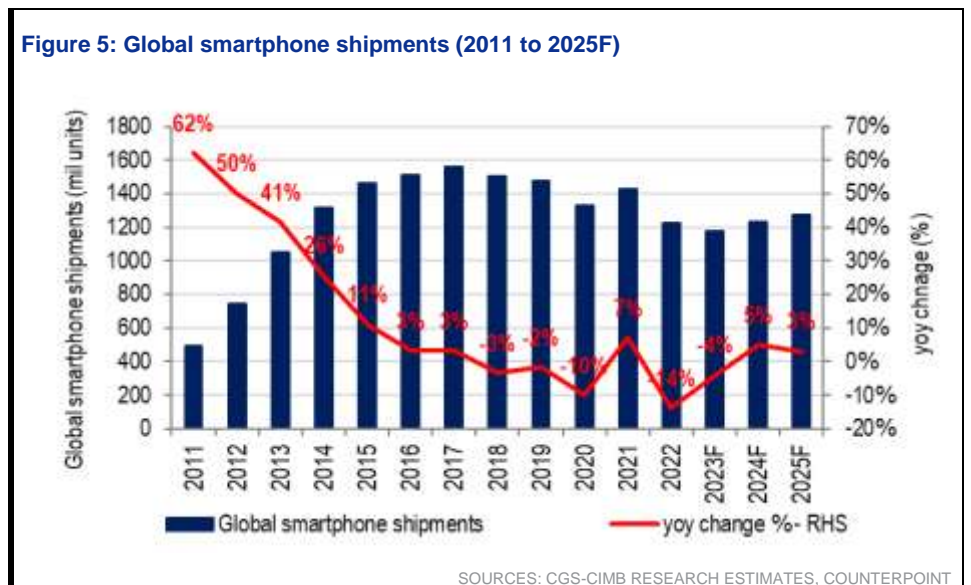


SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Resumption of global smartphone shipment growth, with Chinese brands growing at a faster rate. We do not expect global smartphone sales volume to recover to its 2017 peak, owing to a longer replacement cycle (we estimate c.40 months on average globally in 2023F vs. c.24 months in 2019) and new purchase options such as used and refurbished handsets. As a result, we anticipate low- to mid-single-digit annual growth in the next two years.

We estimate global smartphone shipments to grow 5% yoy to 1.24bn units in 2024F and 3% yoy to 1.28bn units in 2025F, after a 4% decline in 2023F, due to: 1) improved consumer sentiment in emerging markets, 2) strong high-end phone replacement demand in China and Southeast markets, and 3) accelerated 4G-to-5G transition in emerging markets, including India, LATAM, SEA, and Africa (Fig 5).

Figure 5: Global smartphone shipments (2011 to 2025F)



4G/5G migration driving smartphone demand in emerging markets. Despite the introduction of the first 5G smartphones four years ago (in 2019), 5G adoption in emerging markets remained low at below 30%, according to Counterpoint. This is due to the slow construction of 5G infrastructure as it was disrupted by the Covid-19 pandemic.

Chinese handset brands likely to capture the fast-growing emerging markets' smartphone demand. Because emerging markets are now the primary volume drivers for the global smartphone market, accounting for nearly half of global shipments in 3Q23 (Counterpoint estimates total shipments from India, LATAM, SEA, and Africa were 138m units in 3Q23, c.46% of global shipments), we believe that Chinese brands such as Xiaomi, Oppo, Vivo, Huawei, and Honor would benefit because they are well-positioned to capture market demand due to their well-established distribution channels, strong brand awareness, and handset model launches with high price-to-performance quotients (Fig 6 - 12).

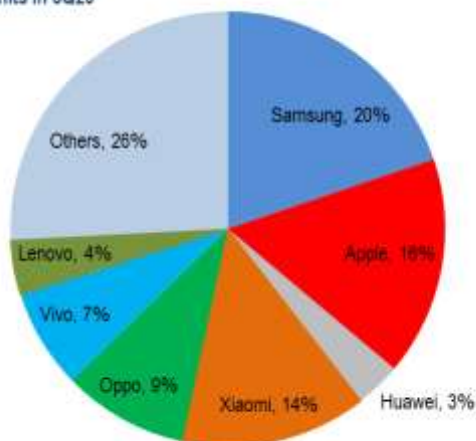
Figure 6: Chinese smartphone brands overseas shipments (2016 to 2023F)

No. of units (million)	2017	2018	2019	2020	2021	2022	2023F
Xiaomi	38	69	86	107	139	113	107
Oppo	36	38	50	58	79	59	57
Vivo	22	24	42	52	60	48	30
Huawei	62	100	99	60	3	-	-
Motorola	-	38	39	33	50	46	44
Total Chinese brands shipments	157	269	316	311	331	267	239
yoy change (%)							
Xiaomi	277%	84%	25%	25%	30%	-19%	-5%
Oppo	71%	6%	31%	16%	35%	-25%	-3%
Vivo	144%	13%	74%	23%	15%	-19%	-37%
Huawei	-1%	61%	-2%	-39%	-96%	N/A	N/A
Motorola	N/A	N/A	5%	-16%	52%	-7%	-5%
Total Chinese brands shipments	53%	71%	18%	-2%	6%	-19%	-10%
% of total shipments							
Xiaomi	39%	58%	69%	74%	73%	74%	73%
Oppo	30%	32%	43%	52%	55%	55%	53%
Vivo	21%	24%	37%	48%	46%	48%	35%
Huawei	41%	49%	41%	44%	8%	N/A	N/A
Motorola	N/A	97%	97%	99%	99%	100%	100%
Total Chinese brands shipment	30%	46%	50%	53%	56%	55%	49%

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

Figure 7: Global smartphone market share by country (3Q23)

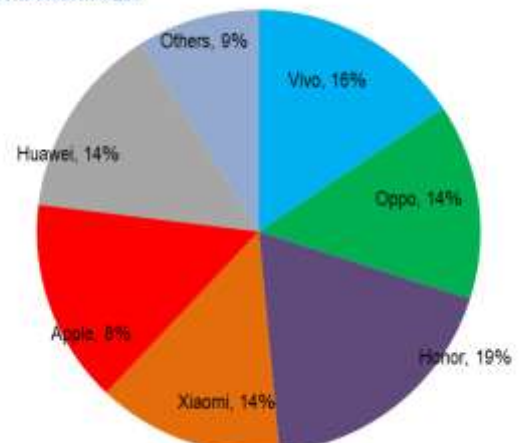
Global: 342m units in 3Q23



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 8: China smartphone market share by brand (3Q23)

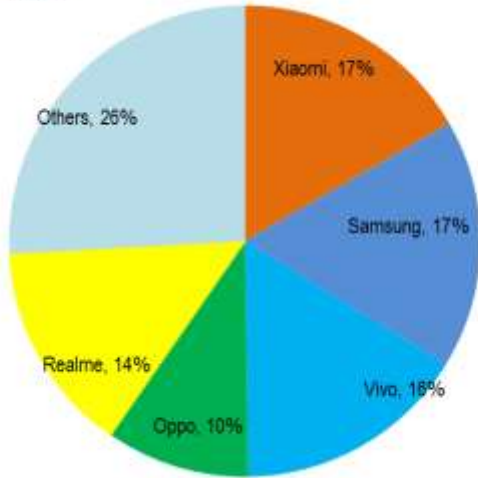
China: 67m units in 3Q23



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 9: India smartphone market share by brand (3Q23)

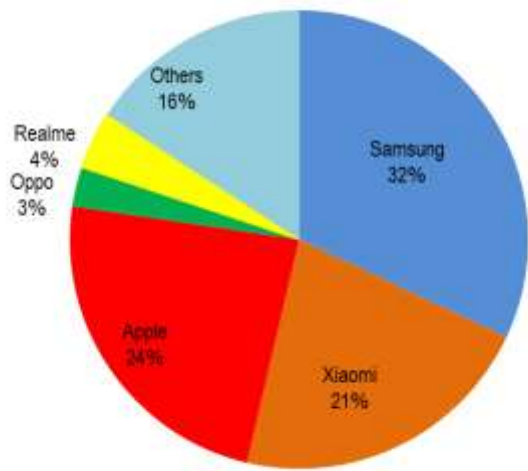
India : 43m in 3Q23



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 10: Europe smartphone market share by brand (3Q23)

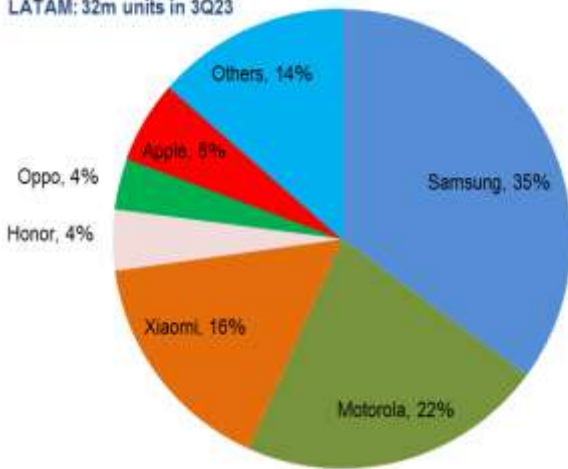
EU: 38m units in 3Q23



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 11: LATAM smartphone market share by brand (3Q23)

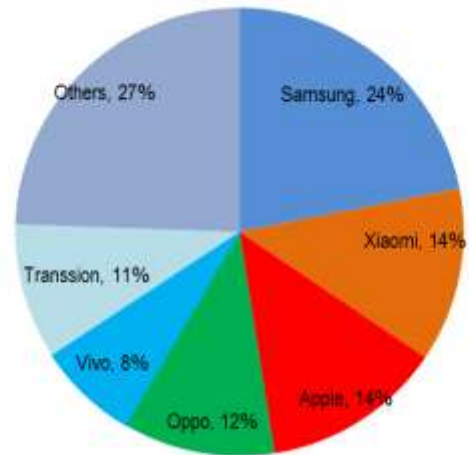
LATAM: 32m units in 3Q23



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 12: SEA smartphone market share by brand (3Q23)

Southeast Asia : 42m units in 3Q23



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Smartphone market showing recovery signs ►

Emerging markets showing recovery signs. China, India and SEA markets accounted for half of global smartphone shipments in 3Q23 (source: Counterpoint). In 3Q23, they showed improvement with China smartphone shipments dipping 2% yoy (-7% yoy in 1Q23, -2% yoy in 2Q23), India's staying flat yoy (-19% yoy in 1Q23 and -2% yoy in 2Q23) and LATAM declining 4% yoy (-19% yoy in 1Q23 and -14% yoy in 2Q23), thanks to rising replacement demand and improved consumer sentiments (Fig 13).

Meanwhile, the US smartphone shipments were sluggish, declining 15% yoy in 3Q23, while the EU's shipments fell 11% yoy, due to inflationary pressure and weak economies (Fig 13).

Figure 13: Global smartphone shipments by region, by quarter (1Q21 to 3Q23)

No. of units	1Q21	2Q22	3Q21	4Q21	1Q21	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23
Global	350.9	323.1	342.0	371.4	326.4	294.5	301.9	302.6	280.2	268.0	299.8
China	91.0	77.3	77.2	83.8	73.7	63.5	68.8	70.1	68.5	61.9	67.2
India	39.0	33.0	47.5	44.7	38.7	36.7	45.3	31.4	31.2	35.9	45.6
U.S.	35.3	35.1	37.1	43.1	37.2	33.3	38.3	39.1	32.7	27.5	32.6
Europe	52.6	45.0	45.6	56.6	48.7	39.0	42.6	45.3	38.6	34.3	38.1
LATAM	33.0	30.9	31.8	34.8	31.1	34.1	28.3	29.9	28.0	28.7	31.3
SEA	61.9	58.6	56.2	61.2	55.5	47.9	43.8	50.8	45.0	41.0	41.9
yoy change (%)	1Q21	2Q22	3Q21	4Q21	1Q21	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23
Global	19%	17%	-6%	-6%	-7%	-9%	-12%	-19%	-14%	-9%	-1%
China	37%	-9%	-8%	-11%	-19%	-18%	-11%	-16%	-7%	-2%	-2%
India	23%	79%	-11%	-6%	-1%	11%	-5%	-30%	-19%	-2%	0%
U.S.	15%	23%	1%	0%	5%	-5%	3%	-9%	-12%	-17%	-15%
Europe	14%	13%	-13%	-3%	-8%	-13%	-7%	-20%	-21%	-12%	-11%
LATAM	23%	24%	-9%	-10%	-10%	-18%	-22%	-17%	-19%	-14%	-4%
SEA	51%	37%	-17%	-5%	-15%	-20%	-15%	-20%	-23%	-15%	-1%

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

First yoy monthly shipment growth since Jun 21 occurred in Oct 2023.

Furthermore, global smartphone sell-through volumes grew 5% yoy in Oct 2023, ending a 27-month negative yoy growth streak, owing to: 1) continued sales recovery in the Middle East and Africa, 2) the start of the festive season in India, 3) launch of Huawei's Mate 60 in China (Huawei shipments jumped 96% yoy in Oct 2023), and 4) the launch of Apple's iPhone 15 series. We expect global smartphone shipments to continue to rise 4% qoq (flattish yoy) in 4Q23F, putting the smartphone market on track for a modest recovery in 2024F, with volume growth of 5% to 1.24bn units, driven by China, India, LATAM and SEA markets.

Chinese brands shipment growth outpace Samsung and Apple ►

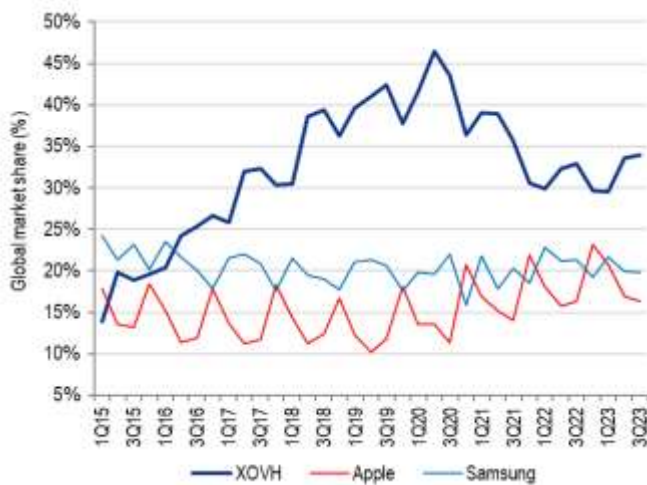
Chinese brands to deliver strong shipment growth in 2024F. We expect Chinese brands to outperform Samsung (005930 KS, Add) and Apple (APLL US, Not Rated) in terms of shipment growth, as the Chinese brands have a stronger presence in emerging markets and offer more affordable high-performance phones. We now forecast Xiaomi/Oppo/Vivo/Huawei smartphone shipments to grow 12%/8%/16%/75% yoy in 2024F to 165m/117m/100m/65m units, driven by: 1) a strong recovery in emerging markets, 2) a new high-end phone replacement cycle in China, and 3) more innovative new model launches among Chinese brands attracting consumers (Fig 14 - 16).

Figure 14: Global smartphone shipments by brand (2016 to 2025F)

No. of units (million)	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F
Xiaomi	96	119	125	145	190	152	147	165	185
Oppo	121	119	117	112	144	106	108	117	125
Vivo	101	102	114	109	131	100	86	100	110
Huawei	153	205	239	138	33	23	37	65	80
Honor	-	-	-	50	44	57	60	68	78
Motorola	50	39	41	33	51	46	44	50	55
Total chinese brands shipments	520	584	634	587	593	485	483	565	633
Samsung	318	292	297	256	273	260	232	235	238
Apple	216	206	196	201	238	225	220	228	225
Total	1,559	1,505	1,479	1,331	1,424	1,225	1,176	1,235	1,272
yoy % change	2017	2018	2019	2020	2021	2022	2023F	2024F	2025F
Xiaomi	55%	24%	5%	17%	31%	-20%	-3%	12%	12%
Oppo	30%	-1%	-2%	-4%	28%	-26%	2%	8%	7%
Vivo	40%	2%	11%	-5%	21%	-24%	-14%	16%	10%
Huawei	10%	34%	16%	-42%	-76%	-30%	58%	75%	23%
Honor	-	-	-	-	-11%	28%	5%	13%	15%
Motorola	-2%	-22%	5%	-18%	52%	-8%	-5%	13%	10%
Total chinese brands shipments	25%	12%	9%	-8%	1%	-18%	0%	17%	12%
Samsung	3%	-8%	2%	-14%	7%	-5%	-11%	2%	1%
Apple	0%	-4%	-5%	3%	18%	-6%	-2%	4%	-1%
Total	3%	-3%	-2%	-10%	7%	-14%	-4%	5%	3%

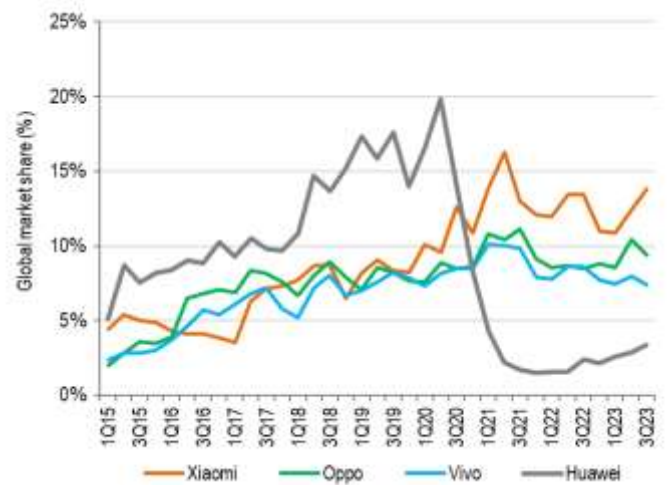
SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

Figure 15: XOVH global market share, by quarter (1Q15 to 3Q23)



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 16: XOVH global market share, by quarter (1Q15 to 3Q23)



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Who will benefit? ➤

Fig 17 shows that handset component manufacturers with higher sales exposure to Chinese brands, such as Sunny Optical, Q Technology (1478 HK, Add), AAC Tech, and Tianma Microelectronics (Tianma, 000050 CH, Add), would benefit the most from the success of Chinese brands, owing to their customers' strong smartphone shipment recovery in 2024F.

Figure 17: Estimated revenue distribution, by customer (% of total revenue in FY23F)

Estimated revenue distribution, by customers (% of total revenue in FY23)	AAC Tech	Cowell	Q Tech	Sunny Optical	BOE Tech	Lens Tech	Tianma	USI
- Oppo	5-10%	0%	20-25%	5-10%	3-5%	3-5%	10-15%	1-3%
- Vivo	5-10%	0%	30-35%	5-10%	3-5%	3-5%	10-15%	1-3%
- Xiaomi	10-15%	0%	0-5%	5-10%	3-5%	3-5%	15-20%	1-3%
- Honor	8-12%	0%	5-10%	5-10%	3-5%	1-2%	3-5%	1-2%
- Motorola	3-5%	0%	3-5%	3-5%	3-5%	1-2%	3-5%	1-2%
- Huawei	1-2%	0%	1-2%	1-2%	1-2%	1-2%	2-4%	0-1%
Chinese brands	30-35%	0%	c.75-85%	45-50%	15-20%	15-20%	45-55%	5-10%
- Apple	34-45%	97%	0%	4%	5-8%	60-70%	0%	65-70%
- Samsung	8-12%	0%	5-10%	c.20-25%	3-5%	3-5%	5-10%	3-5%

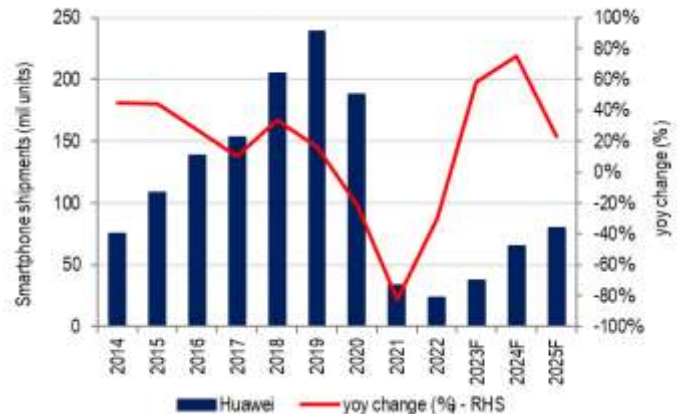
SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS

Figure 18: Xiaomi smartphone shipments, by year (2016-2025F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

Figure 19: Huawei smartphone shipments, by year (2016-2025F)



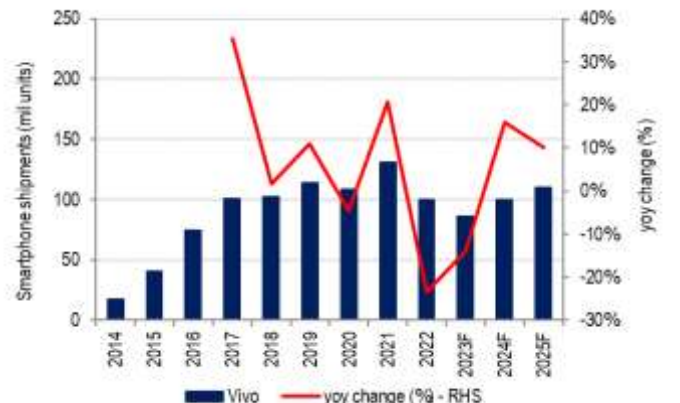
SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

Figure 20: Oppo smartphone shipments, by year (2016-2025F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

Figure 21: Vivo smartphone shipments, by year (2016-2025F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

High-end phone sales to accelerate

High-end phone sales set to accelerate in 2024-25F >

High-end smartphone sales to accelerate in 2024-25F, catalysed by Huawei's return. In our view, Huawei had previously been the world's most innovative smartphone maker before a shortage of powerful chips that followed US export restrictions in Oct 2020 clipped its wings and negatively impacted its operations. As a result, Huawei's shipments fell sharply starting in 4Q20, further exacerbated by the impact of the Covid-19 pandemic and global supply chain issues. With Huawei handicapped by the lack of chips, it was no longer such a formidable competitor, and other handset OEMs responded by cutting back on innovation and using less high-end components as both competition and consumer demand in the high-end smartphone weakened, in our view.

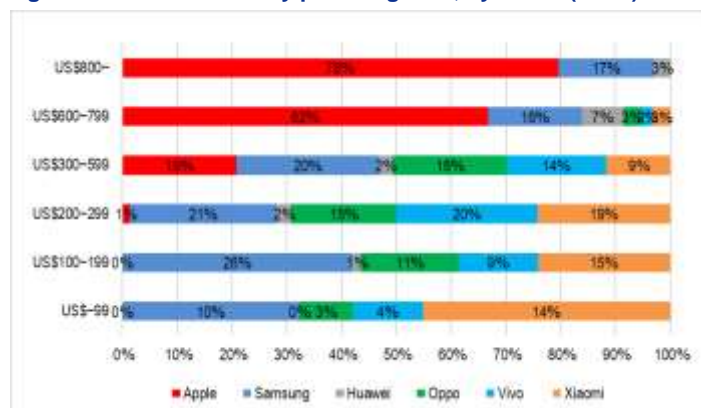
We believe that Huawei's recent return to the smartphone market with Mate 60 5G series in Sep 23 would boost high-end phone sales, given Huawei's higher sales volume in high-end and flagship models compared to Xiaomi, Oppo, and Vivo. We expect a new high-end phone replacement cycle and consumer pursuit of innovative features in high-end phones to start manifesting in China in 2024F.

Apple maintains leadership in high-end US\$600 and above price segment. Apple's iPhones dominated the high-end price segments of US\$600-799 and US\$800 or above, accounting for 65% and 69%, respectively, of total global smartphone sales in 3Q23, while Samsung, Xiaomi, Honor, and Oppo held 13%, 3%, 2% and 1%, respectively, in the US\$600-799 segment, and 19%, 1%, 1% and 1%, respectively, in the US\$800-or-above segment (source: Counterpoint). We think Apple's commanding market share in the high-end segments is largely due to absence of Huawei phones and XOV's lower emphasis on high-end phones because of higher component costs and weak consumer demand, especially in China.

Chinese brands' high-end phone sales fell significantly during the pandemic. Among the Chinese brands in the high-end price segments of US\$600-799 and US\$800 or above in 3Q21, Honor had the highest market share among the top 5 Chinese handset brands (Xiaomi, Oppo, Vivo, Huawei, and Honor, XOVHH) at 7% and 3%, respectively. However, Honor's market share dropped by 5% pts and 2% pts in 3Q21 and 3Q23, respectively, to 2% and 1%, due to poor demand in China. In contrast, Xiaomi performed well in the US\$600-and-higher phone market segment over the last two years, thanks to its successful premiumisation strategy of launching innovative models, such as Mi12, Mi13, and Mi14. This success was aided by Huawei's exit from 5G phones (Figs 22 & 23), in our view.

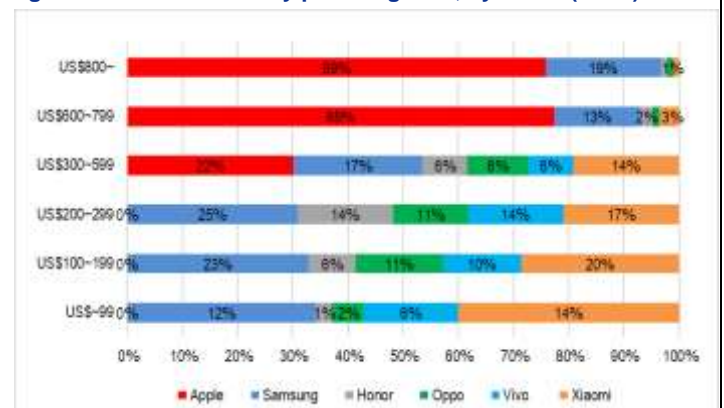
Fig 22 & 23 below shows that Chinese brands increased sales in the US\$100-199 and under-US\$100 segments, increasing their market shares from 21% and 36%, respectively, in 3Q21 to 23% and 47% in 3Q23, as they attempt to offset the lower sales of high-end phones with the volume growth of low-end phones.

Figure 22: Market share by price segment, by brand (3Q21)



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 23: Market share by price segment, by brand (3Q23)

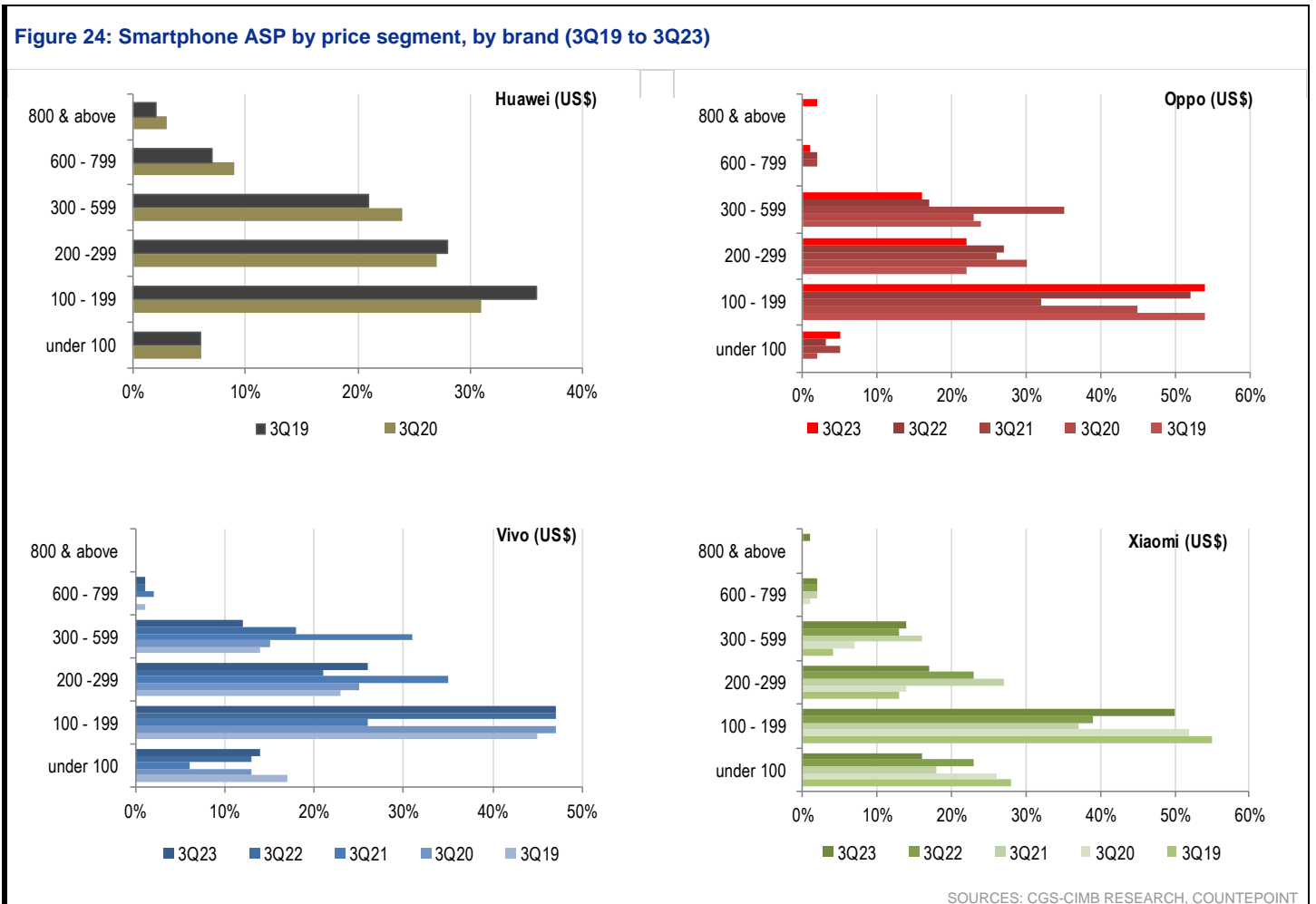


SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Oppo and Vivo smartphone ASPs in downtrend ➤

Fig 24 below shows that Oppo and Vivo reduced their high-end phone sales in 2022 and 2023 significantly as a result of weak consumer demand in China, because they had a higher sales exposure to China (around 50% of all shipments delivered in China in 2022 and 2023).

On the flip side, Xiaomi had been increasing its high-end phone sales over the past two years between 3Q21 and 3Q23, especially in the US\$600-and-above price segments.

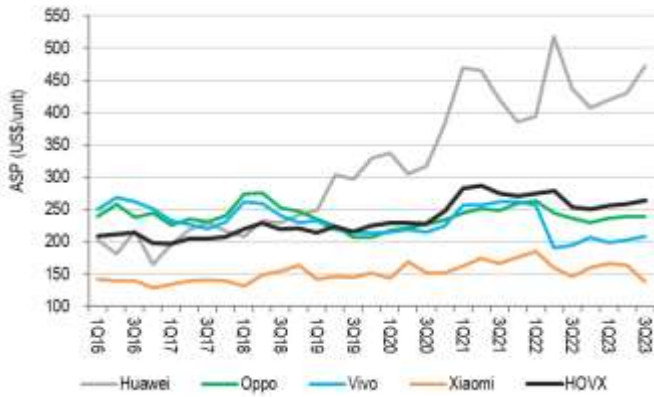


Huawei and Xiaomi smartphone ASPs increasing ➤

Figs 25 & 26 below show that Huawei has been seeing a rising smartphone ASP trend over the past three years despite exiting the 5G phone market, with ASP increasing by 49% between 3Q20 and 3Q23, given its sole focus on the Mate and P series, after selling its sub-brand Honor to the Shenzhen government in 2021.

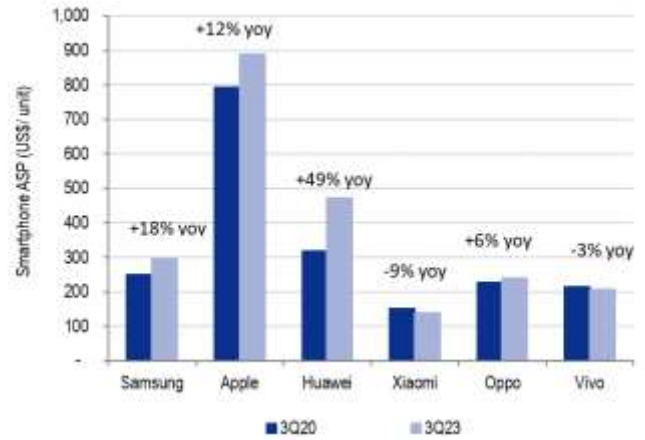
Xiaomi's ASP fell by more than 6% last year between 3Q22 and 3Q23, due to increased low-end phone sales in India and LATAM amid poor consumer sentiment, with more affordable models boosting its sales. Nevertheless, we expect Xiaomi smartphones' ASPs to rise in 2024-25F, thanks to its premiumisation strategy.

Figure 25: Smartphone ASP for Chinese brands, by quarter (3Q16 to 3Q23)



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

Figure 26: Smartphone ASP, by brands (3Q23 vs. 3Q20)

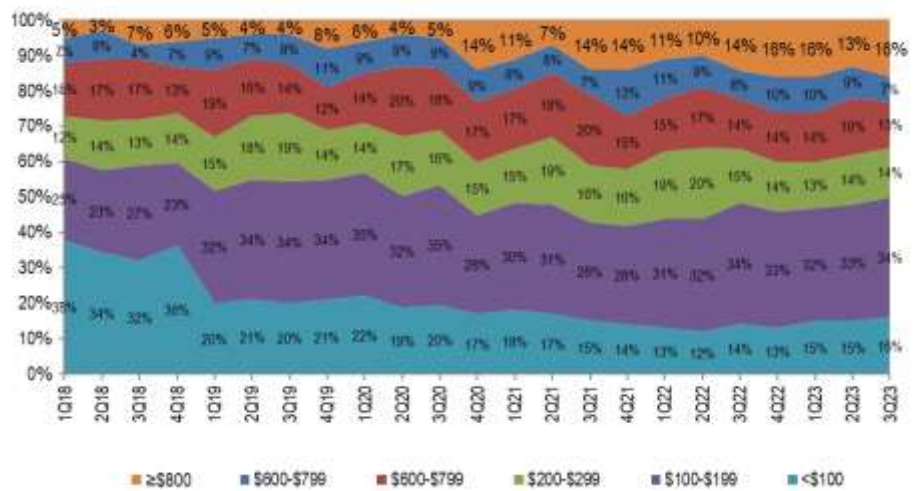


SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

High-end phone gaining traction ➤

High-end price segment (US\$600 and above) gaining traction. Supported by iPhone’s stable sales and continuous innovations in its iPhone 13, iPhone 14, and iPhone 15 series during the Covid-19 pandemic and Huawei’s focus on the high-end price segment, as well as decreased shipments in the low-end to mid-range price segments, overall global smartphone ASP increased by 15% from US\$325 per unit in 3Q20 to US\$373 in 3Q23, with smartphone priced above US\$600 rising by 9% pts from 14% of total smartphone shipments in 3Q20 to 23% in 3Q23 (Fig 27).

Figure 27: Smartphone shipments in various price segments, by quarter (1Q18 to 3Q23)



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

China's high-end phone replacement cycle starting in 2024F ▶

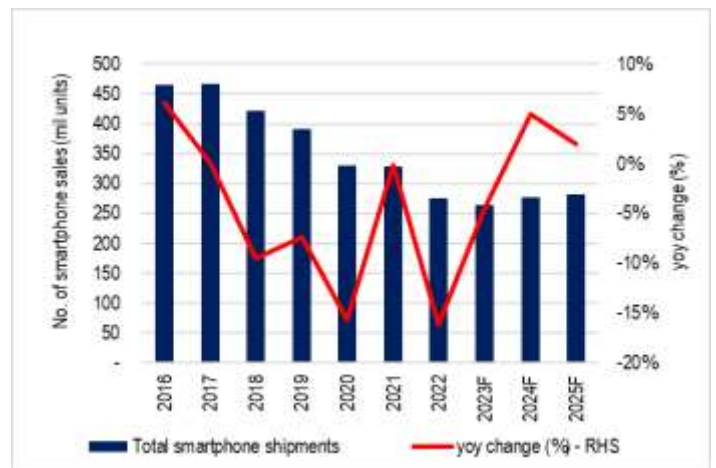
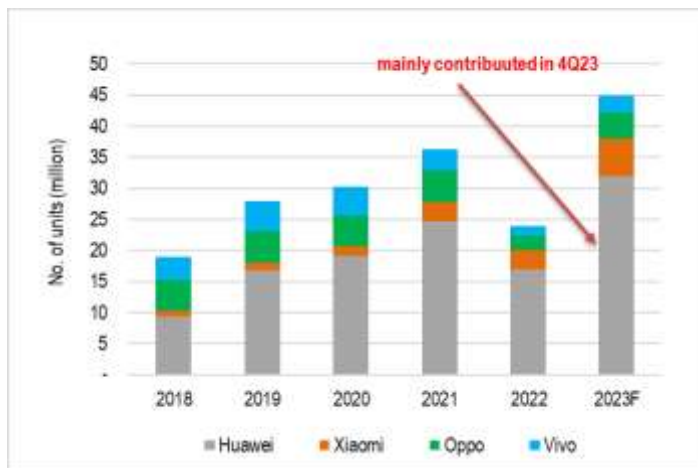
New wave of high-end phone replacement cycle starting 2024F. We estimate that there were over 60m high-end phones sold in China in 2020 and 2021, accounting for 8% of total China smartphone shipments, with Huawei's Mate series and P series accounting for the majority (Fig 28).

Huawei Mate 60 series set to boost China's smartphone sales in the high-end segment in 4Q23 and 2024F. We estimate total shipments for the Mate 60 series (Mate 60 Pro, Mate 60, and Mate 60 Pro+, and Mate X5 foldable) reached 8m units in the first four months of its launch (from Sep 23 to Dec 23) due to strong replacement demand, given that Huawei has not released a 5G smartphone since the Mate 40 (launched in Oct 2020), and to come to around 20m units over the course of the product's lifecycle of 12 months (we estimate that the Mate 70 would be launched in Sep 2024F), benefiting key domestic suppliers.

We estimate that there is a good likelihood of a significant replacement demand for high-end phones in China in 2024F, based on the average 40-month lifespan assumption for Chinese brands' high-end and flagship models, supporting our view that high-end phone sales would expand faster than the average global smartphone sales and China smartphone sales.

Figure 28: China's top 4 brands' high-end smartphone sales, by volume annually (2018 to 2023F)

Figure 29: China's smartphone shipments, annually (2016 to 2025F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

A new wave of specification upgrade cycle starts

Specification upgrade cycle starts again in 2024F >

Huawei returns to the smartphone market, triggering competition and accelerating spec upgrades. We believe Chinese handset brands will become more aggressive with innovative features in their upcoming new models as a result of increased competition, triggered by Huawei's return. We expect Huawei to launch its P70 series in Mar 24F and its Mate 70 series and Mate X6 foldable in Sep 24F, respectively, as flagship models in 2024F, with more advanced technology and features by using high-end sophisticated components such as cameras (pericope-type and OIS), displays (flexible LTPO AMOLED), acoustics (stereo sound), and touch & sensing (haptic engine).

We believe Xiaomi, Oppo, Vivo, and Honor will also introduce innovative features in their flagship models in 2024F in order to maintain their competitiveness and smartphone market share. Meanwhile, the component prices for DRAM/memory, CMOS image sensor/lens sets, OLED displays, and semiconductors have come down, allowing Xiaomi, Oppo, Vivo and Honor to use more sophisticated components for innovative features. We believe that the introduction of new features in the upcoming models by top Chinese brands would accelerate the high-end phone replacement cycle and boost smartphone sales in China in 2024F.

The increased competition has also given birth to a new industry segment: flagship-like devices at non-flagship prices. This benefits not only handset component manufacturers with stronger orders for high-end products, but also accelerates spec upgrades in the mid-range price segment, in our view.

The Mate 60 and Xiaomi 14's debut ushers in a new era of spec upgrades >

Huawei's Mate 60 debut kicked off a new wave of spec upgrade cycle. On 29 Aug 2023, Huawei launched its first 5G-compatible smartphone Mate 60 Pro on its website, three years after US sanctions were enacted in May 2019. We were pleasantly surprised by the Huawei Mate 60 Pro's new hardware and features, despite the fact that the majority of components came from domestic suppliers.

According to TechInsights (a global semiconductor market research provider), domestic suppliers provide c.90% of the Mate 60 Pro's components, with the NAND flash memory being the only significant foreign component, manufactured by South Korea's SK Hynix (000660 KS, Add, TP: W170,000).

Huawei Mate 60 Pro:

Huawei Mate 60 Pro's best feature is its camera. The Mate 60 Pro's rear camera features a quad-camera system with a 64MP primary sensor, a 20MP ultra-wide sensor, a 16MP telephoto lens, and an 8MP depth sensor. The front camera has a 32MP main sensor and an 8MP auxiliary sensor. The cameras use Leica lenses and have options for panorama mode and HDR for high-quality shooting and filmmaking. Based on our channel checks, Sunny Optical is the main camera module supplier.

Mate 60 Pro display with advanced LTPO OLED. Mate 60 Pro is equipped with a 6.82-inch LTPO OLED display, which offers 1,212 x 2,616 resolution, a 120Hz refresh rate and 1440Hz PWM dimming. The screen-to-body ratio is 88.5% and display density is 423 pixels per inch. The display is Huawei's Kunlun Glass 2 and is scratch-resistant and durable, according to Huawei. Based on our channel checks, BOE Technology (BOE, 000725 CH, Hold, TP: Rmb4.10) is the key supplier for the LTPO OLED display and Lens Technology (300433 CH, Add, TP: Rmb18.30) provides the cover glass and glass back covers.

Mate 60 Pro other key features. Huawei Mate 60 Pro also has Bluetooth 5.2, a USB 3.1 (Type-C) connector and IP68 water and dust-resistant certification. The handset has 16GB of RAM and comes with storage capacity options of 512GB and 1TB. Its 5,000mAh battery supports 88W conventional charging as well as

50W wireless charging and 20W wireless reverse charging. The Mate 60 Pro runs on the home-grown HarmonyOS 4.0.

Xiaomi 14 Pro:

Xiaomi 14 Pro debuted on 26 Oct. Xiaomi 14 Pro was the first to feature the most powerful chipset, Qualcomm Snapdragon 8 Gen 3. Also, the Xiaomi 14 Pro runs HyperOS, a revolutionary multi-platform operating system.

Xiaomi 14 Pro display and camera. Mi 14 Pro features a bezel-less LTPO AMOLED curve display. The 14 Pro has a variable aperture main camera lens with 1,024 stops between the highest and minimum apertures of f/1.4 and f/4.0. The 14 Pro also includes Leica-branded 50-megapixel primary cameras, a telephoto camera with a 3x or 75mm equivalent, and a 50-megapixel ultrawide camera.

Xiaomi 14 Pro AI feature. 14 Pro runs AI foundation models on-device, thanks to the Snapdragon 8 Gen 3 processor, which enables execution tasks such as summarising webpages and videoconference transcripts, making meeting note-taking much easier along the way. Leveraging on HyperOS’s generative AI (GenAI) capabilities, the 14 Pro is able to create AI portraits that place you in various locations across the world.

HyperOS: HyperOS is a Xiaomi-developed new multi-platform operating system based on Android and is designed to run on a variety of devices, including handsets, tablets, computing, watches, homes, and automobiles, allowing all of the devices in Xiaomi’s ecosystem to communicate easily and for users to use their phone’s camera with their computer or access their phone’s mobile data from their tablets.

HyperOS’s five primary features:

- 1) underlying restructuring, fully unlocking the potential of single devices;
- 2) cross-end intelligence, multi-device integration, cross-end hardware capabilities;
- 3) proactive intelligence; unified thinking, multidimensional perception,
- 4) proactive for people service; comprehensive security, reconstruct security framework, eco-level privacy rights management,
- 5) open ecosystem, Xiaomi Vela open source for global developers.

Both Mate 60 Pro and Xiaomi 14 pro are strong challengers to Apple’s iPhone 15 Pro Max. With its striking appearance and display, powerful performance and outstanding camera setup, Huawei Mate 60 Pro is a well-rounded 5G smartphone that is comparable to Apple’s most advanced device currently, the iPhone 15 Pro Max, in our view. We expect the Mate 60 Pro and P60 series to be a strong challenger in the high-end smartphone market, especially against Apple’s iPhones, thanks to its elegant design and display, robust performance and excellent camera configuration (Fig 31 & 32).

Mate 60 and Mi 14 sold well during 11.11. Both Huawei Mate 60 series and Xiaomi 14 series’ sales grew 66% and 28% yoy at China’s two-week Singles Day festival (11.11) at Nov 23, respectively, while Apple’s iPhone sales fell 4% yoy, owing to supply issues, according to Counterpoint figures (Fig 30).

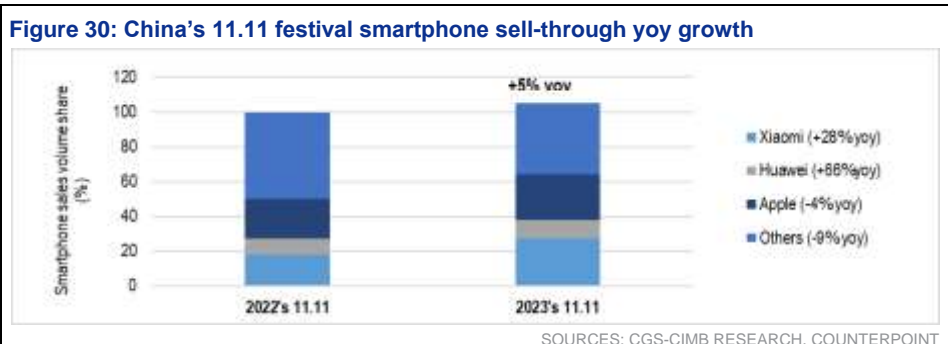
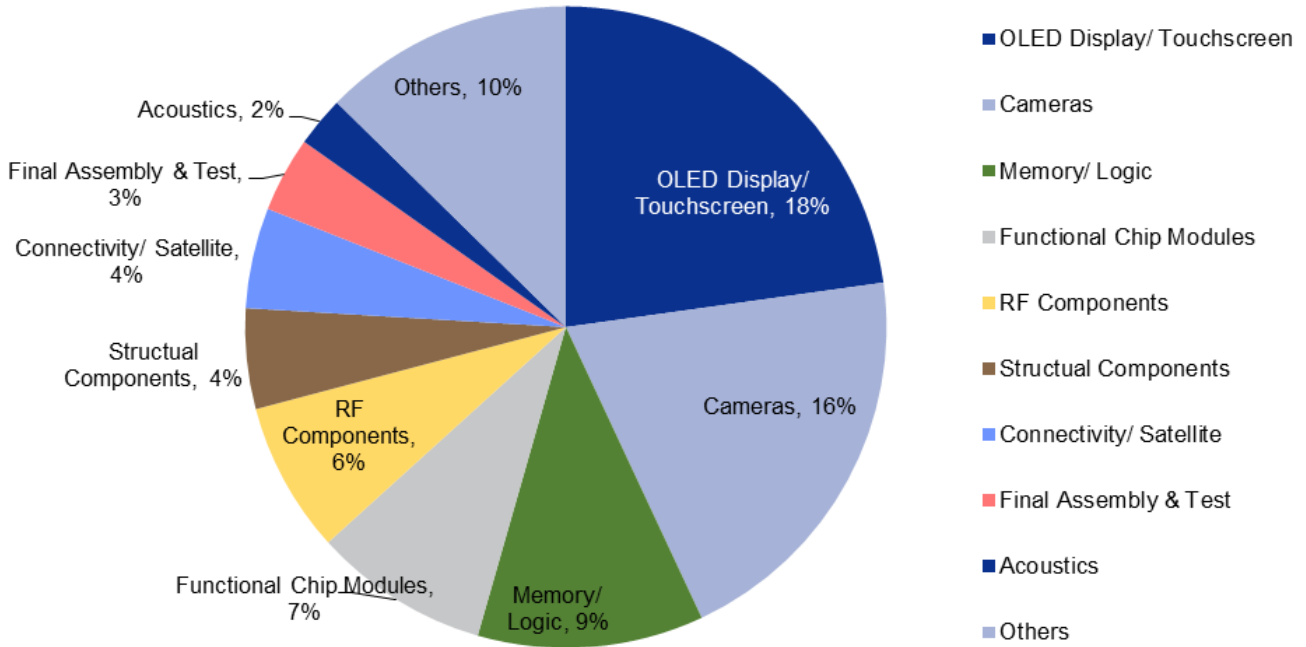


Figure 31: Flagship models' camera specification comparisons

	Model	Apple iPhone 15 Pro Max	Huawei Mate 60 Pro RS Ultimate	Xiaomi 14 Pro
LAUNCH	Announced	22-Sep-23	28-Sep-23	1-Nov-23
NETWORK	Technology	GSM / CDMA / HSPA / EVDO / LTE / 5G	GSM / CDMA / HSPA / CDMA2000 / LTE / 5G	GSM / CDMA / HSPA / CDMA2000 / LTE / 5G
BODY	Dimensions	159.9 x 76.7 x 8.3 mm (6.30 x 3.02 x 0.33 in)	163.7 x 79 x 8.1 mm (6.44 x 3.11 x 0.32 in)	161.4 x 75.3 x 8.5 mm
	Weight	221 g (7.80 oz)	242 g or 246 g (8.54 oz)	223 g or 230 g (7.87 oz)
	Build	Glass front (Corning-made glass), glass back (Corning-made glass), titanium frame (grade 5)	Glass front, aluminum frame, glass back	Glass front, aluminum frame or titanium frame, glass back
DISPLAY	Type	LTPO Super Retina XDR OLED, 120Hz, HDR10, Dolby Vision, 1000 nits (typ), 2000 nits (HBM)	LTPO OLED, 1B colors, 120Hz	LTPO AMOLED, 68B colors, 120Hz, Dolby Vision, HDR10+, 3000 nits (peak)
	Size	6.7 inches, 110.2 cm ² (~89.8% screen-to-body ratio)	6.82 inches, 114.4 cm ² (~88.5% screen-to-body ratio)	6.73 inches, 108.9 cm ² (~89.6% screen-to-body ratio)
	Resolution	1290 x 2796 pixels, 19.5:9 ratio (~460 ppi density)	1260 x 2720 pixels, 19.5:9 ratio (~440 ppi density)	1440 x 3200 pixels, 20:9 ratio (~522 ppi density)
	Protection	Ceramic Shield glass	Huawei Kunlun Glass 2	Xiaomi Longjing Glass
PLATFORM	OS	iOS 17, upgradable to iOS 17.2	HarmonyOS 4.0 (China)	Android 14, HyperOS
	Chipset	Apple A17 Pro (3 nm)	Kirin 9000S (7 nm)	Qualcomm SM8650-AB Snapdragon 8 Gen 3 (4 nm)
	CPU	Hexa-core (2x3.78 GHz + 4x2.11 GHz)	Octa-core (1x2.62 GHz Cortex-A720 & 3x2.15 GHz Cortex-A720 & 4x1.53GHz Cortex-A510)	Octa-core (1x3.3 GHz Cortex-X4 & 5x3.2 GHz Cortex-A720 & 2x2.3 GHz Cortex-A520)
MEMORY	GPU	Apple GPU (6-core graphics)	Maleoon 910 MP4	Adreno 750
	Internal	256GB 8GB RAM, 512GB 8GB RAM, 1TB 8GB RAM	512GB 16GB RAM, 1TB 16GB RAM	256GB 12GB RAM, 512GB 16GB RAM, 1TB 16GB RAM
MAIN CAMERA	Triple	1) 48 MP, f/1.8, 24mm (wide), 1/1.28", 1.22µm, dual pixel PDAF, sensor-shift OIS 2) 12 MP, f/2.8, 120mm (periscope telephoto), 1/3.06", 1.12µm, dual pixel PDAF, 3D sensor-shift OIS, 5x optical zoom 3) 12 MP, f/2.2, 13mm, 120° (ultrawide), 1/2.55", 1.4µm, dual pixel PDAF TOF 3D LiDAR scanner (depth)	50 MP, f/1.4-f/4.0, 24mm (wide), PDAF, Laser AF, OIS 48 MP, f/3.0, 90mm (periscope telephoto), PDAF, OIS, 3.5x optical zoom 40 MP, f/2.2, 13mm, 120° (ultrawide), PDAF NIL	50 MP, f/1.4-f/4.0, 23mm (wide), 1/1.31", 1.2µm, dual pixel PDAF, Laser AF, OIS 50 MP, f/2.0, 75mm (telephoto), PDAF (10cm - ∞), OIS, 3.2x optical zoom 50 MP, f/2.2, 14mm, 115° (ultrawide), AF NIL
	Features	Dual-LED dual-tone flash, HDR (photo/panorama)	LED flash, panorama, HDR	Leica lens, Dual-LED dual-tone flash, HDR, panorama
	Video	4K@24/25/30/60fps, 1080p@25/30/60/120/240fps, 10-bit HDR, Dolby Vision HDR (up to 60fps), ProRes, Cinematic mode (4K@24/30fps), 3D (spatial) video, stereo sound rec.	4K@30/60fps, 1080p@30/60/120/240/480fps, 720p@960fps, 720p@3840fps, HDR, gyro-EIS	8K@24fps (HDR), 4K@24/30/60fps (HDR10+, 10-bit Dolby Vision HDR, 10-bit LOG), 1080p@30/60/120/240/960fps, 720p@1920fps, gyro-EIS
	Single	12 MP, f/1.9, 23mm (wide), 1/3.6", PDAF, OIS, SL 3D, (depth/biometrics sensor)	13 MP, f/2.4, 18mm (ultrawide), TOF 3D, (depth/biometrics sensor)	32 MP, (wide)
	Features	HDR, Cinematic mode (4K@24/30fps)	HDR, panorama	HDR, panorama
SELFIE CAMERA	Video	4K@24/25/30/60fps, 1080p@25/30/60/120fps, gyro-EIS	4K@30/60fps, 1080p@30/60/240fps	4K@30/60fps, 1080p@30/60fps, gyro-EIS
SOUND	Loudspeaker	Yes, with stereo speakers	Yes, with stereo speakers	Yes, with stereo speakers
COMMS	WLAN	Wi-Fi 802.11 a/b/g/n/ac/6e, dual-band, hotspot	Wi-Fi 802.11 a/b/g/n/ac/6, dual-band, Wi-Fi Direct	Wi-Fi 802.11 a/b/g/n/ac/6e/7, dual-band, Wi-Fi Direct
	Bluetooth	5.3, A2DP, LE	5.2, A2DP, LE	5.4, A2DP, LE, aptX HD, aptX Adaptive
	Positioning	GPS (L1+L5), GLONASS, GALILEO, BDS, QZSS, NavIC	GPS (L1+L5), GLONASS (L1), BDS (B1+B1c+B2a+B2b), GALILEO (E1+E5a+E5b), QZSS (L1+L5), NavIC (L5)	GPS (L1+L5), GLONASS (G1), BDS (B1+B1c+B2a), GALILEO (E1+E5a), QZSS (L1+L5), NavIC (L5)
	NFC	Yes	Yes	Yes
FEATURES	USB	USB Type-C 3.2 Gen 2, DisplayPort	USB Type-C 3.1, OTG, DisplayPort 1.2	USB Type-C 3.2 Gen 2, OTG
	Sensors	Face ID, accelerometer, gyro, proximity, compass, barometer	Face ID, fingerprint (under display, optical), accelerometer, gyro, proximity, barometer, compass, color spectrum	Fingerprint (under display, optical), accelerometer, proximity, gyro, compass, barometer, color spectrum
		Ultra Wideband 2 (UWB) support Emergency SOS via satellite (SMS sending/receiving)	BDS Satellite Calling and Message	BDS Satellite Calling and Message
BATTERY	Type	Li-Ion 4323 mAh, non-removable (16.68 Wh)	Li-Po 5000 mAh, non-removable	Li-Po 4880 mAh, non-removable
	Charging	Wired, PD2.0, 50% in 30 min (advertised), 15W wireless (MagSafe), 15W wireless (Qi2) - requires iOS 17.2 update, 4.5W reverse wired	88W wired, 100% in 30 min (advertised), 50W wireless, 20W reverse wireless	120W wired, PD3.0, QC4, 100% in 18 min (advertised), 50W wireless, 100% in 40 min (advertised), 10W reverse wireless

SOURCES: CGS-CIMB RESEARCH, GSMARENA

Figure 32: Huawei Mate 60 Pro's BOM costs (estimated total BOM cost: US\$550/unit)



SOURCES: CGS-CIMB RESEARCH ESTIMATES

Figure 33: Huawei Mate 60 Pro supply chain

Major Components	Key Suppliers
Baseband/ Processor	Huawei HiSilicon, SMIC
OLED Display	BOE Technology, Visionox Technology
Cameras	Oflim, Sunny Optical, Largan, GYZ Electronic, OFILM, LianChuang Electronic
Memory/ Logic	SK Hynix
Structural Components	Lens Tech, Jinlong Machinery, Everwin Precision, SVG Group
Function Chip Module	Goodix Technology, Maxscend Technologies
Connectivity/ Satellite	Hwa Create, M&S Electronics Technology, Longsheng Technology
Acoustics	Goertek

SOURCES: CGS-CIMB RESEARCH ESTIMATES

Handset camera specification upgrades to continue ➤

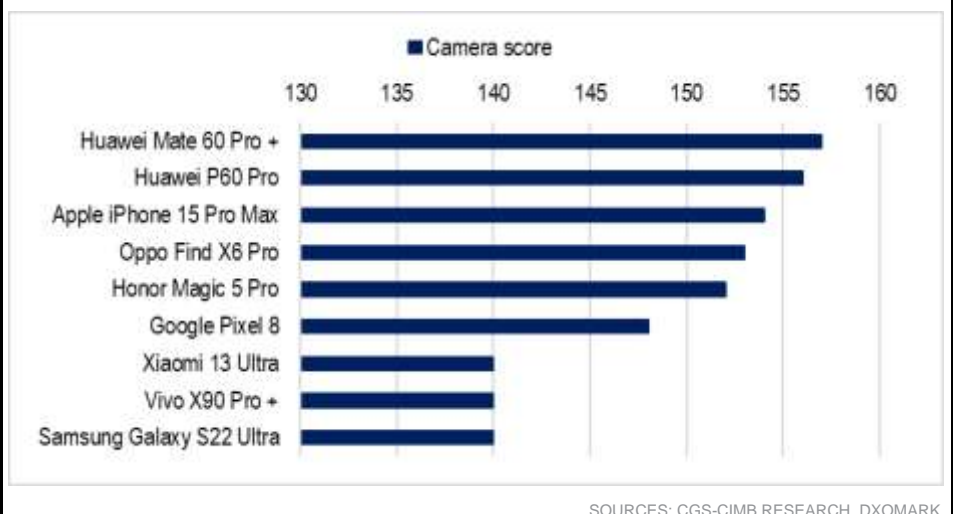
Smartphone camera specification upgrades to continue in 2024F.

Smartphone cameras have advanced by leaps and bounds in recent years. To catch up with market leaders Apple and Samsung, a slew of Chinese handset brands has teamed up with camera specialists to co-develop industry-leading image technology, including OPPO/OnePlus with Hasselblad, Xiaomi with Leica, and Vivo with Zeiss, based on the manufacturers' presentations.

DXOMARK testing revealed that Chinese brand camera models placed first.

DXOMARK, a third-party hardware quality testing, scoring, and review service provider, consistently ranks smartphones that exploit these innovations at the top of its smartphone camera ratings, including the OPPO Find X6, Xiaomi 13 Ultra, and Vivo X90 Pro. Based on its rankings in Sep 2023, DXOMARK has scored Huawei's Mate 60 Pro and P60 Pro and Honor's Magic 5 Pro, which use proprietary photographic technology, above multiple Apple and Samsung high-end models. As a result, handset manufacturers such as Apple and Samsung are working hard to improve their own camera specifications to remain competitive (Fig 34), in our view.

Figure 34: Selective flagship models' camera scores, compared by DXOMARK as of 30 Sep 2023

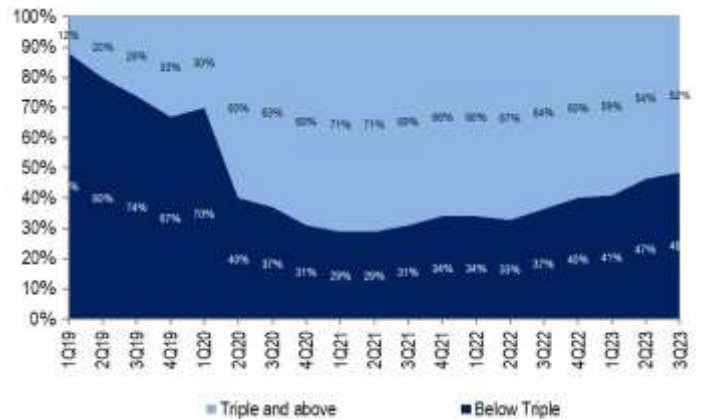
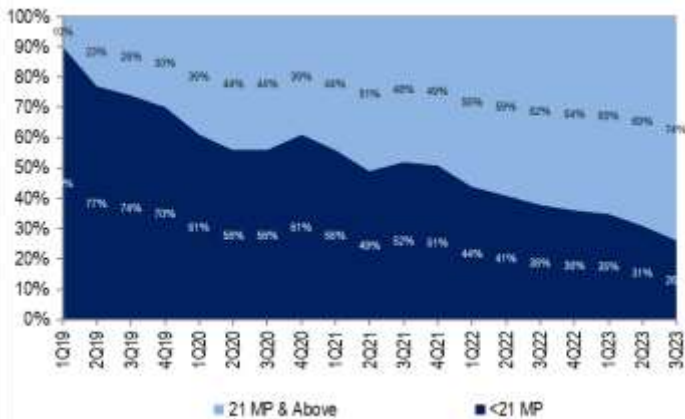


Enhancing camera features. Smartphones' primary camera megapixels (MP) have consistently increased, from 32MP in flagship models in 2020 to 48-64MP in flagship models in 2023, in order to improve smartphone image quality, with the Samsung Galaxy Ultra 23 even carrying a 200MP camera to make a significant difference, while Apple upgraded the main lens in its iPhone 14 to 48MP (Sep 2022) (Fig 35).

On the other hand, the number of cameras in smartphones has been reducing as the functionalities of the primary cameras have risen. In 2021, most high-end flagship models featured four cameras in the rear, with over 70% of high-end phones having triple and quad camera systems to improve image quality and raise customer awareness. However, because of the larger image size and aperture, and improved OIS, triple/quad camera penetration fell to 52% in 3Q23 (Fig 36), according to Counterpoint.

Figure 35: Market share by primary camera MP (1Q19 to 3Q23)

Figure 36: Triple camera penetration rate (1Q18 to 3Q23)



SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

SOURCES: CGS-CIMB RESEARCH, COUNTERPOINT

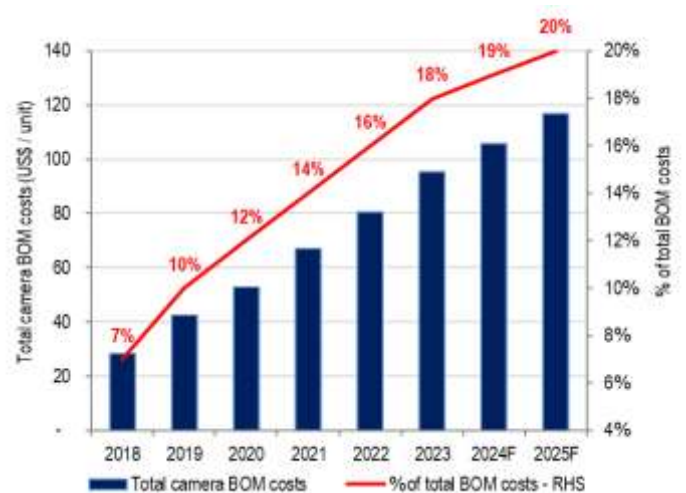
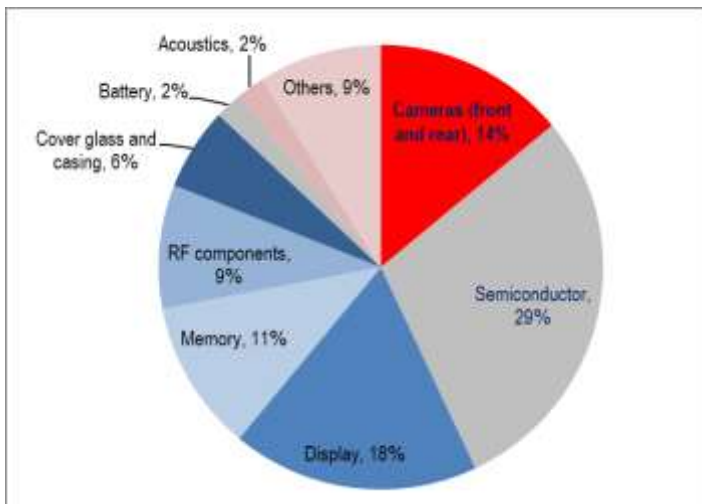
Increasing BOM costs on handset cameras. According to Counterpoint, handsets with main cameras of 21MP or above have consistently increased from around 40% of total smartphone shipments in 2020 to 74% in 3Q23, leading to a consistent increase in BOM costs over the past three years (2021-2023). We expect camera megapixel upgrades to continue in 2024F, along with the more advanced photography technology, such as periscope-style camera providing optical zoom ranging from 3x to 10x, optical image stabilisation (OIS) reducing shaking and vibrating while taking photos and videos, and large aperture improving image quality in dark environments, etc.

We believe these features will continue to increase camera BOM costs, benefiting camera lens, modules, and CMOS image sensor (CIS) suppliers such as Sunny Optical, Q Technology and Will Semiconductor (Fig 37).

We estimate camera BOM costs to continue to rise in 2024F and 2025F, reaching 19% and 20% of total smartphone BOM costs, owing to sustained functionality enhancement and innovative features in smartphone cameras (Fig 38).

Figure 37: Chinese brands' flagship BOM costs breakdown (3Q23)

Figure 38: Chinese brands' flagship camera BOM costs (2018-2025F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COUNTERPOINT

Figure 39: Smartphone camera specification upgrades roadmap

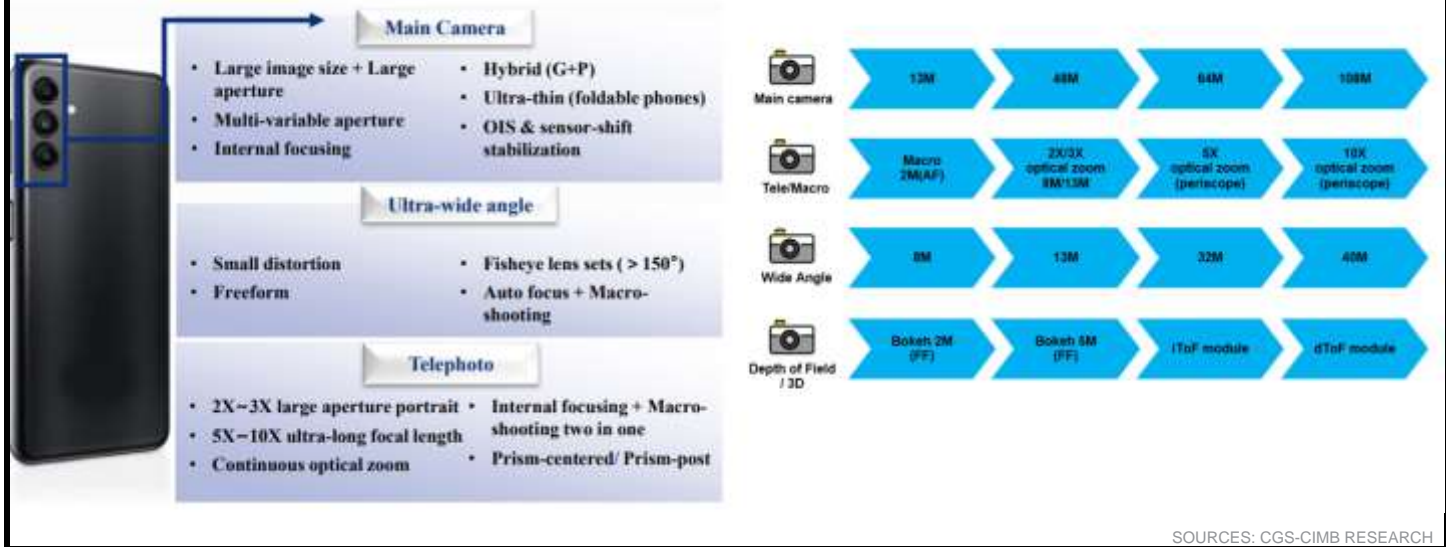


Figure 40: Flagship models' camera specification comparisons

Models	iPhone 15 Pro Max	Samsung Galaxy S23 Ultra	Huawei Mate 60 RS Ultimate	Xiaomi 14 Pro	Oppo Reno 10 Pro+	Vivo X100 Pro
Date of launch	Sep-23	Feb-23	Sep-23	Nov-23	May-22	Nov-23
Appearance						
Rear-facing camera	Triple cam: Wide + telephoto + telephoto + ultrawide + depth	Quad cam: Wide + periscope telephoto + telephoto + ultrawide	Triple cam: Wide + telephoto + telephoto + ultrawide + depth	Triple cam: Wide + periscope telephoto + ultrawide	Triple cam: Wide + macro + ultrawide	Triple cam: Wide + macro + ultrawide
Camera 1						
- resolution	48MP	200MP	48MP	50MP	50MP	50MP
- Aperture	f1.8	f1.7	f1.4-f4.0	f1.4-f4.0	f1.8	f1.8
Special feature	dual pixel PDAF, sensor-shift OIS	multi-directional PDAF, Laser AF, OIS	PDAF, Laser AF, OIS	PDAF, Laser AF, OIS	multi-directional PDAF, OIS	PDAF, Laser AF, OIS
Camera 2						
- resolution	12MP	10MP	48MP	50MP	64MP	50MP
- Aperture	f2.8	f4.9	f3.0	f2.0	f2.5	f2.5
Special feature	dual pixel PDAF, 3D sensor-shift OIS, 5x optical zoom	dual pixel PDAF, OIS, 10x optical zoom	PDAF, OIS, 3.5x optical zoom	PDAF, OIS, 3.2x optical zoom	PDAF, 3x optical zoom, OIS	PDAF, OIS, 4.3x optical zoom
Camera 3						
- resolution	12MP (120 degree)	10MP	40MP	50MP	8MP	50MP
- Aperture	f2.2	f2.4	f2.2	f2.2	f2.2	f2.0
Special feature	dual pixel PDAF	dual pixel PDAF, OIS, 3x optical zoom	PDAF	AF	Nil	AF
Camera 4						
- resolution	Nil	12MP	Nil	Nil	Nil	Nil
- Aperture	Nil	f2.2	Nil	Nil	Nil	Nil
Special feature	TOF 3D LiDAR scanner	dual pixel PDAF, Super Steady video	Nil	Nil	Nil	Nil
Key features	Dual-LED dual-tone flash, HDR (photo/panorama)	LED flash, auto-HDR, panorama	LED flash, panorama, HDR	Leica lenses, Dual-LED flash, HDR, panorama	LED flash, HDR, panorama	Zeiss optics, Zeiss T* lens coating, LED flash, panorama, HDR, 3D LUT import
Front-facing camera						
- resolution	12MP	12MP	13MP	32MP	32MP	32MP
- Aperture	f1.9	f2.2	f2.4	Nil	f2.4	f2.5
Key features	PDAF, OIS, SL 3D	Wide angle, dual pixel PDAF, Dual video call, Auto-HDR, HDR10+	HDR, panorama	HDR, panorama	Panorama, HDR	Wide angle, HDR
Retail price	USD\$1199 / RMB 9999	USD\$1199 / RMB9499	USD\$1199 / RMB11999	USD\$699 / RMB 4999	USD\$549 / RMB 3899	USD\$ 799 / RMB5499

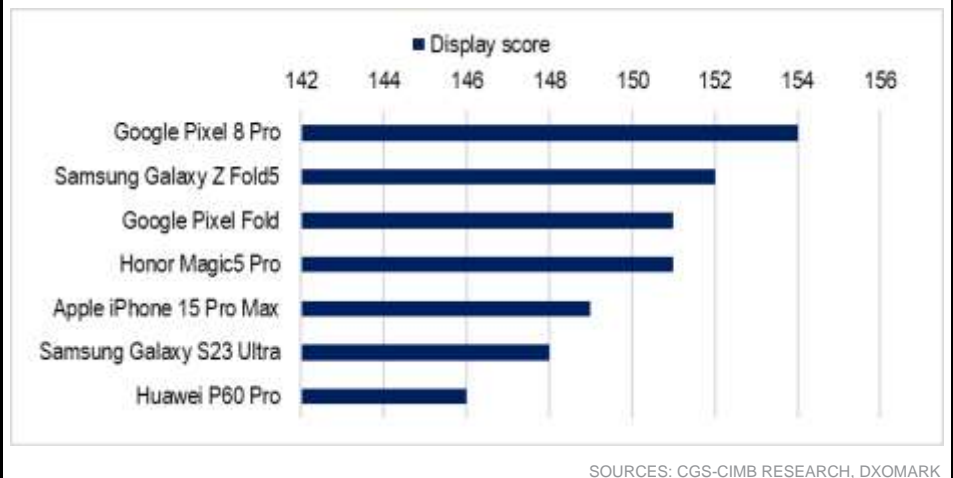
SOURCES: CGS-CIMB RESEARCH, GSMARENA

Chinese brands’ display upgrades to accelerate ➤

DXOMARK testing revealed that Chinese brand camera models placed first. DXOMARK ranked Google Pixel 8 Pro and Samsung Galaxy Z Fold 5 as having the best smartphone displays (as at 15 Dec 2023), in terms of resolutions, refresh rates, color options, touch, view angles, etc. in their currently available flagship models .

Fig 41 shows only two Chinese brands’ models, Honor Magic 5 Pro and Huawei P60 Pro, being represented in the table, indicating that the overall display quality in flagship models from Chinese brands is still trailing behind major overseas competitors due to a shortage of domestic supply for high quality OLED panels and concerns about material costs.

Figure 41: Selective flagship models’ display scores, compared by DXOMARK (as at 15 Dec 2023)



Chinese brands’ OLED penetration should rise. Nevertheless, we have seen wider adoption of advanced display technology, such as flexible AMOLED and LTPO AMOLED, similar to Apple’s iPhone 15 and Samsung’s Galaxy S23, in the latest flagship models launched in Sep 2023. We expect an increase in domestic supply and lower OLED panel prices to accelerate the adoption of OLED penetration by Chinese brands in 2024-25F, catching up with the display technology in the global smartphone industry.

According to Counterpoint, Chinese brands’ OLED penetration rate should rise to 40% in 2025F, from only 20% in 2022, due to increasing adoption in the mid- to high-end price segments (Fig 42).

Figure 42: Chinese brands’ OLED penetration rate (2019 to 2025F)

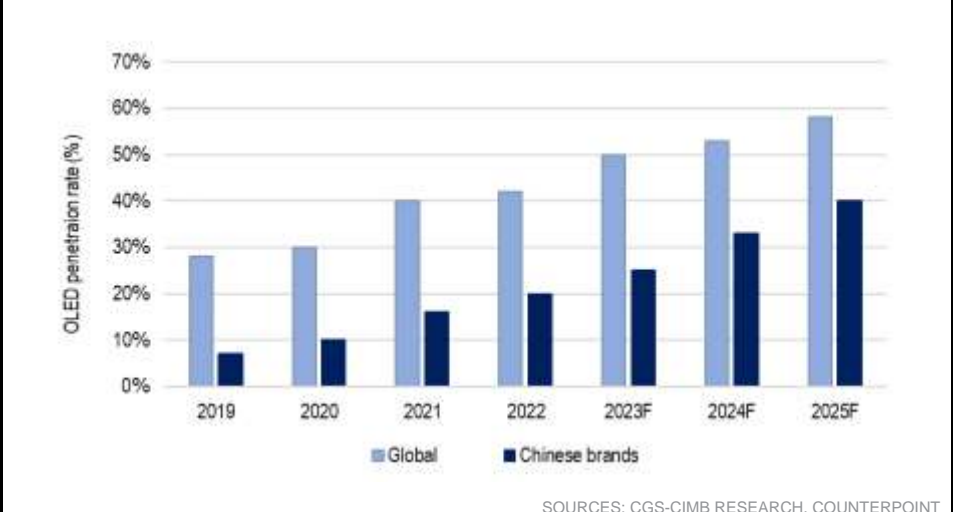








Figure 43: Flagship models' display specification comparison

Models	iPhone 15 Pro Max	Samsung Galaxy S23 Ultra	Huawei Mate 60 RS Ultimate	Xiaomi 14 Pro	Oppo Reno 10 Pro+	Vivo X100 Pro
Date of launch	Sep-23	Feb-23	Sep-23	Nov-23	May-22	Nov-23
Appearance						
Display type	LTPO Super Retina XDR OLED, HDR10, Dolby Vision, 1000 nits (typ), 2000 nits (HBM)	Dynamic AMOLED 2X, HDR10+, 1200 nits (HBM), 1750 nits (peak)	LTPO OLED, 1B colors	LTPO AMOLED, 68B colors, Dolby Vision, HDR10+, 3000 nits (peak)	AMOLED, 1B colors, HDR10+, 500 nits (typ), 1100 nits (HBM), 1400 nits (peak)	LTPO AMOLED, 1B colors, 3000 nits (peak)
Display size (inches)	6.7	6.8	6.82	6.73	6.74	6.78
Display resolution	1296 x 2796	1440 x 3088	1260 x 2720	1440 x 3200	1240 x 2772	1260 x 2800
Screen-to-body ratio	89.80%	89.90%	88.50%	89.60%	90.60%	89.80%
Refresh rate	120Hz	120Hz	120Hz	120Hz	120Hz	120Hz
Retail price (US\$/Rmb)	USD\$1199 / RMB 9999	USD\$1199 / RMB9499	USD\$1199 / RMB11999	USD\$699 / RMB 4999	USD\$549 / RMB 3899	USD\$ 799 / RMB5499

SOURCES: CGS-CIMB RESEARCH, GSMARENA

Higher contributions from high-margin non-handset components

Non-handset business to drive component makers' revenue growth and GPM improvements ►

Higher revenue contributions from automotive and AR/VR (non-handset components), leading to sustained GPM improvements. We believe that revenue in the non-handset businesses of automotive electronics and AR/VR products would accelerate in 2024-25F, owing to rising advanced driver assistance system (ADAS) adoption in the global EV market and the Vison Pro launches. Given that automotive components have longer product cycles and a more stable demand/supply dynamic, we believe handset component makers will benefit from increased revenue from automotive and AR/VR components in the coming years (FY24-25F), resulting in sustained GPM improvements from higher-end products.

Chinese handset component makers are looking for new growth drivers from automotive electronics and AR/VR. In the past few years (2020-23), China handset component makers have been looking for new growth drivers because orders for handset components have been falling and competition has been getting tougher. We think that automotive electronics, such as vehicle lens and camera modules, auto displays, and precision auto parts, as well as AR/VR products, such as headset displays, sensors and cameras, and acoustics, will become their next growth drivers in FY24-25F, thanks to the rising adoption of ADAS in the smart EV market and rapid development of metaverse technology.

Supported by the significant electrification trend in automobiles and abundant AR/VR new product launches in 2024-25F, we believe that Chinese handset component makers' non-handset revenue will accelerate in FY24-25F, owing to their leading camera and display technologies and ongoing R&D investments for innovative features. Fig 44 shows the above companies' revenue breakdowns by automotive and AR/VR and AIoT segments in FY22 and FY23F.

Figure 44: Key beneficiaries of fast-growing automotive components and AR/VR products revenue

FYE Dec 31 (revenue breakdown %)	AAC Tech	BOE	Cowell	Lens Tech	Q Tech	Sunny	Tianma	USI	Will Semi
FY23F revenue breakdown (% of total turnover)									
- Smartphone	97%	90%	94%	90%	98%	78%	71%	75%	65%
- Automotive	2%	8%	6%	10%	1%	16%	24%	6%	19%
- AR/VR	1%	2%	0%	0%	1%	6%	5%	2%	3%
FY24F revenue breakdown (% of total turnover)									
- Smartphone	95%	86%	96%	84%	96%	74%	71%	70%	67%
- Automotive	3%	11%	4%	12%	2%	18%	26%	8%	23%
- AR/VR	2%	3%	0%	4%	2%	8%	3%	4%	5%
FY25F revenue breakdown (% of total turnover)									
- Smartphone	89%	82%	95%	80%	92%	68%	65%	67%	68%
- Automotive	6%	13%	3%	14%	4%	20%	30%	13%	26%
- AR/VR	5%	5%	2%	6%	4%	12%	2%	3%	5%
FYE Dec 31 (yoy % change)	AAC Tech	BOE Tech	Cowell	Lens Tech	Q Tech	Sunny	Tianma	USI	Will Semi
FY24F revenue									
- Total revenue	14%	17%	38%	13%	5%	20%	13%	11%	25%
- Smartphone	12%	12%	40%	6%	3%	14%	13%	4%	29%
- Automotive	71%	58%	4%	36%	111%	31%	22%	41%	51%
- AR/VR, wearable and other AIoT products	128%	115%	N/M	N/M	N/M	56%	-32%	122%	108%
FY25F revenue									
- Total revenue	7%	13%	34%	13%	4%	17%	15%	12%	22%
- Smartphone	1%	8%	32%	8%	1%	8%	5%	7%	24%
- Automotive	122%	34%	4%	32%	65%	31%	33%	82%	38%
- AR/VR, wearable and other AIoT products	158%	82%	N/M	70%	109%	70%	-23%	-16%	22%

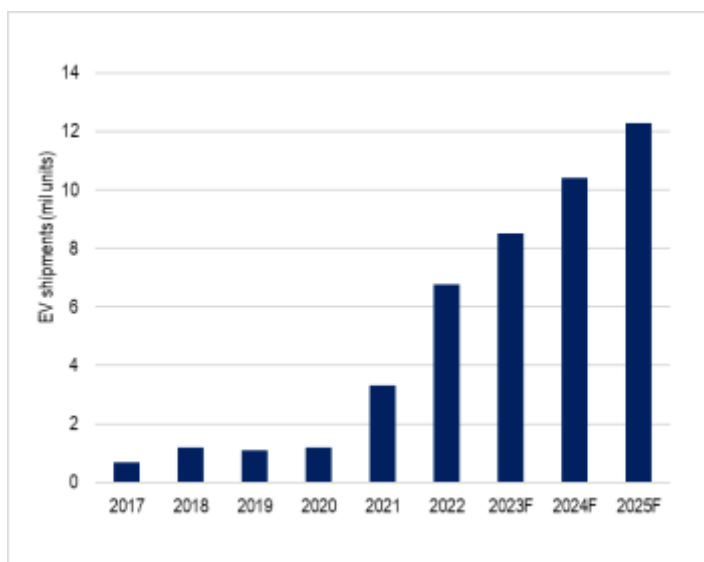
SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS

ADAS driving demand for vehicle cameras ▶

Rising ADAS adoption in EVs boosting vehicle camera and auto display demand. Global EV sales have been strong in 2023, with c.13m units EV delivered, of which China could account for 8.5m units (55% of global EV sales in 2023F). EV sales in China have increased dramatically in recent years (2020-23), as a result of favourable government policies and consumer preference for intelligent cockpit features in the smart EVs.

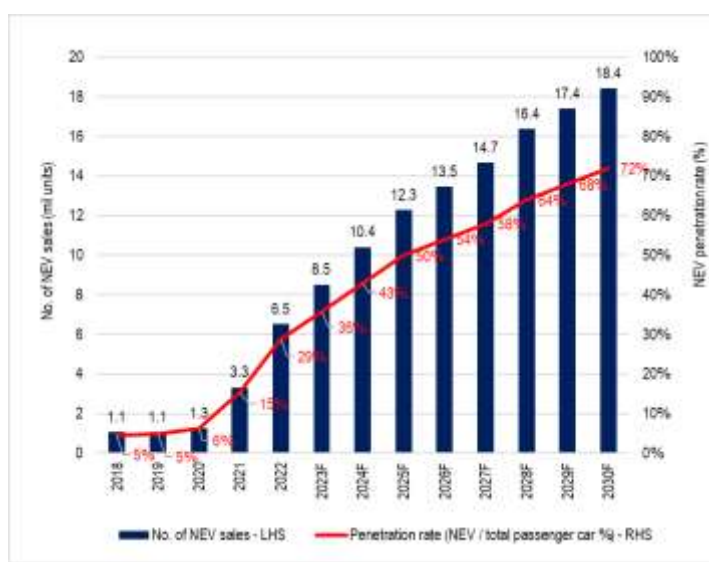
China's EV penetration rate in total automotive sales surpassed 40% for the first time on Nov 23, indicating that demand for EVs remains strong due to continued penetration growth. We believe that the increasing use of Advanced Driver Assistance Systems (ADAS) in EVs will drive demand for high-quality image and sensing cameras, as well as displays for in-cabin infotainment systems. (Fig 45 & 46).

Figure 45: Global EV shipments, by year (2017 to 2025F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, INTERNATIONAL ENERGY AGENCY (IEA)

Figure 46: China's new energy vehicle (NEV) penetration, by year (2020 to 2030F)



SOURCES: CGS-CIMB RESEARCH ESTIMATES, CHINA ASSOCIATION OF AUTOMOTIVE MANUFACTURERS (CAAM), CHINA PASSENGER CAR ASSOCIATION (CPCA)

ADAS driving higher demand for image and sensing cameras. ADAS/autonomous driving require cameras, light detection and ranging (LiDAR), and radar. With more EV manufacturers incorporating ADAS into their vehicles, the demand for these sensors and cameras is being driven by the need for safety functions, as well as the enhancement of the driving experience. According to McKinsey & Company (a global management consulting company), the sensors market will grow at a 13% CAGR, from US\$13bn in 2020 to US\$43bn in 2030F, owing to a significant increase in ADAS Level 4-5 production rates and increased safety requirements.

XPeng (9868 HK, Add, TP: HK\$87.20), has already developed a semi-autonomous driving system City Navigation-Guided Pilot (XNGP) in the P7, G9, and P5 models, which use c.12 sensors and cameras, including dual-LiDAR sensor, an 8MP HD sensing camera, and various 2-3MP surrounding cameras, to achieve accurate in-city navigation functions (Fig 47).

Li Auto (2015 HK, Add, TP: HK\$272.60) has also developed its own autonomous driving system called AD Max, which is equipped with a large-scale AI algorithm that enables real-time perception, decision-making, and planning like a human driver, without relying on high-precision maps from over 10 imaging cameras and sensing cameras (Fig 48).

Figure 47: XPeng's XNGP has been rolled out in China



SOURCES: CGS-CIMB RESEARCH, XPENG)

Figure 48: Li Auto's AD Max



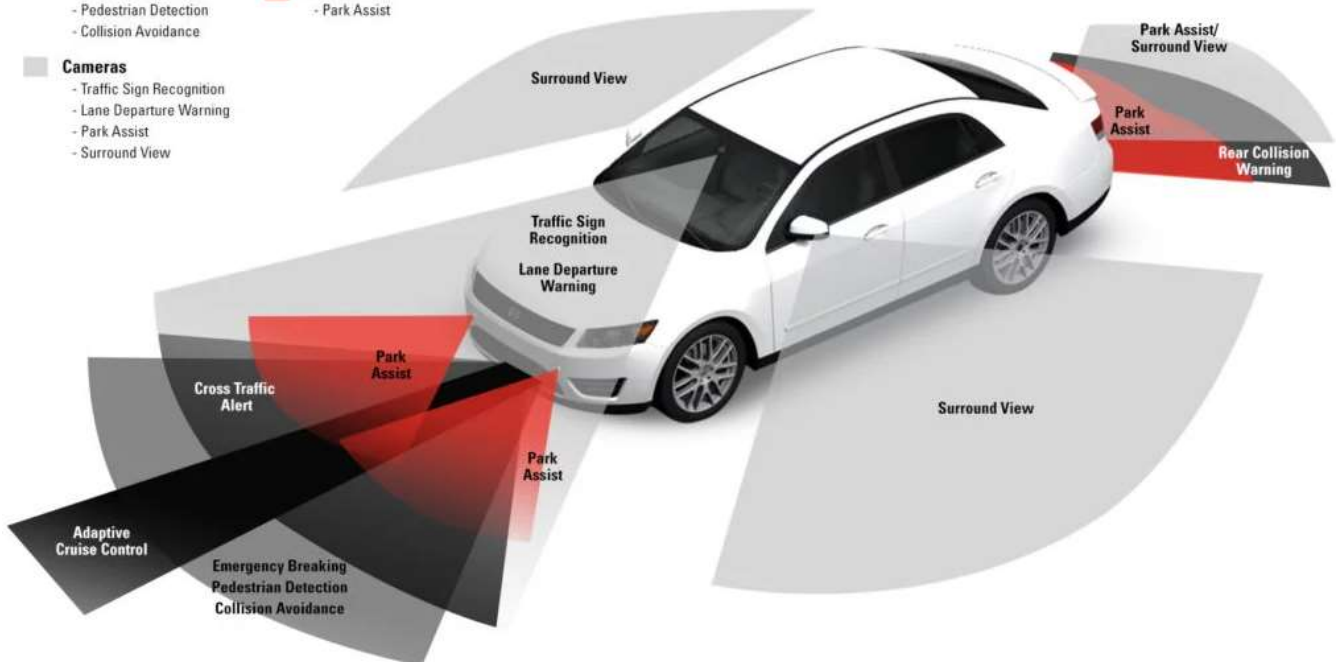
SOURCES: CGS-CIMB RESEARCH, LI AUTO, CNEVPOST

Increasing no. of cameras for ADAS Level 4 and 5. Currently, more ADAS Level 4 EVs are hitting the market, indicating that consumer preference for EVs is shifting towards EVs with autonomous driving features, driving up demand for vehicle cameras, radar sensors, and LiDAR sensors. ADAS Levels 4-5 may require a total of 50 or more additional cameras and sensors (vs. Levels 2), including microphones and ultrasonic sensors. It is worth noting that unexpected sensor advancements or breakthroughs could potentially change the long-term sensor configuration for autonomous driving, pushing up automotive electronics sales even further (Fig 49 & 50).

Figure 49: ADAS ensures car safety with camaras and radars, as well as LiDAR to assist autonomous driving

ADAS: THE CIRCLE OF SAFETY

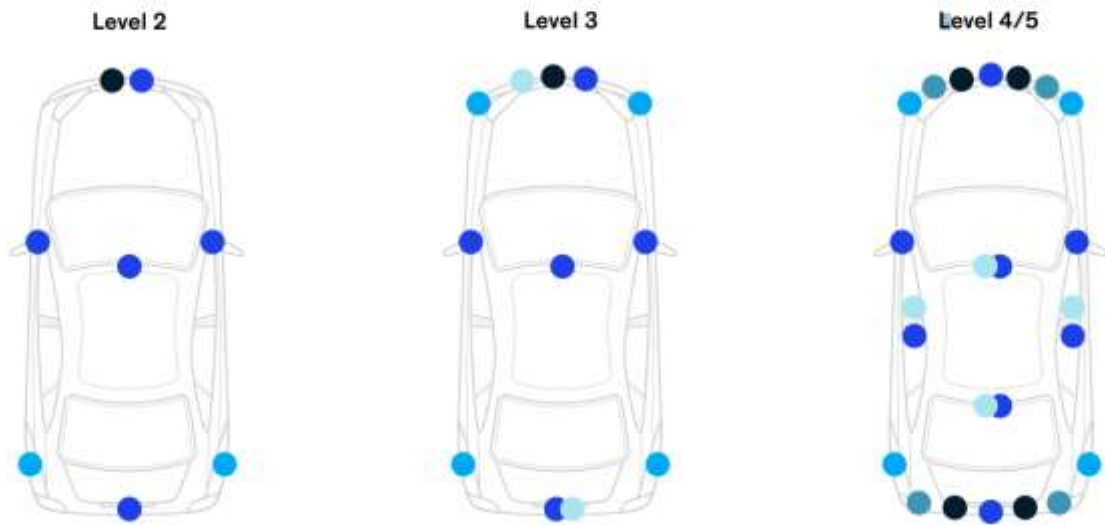
- Long-Range Radar**
 - Adaptive Cruise Control
- LIDAR**
 - Emergency Braking
 - Pedestrian Detection
 - Collision Avoidance
- Cameras**
 - Traffic Sign Recognition
 - Lane Departure Warning
 - Park Assist
 - Surround View
- Short/Medium-Range Radar**
 - Cross Traffic Alert
 - Rear Collision Warning
- Ultrasound**
 - Park Assist



SOURCES: CGS-CIMB RESEARCH, SPINNY

Figure 50: Demonstration on car with radars, LiDARs and camera at each level of safety

● Long-range radar ● Short- and medium-range radar ● Camera ● Long-range LiDAR ● Short-range LiDAR



SOURCES: CGS-CIMB RESEARCH, MCKINSEY & COMPANY

Sunny Optical and Will Semi have high sales exposure to vehicle cameras. Within our coverage, Sunny Optical Technology (Sunny Optical, 2382 HK, Add) and Will Semiconductor (Will Semi, 603501 CH, Add) have the highest sales exposure to the vehicle camera market, at 16% and 15% of FY23F revenue, respectively.

Sunny Optical is the world's largest vehicle lens supplier, with a 30% global market share in terms of volume in 2022, thanks to its first mover advantage, according to the company.

Will Semi, thanks to its extensive global customer base, is the largest CMOS image sensor (CIS) supplier for vehicle cameras, with a market share of c.50% in terms of volume in 2022, according to the company.

Smart cockpit driving higher auto display demand >

Automotive displays will be the second driver for automotive electronics. The next generation of EVs would reinforce vehicle control, driver assistance, and seamless connection of devices, including Heads-up Display (HUD), an in-cabin infotainment system, another key component manufactured by handset components manufacturers.

Given that EV manufacturers are attempting to strictly control vehicle weight to reduce energy consumption, automotive displays in luxury and premium smart EVs are migrating from traditional A-Si thin film transistor liquid crystal display (A-Si LCD) to advanced low temperature poly-silicon TFT LCD (LTPS) and active-matrix organic light-emitting diode (AMOLED), owing to the latter's light weight, thin size, high contrast and transparency ratios, amid the growing adoption of autonomous driving technology and advanced vehicle features that are driving the demand for smart cockpit/smart display.

Figure 51: Driver using in-cockpit panels



SOURCES: CGS-CIMB RESEARCH, TESLA

Figure 52: Dashboard with HD display in Tesla Model S



SOURCES: CGS-CIMB RESEARCH, PC MAGAZINE & COMPANY

Increasing adoption of cockpits in EVs. According to Juniper Research (a global market research and consultancy), 287m vehicles, or 20% of total global vehicles, will have intelligent cockpits by 2025F, up from 122m in 2021, suggesting a 5-year growth rate of 130%. We forecast that the auto display segment will grow at a rate of more than 25% per year over the next two years (2024-25F), owing to: 1) increased demand for precise navigation systems, 2) improved in-vehicle user experience, and 3) integration of AR/VR technology for safety and visibility reasons.

Figure 53: Head-up display demonstration by Li Auto



SOURCES: CGS-CIMB RESEARCH, LI AUTO

Figure 54: Family enjoying infotainment while travelling



SOURCES: CGS-CIMB RESEARCH, LI AUTO

Large room for growth in automotive display. According to Juniper Research, the automotive smart display market, which includes centre stack displays, HUD, rear seat entertainment displays, and digital instrument cluster displays, will be worth US\$9.7bn by 2027F, up from US\$2.3bn in 2022, growing at a CAGR of 33%, owing to increased smart EV adoption with advanced ADAS systems and infotainment displays.

Global automotive display shipments totalled 50m units in 2Q23, up 14.7% yoy, owing to global supply chain recovery and the expansion of the global EV market, based on Juniper Research.

Given the global EV market development and the massive Chinese EV expansion, we see Chinese auto display suppliers outperforming the rest of the world in the next two years (2024F and 2025F) as China accounted for more than 60% of the global smart display market by revenue in 2022 according to Juniper Research.

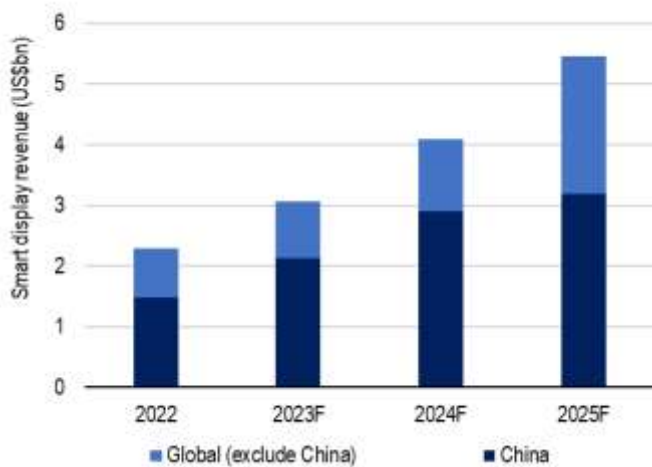
BOE and Tianma are key auto display manufacturers. BOE held the top position in 2022 for automotive display shipments, with a 16% market share, followed by Tianma, with a 15% share, according to MarketsandMarkets (a marketing research services provider). We believe Chinese auto display manufacturers, such as BOE and Tianma, would maintain the top positions in the smart auto display segment in 2023-25F, leveraging on their heavy investment in R&D to develop advanced display technologies.

Component makers to benefit from rapidly-growing ADAS and intelligent cockpits ➤

According to MarketsandMarkets, global smart display revenue in 2022 reached US\$2.3bn, of which China amounted for US\$1.49bn. We expect China’s smart display revenue to grow at a CAGR of 30% from 2022 to 2025F, reaching US\$3.2bn in 2025F, due to the fast-growing EV manufacturing sector in China (Fig 55).

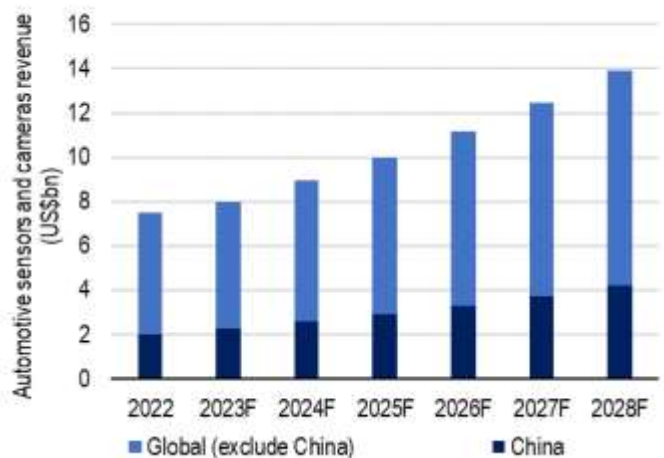
According to Huaon, a China-based industry research institute, the global automotive sensors and cameras revenue in 2022 was c.US\$7.5bn. It forecasts the market to grow at a c.12% CAGR from 2022 to 2028F, reaching US\$14bn in 2028F. According to same company, the China automotive sensors and camera market reached US\$2bn in 2022 and would attain US\$4.2bn in 2028F, suggesting a 13% CAGR as a result of fast-growing ADAS adoption in China’s EV market (Fig 56).

Figure 55: Global smart display market size in terms of revenue (2022 to 2025F)



SOURCES: CGS-CIMB RESEARCH, MARKETANDMARKET

Figure 56: Automotive sensor and camera revenue (2022 to 2028F)



SOURCES: CGS-CIMB RESEARCH, HUAON

BOE and Tianma have high sales exposure to auto displays. BOE and Tianma have the highest sales exposure to the auto display market under our coverage, with their revenue shares of 11% and 29% in FY23F, respectively.

According to Omdia, BOE is the world’s largest auto display manufacturer, with a 15% global market share in 1H23. Its customers include overseas tier-1 automakers and major domestic automakers, and its products include TFT-LCD and OLED centre stack displays, instrument cluster displays, head-up displays, and rear-seat entertainment displays.

Tianma is the world’s largest TFF-LTPS auto display manufacturer, accounting for 24% of the global market share in 1H23, according to Omdia. Its products are similar to those of BOE, but it employs TFF-LTPS panels. It has a wide customer base in China, which includes all the major traditional automakers, as well as Chinese EV manufacturers.

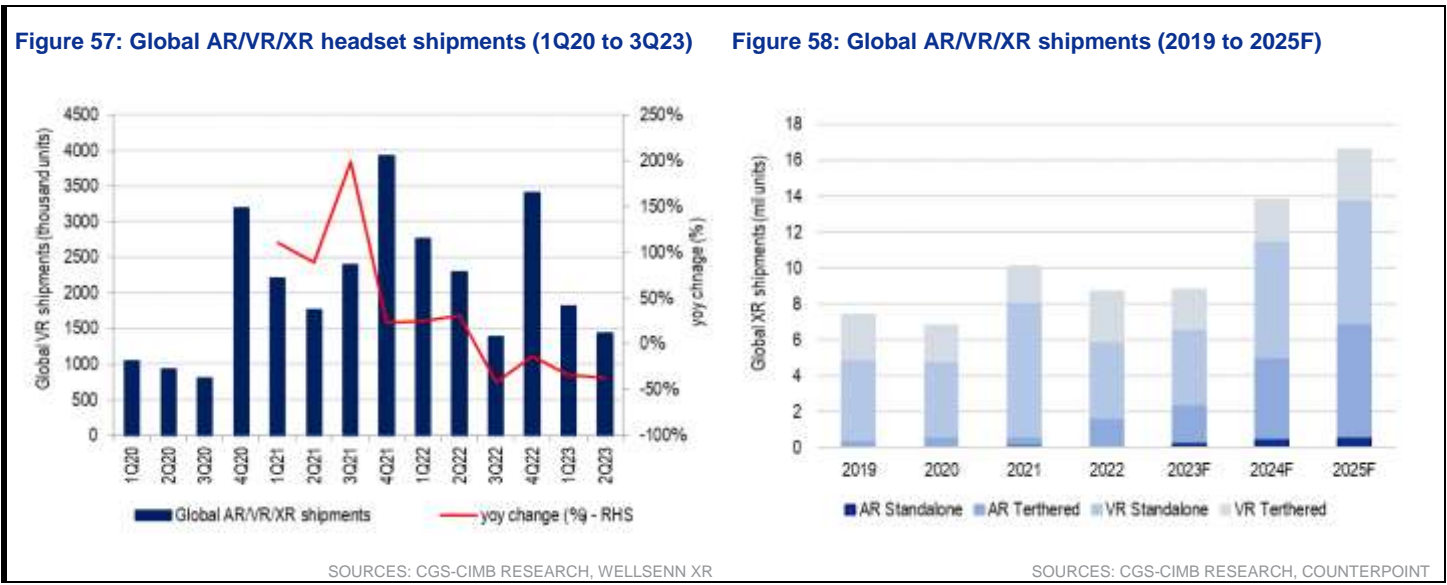
Apple's Vision Pro launch to accelerate the AR/VR market ▶

AR/VR market to accelerate in 2024-25F. Due to the unveiling of Apple Vision Pro, other players in the mixed reality (MR) market will be driven to push the boundaries of their products, including improving user experience from the hardware end and enriching application scenarios, in our view. In addition, we think handset component manufacturers will also benefit from these developments as the growth of the augmented reality (AR)/virtual reality (VR) market will drive demand for components, such as displays, lens, camera modules and casings.

Delays in shipments and limited application scenarios have led to a weaker-than-expected VR headset market in 2023F. According to Wellsenn XR (industry research institute), global VR headset shipments experienced very good growth in 2020 and 2021, up 74% and 72% yoy, respectively. However, in 2022, the global VR market fell by 4% yoy. Global VR headset shipments continued to decline yoy in the first three quarters of 2023 and are only expected to rebound in 4Q23F due to the launch of Meta Quest 3, Wellsenn said.

Frequent delays in shipments by brands are the direct cause of the overall decline in shipments, in our view. Before Meta Quest 3 was launched in Oct 2023, the VR headset market had not released any eye-catching new products for nearly a year, and the marketing expenses of the head players had all been scaled down, making it difficult to stimulate user appetite for non-mandatory consumer electronics products amid an economic downturn. Moreover, application scenarios are still limited, with video games the major application for the time being, which hampered AR headset sales in 2023.

AR/VR/XR market size forecast. Counterpoint estimates that the global AR/VR/XR market would jump 67% yoy to 13.8m units in 2024F and increase 20% yoy to 16.6m units in 2025F, driven by falling retail prices of AR/VR/XR hardware and rising adoption of AR/VR/XR application for various use cases (Fig 57 & 58).



Apple unveils MR headset Vision Pro, which boasts the most advanced and sophisticated technology. After a reported seven years in development, Apple unveiled Vision Pro, a MR headset, on 6 Jun 2023 at WWDC 2023. Apple claims the device successfully and effectively combines the digital and physical worlds, since users can switch between AR and virtual reality VR smoothly by using a rotary knob. The launch of the Apple Vision Pro should accelerate MR development, in our view, as other players are likely to jump on the bandwagon.

- Meta is reportedly teaming up with LG to offer up competition to the Vision Pro with a new headset display, slated to arrive sometime in 2024F, called Meta Quest Pro 4, in line with its naming tradition.
- Samsung announced earlier in 2023 that it was working with Qualcomm and Google to develop an Android-powered XR device, which may also be positioned to compete against Apple and Meta.
- The HTC Vive XR Elite was introduced in Mar 2023. Notably, HTC has developed an extensive metaverse virtual space called VIVEVRSE. This virtual space may be used as a comfortable retreat for relaxation or as a corner office for work-related tasks, significantly expanding the XR headset's application scenarios.

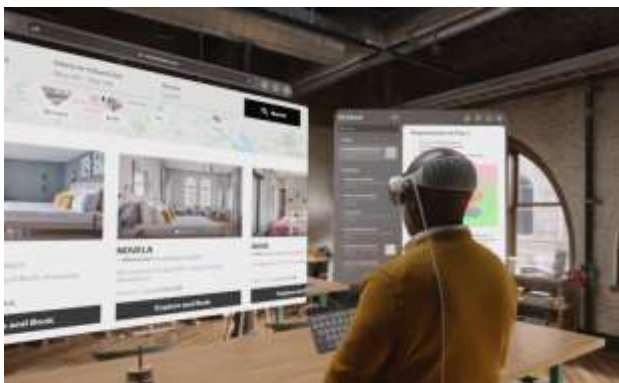
We believe that the launch of Vision Pro would accelerate global MR development as other players follow suit to launch similar products at more affordable prices to capture market opportunities, since the pricing of Vision Pro (US\$ 3,499) is out of the price range of most customers (Fig 59).

Figure 59: Comparison of the most popular and upcoming flagship AR/VR/MR headset displays in the market

Brand	Apple	Oculus	Meta	Sony	Pico	Pimax	HTC Vive	Varjo
Model	Vision Pro	Oculus Quest 2	Meta Quest Pro	Play Station VR2	Pico 4 Pro	Pimax Crystal QLED	HTC Vive XR Elite	Varjo XR-4
Announce Date	Jun-23	Sep-20	Oct-21	Feb-21	Sep-22	May-22	Jan-23	Nov-23
Release Date	Unreleased (expected early 2024)	Oct-20	Oct-22	Feb-23	Nov-22	May-23	Mar-23	Nov-23
Appearance								
Device Type	Standalone VR	Standalone VR	Standalone VR	Console-powered VR	Standalone VR	PC-powered VR	Standalone VR	PC-powered VR
Visible FOV	N/A	97° H/93° V	106° H/95.57° D	110° D	104° H/103° V	110° H/120° D	110° D	120° H/105° V
Optics	Pancakes Lenses	Fresnel lenses	Pancakes Lenses	Fresnel lenses	Pancake Lenses	Aspherical Lenses	Pancakes Lenses	Aspherical Lenses
Display size / Resolution/ Refresh rate	2 Micro-OLED, 4K, 90Hz	Single Fast switch LCD, 1832x1920, 120Hz	2 QLED, 1800x1920, 90hz	2 OLED, 2000x2040, 120hz	2 LCD, 2160x 2160, 90hz	QLED,2880x2880, 160hz	2LCD,1920x1920, 90hz	2 Mini-LED, 3840x3744, 90Hz
Weight (g)	N/A	503	722	560	586	845	625	N/A
Platform	Vision OS	Oculus Home, SteamVR	Meta Quest	PlayStation	Pico Store	Pimax Store, SteamVR	Viveport, SteamVR	SteamVR
Chipset	Apple M2, Apple R1	Qualcomm Snapdragon XR2	Qualcomm Snapdragon XR2+	N/A	Qualcomm Snapdragon XR2	Qualcomm Snapdragon XR2	Qualcomm Snapdragon XR2	N/A
Tracking type	6 DoF Inside-out via 12 integrated cameras	6 DoF Inside-out via 4 integrated cameras	6 DoF Inside-out via 5 integrated cameras	6 DoF Inside-out via 4 integrated cameras	6 DoF Inside-out via 4 integrated cameras	6 DoF Inside-out via 4 integrated cameras	6 DoF Inside-out via 4 integrated cameras	6 DoF Inside-out
Controller	N/A	Two 6DoF	Two 6DoF	Two 6DoF	Two 6DoF	Two 6DoF	Two 6DoF	Two 6DoF
Storage (GB)	N/A	128/256	256	N/A	512	N/A	128	N/A
Battery capacity (mAh)	N/A	3640	N/A	N/A	5300	6000	7000	N/A
Retail price (US\$)	\$3,499	\$399 with controllers	\$1,499 with controllers	\$550 with controllers	\$399	\$1,599 with controllers	\$1,099 with controllers	\$3990 with controllers

SOURCES: CGS-CIMB RESEARCH, VRCOMPARE

Figure 60: Apple Vision Pro 3D Interactive Mode



SOURCES: CGS-CIMB RESEARCH, APPLE

Figure 61: VIVEVER for Business



SOURCES: CGS-CIMB RESEARCH, VIVERSE

Headset hardware is constantly being upgraded to create a superior experience for users. Regarding the comfort and lightness of the device, one of the major pain points of the previous generation of VR devices is that the weight and volume of the front display part of the VR headset is too large, which is a heavy burden on the heads of long-term users. Therefore, most of the new products released in 2023 have used “pancake” lens to replace the original lens, thus reducing the size and weight significantly and greatly improving the ease of use. In terms of clarity, new hardware monocular resolution basically reached 2000*2000. In addition, the continuous optimisation of the pupil distance adjustment method and the presence of myopic optical further enhanced user experience in terms of clarity.

Because of its significant R&D expenditure and first-mover advantage, Sunny Optical currently offers pancake solutions for Meta Quest 3 and other major VR headset players.

Leading domestic handset component manufacturers to benefit. Many handset component makers are continuing to seek opportunities in the AR/VR market.

- Goertek (002241 CH, Not Rated) is also the biggest OEM for mainstream VR headsets, including Meta's Oculus and Sony's PSVR.
- Sunny Optical is the key pancake solution (lens and camera modules) supplier for Meta Quest 3.
- Largan Precision (3008 TT, Not Rated) is the leading manufacturer of glass-plastic hybrid lenses and the exclusive supplier of the tetraprism camera lens for the iPhone 15 Pro Max.
- Q Technology is a major manufacturer of AR camera modules for Pico's 4 Pro and Sony's Play Station.

We expect demand for AR/VR/XR hardware, including displays, lens, sensors, and camera module, to continue to be dominated by VR/MR headsets, as we believe the VR/MR hardware will become more affordable and comfortable, thanks to continuous technology improvements and a mature supply chain.

Estimated Vision Pro BOM costs. According to Wellsenn XR, the total BOM cost of Vision Pro is estimated around US\$1,700.

Vision Pro's key suppliers include Sony, as the single supplier for the micro-OLED display; LG Display (034220 KS, Hold, TP:W13,000) for flexible AMOLED display; Shenzhen Everwin Precision (300115 CH, Not Rated) for the casing; Cowell (1415 HK, Add), for camera modules; Genius Electronic Optical (GSEO, 3406 TT, Not Rated) for Pancake lens and ToF sensor; and Largan Precision for fisheye lens and camera lens, according to Wellsenn XR (Fig 62).

Figure 62: Apple Vision Pro BOM costs

Category	Component	Specification	Supplier	Estimate cost (USD)
Computing and memory	Main processor	M2	Apple	\$120
	Co-processor	R1	Apple	\$60
	ROM	UFS4.0, 512G	Samsung, Kioxia	\$20
	RAM	LPDDR5, 12G	SK Hynix, Samsung	\$30
	WiFi SiP	WiFi 6	Broadcom, Skyworks	\$6
	Bluetooth	Bluetooth 5.3	Broadcom, Skyworks	\$2
	PMIC	-	Apple, ST, TI, etc	\$0.5 x 8
Display panel	Others	Codec, audio PA, LED driver, capacitor, resistor, motor drive	-	\$8
	External display panel	Flexible AMOLED	LG Display	\$60
Optical component	Internal display panel	Micro OLED	Sony	\$350 x 2
	Lens	Pancake 3P	GSEO(玉晶光), Young Optics Optics(扬明光), GIS(业成光电)	\$120 x 2
Sensors	IPD Electric adjustment module	-	Zhaowei Machinery & Electronic(兆威机电)	\$10 x 2
	Down cameras	Fisheye IR SonyIMX418	Lens: Largan(大立光) Module:Cowell(高伟电子)	\$5x 4
	Main cameras	RGB	Lens: Largan(大立光) Module:Cowell(高伟电子)	\$8 x 2
	Eyetrack	WLO packaging	Sony	\$10 x 4
	Side cameras	Fisheye IR SonyIMX418	Lens: Largan(大立光) Module:Cowell(高伟电子)	\$5 x 2
	Hand tracking	RX + TX	Lens: Largan(大立光) Module: Foxconn(富士康)	\$10
	ToF	DTof SonyIMX611	Lens: GSEO(玉晶光) Module: LG	\$10
Structural parts	IMU	-	TDK	\$3
	Vibration motor	-	-	\$2 x 2
	Structure frame	Aluminum alloy, carbon fiber; Frame, casing	Everwin Precision(长盈精密), LY iTECH(领益智造)	\$120
Connection	Heat dissipation module	-	-	\$9
	Others	Sealing tape, foam, etc	-	\$12
	PCB	-	Avary(鹏鼎)	\$12
Battery	FPC	-	Avary(鹏鼎)	\$15
	External power cable	-	-	\$5
Acoustics	Built-in battery	500 mAh	-	\$3
	External battery	10,000 mAh	Goertek(歌尔股份)	\$15
Packaging accessories	Microphone	-	Merry Electronics(美律实业)	\$6
	Speaker	-	Goertek(歌尔股份)	\$2 x 4
ODM/OEM	Outer package, battery package, etc	-	-	\$15
			Luxshare(立讯精密)	\$130

SOURCES: CGS-CIMB RESEARCH, WELLSENN XR

China smartphone sector valuation looks attractive

China smartphone sector attractive at c.16x FY24F P/E ►

Valuation de-rating complete. We believe the China smartphone sector has completed its valuation de-rating after more than 30 months of downward EPS revisions and share price corrections. The sector is now trading at c.16x FY24F P/E on a +90% EPS recovery (vs. -28% in FY23F), underpinned by improving customers' smartphone shipments growth and high-end component order increases. We also estimate a 21% increase in the China smartphone sector EPS in FY25F, driven by rapid sales growth in the high-margin non-handset category, which includes automotive components and AR/VR products.

Sector valuation at c.16x FY24F P/E appears attractive. We believe the current sector valuation of c.16x FY24F P/E is attractive as it is just slightly higher than the 5-year average of 15.4x (2019-23) and represents a 25% discount to its peak valuation of c.21x at the end of 2017, owing to a strong earnings recovery forecast and probable sector EPS upward revision due to higher-than-expected high-end phone sales and spec upgrades in the upcoming flagship model launches (Fig 63).

Figure 63: China smartphone sector's prospective P/E vs. sector average share price performance (1 Jan 2017 to 31 Dec 2023)



DATA AS AT 29 DEC 2023

SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Our 2023 sector top picks are the market outperformers ➤

Cowell and Will Semi outperformed the HSI and MSCI China by 126% and 66%, respectively, in 2023. Our sector's top picks outperformed in 2023, with Cowell's share price up 112% and Will Semi up 52%, thanks to an improved net profit outlook in 2H23F. Cowell and Will Semi's share prices outperformed the Hang Seng Index (HSI) and MSCI China Index by 126% and 66%, respectively, in 2023. However, Sunny Optical's share price fell 23% in 2023, trailing the HSI's -14%, as a result of slower-than-expected Chinese customer shipment recovery in 2H23F (Fig 64).

Figure 64: CGS-CIMB coverage's share price performance in 2023

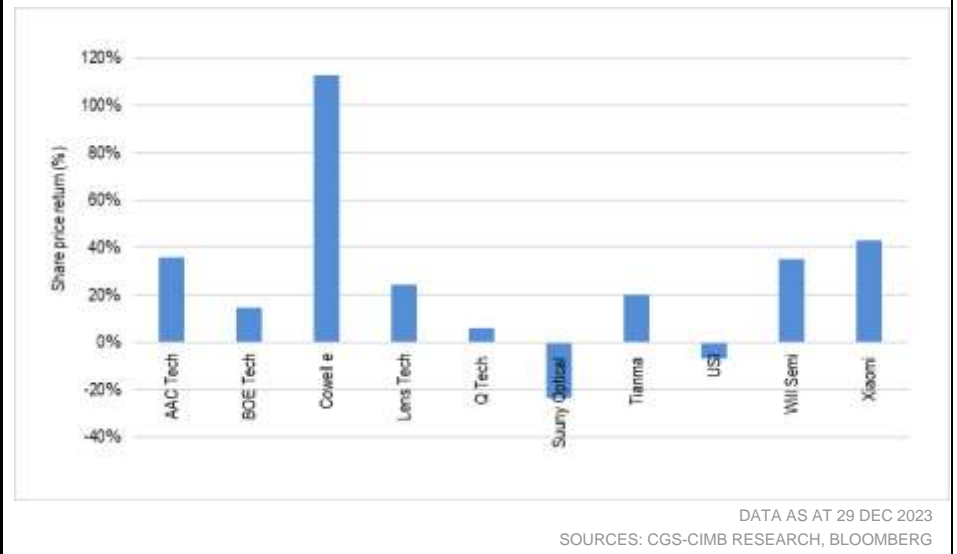


Figure 65: Annual share price returns – Chinese handset component makers – China-listed (2019 to 2023)

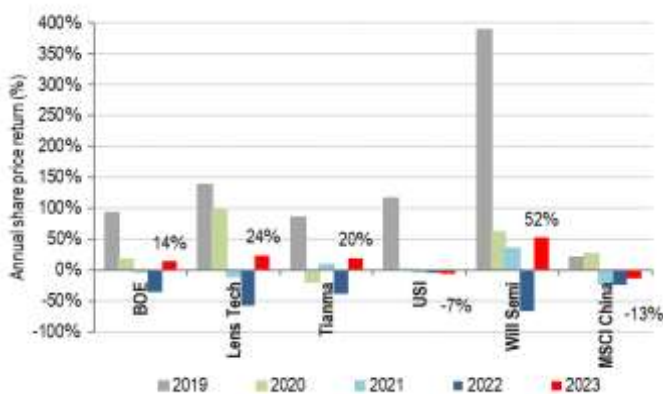
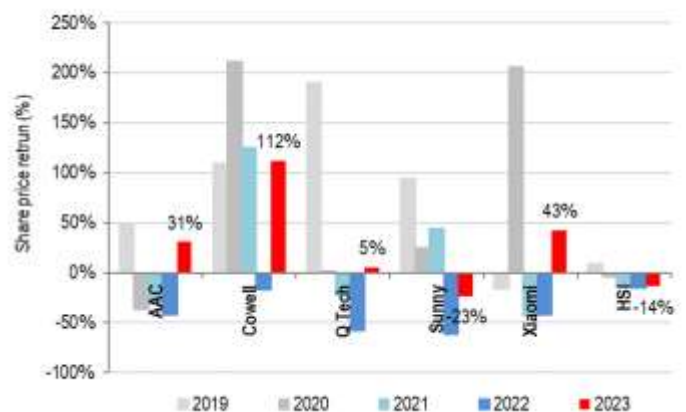


Figure 66: Annual share price returns – Chinese handset component makers – HK-listed (2019 to 2023)



Since Oct 2023, share prices have begun to rebound ➤

Share prices rebounded in the last three months of 2023. Stock prices of our coverage universe have rebounded strongly in the last three months of 2023 (29 Sep to 29 Dec 23), ranging from 4% to 73%, as global smartphone shipments improved in Oct and Nov 2023 and on market expectations of Huawei's return triggering greater competition and accelerated spec upgrades (Fig 67 & 68).

Figure 67: Share price performance of CGS-CIMB's coverage universe from 31 Dec 22 to 29 Sep 23

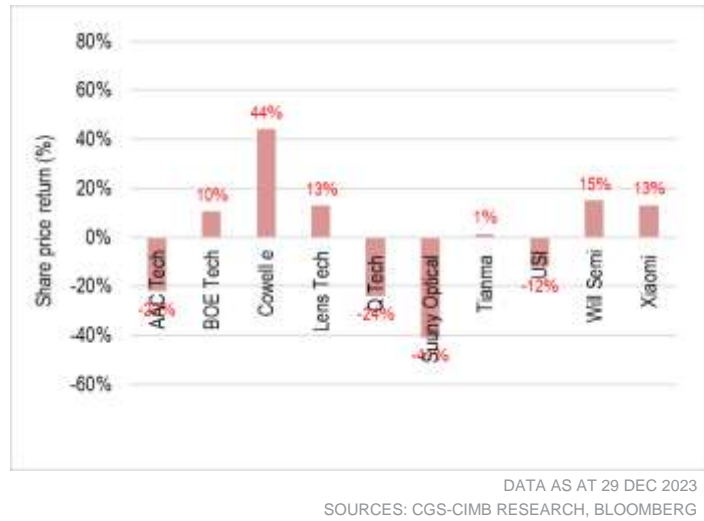
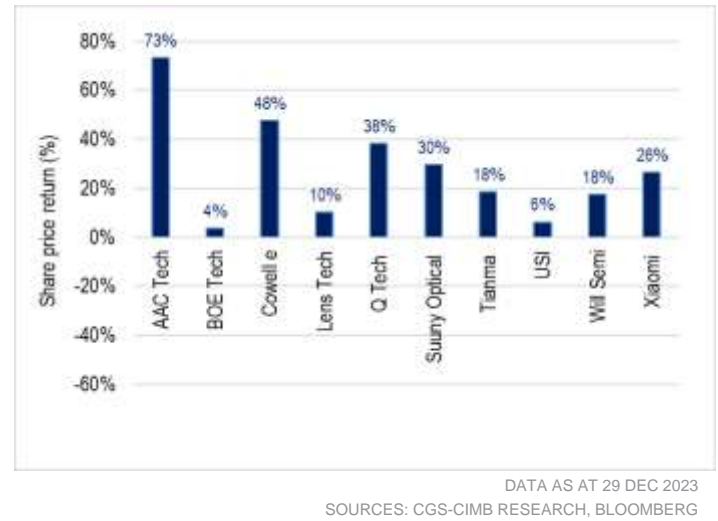


Figure 68: Share price performance of CGS-CIMB's coverage universe from 29 Sep to 29 Dec 23



Bloomberg consensus' EPS forecast cuts likely over ➤

Bloomberg consensus's EPS forecast cuts likely ended in Dec 2023. Due to the persistently weak global smartphone market in 1Q-2Q23, Chinese handset component makers suffered from poor client demand and falling GPM, resulting in disappointing 1H23 results, with net profit declines ranging from 30% to 80% yoy, which prompted a round of FY23F EPS estimate cuts by the market following 1H23 results. This was not helped by the cloudy 2H23F earnings outlook amid a bleak smartphone market at the time. Nevertheless, we think Bloomberg consensus FY23F/24F EPS forecasts have stabilised since Oct 23 as global smartphone sales posted a yoy increase, while Sunny Optical and Q Technology announced very robust handset camera module shipments recovery in Sep and Oct 23 (Fig 69).

As at end-Dec 23, the Bloomberg consensus' FY23F EPS forecast for the sector was 54% lower vs. end-Dec 22, while its FY24F forecast had declined by 38% vs. end-Dec 22 (Fig 70).

Figure 69: Accumulated Bloomberg consensus FY23F/FY24F EPS revisions (Dec 2022 to Dec 2023)

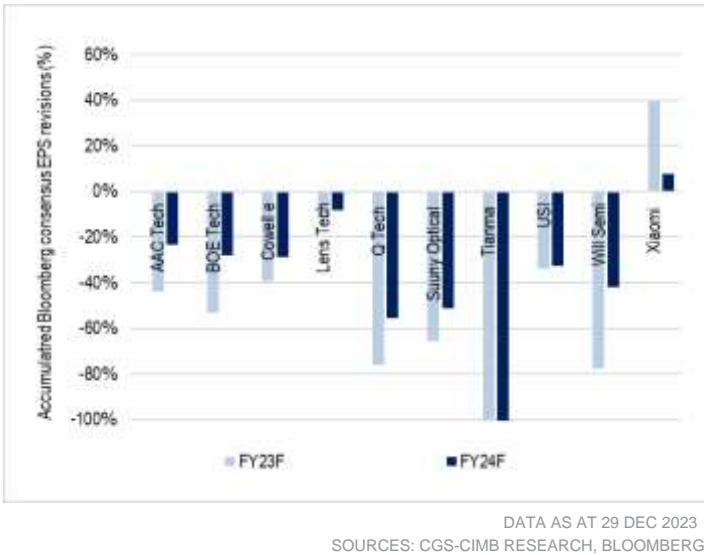
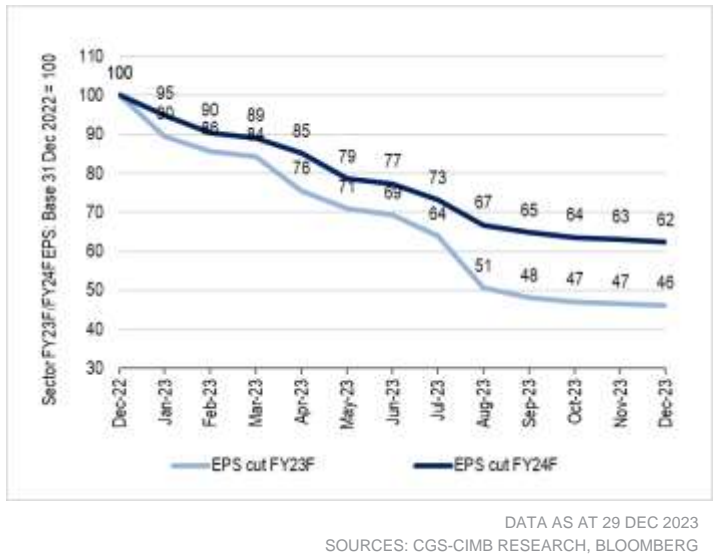


Figure 70: China smartphone sector – average EPS revisions in FY23F/FY24F (Dec 2023 to Dec 2023)



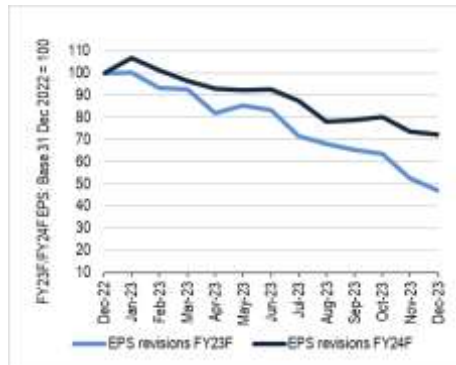
Except for Xiaomi, all other China handset component makers saw their FY23F EPS forecasts cut. Among our coverage universe of 10 companies (9 domestic handset component makers and Xiaomi), the companies with higher sales from Apple saw lower EPS reductions for FY23F, such as Lens Tech, USI, and Cowell, due to resilient iPhone shipments in 2023F, whereas companies with higher sales from Chinese brands experienced higher EPS cuts for FY23F and FY24F, such as Sunny Optical, BOE, Q Technology, Tianma, and Will Semi, due to weakened smartphone shipments and continuous spec downgrades. Xiaomi was the only company that saw an increase in FY23F/24F EPS forecasts due to improved GPM in smartphone and IoT products, as well as recovery in smartphone sales in 3Q23 (Figs 71 to 79).

Figure 71: AAC Tech's EPS revisions



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 72: BOE's EPS revisions



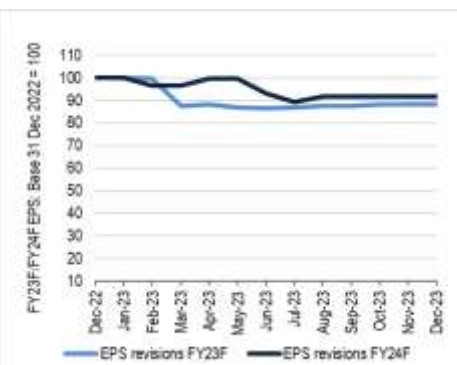
SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 73: Cowell's EPS revisions



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 74: Lens Tech's EPS revisions



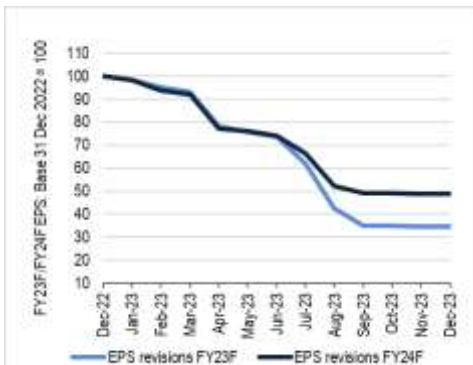
SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 75: Q Technology's EPS revisions



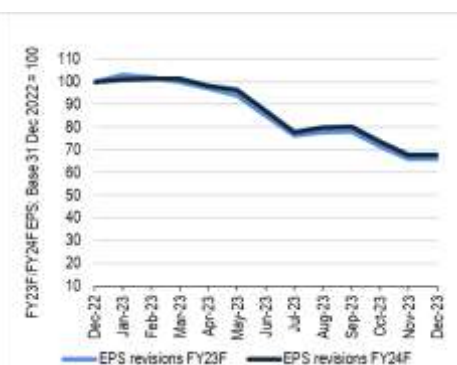
SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 76: Sunny Optical's EPS revisions



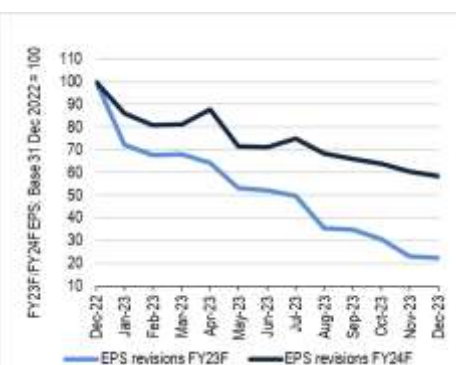
SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 77: USI's EPS revisions



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 78: Will Semi's EPS revisions



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 79: Xiaomi's EPS revisions



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Recommendation and sector top picks

There are signs of global smartphone market revival >

Downgraded China smartphone sector a year ago. We last downgraded our rating for the China smartphone sector from Overweight to Neutral on 7 Oct 2022 “*Sluggish spec upgrades and weak demand*”, on the back of: 1) declining smartphone shipments among top-tier Chinese brands, including Xiaomi, Oppo, and Vivo, 2) sluggish spec upgrades due to weakened consumer demand, 3) high component prices and manufacturing costs due to the Covid-19 pandemic, and 4) unfavourable macroeconomic headwinds due to the strong US dollar and global inflationary pressures, which hurt consumer sentiment.

Turning positive now on global smartphone market outlook in 2024-25F. We have recently observed several recovery signals in the global smartphone market, including: 1) improving smartphone sales in emerging markets (China, India, LATAM, and Southeast Asia), 2) increased competition in China and Southeast Asia markets as Huawei returns to the smartphone market, 3) stronger high-end smartphone sales growth as the high-end replacement cycle starts, 4) accelerating spec upgrades, particularly in cameras and sensing components, and 5) higher earnings contribution from high-margin automotive and AR/VR products.

Upgrade China smartphone sector to Overweight >

Upgrade China smartphone sector from Neutral to Overweight. We upgrade our rating for the China smartphone sector from Neutral to Overweight, due to: 1) global smartphone shipment recovery, 2) the commencement of new spec-upgrade cycle, 3) faster high-end smartphone shipments growth, and 4) profit margin improvements from higher capacity utilisation, increasing ASP and rising revenue contributions from non-smartphone segments.

Xiaomi, AAC Tech, and Sunny Optical, are sector top picks >

Xiaomi, AAC Tech, and Sunny Optical are our sector top picks. Our China smartphone sector top picks are Xiaomi, AAC Tech, and Sunny Optical, in that order. We expect them to deliver better earnings growth and market share gains, owing to continuous innovative new product launches, increasing production capacities, and robust revenue growth in automotive components and AR/VR products.

- **Xiaomi Corporate (1810 HK, Add, TP: HK\$22.80).** We keep our positive view on Xiaomi due to its solid EPS growth outlook (+5%/+21% in FY24F/25F), premised on a steady recovery in smartphone shipments, rising IoT revenue, and improved GPM outlook for Internet services, as well as success in its EV business. We anticipate Xiaomi's smartphone shipments to rise 18% yoy to 178m units in FY24F, following a 1% decline in FY23F. This is due to steady sales growth in China's high-end segment and recovery overseas. On the other hand, we expect Xiaomi's EV business to succeed in capturing a larger slice of China's NEV market due to its leading technology in both hardware and software, as well as strong customer base and brand name. Although we expect Xiaomi's first EV launch in 2Q24F to widen its net losses to c.Rmb10bn in FY24F (vs. c.Rmb7.0bn in FY23F), we believe it should achieve breakeven in FY26F due to lower production costs per EV from economies of scale.

We reiterate Add on Xiaomi with a TP of HK\$22.80. We reiterate Add and TP of HK\$22.80, based on 22x FY25F P/E, its 3-year average, reflecting positive EV developments and an improving smartphone market outlook.

Share price catalysts: a successful first EV (the SU7 sedan) launch, stronger smartphone shipments and sustainable GPM improvements in the smartphone and IoT segments. +

Downside risks: delays in the SU7 launch, keener competition in the China market due to strong Huawei sales, and higher-than-expected losses in the EV business, affecting its overall profitability.

Figure 80: Xiaomi's 12-month forward P/E



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 81: Xiaomi's P/BV



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

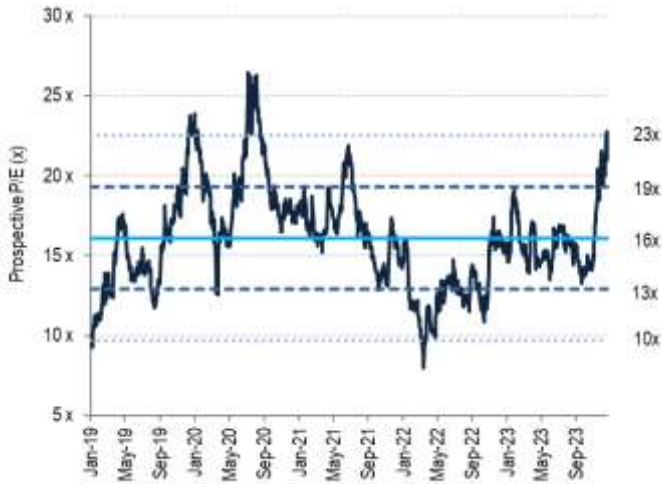
- AAC Technologies (2018 HK, Add, TP: HK\$26.20).** We think AAC Tech is among the most favoured companies in Apple's supply chain due to its large market shares in acoustics and haptic components in terms of sales (we estimate AAC Tech to hold market share of c.40% and c.60%, respectively, in 2023F) for iPhones. We believe AAC will be a recipient of orders for the new design microphones and potential haptics feature upgrades for the iPhone 16 series. AAC is also expanding precision mechanics to meet ongoing orders for MacBook metal casings and the middle frame for Chinese customers' foldable phones. Although its optics business has faced sustained margin pressure due to low production utilisation and weak product mix, especially in 9M23 amid weak Chinese OEM demand, we believe the situation will improve starting from 4Q23F due to higher sales of Chinese branded smartphones.

We reiterate Add on AAC Tech with a TP of HK\$26.20. We reiterate our Add call on AAC Tech due to its accelerating earnings outlook (+59%/+21% in FY24F/25F). Our TP of HK\$26.20 is based on 16x FY25F P/E, +1 s.d. of its 3-year average, reflecting its stronger earnings outlook.

Share price catalysts: stable iPhone sales and Chinese customers' order recovery, driving higher revenue growth and GPM improvements in the optics business on better product mix and output.

Downside risks: sustained margin pressure in optics production and delays in customers' component spec upgrades, resulting in lower revenue and earnings growth than we expected.

Figure 82: AAC Tech's 12-month forward P/E



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 83: AAC Tech's P/BV



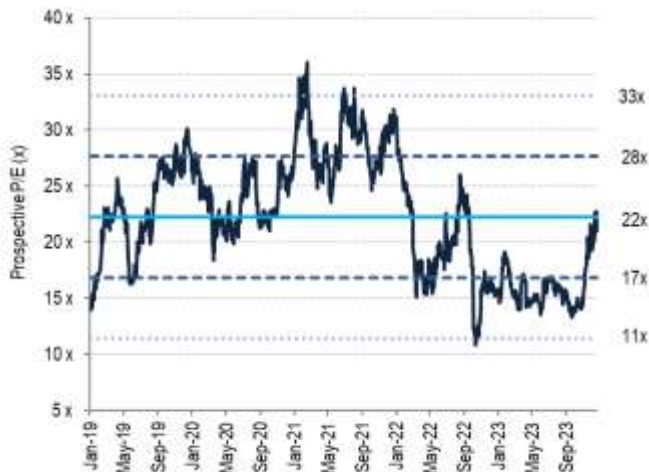
SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

- Sunny Optical Technology (2382 HK, Add, TP: HK\$98.80).** We believe Sunny Optical's FY24F net profit should rebound 97% yoy to Rmb3.38bn, driven by: 1) increased sophisticated high-end HCM demand from Chinese brands, underpinned by robust high-end phone sales, 2) Apple's continued supply chain market share gains, with strong high-end handset lens set (HLS) shipments, and 3) robust vehicle lens set (VLS) shipments growth due to steady growth in the ADAS penetration rate in the Chinese EV market.
- We reiterate Add on Sunny Optical with a TP of HK\$98.80.** We retain our Add call on Sunny Optical due to the steady recovery in shipments and GPM in HCM and HLS, as well as growing VLS contribution, resulting in a strong EPS recovery (+111%/+39% in FY24F/25F). Our TP of HK\$98.80 is based on 22x FY25F P/E, its 3-year average, reflecting the recovering global smartphone market and sustained VLS growth.

Share price catalysts: faster shipments and GPM recovery for HCM and HLS.

Downside risks: lower-than-expected spec upgrades by Chinese brands, which could impact Sunny Optical's ASP and GPM in the HCM and HLS segments.

Figure 84: Sunny Optical's 12-month forward P/E



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Figure 85: Sunny Optical's P/BV



SOURCES: CGS-CIMB RESEARCH, BLOOMBERG

Peer comparison table ➤

Figure 86: Peers comparison

Company	Bloomberg Code	Recom.	Price		Upside (%)	Market Cap (US\$m)	P/E (x)			3-year EPS CAGR %	P/BV (x)		Recurring ROE (%)		EV/EBITDA (x)		Dividend yield (%)	
			(local curr)	(local curr)			CY2023F	CY2024F	CY2025F		CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F
Handset vendors																		
Lenovo Group	992 HK	Add	10.70	10.70	0%	16,818	14.3	13.8	11.1	-7.2%	2.2	1.7	17.7%	14.0%	4.4	3.8	2.3%	2.5%
Xiaomi	1810 HK	Add	15.08	22.80	51%	48,424	18.3	17.9	14.9	50.8%	1.8	1.4	11.3%	8.9%	13.1	13.0	0.0%	0.0%
Samsung Electronics	005930 KS	Add	76,600	115,000	50%	350,408	42.5	16.0	14.4	-13.0%	1.5	1.4	3.5%	8.9%	12.9	7.2	1.9%	1.9%
Apple	AAPL US	Not Rated	184.25	N/A	N/A	2,865,595	30.4	27.9	25.8	2.5%	49.1	39.0	N/A	N/A	22.2	21.0	0.5%	0.5%
Average							26.4	18.9	16.6	8.3%	13.6	10.9	10.8%	10.6%	13.2	11.2	1.2%	1.2%
Handset components - Casings / EMS																		
BYD Electronic	285 HK	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Lens Technology	300433 CH	Add	12.64	18.30	45%	8,813	20.5	15.3	12.4	24.0%	1.4	1.3	7.1%	9.0%	11.1	9.2	2.0%	2.6%
Luxshare Precision	002475 CH	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Shezhen Everwin Precision	300115 CH	Not Rated	12.06	N/A	N/A	2,031	55.6	20.2	15.0	N/A	2.5	2.3	9.1%	9.6%	N/A	N/A	0.1%	0.7%
Catcher Technology	2474 TT	Not Rated	194.00	N/A	N/A	4,258	11.6	16.6	17.3	-16.1%	0.8	0.8	4.3%	4.6%	11.8	4.4	5.4%	5.5%
Jabil	JBL US	Not Rated	127.35	N/A	N/A	16,294	15.0	14.0	11.9	4.8%	6.0	12.3	48.8%	51.4%	6.6	6.8	0.3%	0.3%
Average							23.3	15.9	13.2	23.2%	2.6	3.5	16.7%	17.8%	10.4	7.3	1.6%	1.9%
Handset components - Displays																		
BOE Technology	000725 CH	Hold	3.80	4.10	8%	19,869	82.2	20.7	11.2	N/A	1.1	1.0	1.3%	5.0%	7.6	5.6	0.2%	0.7%
Tianma Microelectronics	000050 CH	Add	10.18	13.34	31%	3,501	19.5	15.7	N/A	N/A	0.7	0.6	3.5%	4.1%	10.0	9.3	0.5%	0.6%
LG Display	034220 KS	Hold	13,050	13,000	0%	3,578	na	na	(18.7)	N/A	0.7	0.9	-34.8%	-29.3%	19.5	10.7	0.0%	0.0%
Average							50.9	18.2	(3.7)	N/A	0.8	0.8	-10.0%	-6.7%	12.4	8.5	0.2%	0.5%
Handset components - Opticals																		
Cowell Holdings	1415 HK	Add	21.95	27.80	27%	2,395	33.1	21.1	15.2	18.1%	5.4	4.4	17.9%	22.8%	20.7	12.4	0.0%	0.0%
Q Technology	1478 HK	Add	3.85	4.80	25%	584	16.8	8.5	6.6	52.1%	0.9	0.8	5.3%	9.9%	5.4	3.1	0.0%	1.2%
Sunny Optical Tech	2382 HK	Add	64.00	98.80	54%	8,989	42.8	20.3	14.5	19.6%	3.1	2.8	7.3%	15.1%	11.2	7.8	0.5%	1.0%
Will Semiconductor	603501 CH	Add	98.17	132.00	34%	16,699	137.2	48.3	29.8	N/A	6.2	5.4	4.7%	12.0%	39.6	20.1	0.1%	0.2%
Largan Precision	3008 TT	Not Rated	2,650	N/A	N/A	11,411	19.2	18.4	17.0	-4.1%	2.2	2.0	10.9%	11.4%	11.0	8.6	2.6%	2.6%
LG Innotek	011070 KS	Add	229,000	400,000	75%	4,153	9.2	6.9	6.2	N/A	1.1	1.0	13.1%	15.4%	3.3	3.0	1.3%	1.3%
Average							43.0	23.4	16.7	21.4%	4.0	3.6	7.4%	13.8%	21.0	10.8	0.6%	0.9%
Handset components - others																		
AAC Technologies	2018 HK	Add	21.50	26.20	22%	3,300	25.5	16.1	13.3	28.2%	1.1	1.0	4.3%	6.3%	6.6	5.3	0.6%	1.0%
Avary Holding Shenzhen	002938 CH	Not Rated	21.25	N/A	N/A	6,899	11.3	9.7	8.6	4.3%	1.6	1.4	13.8%	14.5%	6.2	5.0	2.7%	3.1%
GoerTek Inc	002241 CH	Not Rated	19.67	N/A	N/A	9,413	34.1	23.0	19.1	-2.6%	2.2	2.0	5.4%	8.8%	12.3	9.2	0.7%	1.1%
Sunwoda Electronics	300207 CH	Not Rated	14.07	N/A	N/A	3,666	24.3	16.9	11.8	22.8%	1.2	1.1	5.1%	6.9%	11.6	8.3	0.6%	0.9%
Universal Scientific Industrial	601231 CH	Add	14.68	18.32	25%	4,539	12.0	10.0	N/A	N/A	1.2	0.9	11.1%	10.2%	3.7	1.7	5.0%	6.0%
NanoFilm Technologies	NANO SP	Reduce	0.92	0.75	-18%	446	na	29.3	14.8	-1.2%	1.4	1.4	-0.2%	4.7%	15.4	8.7	0.4%	0.9%
Delta Electronics Inc	2308 TT	Not Rated	304.00	N/A	N/A	25,476	23.4	19.9	17.2	10.6%	4.1	3.7	16.6%	18.2%	12.6	10.7	2.6%	2.8%
Pegatron	4938 TT	Not Rated	84.60	N/A	N/A	7,272	14.5	12.9	11.8	6.7%	1.2	1.2	8.2%	9.1%	7.6	6.1	4.7%	5.2%
Zhen Ding Technology	4958 TT	Not Rated	110.00	N/A	N/A	3,361	15.4	10.1	8.6	-5.3%	1.0	1.0	6.7%	9.5%	5.1	3.9	3.4%	4.1%
SEMCO	009150 KS	Add	152,000	200,000	32%	8,700	19.6	14.4	13.0	-4.9%	1.5	1.4	8.0%	9.8%	7.5	5.5	1.4%	1.4%
BH Co.	090460 KS	Add	19,550	27,000	38%	516	7.1	6.2	5.5	-5.3%	1.0	0.9	15.8%	15.7%	3.7	2.4	1.3%	1.3%
Pi advanced Materials	178920 KS	Add	30,100	36,000	20%	677	191.0	26.5	24.0	-6.9%	2.7	2.6	1.4%	10.0%	30.1	11.8	1.2%	2.3%
Average							34.4	16.2	13.4	4.2%	1.7	1.5	8.0%	10.3%	10.2	6.5	2.1%	2.5%

PRICES AS AT 04 JAN 2023

SOURCES: CGS-CIMB RESEARCH ESTIMATES, BLOOMBERG

Note: Estimates for Not Rated companies are based on Bloomberg consensus

China smartphone sector's re-rating catalysts and risks >

We think the China smartphone sector will be catalysed by:

- 1) Strong Chinese brands' (Huawei, Xiaomi, Oppo, Vivo and Honor) shipments growth in 2024F, due to demand recovery from markets such as China, India, LATAM, Europe and Southeast Asia.
- 2) Accelerating spec upgrades in new model launches in Mar 24F and Sep 24F, as Chinese brands maintain their competitiveness.
- 3) Rapid revenue growth in automotive components (cameras and displays), as a result of start-up EV makers' rapid adoption of ADAS, and AR/VR products, thanks to the Vision Pro launches.
- 4) Stronger-than-expected earnings recovery among handset component manufacturers, owing to higher ASP and GPM, as well as strong revenue growth.

We think the China smartphone sector's downside risks are:

- 1) Slower-than-expected Chinese brands' shipments due to weak consumer demand in markets such as India, Latin America, Europe, and Southeast Asia.
- 2) Lower-than-expected spec upgrades among Chinese brands negatively impacting the smartphone industry's ASP and GPM recovery.
- 3) High-end smartphone sales falling short of our expectations due to fewer innovative features in the new models and continued consumer spending downgrades.
- 4) Slower-than-expected ADAS adoption rate in China's EV market, which has a negative impact on component makers' automotive revenue growth.

ESG in China smartphone sector

ESG in a nutshell



We are of the view that the China smartphone sector has medium-low ESG risk. Handset players and component manufacturers face potential ESG challenges due to: 1) a 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 order to protect user privacy, 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 sensors and cameras OEMs, namely AAC technologies, and Sunny Optical made charitable donations for social causes across diverse jurisdictions in FY21-22. AAC technologies donated Rmb1m to support the disadvantaged of Changzhou community. Sunny Optical also donated Rmb1m to address education and public welfare issues in the villages of China.

Environmental

AAC Technologies, Sunny Optical and Xiaomi have made conscious efforts to lower their energy consumption, water consumption and intensity, hazardous and non-hazardous waste, and greenhouse gas (GHG) emissions. We see the sector making further improvements in the environmental pillar in the future due to tightened government policies on ESG and investor awareness of the environmental impact.

Implications

For AAC Technologies, all environmental measurements improved in FY22. It was rated B- by Refinitiv for its Environmental pillar and ranked 27th out of 94 in the global electronic equipment & parts sector in 2022. For Sunny Optical, despite a slight rise in energy and water consumption, total GHG emissions decreased. Nevertheless, it was rated B in this pillar by Refinitiv and ranked 16th in the sector in FY22. As for Xiaomi, the company saw improved numbers in the production of hazardous waste and was ranked 3rd out of 64 companies in the global computers, phones and electronics sector in FY22.

Social

Our coverage companies aim to have a positive social impact with the products they make and on their employees, as well as the community at large.

Implications

Xiaomi developed basic accessibility features for its products, such as developing unique customised voices for vocally disabled users. AAC holds induction programmes and uses online learning platforms to boost employee competence and for career development. Sunny Optical also provides substantial benefits for employees, such as supplementary insurance. The company also encourages employees to participate in development and training for personal enrichment.

Governance

Each company has its own ESG governance structure. AAC and Xiaomi Technologies have sustainability working groups to handle ESG-related issues and put forward respective strategies. Sunny Optical has a good internal management for ESG and healthy communication in the supply chain.

Implications

Refinitiv rated Sunny Optical an A- in the Governance pillar in FY22 and AAC Technologies an A in the Governance pillar in FY22. Xiaomi was ranked 60th out of 64 in the global computers, phones, and electronics sector in FY22. We expect the handsets sector in China to see improving ESG ratings right across the board from upstream to downstream over the next few years as their ESG initiatives bear fruit amid tightened government policies and increasing investor awareness on ESG issues.

SOURCES: CGS-CIMB RESEARCH, REFINITIV

Figure 87: ESG ratings of the companies under our coverage in China smartphone sector

Company	Tickers	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	
AAC Technology	2018 HK	A-	A-	A-	A-	B	B	B	B	B	B-	A	A	A	A	A-	A	A	A	A	A	A
BOE Technology	0000725 CH	B-	B-	B	A-	B+	B+	B+	A-	A-	B+	B	B	B+	A-	A-	C-	C-	C-	B+	A-	A-
Cowell e Holdings	1415 HK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lens Tchnology	300433 CH	C	C	C+	C	C-	C-	C	C+	C	C-	C-	C-	C	C	C-	C	C+	C+	C+	C+	C-
Q Technology	1478 HK	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sunny Optical Technology	2382 HK	B-	B-	A-	A-	B+	C+	B	B+	B+	B	C-	C+	B+	B+	B+	A-	A	A-	A-	A-	A-
Tianma Microelectronics	000050 CH	C+	B-	B-	C+	C+	C+	B-	B-	B-	B-	B	B-	B-	B-	B-	C	C	C	C-	C-	C-
Universal Scientific Industrial	601231 CH	N/A	B	B+	B+	B	N/A	A-	A-	A-	A-	N/A	B+	A	A	A-	N/A	D+	C-	C-	C-	D
Will Semiconductor	603501 CH	N/A	D	C-	C	C	N/A	D-	D+	C	C-	N/A	D-	C-	C+	C-	N/A	C	B-	C-	C-	D+
Xiaomi Corporation	1810 HK	C-	C	D+	N/A	C	C	C	C+	N/A	A	D	C	C	N/A	C+	D+	C-	C-	N/A	N/A	D+
Number of Covered Stocks Scored between (Inclusive)																						
"A-" to "A+"		1	1	2	3	0	0	1	2	2	2	1	1	2	3	3	2	2	2	1	3	3
"B-" to "B+"		2	4	3	1	4	2	4	3	3	4	2	3	3	2	2	0	0	1	1	0	0
"C-" to "C+"		3	2	2	3	4	4	2	2	2	2	2	3	3	2	3	3	5	5	4	1	1
"D-" to "D+"		0	1	1	0	0	0	1	1	0	0	1	1	0	0	0	1	1	0	0	0	3

SOURCES: CGS-CIMB RESEARCH, REFINITIV

Figure 88: Chinese green securities by issuer (2018 to 2022)

Mix %	2018	2019	2020	2021	2022
Financial Corporate	71.00%	63.00%	30.00%	36.00%	58.00%
Non Financial Corporate	15.00%	13.00%	33.00%	13.00%	6.00%
Government Backed entity	12.00%	9.90%	22.00%	35.00%	24.00%
Development Bank	2.00%	14.00%	6.00%	15.00%	11.00%
Others	0.00%	0.10%	9.00%	1.00%	1.00%

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

Company Briefs

AAC Technologies (2018 HK, Add) – sector top pick

BOE Technology – A (000725 CH, Hold)

Cowell e Holdings (1415 HK, Add)

Lens Technology – A (300433 CH, Add)

Q Technology (1478 HK, Add)

Sunny Optical Technology (2382 HK, Add) – sector top pick

Will Semiconductor – A (603501 CH, Add)

Xiaomi Corporation (1810 HK, Add) – sector top pick

Hong Kong

ADD (no change)

Consensus ratings*: Buy 15 Hold 9 Sell 6

Current price:	HK\$21.50
Target price:	HK\$26.20
Previous target:	HK\$24.30
Up/downside:	21.9%
CGS-CIMB / Consensus:	33.0%
Reuters:	2018.HK
Bloomberg:	2018 HK
Market cap:	US\$3,300m
	HK\$25,768m
Average daily turnover:	US\$18.83m
	HK\$148.0m
Current shares o/s:	1,199m
Free float:	32.2%

*Source: Bloomberg

Key changes in this note

- FY23-225F revenue decreased by 1-7% due to lower revenue in optics segment.
- FY23-25F GPM decreased by 0.5-1.1% pts due to lower GPM in optics segment but partially offset by higher GPM in acoustic and haptic components.
- FY23-25F EPS decreased by 2-19%, mainly due to lower revenue and GPM in optics segment.



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	3.9	64.4	19.4
Relative (%)	3.9	67.6	39.4

Major shareholders	% held
Wu Chun Yuan	40.8
JP Morgan Chase & Co.	13.9
The Capital Group Companies, Inc.	13.1

Analyst



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AAC Technologies

Beneficiary of acoustic/haptic spec upgrades

- AAC Tech should benefit from acoustic/haptic component spec upgrades in the iPhone 16 series, as well as revenue growth in metal casings, in our view.
- We expect its optics profitability to improve in FY24F due to better product mix and higher acoustics revenue following the iPhone's spec upgrades.
- Reiterate Add with higher TP of HK\$26.20, still based on 16x P/E.

AAC Tech likely beneficiary of potential iPhone spec upgrades

We think AAC Technologies (AAC Tech) is among the most favoured companies in Apple's supply chain due to its current large market shares in acoustics and haptic components (at c.40% and c.60% respectively, according to our channel check, for iPhones). We believe AAC will be a recipient of orders for new design microphone and potential haptics feature upgrades for the iPhone 16 series. AAC is also expanding its precision manufacturing capacity to meet ongoing orders for MacBook metal casings and the middle frame for Chinese smartphone makers' foldable phones. Although its optics business has faced sustained margin pressure due to low production utilisation and weak product mix, especially in 9M23 amid weak Chinese OEM demand, we think the situation will improve from 4Q23F due to higher sales of Chinese branded smartphones.

Optics profitability and microphone revenue set to rise in FY24F

Optics segment revenue fell 4% yoy 1H23 while GPM declined to a negative 17% (-16% pts yoy) amid ASP pressure from inventory clearance and poor product mix. Nevertheless, the unit started turning around in 3Q23, in our view, and we expect GPM to return positive in 4Q23F, underpinned by improved product mix on a recovery in Chinese customer orders amid new model launches. We expect its optics business improvement to sustain in FY24F due to the sales of more high-end products, such as 6P lenses, and easing price competition in the domestic supply chain of lens for Chinese brands. We also believe its acoustic revenue will accelerate in FY24F due to potential microphone upgrades in the iPhone 16 series in a bid to improve signal-to-noise ratio, which would help the Siri artificial intelligence (AI) work more effectively, and benefit to microphone ASP.

Cut FY23-25F EPS on lower GPM in the optics segment

We lower our FY23F EPS by 19%, owing primarily to extended operating losses in the optics business as a result of a prolonged Chinese customer downcycle. We cut our FY24F/25F EPS by 7%/2% to reflect a lower GPM in optics but higher revenue/GPM in acoustic/haptic components due to customers' feature upgrades in acoustics and haptics.

Reiterate Add with a higher TP of HK\$26.20

We reiterate Add as we see its net profit accelerating (+59%/+21% in FY24F/25F). Our TP rises to HK\$26.20 as we roll over our valuation to FY25F, still based on 16x P/E, +1 s.d. of its 3-year average to reflect its strong earnings outlook. Re-rating catalysts: 1) stable iPhone sales and Chinese customers' order recovery, driving higher revenue growth and 2) GPM improvements in the optics business on better product mix and output. Downside risks: 1) sustained margin pressure in optics production, and 2) delays in customers' component spec upgrades, resulting in lower revenue and earnings growth than we expect.

Financial Summary

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (Rmbm)	17,667	20,625	21,147	24,118	25,896
Net Profit (Rmbm)	1,316	821	924	1,465	1,776
Normalised EPS (Rmb)	1.09	0.65	0.77	1.22	1.48
Normalised EPS Growth	(11.8%)	(40.5%)	18.8%	58.5%	21.2%
FD Normalised P/E (x)	18.04	30.40	25.60	16.14	13.32
Price To Sales (x)	1.34	1.14	1.12	0.98	0.91
DPS (Rmb)	0.18	0.11	0.12	0.19	0.23
Dividend Yield	0.92%	0.55%	0.62%	0.98%	1.19%
EV/EBITDA (x)	7.00	7.61	6.71	5.24	4.66
P/FCFE (x)	NA	15.72	7.33	10.73	7.88
Net Gearing	16.7%	12.8%	3.0%	(4.8%)	(13.1%)
P/BV (x)	1.09	1.09	1.05	0.99	0.94
ROE	6.13%	3.58%	4.19%	6.35%	7.26%
% Change In Normalised EPS Estimates			(18.8%)	(7.1%)	(2.0%)
Normalised EPS/consensus EPS (x)			1.34	1.23	1.17

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Beneficiary of acoustic/haptic spec upgrades

Figure 1: Operational figures (1Q20 to 1H23), 1Q20 to 4Q22 by quarter, from 1H23 bi-annual

FYE 31 Dec (Rmb m)	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	1H21	3Q21	4Q21	2H21	1Q22	2Q22	1H22	3Q22	4Q22	2H22	1H23
Total revenue	3,560	4,277	4,520	4,783	4,292	4,317	8,609	4,246	4,812	9,058	4,896	4,516	9,412	5,373	5,840	11,213	9,219
- Acoustics	1,420	1,909	2,160	2,071	2,096	2,042	4,138	2,202	2,242	4,444	2,230	1,909	4,139	2,324	2,385	4,709	3,323
- Electromagnetic drives and precision mechanics	1,690	1,726	1,520	1,912	1,228	1,219	2,447	1,400	1,792	3,192	1,500	1,431	2,931	2,055	2,290	4,345	3,620
- Sensor & semiconductor	199	259	368	257	283	238	521	254	238	492	238	241	479	421	357	778	494
- Optics	245	379	474	536	674	808	1,482	395	513	908	924	928	1,852	567	798	1,365	1,771
- others	6	4	(2)	8	11	10	21	(5)	27	22	4	6	10	6	11	17	11
Gross profit	823	995	1,067	1,342	1,337	1,078	2,415	964	986	1,950	957	826	1,783	1,022	970	1,992	1,297
Net profit	53	269	424	750	532	389	921	183	212	395	183	167	350	234	237	471	150
Yoy change (%)																	
Total revenue	-5.1%	12.1%	-9.8%	-9.8%	20.6%	0.9%	9.9%	-6.1%	0.6%	-2.6%	14.1%	4.6%	9.3%	26.5%	21.4%	23.8%	-2.0%
- Acoustics	-24.5%	8.1%	-5.3%	-7.6%	47.6%	6.9%	24.3%	2.0%	8.3%	5.0%	6.4%	-6.5%	0.0%	5.5%	6.4%	5.9%	-19.7%
- Electromagnetic drives and precision mechanics	10.5%	15.0%	-28.2%	-24.9%	-27.3%	-29.4%	-28.4%	-7.9%	-6.3%	-7.0%	22.1%	17.4%	19.8%	46.8%	27.8%	36.1%	23.5%
- Sensor & semiconductor	29.2%	14.4%	27.3%	-1.0%	42.2%	-7.9%	13.9%	-31.0%	-7.3%	-21.3%	-15.9%	1.1%	-8.2%	65.7%	49.8%	58.0%	3.2%
- Optics	62.3%	42.6%	51.4%	57.6%	175.1%	112.9%	137.3%	-16.7%	-4.4%	-10.1%	37.1%	14.9%	25.0%	43.5%	55.7%	50.4%	-4.4%
Gross profit	-27.1%	4.2%	-28.1%	-12.8%	62.5%	8.3%	32.8%	-9.6%	-26.6%	-19.1%	-28.4%	-23.4%	-26.2%	6.0%	-1.6%	2.2%	-27.2%
Net profit	-87.9%	-11.7%	-37.3%	1.0%	909.7%	44.8%	186.6%	-56.8%	-71.7%	-66.3%	-65.6%	-57.0%	-62.0%	27.5%	12.0%	19.2%	-57.1%
Margin (%)																	
Gross profit margin	23.1%	23.3%	23.6%	28.1%	31.1%	25.0%	28.1%	22.7%	20.5%	21.5%	19.5%	18.3%	18.9%	19.0%	16.6%	17.8%	14.1%
- Acoustics	26.0%	26.5%	26.6%	31.9%	37.4%	28.4%	33.0%	26.6%	26.7%	26.6%	26.6%	27.7%	27.1%	26.9%	31.2%	29.1%	25.5%
- Electromagnetic drives and precision mechanics	23.6%	22.8%	20.1%	27.7%	25.5%	22.2%	23.8%	20.1%	19.9%	20.0%	19.6%	21.2%	20.4%	21.5%	22.3%	21.9%	19.3%
- Sensor & semiconductor	16.5%	16.0%	19.0%	17.8%	16.7%	15.8%	16.3%	19.0%	8.5%	13.9%	14.1%	11.4%	13.7%	7.4%	13.9%	10.4%	11.3%
- Optics	9.8%	13.8%	24.5%	21.5%	27.8%	22.0%	24.7%	14.9%	-2.5%	5.1%	3.5%	-4.7%	-0.6%	-13.4%	-41.3%	-29.7%	-17.0%
EBITDA margin	20.6%	21.4%	24.8%	28.9%	30.7%	27.8%	21.3%	19.6%	20.4%	20.8%	21.0%	20.9%	17.9%	14.0%	15.8%	18.0%	
Net profit margin	1.5%	6.3%	9.4%	15.7%	12.4%	9.0%	10.7%	4.3%	4.4%	4.4%	3.7%	3.7%	3.7%	4.4%	4.1%	4.2%	1.6%
Margin change (yoy pt %)																	
Gross profit margin	-7.0%	-1.8%	-6.0%	-1.5%	8.0%	1.7%	4.9%	-0.9%	-3.1%	-6.5%	-11.6%	-6.7%	-6.0%	-3.7%	-3.9%	-3.8%	-4.2%
- Acoustics	-6.9%	-0.6%	-3.5%	1.6%	11.4%	2.0%	6.7%	0.0%	-5.2%	-2.6%	-10.8%	-0.7%	-5.9%	0.3%	4.4%	2.5%	-1.6%
- Electromagnetic drives and precision mechanics	-8.7%	-4.3%	-9.4%	-1.9%	1.9%	-0.7%	0.6%	0.0%	-7.8%	-4.4%	-5.9%	-0.9%	-3.4%	1.4%	2.4%	1.9%	-1.1%
- Sensor & semiconductor	-2.0%	-10.9%	-12.3%	-11.5%	0.2%	-0.2%	0.1%	0.0%	-9.2%	-4.6%	-2.6%	-4.4%	-2.6%	-11.6%	5.4%	-3.6%	-2.4%
- Optics	n.a.	n.a.	n.a.	n.a.	18.0%	8.2%	12.4%	-9.5%	-24.0%	-17.8%	-24.3%	-26.7%	-25.3%	-28.3%	-38.8%	-34.8%	-16.4%
EBITDA margin	-5.7%	0.8%	3.8%	4.1%	3.8%	-5.9%	2.9%	-6.5%	-1.7%	0.8%	0.5%	0.2%	-0.1%	-3.0%	-3.9%	1.9%	18.1%
Net profit margin	-10.1%	-1.4%	-4.0%	1.7%	10.9%	2.7%	6.6%	-5.1%	-11.3%	-8.3%	-8.7%	-5.3%	-7.0%	0.0%	-1.1%	-0.6%	-2.1%

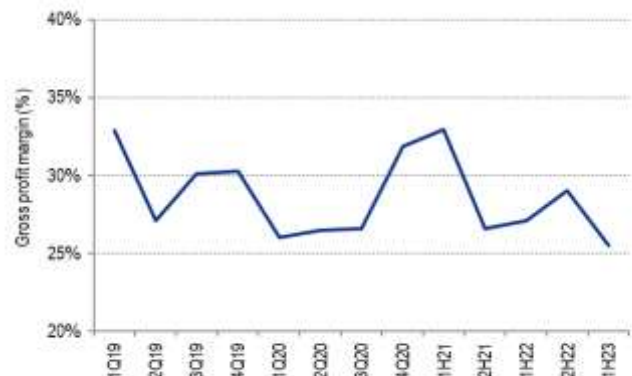
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 2: Acoustics revenue (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



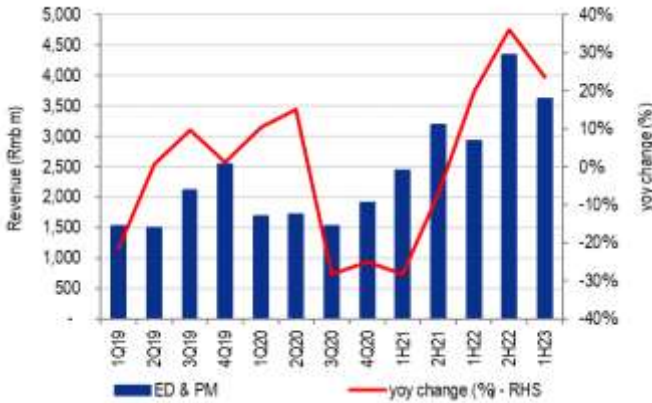
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 3: Acoustics GPM (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



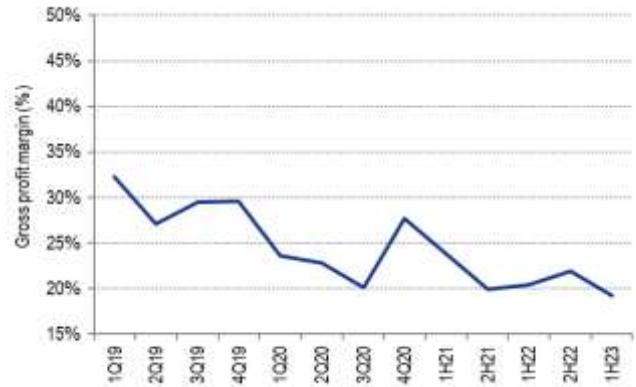
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 4: Electromagnetic drives & precision mechanics revenue (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



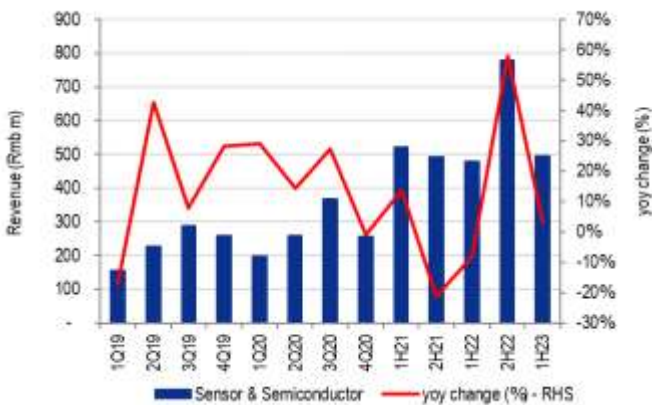
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 5: Electromagnetic drives & precision mechanics GPM (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



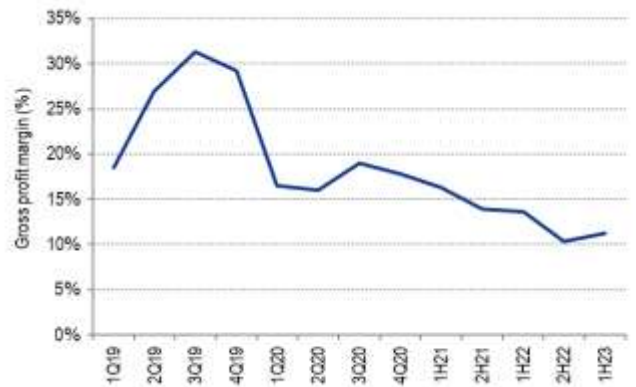
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 6: Sensor & semiconductor revenue (1Q19 to 1H23, 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



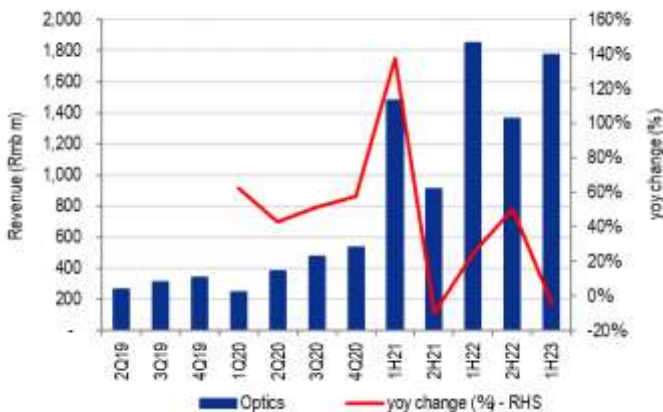
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 7: Sensor & semiconductor GPM (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



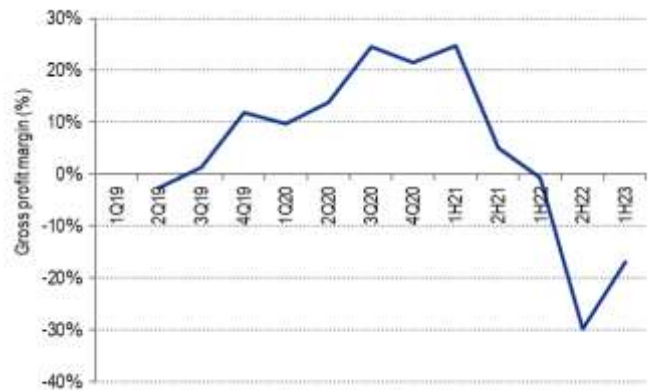
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 8: Optics revenue (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



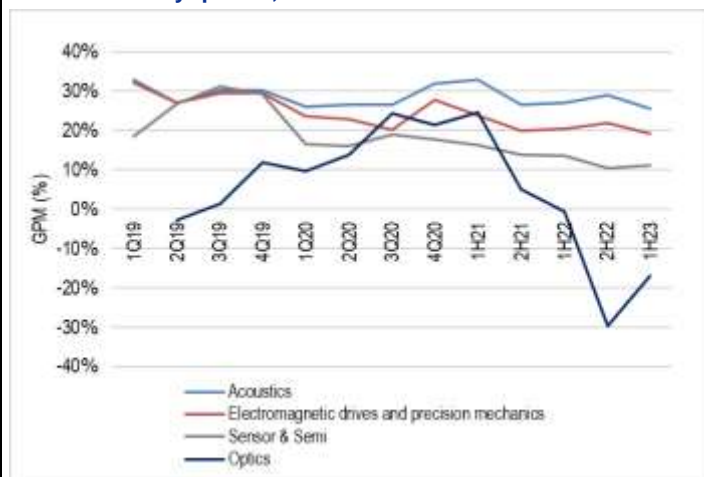
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 9: Optics GPM (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



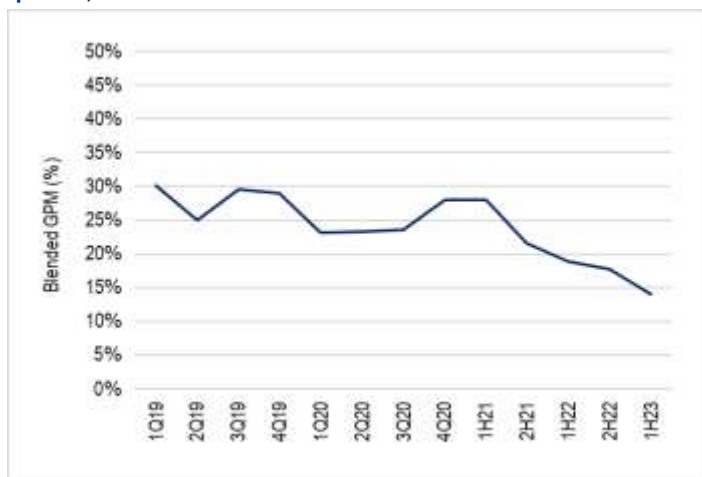
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 10: Gross profit, by product segment (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 11: Blended GPM (1Q19 to 1H23), 1Q19 to 4Q22 by quarter, from 1H23 bi-annual



SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 12: Earnings revisions

FYE Dec 31 (Rmb m)	FY23F			FY24F			FY25F		
	Old	New	% chg	Old	New	% chg	Old	New	% chg
Total revenue	22,739	21,147	-7%	24,610	24,118	-2%	26,157	25,896	-1%
Gross profit	4,099	3,589	-12%	5,213	4,875	-6%	5,628	5,433	-3%
Gross margin (%)	18.0%	17.0%	-1.1% pts	21.2%	20.2%	-1.0% pts	21.5%	21.0%	-0.5% pts
EBITDA	4,311	3,707	-14%	4,680	4,399	-6%	4,626	4,488	-3%
EBITDA margin (%)	18.6%	17.5%	-1.1% pts	19.2%	18.2%	-1.0% pts	17.9%	17.3%	-0.5% pts
Net profit	1,138	924	-19%	1,577	1,465	-7%	1,812	1,776	-2%
Core net profit	1,138	924	-19%	1,577	1,465	-7%	1,812	1,776	-2%
EPS (HK\$)	0.95	0.77	-19%	1.32	1.22	-7%	1.51	1.48	-2%

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS


Figure 13: Peer comparison

Company	Bloomberg Code	Recom.	Price	Target price	Upside (%)	Market Cap (US\$m)	P/E (x)			3-year EPS CAGR %	P/BV (x)		Recurring ROE (%)		EV/EBITDA (x)		Dividend yield (%)	
			(local curr)	(local curr)			CY2023F	CY2024F	CY2025F		CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F
Handset vendors																		
Lenovo Group	992 HK	Add	10.70	10.70	0%	16,818	14.3	13.8	11.1	-7.2%	2.2	1.7	17.7%	14.0%	4.4	3.8	2.3%	2.5%
Xiaomi	1810 HK	Add	15.08	22.80	51%	48,424	18.3	17.9	14.9	50.8%	1.8	1.4	11.3%	8.9%	13.1	13.0	0.0%	0.0%
Samsung Electronics	005930 KS	Add	76.600	115,000	50%	350,408	42.5	16.0	14.4	-13.0%	1.5	1.4	3.5%	8.9%	12.9	7.2	1.9%	1.9%
Apple	AAPL US	Not Rated	184.25	N/A	N/A	2,865,595	30.4	27.9	25.8	2.5%	49.1	39.0	N/A	N/A	22.2	21.0	0.5%	0.5%
Average							26.4	18.9	16.6	8.3%	13.6	10.9	10.8%	10.6%	13.2	11.2	1.2%	1.2%
Handset components - Casings / EMS																		
BYD Electronic	285 HK	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Lens Technology	300433 CH	Add	12.64	18.30	45%	8,813	20.5	15.3	12.4	24.0%	1.4	1.3	7.1%	9.0%	11.1	9.2	2.0%	2.6%
Luxshare Precision	002475 CH	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Shezhen Everwin in Precision	300115 CH	Not Rated	12.06	N/A	N/A	2,031	55.6	20.2	15.0	N/A	2.5	2.3	9.1%	9.6%	N/A	N/A	0.1%	0.7%
Catcher Technology	2474 TT	Not Rated	194.00	N/A	N/A	4,258	11.6	16.6	17.3	-16.1%	0.8	0.8	4.3%	4.6%	11.8	4.4	5.4%	5.5%
Jabil	JBL US	Not Rated	127.35	N/A	N/A	16,294	15.0	14.0	11.9	4.8%	6.0	12.3	48.8%	51.4%	6.6	6.8	0.3%	0.3%
Average							23.3	15.9	13.2	23.2%	2.6	3.5	16.7%	17.8%	10.4	7.3	1.6%	1.9%
Handset components - Displays																		
BOE Technology	000725 CH	Hold	3.80	4.10	8%	19,869	82.2	20.7	11.2	N/A	1.1	1.0	1.3%	5.0%	7.6	5.6	0.2%	0.7%
Tianma Microelectronics	000050 CH	Add	10.18	13.34	31%	3,501	19.5	15.7	N/A	N/A	0.7	0.6	3.5%	4.1%	10.0	9.3	0.5%	0.6%
LG Display	034220 KS	Hold	13,050	13,000	0%	3,578	na	na	(18.7)	N/A	0.7	0.9	-34.8%	-29.3%	19.5	10.7	0.0%	0.0%
Average							50.9	18.2	(3.7)	N/A	0.8	0.8	-10.0%	-6.7%	12.4	8.5	0.2%	0.5%
Handset components - Opticals																		
Cowell e Holdings	1415 HK	Add	21.95	27.80	27%	2,395	33.1	21.1	15.2	18.1%	5.4	4.4	17.9%	22.8%	20.7	12.4	0.0%	0.0%
Q Technology	1478 HK	Add	3.85	4.80	25%	584	16.8	8.5	6.6	52.1%	0.9	0.8	5.3%	9.9%	5.4	3.1	0.0%	1.2%
Sunny Optical Tech	2382 HK	Add	64.00	98.80	54%	8,989	42.8	20.3	14.5	19.6%	3.1	2.8	7.3%	15.1%	11.2	7.8	0.5%	1.0%
Will Semiconductor	603501 CH	Add	98.17	132.00	34%	16,699	137.2	48.3	29.8	N/A	6.2	5.4	4.7%	12.0%	39.6	20.1	0.1%	0.2%
Largan Precision	3008 TT	Not Rated	2,650	N/A	N/A	11,411	19.2	18.4	17.0	-4.1%	2.2	2.0	10.9%	11.4%	11.0	8.6	2.6%	2.6%
LG Innotek	011070 KS	Add	229,000	400,000	75%	4,153	9.2	6.9	6.2	N/A	1.1	1.0	13.1%	15.4%	3.3	3.0	1.3%	1.3%
Average							43.0	23.4	16.7	21.4%	4.0	3.6	7.4%	13.8%	21.0	10.8	0.6%	0.9%
Handset components - others																		
AAC Technologies	2018 HK	Add	21.50	26.20	22%	3,300	25.5	16.1	13.3	28.2%	1.1	1.0	4.3%	6.3%	6.6	5.3	0.6%	1.0%
Avary Holding Shenzhen	002938 CH	Not Rated	21.25	N/A	N/A	6,899	11.3	9.7	8.6	4.3%	1.6	1.4	13.8%	14.5%	6.2	5.0	2.7%	3.1%
GoerTek Inc	002241 CH	Not Rated	19.67	N/A	N/A	9,413	34.1	23.0	19.1	-2.6%	2.2	2.0	5.4%	8.8%	12.3	9.2	0.7%	1.1%
Sunwoda Electronics	300207 CH	Not Rated	14.07	N/A	N/A	3,666	24.3	16.9	11.8	22.8%	1.2	1.1	5.1%	6.9%	11.6	8.3	0.6%	0.9%
Universal Scientific Industrial	601231 CH	Add	14.68	18.32	25%	4,539	12.0	10.0	N/A	N/A	1.2	0.9	11.1%	10.2%	3.7	1.7	5.0%	6.0%
Nanofilm Technologies	NANO SP	Reduce	0.92	0.75	-18%	446	na	29.3	14.8	-1.2%	1.4	1.4	-0.2%	4.7%	15.4	8.7	0.4%	0.9%
Delta Electronics Inc	2308 TT	Not Rated	304.00	N/A	N/A	25,476	23.4	19.9	17.2	10.6%	4.1	3.7	16.6%	18.2%	12.6	10.7	2.6%	2.8%
Pegatron	4938 TT	Not Rated	84.60	N/A	N/A	7,272	14.5	12.9	11.8	6.7%	1.2	1.2	8.2%	9.1%	7.6	6.1	4.7%	5.2%
Zhen Ding Technology	4958 TT	Not Rated	110.00	N/A	N/A	3,361	15.4	10.1	8.6	-5.3%	1.0	1.0	6.7%	9.5%	5.1	3.9	3.4%	4.1%
SEMCO	009150 KS	Add	152,000	200,000	32%	8,700	19.6	14.4	13.0	-4.9%	1.5	1.4	8.0%	9.8%	7.5	5.5	1.4%	1.4%
BH Co.	090460 KS	Add	19,550	27,000	38%	516	7.1	6.2	5.5	-5.3%	1.0	0.9	15.8%	15.7%	3.7	2.4	1.3%	1.3%
Pi advanced Materials	178920 KS	Add	30,100	36,000	20%	677	191.0	26.5	24.0	-6.9%	2.7	2.6	1.4%	10.0%	30.1	11.8	1.2%	2.3%
Average							34.4	16.2	13.4	4.2%	1.7	1.5	8.0%	10.3%	10.2	6.5	2.1%	2.5%

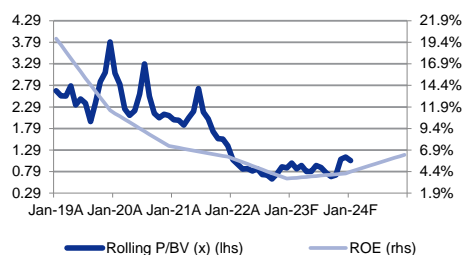
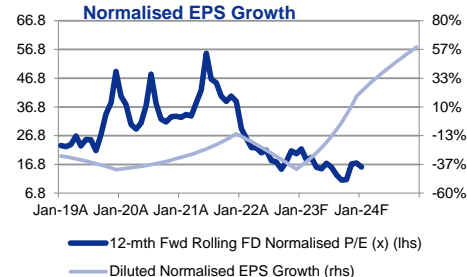
PRICE AS AT 04 JAN 2024

SOURCES: CGS-CIMB RESEARCH ESTIMATES, BLOOMBERG

Note: Estimates for Not rated companies are based on Bloomberg consensus estimates

Refinitiv ESG Scores	
 <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="background-color: #4CAF50; color: white; padding: 5px; text-align: center;">B+ <small>ESG Score</small></div> <div style="background-color: #4CAF50; color: white; padding: 5px; text-align: center;">B <small>ESG Controversies Score</small></div> <div style="background-color: #4CAF50; color: white; padding: 5px; text-align: center;">B+ <small>ESG Combined Score</small></div> <div style="background-color: #4CAF50; color: white; padding: 5px; text-align: center;">B- <small>ESG Environment Pillar Score</small></div> <div style="background-color: #4CAF50; color: white; padding: 5px; text-align: center;">A- <small>ESG Social Pillar Score</small></div> <div style="background-color: #4CAF50; color: white; padding: 5px; text-align: center;">A <small>ESG Government Pillar Score</small></div> </div>	
<p>ESG in a nutshell</p> <p>In 2022, AAC Technologies (AAC) continued its efforts on improving its ESG performance. Environmental statistics in FY22 indicate the good progress AAC has made in sustainability. It was involved in a wide range of activities to foster talent within the organisation as well as support the local community, thanks to its ESG-related team and structure. AAC achieved a B+ in ESG Controversies as assessed by Refinitiv. From our perspective, AAC was not involved in any environmentally-detrimental industry practices. And it made efforts to integrate ESG into its business activities.</p>	
<p>Environmental</p> <p>In FY22, AAC's energy consumption and intensity, water consumption and intensity, and greenhouse gas (GHG) emission and intensity all decreased from the previous year; hazardous waste produced also dropped but non-hazardous waste increased to some extent.</p>	<p>Implications</p> <p>In FY22, AAC's total energy consumption (GJ) decreased 16.3% yoy to 3,699,020. Energy intensity (GJ per million Rmb revenue) dropped from 250 in FY21 to 179 in FY22. Water consumption (tonnes) declined 12.8% yoy to 10,964,065. Water intensity (tonnes per million Rmb revenue) reduced from 711 in FY21 to 687 in FY22. Total GHG emission (tCO2e) decreased 19.6% yoy to 598,341. GHG emission intensity dropped from 0.42 in FY21 to 0.29 in FY22. Hazardous waste produced (tonnes) reduced 41.1% yoy to 12,012, while non-hazardous waste produced (tonnes) rose 22.1% yoy to 14,156.</p> <p>According to Refinitiv, AAC was rated B- for its Environmental pillar and ranked 27th out of 94 in the global electronic equipment & parts sector for this pillar in 2022.</p>
<p>Social</p> <p>AAC emphasises nurture and the protection of employees. The company is also committed to serving and supporting local communities, according to the company.</p>	<p>Implications</p> <p>AAC utilises Lark, a collaborative platform, to help employees and promote talent acquisition. To find potential talent, AAC conducts many recruitment activities to attract fresh graduates. AAC holds induction programmes and uses online learning platforms to boost employee competence and for career development. For employee satisfaction, AAC provides many channels for staff feedback and suggestions to the management. AAC is also engaged in the local community via charities and community care. The company has donated Rmb1m in FY22 to support education, medical services, and poverty relief in Changzhou.</p> <p>According to Refinitiv, AAC was rated A for its Social pillar and ranked 2nd of 94 in the global electronic equipment & parts sector for this pillar in 2022.</p>
<p>Governance</p> <p>AAC has its Sustainability Working Group to handle ESG-related issues and put forward respective strategies.</p>	<p>Implications</p> <p>AAC has a specific Sustainability Working Group under the Board to review the company's sustainability strategies and material issues. To promote ethics and integrity within the company, AAC utilises a code of conduct and business ethics guideline that cover areas such as anti-corruption, fraud, conflicts of interest, anti-discrimination, anti-competition, and confidentiality initiatives. On supplier management, AAC evaluates suppliers in terms of quality, environmental and social performances and interacts actively with suppliers.</p> <p>According to Refinitiv, AAC was rated A for the Governance pillar, and ranked 6th of 94 in the global electronic equipment & parts sector for this pillar in 2022.</p>

SOURCES: CGS-CIMB RESEARCH, REFINITIV

BY THE NUMBERS
P/BV vs ROE

12-mth Fwd FD Normalised P/E vs FD Normalised EPS Growth

Profit & Loss

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	17,667	20,625	21,147	24,118	25,896
Gross Profit	4,365	3,775	3,589	4,875	5,433
Operating EBITDA	4,028	3,542	3,707	4,399	4,488
Depreciation And Amortisation	-2,544	-2,802	-2,996	-2,797	-2,626
Operating EBIT	1,484	740	711	1,602	1,861
Financial Income/(Expense)	-367	-349	-165	-178	-60
Pretax Income/(Loss) from Assoc.	-1	-1	-1	-0	-0
Non-Operating Income/(Expense)	297	428	560	310	310
Profit Before Tax (pre-EI)	1,413	817	1,105	1,733	2,111
Exceptional Items	0	44	0	0	0
Pre-tax Profit	1,413	861	1,105	1,733	2,111
Taxation	-120	-231	-199	-260	-317
Exceptional Income - post-tax					
Profit After Tax	1,293	629	906	1,473	1,794
Minority Interests	23	192	18	-9	-18
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	1,316	821	924	1,465	1,776
Normalised Net Profit	1,293	586	906	1,473	1,794
Fully Diluted Normalised Profit	1,316	778	924	1,465	1,776

Cash Flow

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	4,028	3,542	3,707	4,399	4,488
Cash Flow from Inv. & Assoc.	1	1	1	0	0
Change In Working Capital	-2,123	587	-117	-741	-436
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense					
Other Operating Cashflow	875	819	724	487	370
Net Interest (Paid)/Received	-367	-349	-165	-178	-60
Tax Paid	-217	-231	-199	-260	-317
Cashflow From Operations	2,196	4,368	3,951	3,707	4,044
Capex	-3,584	-1,848	-1,500	-1,500	-1,500
Disposals Of FAs/subsidiaries	0	0	0	0	0
Acq. Of Subsidiaries/investments	-2,229	0	0	0	0
Other Investing Cashflow	1,541	54	238	264	322
Cash Flow From Investing	-4,272	-1,794	-1,262	-1,236	-1,178
Debt Raised/(repaid)	-2,653	-1,070	535	-267	134
Proceeds From Issue Of Shares	0	0	0	0	0
Shares Repurchased	0	0	0	0	0
Dividends Paid	-403	-242	-144	-162	-256
Preferred Dividends					
Other Financing Cashflow	3,669	-403	-403	-441	-383
Cash Flow From Financing	613	-1,715	-12	-871	-505
Total Cash Generated	-1,463	859	2,678	1,600	2,361
Free Cashflow To Equity	-4,729	1,504	3,224	2,204	3,000
Free Cashflow To Firm	-1,660	2,977	3,093	2,913	3,249

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS... cont'd

Balance Sheet

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	6,054	6,814	8,793	10,743	12,930
Total Debtors	6,018	5,539	5,679	6,476	6,953
Inventories	5,695	4,401	4,586	5,026	5,345
Total Other Current Assets	187	361	361	361	361
Total Current Assets	17,955	17,116	19,420	22,607	25,589
Fixed Assets	19,987	19,302	17,917	16,731	15,716
Total Investments	0	0	0	0	0
Intangible Assets	604	839	839	839	839
Total Other Non-Current Assets	3,476	3,086	3,154	3,154	3,154
Total Non-current Assets	24,067	23,227	21,910	20,725	19,710
Short-term Debt	2,902	1,833	2,367	2,100	2,234
Current Portion of Long-Term Debt					
Total Creditors	6,148	4,959	5,167	5,663	6,022
Other Current Liabilities	618	2,263	2,373	2,341	2,401
Total Current Liabilities	9,668	9,055	9,908	10,104	10,657
Total Long-term Debt	330	1,727	1,029	1,378	1,203
Hybrid Debt - Debt Component	6,573	6,088	6,088	6,088	6,088
Total Other Non-Current Liabilities	2,909	1,235	1,250	1,336	1,387
Total Non-current Liabilities	9,812	9,050	8,367	8,802	8,678
Total Provisions	41	43	43	43	43
Total Liabilities	19,520	18,148	18,317	18,949	19,378
Shareholders' Equity	21,811	21,656	22,420	23,731	25,203
Minority Interests	691	539	593	653	718
Total Equity	22,502	22,196	23,013	24,383	25,921

Key Ratios

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	3.1%	16.7%	2.5%	14.1%	7.4%
Operating EBITDA Growth	5.8%	(12.1%)	4.7%	18.7%	2.0%
Operating EBITDA Margin	22.8%	17.2%	17.5%	18.2%	17.3%
Net Cash Per Share (Rmb)	-3.10	-2.36	-0.58	0.98	2.84
BVPS (Rmb)	18.05	18.07	18.71	19.80	21.03
Gross Interest Cover	3.57	1.84	1.76	3.63	4.87
Effective Tax Rate	8.5%	26.9%	18.0%	15.0%	15.0%
Net Dividend Payout Ratio	18.4%	18.5%	17.5%	17.5%	17.5%
Accounts Receivables Days	115.6	102.1	96.7	92.1	94.5
Inventory Days	132.9	109.4	93.4	91.4	92.5
Accounts Payables Days	155.7	120.3	105.2	103.0	104.2
ROIC (%)	4.41%	1.90%	2.03%	4.81%	5.68%
ROCE (%)	4.89%	2.47%	2.95%	5.61%	6.29%
Return On Average Assets	3.88%	2.06%	2.52%	3.80%	4.15%

Key Drivers

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Acoustics revenue growth (yoy change %)	13.5%	3.1%	-12.7%	7.1%	4.0%
Optics revenue growth (yoy change %)	46.2%	34.7%	24.3%	7.4%	5.3%
Acoustics GPM (%)	29.7%	28.1%	28.0%	28.5%	29.0%
Optics (GPM %)	17.2%	-13.0%	-11.0%	5.0%	10.0%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

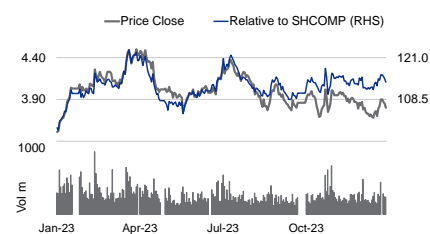
China

HOLD (no change)

Consensus ratings*: Buy 22 Hold 0 Sell 0

Current price:	Rmb3.80
Target price:	Rmb4.10 ▲
Previous target:	Rmb3.57
Up/downside:	7.9%
CGS-CIMB / Consensus:	-16.3%
Reuters:	000725.SZ
Bloomberg:	000725 CH
Market cap:	US\$19,869m
	Rmb142,014m
Average daily turnover:	US\$141.4m
	Rmb1,021m
Current shares o/s	38,442m
Free float:	85.4%

*Source: Bloomberg



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-1.6	-1.6	8.3
Relative (%)	0.7	3.4	13.7

Major shareholders	% held
Beijing State-owned Capital Operation	10.6
Beijing BOE Investment & Dev	2.1
Beijing Jing Guorui Soe refrom and	1.9

Analyst

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BOE Technology Group-A

Display demand to boost FY24F net profit

- In FY23F, BOE Technology Group suffered from falling LCD TV prices and weak market demand for smartphone, PC, automotive, and AR/VR displays.
- We expect an FY24F earnings recovery (+297%) on stable LCD TV prices, higher OLED display output, and rising demand for auto and AR/VR displays.
- Reiterate Hold with a higher TP of Rmb4.10, still based on 1.1x FY24F P/BV.

Improving operational outlook in FY24F

- Given falling LCD TV prices and weak display demand from smartphones, PC, automotive, and AR/VR, we expect BOE's FY23F net profit to fall 76% yoy. However, we expect BOE's results to improve in FY24F on a recovery in LCD TV panel prices, increased OLED display output, and rising demand for automotive and AR/VR displays.

LCD TV segment turns profitable

- We think the LCD TV segment turned profitable in 4Q23F due to the rise in LCD TV panel prices and strong sales of large-sized TVs (52" or larger). We anticipate an 18% yoy increase in LCD TV revenue in FY24F, owing to stable LCD panel price, lower output from Chinese panel makers, and recovering demand from smartphone, automotive, and AR/VR applications, as well as stronger replacement sales for large-sized TVs ahead of the 2024 Olympic Games. We expect the LCD TV segment's profitability to rebound sharply in FY24F as LCD TV panel prices rise and product mix improves.

OLED manufacturing profit margins to continue improving in FY24F

- BOE produced 100m OLED displays in 10M23, approaching its annual shipment target of 120m units, amid rising OLED display penetration in high-end smartphone models and wider adoption in automobiles and PC. We believe Chinese brands' smartphone display migration, foldable phones, and auto displays would drive OLED shipments in FY24-25F. Due to lower material prices and improved capacity utilisation, OLED profit margins should improve in FY24F, reaching breakeven in FY25F, in our estimation.

Automotive display and mini-LED to be the new growth drivers

- BOE was the world's largest supplier of auto displays of 8" and above in 2022, according to Omdia. We anticipate that its automotive display revenue would continue to grow rapidly in FY24-25F owing to an increase in display size and infotainment displays as a result of Chinese EV makers' rapid development of ADAS and smart cockpits. We also see a significant market opportunity for BOE in mini-LEDs due to rising demand for TVs, gaming PCs, AR/VR products, auto displays, and outdoor video walls.

Reiterate Hold, with a higher target price of Rmb4.10

- Despite the improved net profit outlook (+297% in FY24F, +84% in FY25F), we believe its current valuation of 82x P/E and 1.07x P/BV in FY23F is fair, reflecting lower LCD TV panel prices and a slow recovery in PC and AR/VR displays. Hence, we reiterate Hold. We raise our TP to Rmb4.10 as we roll forward to FY24F P/BV, still based on 1.1x, its 5-year average, due to its recovering EPS growth. Upside risks: stabilised LCD TV panel prices and robust OLED shipments. Downside risks: weaker-than-expected LCD display demand and lower-than-expected profitability in OLED manufacturing.

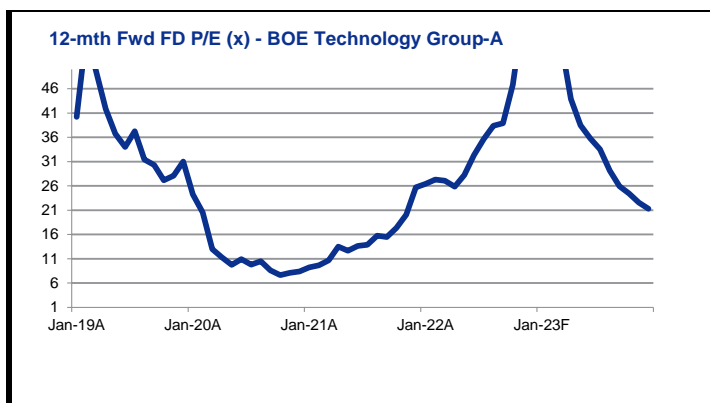
Financial Summary	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (Rmbm)	221,036	178,414	180,753	212,094	240,531
Net Profit (Rmbm)	25,496	7,551	1,763	6,994	12,901
Normalised EPS (Rmb)	0.71	0.20	0.05	0.18	0.34
Normalised EPS Growth	388%	(72%)	(76%)	297%	84%
FD Normalised P/E (x)	5.32	19.35	82.24	20.73	11.24
Price To Sales (x)	0.61	0.82	0.80	0.68	0.60
DPS (Rmb)	0.21	0.03	0.01	0.03	0.05
Dividend Yield	5.53%	0.78%	0.18%	0.72%	1.33%
EV/EBITDA (x)	3.25	7.55	7.68	5.53	4.14
P/FCFE (x)	32.69	28.20	18.49	7.84	6.51
Net Gearing	12.5%	19.6%	21.2%	17.0%	12.0%
P/BV (x)	1.02	1.07	1.07	1.02	0.94
ROE	20.7%	5.4%	1.3%	5.0%	8.7%
% Change In Normalised EPS Estimates					
Normalised EPS/consensus EPS (x)			0.36	0.62	0.88

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS

Profit & Loss				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	178,414	180,753	212,094	240,531
Gross Profit	55,106	55,314	66,354	79,100
Operating EBITDA	31,687	31,440	42,299	54,285
Depreciation And Amortisation	-34,223	-34,527	-34,540	-34,601
Operating EBIT	-2,536	-3,087	7,759	19,684
Financial Income/(Expense)	-2,089	-2,012	-2,101	-2,872
Pretax Income/(Loss) from Assoc.	528	687	892	1,160
Non-Operating Income/(Expense)	4,149	6,030	3,320	350
Profit Before Tax (pre-EI)	51	1,618	9,870	18,322
Exceptional Items	0	0	0	0
Pre-tax Profit	51	1,618	9,870	18,322
Taxation	-1,788	-1,357	-1,852	-3,520
Exceptional Income - post-tax				
Profit After Tax	-1,737	261	8,018	14,802
Minority Interests	9,288	1,502	-1,024	-1,901
Preferred Dividends				
FX Gain/(Loss) - post tax				
Other Adjustments - post-tax				
Net Profit	7,551	1,763	6,994	12,901
Normalised Net Profit	-1,737	261	8,018	14,802
Fully Diluted Normalised Profit	7,551	1,763	6,994	12,901

Cash Flow				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	31,687	31,440	42,299	54,285
Cash Flow from Inv. & Assoc.	-528	-687	-892	-1,160
Change In Working Capital	6,889	-1,176	-1,978	-2,228
(Incr)/Decr in Total Provisions				
Other Non-Cash (Income)/Expense	2,086	0	0	0
Other Operating Cashflow	6,766	8,729	6,313	4,382
Net Interest (Paid)/Received	-2,089	-2,012	-2,101	-2,872
Tax Paid	-1,788	-1,357	-1,852	-3,520
Cash Flow From Operations	43,022	34,938	41,788	48,887
Capex	-29,398	-35,120	-32,110	-35,800
Disposals Of FAs/subsidiaries	0	0	0	0
Acq. Of Subsidiaries/investments	-92,206	0	0	0
Other Investing Cashflow	85,631	1,850	2,150	2,230
Cash Flow From Investing	-35,973	-33,270	-29,960	-33,570
Debt Raised/(repaid)	-1,869	6,173	6,672	6,962
Proceeds From Issue Of Shares	0	0	0	0
Shares Repurchased	0	0	0	0
Dividends Paid	-13,829	-1,133	-264	-1,049
Preferred Dividends				
Other Financing Cashflow	-5,476	-3,862	-4,251	-5,102
Cash Flow From Financing	-21,173	1,178	2,157	811
Total Cash Generated	-14,124	2,846	13,985	16,128
Free Cashflow To Equity	5,180	7,840	18,501	22,279
Free Cashflow To Firm	10,621	5,530	16,079	20,419



Balance Sheet				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	85,988	88,834	102,819	118,947
Total Debtors	29,981	30,374	35,641	40,419
Inventories	22,788	22,790	25,684	27,928
Total Other Current Assets	3,474	3,474	3,474	3,474
Total Current Assets	142,231	145,472	167,618	190,769
Fixed Assets	205,987	207,575	206,140	208,334
Total Investments	12,422	12,422	12,422	12,422
Intangible Assets	9,609	9,609	9,609	9,609
Total Other Non-Current Assets	50,313	50,313	50,313	50,313
Total Non-current Assets	278,331	279,919	278,484	280,678
Short-term Debt	2,374	2,389	2,597	2,771
Current Portion of Long-Term Debt				
Total Creditors	49,467	48,686	54,868	59,663
Other Current Liabilities	33,829	33,067	32,929	33,087
Total Current Liabilities	85,670	84,142	90,394	95,520
Total Long-term Debt	123,143	129,301	135,766	142,554
Hybrid Debt - Debt Component				
Total Other Non-Current Liabilities	8,424	8,534	10,014	11,356
Total Non-current Liabilities	131,567	137,835	145,779	153,910
Total Provisions	1,274	1,400	1,337	1,369
Total Liabilities	218,512	223,377	237,511	250,799
Shareholders' Equity	136,089	136,053	142,630	154,687
Minority Interests	65,961	65,961	65,961	65,961
Total Equity	202,050	202,014	208,591	220,648

Key Ratios				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	(19.3%)	1.3%	17.3%	13.4%
Operating EBITDA Growth	(55%)	(1%)	35%	28%
Operating EBITDA Margin	17.8%	17.4%	19.9%	22.6%
Net Cash Per Share (Rmb)	-1.03	-1.12	-0.93	-0.69
BVPS (Rmb)	3.54	3.57	3.74	4.05
Gross Interest Cover	-0.71	-0.80	1.83	3.86
Effective Tax Rate	3492%	84%	19%	19%
Net Dividend Payout Ratio	15.0%	15.0%	15.0%	15.0%
Accounts Receivables Days	65.17	57.33	53.58	54.29
Inventory Days	74.76	66.31	60.87	60.61
Accounts Payables Days	92.19	86.13	78.42	78.09
ROIC (%)	(0.8%)	(1.0%)	2.4%	6.1%
ROCE (%)	(0.3%)	(0.4%)	2.9%	6.1%
Return On Average Assets	(0.04%)	0.42%	2.20%	3.70%

Key Drivers				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Display rev growth (yoy % chg)	-22.6%	11.3%	4.9%	0.7%
IoT Innovation rev growth (yoy % chg)	-4.0%	1.3%	17.7%	13.7%
Display (GPM %)	14.0%	13.0%	15.6%	17.8%
IoT Innovation (GPM %)	17.5%	13.5%	18.1%	23.5%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

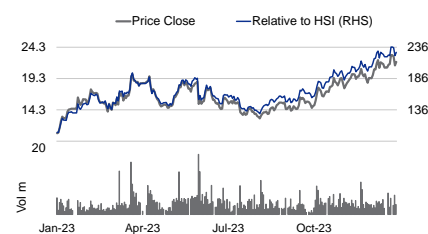
Hong Kong

ADD (no change)

Consensus ratings*: Buy 10 Hold 0 Sell 0

Current price:	HK\$21.95
Target price:	HK\$27.80
Previous target:	HK\$20.00
Up/downside:	26.7%
CGS-CIMB / Consensus:	6.3%
Reuters:	1415.HK
Bloomberg:	1415 HK
Market cap:	US\$2,395m HK\$18,699m
Average daily turnover:	US\$8.32m HK\$65.03m
Current shares o/s	835.7m
Free float:	27.9%

*Source: Bloomberg



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	14.3	44.8	107.9
Relative (%)	14.3	48	127.9

Major shareholders	% held
Luxvisions Innovation Limited	72.1

Analyst

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Cowell e Holdings Inc

Expanding capacity for iPhone rear camera

- We expect Cowell to benefit from the ongoing iPhone camera spec upgrades due to its enhanced manufacturing capabilities and solid supplier status.
- We anticipate Cowell's FCCM shipments and ASP rising in FY24F as a result of increased contributions from rear-facing FCCM.
- Reiterate Add; our TP rises to HK\$27.80, based on 20x FY25F P/E.

Cowell to benefit from ongoing iPhone camera spec upgrades

- Cowell e Holdings was our top pick for the sector in 2023, having outperformed the market with a share price increase of 112% in 2023, amid consistent camera specification upgrades for iPhones. We think Cowell would continue to benefit from the new creative iPhone camera features, as well as gain market share in Apple's supply chain.

Rear-facing FCCM shipments starting for iPhone in FY24F

- We think Cowell's flip-chip camera module (FCCM) revenue fell 10% yoy in FY23F (c.94% of FY23F revenue) due to a 9% drop in shipments and a 1% ASP decline due to weak iPad demand and the absence of camera spec upgrades in the iPhone15. We also think gross profit margin (GPM) fell 1.3% pts to 14.4% in FY23F due to lower utilisation and an unfavourable Rmb/US\$ exchange rate, particularly in 1H23. Nonetheless, we expect FCCM shipments to increase by c.18% yoy in FY24F, owing to increased iPhone16 output. More importantly, we anticipate an 18% increase in FCCM ASP to c.US\$8.2 due to the contribution of high-ASP rear-facing FCCM. We forecast rear-facing FCCM output rising from c.15m units in FY23F (only used in iPads) to c.40m units in FY24F (for use in iPads and iPhones) because of the order win for iPhone16's rear-facing FCCM. When combined with a higher rear-facing FCCM ASP, we anticipate a 38% increase in revenue in FY24F. We expect revenue from automotive light detection and ranging (LiDAR) module to double to c.US\$57m in FY23F (c.6% of revenue) due to increased demand from Chinese EV makers. We anticipate LiDAR revenue growing rapidly, underpinned by a rising penetration rate of smart EVs in China's new energy vehicle market.

Increasing production capacity for rear-facing FCCM

- Having invested US\$91m in FY22 to expand its production capacity for the front-facing FCCM, we believe Cowell spent a further US\$150m in new production capacity for the rear-facing FCCM in FY23F.

Reiterate Add, with a higher target price of HK\$27.80

- We reiterate our Add call for its enhanced production capacity. We raise our target price to HK\$27.80 as we roll over to FY25F, still based on 20x P/E, a 20% premium to its peers, reflecting its rising market share in the supply chain. Share price catalysts include strong iPhone and iPad sales, as well as fast shipments growth in LiDAR. Downside risks include weak iPhone sales and a low production yield in the production of rear-facing FCCM, both of which have an impact on revenue growth and GPM.

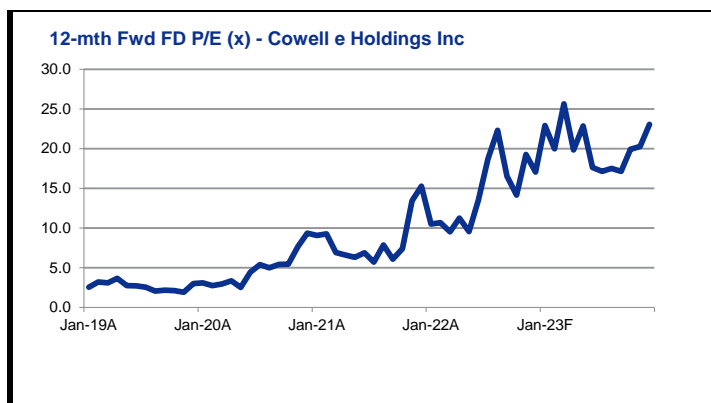
Financial Summary	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (US\$m)	799	1,116	1,019	1,405	1,880
Net Profit (US\$m)	49.8	84.3	70.9	111.2	154.8
Normalised EPS (US\$)	0.08	0.11	0.08	0.13	0.19
Normalised EPS Growth	1.6%	40.5%	(26.1%)	56.8%	39.3%
FD Normalised P/E (x)	34.84	25.45	34.43	21.96	15.77
Price To Sales (x)	2.93	2.10	2.31	1.67	1.25
DPS (US\$)	-	-	-	-	-
Dividend Yield	0%	0%	0%	0%	0%
EV/EBITDA (x)	23.24	18.50	20.72	12.44	8.99
P/FCFE (x)	20.48	NA	NA	72.13	19.47
Net Gearing	(41.4%)	(36.2%)	(14.0%)	(15.1%)	(28.1%)
P/BV (x)	7.60	6.53	5.42	4.35	3.41
ROE	24.4%	28.7%	17.9%	22.8%	25.2%
% Change In Normalised EPS Estimates			0%	0%	0%
Normalised EPS/consensus EPS (x)			1.09	1.00	0.85

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS

Profit & Loss				
(US\$m)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	1,116.2	1,018.9	1,405.3	1,880.1
Gross Profit	174.4	146.3	214.6	285.7
Operating EBITDA	119.9	110.4	182.2	239.7
Depreciation And Amortisation	(19.7)	(36.9)	(54.6)	(62.8)
Operating EBIT	100.2	73.5	127.6	176.9
Financial Income/(Expense)	2.0	2.5	(3.1)	(1.1)
Pretax Income/(Loss) from Assoc.	0.0	0.0	0.0	0.0
Non-Operating Income/(Expense)	10.2	6.3	6.3	6.3
Profit Before Tax (pre-EI)	112.5	82.2	130.8	182.1
Exceptional Items	(11.6)	0.0	0.0	0.0
Pre-tax Profit	100.8	82.2	130.8	182.1
Taxation	(17.0)	(12.3)	(19.6)	(27.3)
Exceptional Income - post-tax				
Profit After Tax	83.8	69.9	111.2	154.8
Minority Interests	0.5	1.0	0.0	0.0
Preferred Dividends				
FX Gain/(Loss) - post tax				
Other Adjustments - post-tax				
Net Profit	84.3	70.9	111.2	154.8
Normalised Net Profit	95.4	69.9	111.2	154.8
Fully Diluted Normalised Profit	95.9	70.9	111.2	154.8

Cash Flow				
(US\$m)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	119.9	110.4	182.2	239.7
Cash Flow from Inv. & Assoc.				
Change In Working Capital	(4.0)	(28.4)	(26.7)	(27.8)
(Incr)/Decr in Total Provisions				
Other Non-Cash (Income)/Expense				
Other Operating Cashflow	17.8	5.7	21.0	12.3
Net Interest (Paid)/Received	2.0	2.5	(8.0)	(2.6)
Tax Paid	(19.3)	(12.3)	(19.6)	(27.3)
Cashflow From Operations	116.4	77.8	148.8	194.3
Capex	(91.9)	(150.0)	(120.0)	(80.0)
Disposals Of FAs/subsidiaries	0.0	0.0	0.0	0.0
Acq. Of Subsidiaries/investments	(0.7)	0.0	0.0	0.0
Other Investing Cashflow	(82.9)	8.8	0.0	4.9
Cash Flow From Investing	(175.5)	(141.2)	(120.0)	(75.1)
Debt Raised/(repaid)	(56.5)	4.2	5.0	6.3
Proceeds From Issue Of Shares	1.9	0.0	0.0	0.0
Shares Repurchased	0.0	0.0	0.0	0.0
Dividends Paid	0.0	0.0	0.0	0.0
Preferred Dividends				
Other Financing Cashflow	0.5	(4.8)	(6.5)	(6.0)
Cash Flow From Financing	(54.1)	(0.6)	(1.5)	0.2
Total Cash Generated	(113.2)	(64.0)	27.3	119.4
Free Cashflow To Equity	(115.6)	(59.2)	33.8	125.4
Free Cashflow To Firm	(54.0)	(57.1)	36.8	126.6



Balance Sheet				
(US\$m)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	146.5	81.0	106.8	224.7
Total Debtors	195.8	178.8	211.8	257.6
Inventories	138.3	95.6	114.2	152.9
Total Other Current Assets	0.0	0.0	0.0	0.0
Total Current Assets	480.6	355.4	432.7	635.1
Fixed Assets	130.3	243.3	308.7	325.9
Total Investments	0.6	0.6	0.6	0.6
Intangible Assets	3.1	3.1	3.1	3.1
Total Other Non-Current Assets	16.6	16.6	16.6	16.6
Total Non-current Assets	150.5	263.6	329.0	346.2
Short-term Debt	15.8	20.0	25.0	31.3
Current Portion of Long-Term Debt				
Total Creditors	230.7	142.5	167.3	224.0
Other Current Liabilities	5.9	5.9	5.9	5.9
Total Current Liabilities	252.3	168.3	198.1	261.1
Total Long-term Debt	0.0	0.0	0.0	0.0
Hybrid Debt - Debt Component				
Total Other Non-Current Liabilities	18.2	16.7	23.0	30.7
Total Non-current Liabilities	18.2	16.7	23.0	30.7
Total Provisions	0.0	0.0	0.0	0.0
Total Liabilities	270.6	185.0	221.1	291.8
Shareholders' Equity	360.0	433.3	540.0	688.9
Minority Interests	0.6	0.6	0.6	0.6
Total Equity	360.6	433.9	540.6	689.5

Key Ratios				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	39.7%	(8.7%)	37.9%	33.8%
Operating EBITDA Growth	25.7%	(7.9%)	65.0%	31.5%
Operating EBITDA Margin	10.7%	10.8%	13.0%	12.7%
Net Cash Per Share (US\$)	0.16	0.07	0.10	0.23
BVPS (US\$)	0.43	0.52	0.65	0.82
Gross Interest Cover	19.59	11.63	15.95	23.59
Effective Tax Rate	16.9%	15.0%	15.0%	15.0%
Net Dividend Payout Ratio	NA	NA	NA	NA
Accounts Receivables Days	51.26	67.10	50.86	45.55
Inventory Days	53.69	48.93	32.24	30.57
Accounts Payables Days	70.89	76.11	46.42	43.67
ROIC (%)	38.1%	22.3%	24.6%	27.6%
ROCE (%)	28.3%	19.8%	26.0%	28.5%
Return On Average Assets	15.9%	10.9%	16.4%	17.9%

Key Drivers				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Camera module volume (million units)	155.0	140.2	165.0	187.5
Camera module ASP (US\$ per unit)	7.0	6.9	8.2	9.7

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

China

ADD (no change)

Consensus ratings*: Buy 8 Hold 2 Sell 0

Current price:	Rmb12.64
Target price:	Rmb18.30 ▲
Previous target:	Rmb16.50
Up/downside:	44.8%
CGS-CIMB / Consensus:	23.1%
Reuters:	300433.SZ
Bloomberg:	300433 CH
Market cap:	US\$8,813m
	Rmb62,988m
Average daily turnover:	US\$53.40m
	Rmb384.5m
Current shares o/s	4,973m
Free float:	43.6%

*Source: Bloomberg



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-1.2	2.9	18.1
Relative (%)	1.1	7.9	23.5

Major shareholders	% held
Lens Technology HK & Zhou family	56.4

Analyst

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Lens Technology Co Ltd-A

Apple orders stable, Chinese orders growing

- Lens Tech is the major cover glass/back cover supplier to Apple's devices and ceramic/sapphire parts for wearables.
- We expect Lens Tech's FY24F revenue to grow 13% yoy and GPM to widen by 100bp, amid recovering Chinese brand orders and stable Apple business.
- Reiterate Add. Our higher TP of Rmb18.30 is based on 18x FY25F P/E.

Lens Tech keeps its market leadership in cover glass/back cover

- We remain positive on Lens Technology's (Lens Tech) promising net profit growth of c.34%/24% in FY24F/25F, supported by consistent orders from Apple, recovering orders from Chinese brands, and the fast-growing automotive component business from Tesla and Chinese EV makers. Lens Tech has maintained its market leadership in cover glass/back covers for iPhones, ceramic/sapphire parts for Apple Watch, and major cover glass/back covers for high-end models from Chinese brands. We estimate that Apple likely generated c.70% of the company's FY23F revenue.

FY24F revenue to accelerate and GPM to improve

- We anticipate an 18% yoy revenue increase in 4Q23F (vs. 5% in 1H23, 10% in 3Q23), owing to strong orders from top-tier Chinese brands (Huawei, Xiaomi, Honor, Oppo and Vivo) and rising orders for EV makers, as well as a higher GPM in 4Q23F (vs. 16% in 1H23, 20% in 3Q23) due to better capacity utilisation and higher contributions from automotive.
- We estimate its FY24F revenue to grow by 13% yoy (c.11% in FY23F), driven by: 1) Chinese brands' shipments recovery with stronger high-end products, and stable cover-glass/back-cover demand for iPhones, as well as rising auto component output on a larger customer base in China.
- We also anticipate GPM to widen in FY24F on better capacity utilisation for cover-glass/back cover and assembly services for Chinese customers and higher contributions from automotive components. We estimate FY24F GPM widening by 100bp to c.20% (compared to c.19% in FY23F).

Reiterate Add, with a higher target price of Rmb18.30

- We reiterate Add on Lens Tech due to its promising earnings growth outlook and solid supplier status for Apple. We raise our target price to Rmb18.30 as we roll over to FY25F, pegged at 18x P/E (previously 20x), a 10% premium to larger-sized Apple suppliers to reflect its strong market position in Apple's supply chain. Share price catalysts include stronger-than-expected order recovery from Chinese brands and increased automotive revenue. Downside risks include increased competition in Tesla's supply chain and Chinese handset cover-glass market, which could affect its GPM, and a slower-than-expected recovery in Chinese brands smartphone shipments.

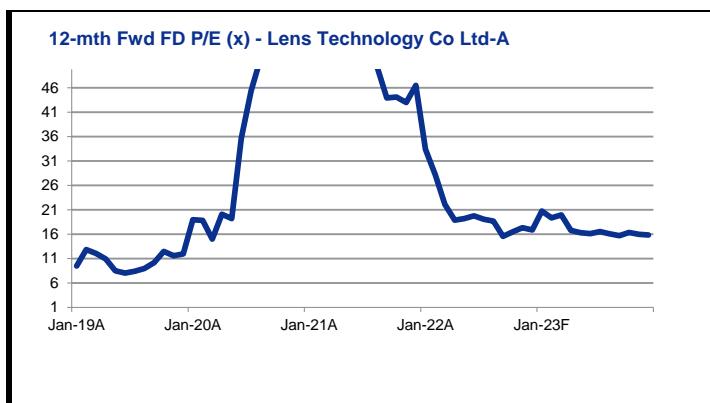
Financial Summary	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (Rmbm)	45,268	46,699	51,649	58,449	66,242
Net Profit (Rmbm)	2,070	2,448	3,069	4,098	5,061
Normalised EPS (Rmb)	0.42	0.49	0.62	0.82	1.02
Normalised EPS Growth	(63.5%)	17.2%	25.4%	33.5%	23.5%
FD Normalised P/E (x)	30.10	25.68	20.48	15.34	12.42
Price To Sales (x)	1.38	1.35	1.22	1.08	0.95
DPS (Rmb)	0.10	0.20	0.25	0.33	0.41
Dividend Yield	0.79%	1.58%	1.95%	2.61%	3.22%
EV/EBITDA (x)	13.86	12.30	11.24	9.07	7.81
P/FCFE (x)	NA	NA	NA	26.64	18.73
Net Gearing	15.8%	15.6%	18.2%	16.3%	13.9%
P/BV (x)	1.47	1.42	1.42	1.34	1.32
ROE	4.9%	5.6%	6.9%	9.0%	10.7%
% Change In Normalised EPS Estimates			0%	0%	0%
Normalised EPS/consensus EPS (x)			0.99	1.00	1.05

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS

Profit & Loss				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	46,699	51,649	58,449	66,242
Gross Profit	8,969	9,832	11,805	13,593
Operating EBITDA	5,653	6,290	7,744	8,869
Depreciation And Amortisation	-2,578	-2,858	-3,001	-3,087
Operating EBIT	3,075	3,432	4,743	5,782
Financial Income/(Expense)	-102	-321	-372	-360
Pretax Income/(Loss) from Assoc.	4	52	157	248
Non-Operating Income/(Expense)	-62	276	336	336
Profit Before Tax (pre-EI)	2,915	3,438	4,863	6,005
Exceptional Items	0	0	0	0
Pre-tax Profit	2,915	3,438	4,863	6,005
Taxation	-395	-344	-729	-901
Exceptional Income - post-tax				
Profit After Tax	2,520	3,094	4,134	5,105
Minority Interests	-72	-25	-35	-44
Preferred Dividends				
FX Gain/(Loss) - post tax				
Other Adjustments - post-tax				
Net Profit	2,448	3,069	4,098	5,061
Normalised Net Profit	2,520	3,094	4,134	5,105
Fully Diluted Normalised Profit	2,448	3,069	4,098	5,061

Cash Flow				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	5,653	6,290	7,744	8,869
Cash Flow from Inv. & Assoc.				
Change In Working Capital	13	-630	-937	-1,030
(Incr)/Decr in Total Provisions				
Other Non-Cash (Income)/Expense				
Other Operating Cashflow	2,759	881	992	980
Net Interest (Paid)/Received	-102	-321	-372	-360
Tax Paid	858	-344	-729	-901
Cash Flow From Operations	9,181	5,876	6,697	7,558
Capex	-5,700	-5,500	-4,200	-4,200
Disposals Of FAs/subsidiaries				
Acq. Of Subsidiaries/investments	-7,559	0	0	0
Other Investing Cashflow				
Cash Flow From Investing	-13,259	-5,500	-4,200	-4,200
Debt Raised/(repaid)	-394	-390	-137	-1
Proceeds From Issue Of Shares	0	0	0	0
Shares Repurchased	0	0	0	0
Dividends Paid	-1,083	-1,228	-1,639	-2,024
Preferred Dividends				
Other Financing Cashflow	-940	-532	-595	-591
Cash Flow From Financing	-2,416	-2,149	-2,372	-2,616
Total Cash Generated	-6,494	-1,773	126	742
Free Cashflow To Equity	-4,472	-14	2,360	3,357
Free Cashflow To Firm	-3,832	908	3,093	3,949



Balance Sheet				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	12,041	10,478	10,826	11,798
Total Debtors	9,460	10,463	11,841	13,420
Inventories	6,685	7,409	8,264	9,328
Total Other Current Assets	425	425	425	425
Total Current Assets	28,611	28,776	31,357	34,972
Fixed Assets	36,983	39,625	40,823	41,936
Total Investments	1,434	1,434	1,434	1,434
Intangible Assets	8,156	8,156	8,156	8,156
Total Other Non-Current Assets	3,162	3,295	3,477	3,686
Total Non-current Assets	49,734	52,509	53,890	55,211
Short-term Debt	9,862	10,385	11,068	11,806
Current Portion of Long-Term Debt				
Total Creditors	12,076	13,384	14,929	16,852
Other Current Liabilities	229	1,784	1,561	3,243
Total Current Liabilities	22,167	25,553	27,558	31,901
Total Long-term Debt	9,123	8,211	7,390	6,651
Hybrid Debt - Debt Component	0	0	0	0
Total Other Non-Current Liabilities	1,909	2,111	2,389	2,708
Total Non-current Liabilities	11,032	10,322	9,779	9,358
Total Provisions	765	846	958	1,085
Total Liabilities	33,964	36,721	38,294	42,345
Shareholders' Equity	44,173	44,354	46,743	47,630
Minority Interests	209	209	209	209
Total Equity	44,382	44,564	46,952	47,839

Key Ratios				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	3.2%	10.6%	13.2%	13.3%
Operating EBITDA Growth	14.1%	11.3%	23.1%	14.5%
Operating EBITDA Margin	12.1%	12.2%	13.2%	13.4%
Net Cash Per Share (Rmb)	-1.40	-1.63	-1.53	-1.34
BVPS (Rmb)	8.88	8.92	9.40	9.58
Gross Interest Cover	12.52	6.46	7.97	9.79
Effective Tax Rate	13.6%	10.0%	15.0%	15.0%
Net Dividend Payout Ratio	40.6%	40.0%	40.0%	40.0%
Accounts Receivables Days	73.21	67.13	66.59	66.36
Inventory Days	62.02	61.51	61.49	60.98
Accounts Payables Days	98.3	93.2	93.2	92.4
ROIC (%)	6.0%	6.5%	8.7%	10.2%
ROCE (%)	5.10%	5.68%	7.62%	8.99%
Return On Average Assets	3.38%	4.28%	5.41%	6.23%

Key Drivers				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Small-size cover glass (yoy change %)	-0.4%	6.4%	8.6%	5.9%
Large-size cover glass (yoy change %)	-1.8%	27.1%	25.1%	23.9%
Automotive parts and modules (%)	59.4%	40.0%	36.0%	32.0%
New materials (yoy change %)	20.9%	25.0%	15.0%	25.0%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Hong Kong

ADD (no change)

Consensus ratings*: Buy 12 Hold 6 Sell 0

Current price:	HK\$3.85
Target price:	HK\$4.80
Previous target:	HK\$4.40
Up/downside:	24.7%
CGS-CIMB / Consensus:	6.1%
Reuters:	1478.HK
Bloomberg:	1478 HK
Market cap:	US\$584.0m
	HK\$4,560m
Average daily turnover:	US\$3.60m
	HK\$27.94m
Current shares o/s:	1,182m
Free float:	35.7%

*Source: Bloomberg

Key changes in this note

- FY23-25F revenue reduced by 2-3% due to lower HCM shipments forecast.
- FY23-25F GPM reduced by 0.5-0.8% pt due to lower GPM assumptions in HCM business.
- FY23-25F EPS reduced by 12-19%.



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-14.6	29.6	-15
Relative (%)	-14.6	32.8	5

Major shareholders

Mr HE Ningning	% held	64.3
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Analyst



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Q Technology

FY24F profitability set to improve

- We anticipate a strong net profit recovery for Q Tech in FY24F, owing to increased HCM volume and GPM, as well as profit from ACM.
- We expect HCM output to increase by 10% yoy, with greater contribution from sophisticated products lifting ASP and GPM in HCM.
- Reiterate Add. We raise TP to HK\$4.80, still based on 8x FY25F P/E.

Q Tech likely to experience strong net profit recovery in FY24F

In FY23F, Q Technology (Q Tech) faced weak demand from its three key Chinese customers (Vivo, Oppo, and Lenovo) for handset camera modules (HCM), increased competition in the domestic supply chain, and losses from automotive camera modules (ACM). This led to a plunge in profits, with HCM gross profit margin (GPM) falling to 3.4% (-190bp yoy, +90bp hoh). However, we anticipate a strong net profit recovery for Q Tech in FY24F, on the back of improved GPM for HCM due to better utilisation, strong Chinese customer orders for 32 megapixel (MP) or above products on more high-end phone sales and profit from ACM due to wider customer base.

Handset camera module to see volume and ASP growth in FY24F

Q Tech shipped 168m HCMs in 1H23, a 21% decrease yoy on weak demand from Chinese customers. We estimate the company to produce 205m HCM in 2H23F, down 3% yoy but up 22% hoh. We expect HCM shipments to increase 10% yoy to 410m units in FY24F, driven by Chinese customer order recovery. We also expect product mix to improve, with higher output of 32MP+ products and periscope camera modules, and optical image stabilisation (OIS) modules, resulting in a 5% increase in HCM ASP in FY24F. Hence, we expect HCM GPM to recover significantly to 7.3% in FY24F (c.5.5% in FY23F), owing to higher production capacity utilisation and a better product mix.

Automotive camera module profitability to improve in FY24F

Q Tech currently produces ACM, including in-cabin, surround view cameras and ADAS sensing camera modules, for BYD, XPeng, NIO, Geely, and AITO EV models. However, due to low volume output, the ACM project may not be profitable in FY23F. We estimate ACM to account for 2-3% of its FY23F revenue, but we expect ACM revenue to more than double in FY24F as we assume new project wins for AITO and BYD. We expect its automotive camera segment to turn profitable in FY24F due to improved production scale.

Reiterate Add with a higher TP of HK\$4.80

We cut our FY23-25F EPS by c.12-19% to reflect slower-than-expected recovery in HCM demand in 2H23F from Vivo and Oppo. We retain Add on Q Tech for its improving HCM GPM outlook and growing ACM business. We roll forward to FY25F P/E and raise TP to HK\$4.80, still based on 8x P/E, a 50% discount to peers to reflect its thinner HCM GPM. A strong recovery in HCM shipments and GPM, as well as improved profitability in ACM, are share price catalysts. Risks include fierce competition in HCM and slower-than-expected growth in sophisticated product orders, which could impede GPM improvement.

Financial Summary

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (Rmbm)	18,663	13,759	11,760	12,388	12,944
Net Profit (Rmbm)	863.0	171.1	248.5	493.1	635.6
Normalised EPS (Rmb)	0.75	0.14	0.21	0.42	0.54
Normalised EPS Growth	2.8%	(80.7%)	45.1%	98.5%	28.9%
FD Normalised P/E (x)	4.73	24.38	16.80	8.47	6.57
Price To Sales (x)	0.22	0.30	0.35	0.34	0.32
DPS (Rmb)	-	-	-	0.042	0.054
Dividend Yield	0.00%	0.00%	0.00%	1.18%	1.52%
EV/EBITDA (x)	2.10	10.43	5.59	3.12	2.22
P/FCFE (x)	13.00	3.28	15.39	8.16	6.12
Net Gearing	(16.9%)	(3.6%)	(10.6%)	(17.1%)	(24.6%)
P/BV (x)	0.89	0.88	0.87	0.80	0.73
ROE	20.8%	3.6%	5.2%	9.9%	11.6%
% Change In Normalised EPS Estimates			(18.6%)	(15.0%)	(11.5%)
Normalised EPS/consensus EPS (x)			1.64	1.29	1.17

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

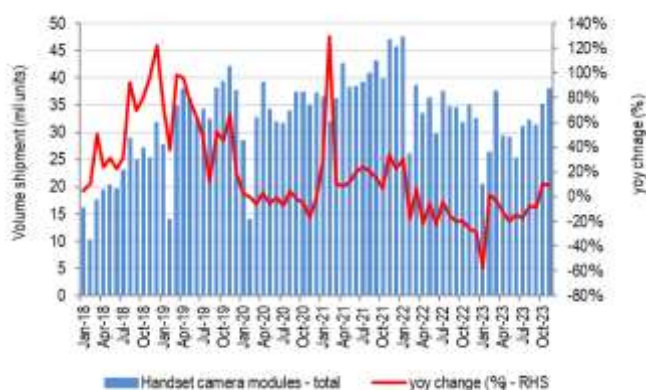
FY24F profitability set to improve

Figure 1: Monthly key segment shipments from Dec 2022 to Nov 2023

Monthly shipments	12/22	01/23	02/23	03/23	04/23	05/23	06/23	07/23	08/23	09/23	10/23	11/23
Volume shipments (mil units)												
Handset camera modules	32.6	20.5	26.4	37.5	29.3	29.1	25.2	31.0	32.2	31.3	35.1	37.9
- 32MP below	20.9	12.9	18.0	26.4	18.8	17.2	13.9	18.2	18.4	19.1	19.2	19.2
- 32MP and above	11.7	7.6	8.3	11.1	10.5	11.8	10.8	12.8	13.0	11.4	15.2	17.9
Fingerprint recognition modules	10.0	5.6	7.3	9.3	11.0	8.7	8.8	8.9	10.2	9.9	9.4	10.9
- Under-glass fingerprint	5.8	2.7	4.2	5.3	6.3	5.3	5.9	6.6	7.2	7.2	2.4	3.0
- non under-glass fingerprint	4.2	2.9	3.0	4.0	4.7	3.4	2.9	2.3	2.9	2.8	6.9	7.8
Volume shipments (yoy %)												
Handset camera modules	-29%	-57%	1%	-3%	-12%	-20%	-15%	-17%	-7%	-9%	10%	9%
- 32MP below	-35%	-62%	-5%	-6%	-26%	-32%	-34%	-31%	-27%	-24%	-16%	-17%
- 32MP and above	-13%	-43%	16%	7%	30%	7%	26%	17%	35%	24%	70%	52%
Fingerprint recognition modules	-6%	-48%	27%	-6%	24%	-5%	39%	31%	13%	-16%	-20%	-6%
- Under-glass fingerprint	29%	-43%	103%	24%	77%	7%	100%	90%	92%	76%	-41%	-47%
- Non under-glass fingerprint	-32%	-51%	-17%	-30%	-12%	-19%	-13%	-31%	-44%	-64%	-9%	34%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 2: Q Tech's monthly HCM shipments from Jan 2018 to Nov 2023



SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 3: Q Tech's annual HCM shipments from FY17 to FY25F



SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS

Figure 4: Earnings revision

FYE - 31-Dec (Rmb m)	FY23F			FY24F			FY25F		
	Old	New	% chg	Old	New	% chg	Old	New	% chg
Total revenue	12,136	11,760	-3%	12,706	12,388	-3%	13,222	12,944	-2%
Gross profit	744	686	-8%	1,185	1,084	-8%	1,363	1,270	-7%
Gross margin (%)	6.3%	5.8%	-0.5% pts	9.6%	8.8%	-0.8% pts	10.5%	9.8%	-0.7% pts
EBITDA	658	600	-9%	1,048	948	-10%	1,190	1,096	-8%
EBITDA margin (%)	5.6%	5.1%	-0.5% pts	8.5%	7.7%	-0.8% pts	9.2%	8.5%	-0.7% pts
Net profit	305	248	-19%	580	493	-15%	718	636	-11%
Core net profit	305	248	-19%	580	493	-15%	718	636	-11%
EPS (HK\$)	0.26	0.21	-19%	0.49	0.42	-15%	0.61	0.54	-11%

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS

Figure 5: Peer comparison

Company	Bloomberg Code	Recom.	Price		Upside (%)	Market Cap (US\$m)	P/E (x)			3-year EPS CAGR %	P/BV (x)		Recurring ROE (%)		EV/EBITDA (x)		Dividend yield (%)	
			(local curr)	Target price (local curr)			CY2023F	CY2024F	CY2025F		CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F
Handset vendors																		
Lenovo Group	992 HK	Add	10.70	10.70	0%	16,818	14.3	13.8	11.1	-7.2%	2.2	1.7	17.7%	14.0%	4.4	3.8	2.3%	2.5%
Xiaomi	1810 HK	Add	15.08	22.80	51%	48,424	18.3	17.9	14.9	50.8%	1.8	1.4	11.3%	8.9%	13.1	13.0	0.0%	0.0%
Samsung Electronics	005930 KS	Add	76.600	115,000	50%	350,408	42.5	16.0	14.4	-13.0%	1.5	1.4	3.5%	8.9%	12.9	7.2	1.9%	1.9%
Apple	AAPL US	Not Rated	184.25	N/A	N/A	2,865,595	30.4	27.9	25.8	2.5%	49.1	39.0	N/A	N/A	22.2	21.0	0.5%	0.5%
Average							26.4	18.9	16.6	8.3%	13.6	10.9	10.8%	10.6%	13.2	11.2	1.2%	1.2%
Handset components - Casings / EMS																		
BYD Electronic	285 HK	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Lens Technology	300433 CH	Add	12.64	18.30	45%	8,813	20.5	15.3	12.4	24.0%	1.4	1.3	7.1%	9.0%	11.1	9.2	2.0%	2.6%
Luxshare Precision	002475 CH	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Shezhen Everwin in Precision	300115 CH	Not Rated	12.06	N/A	N/A	2,031	55.6	20.2	15.0	N/A	2.5	2.3	9.1%	9.6%	N/A	N/A	0.1%	0.7%
Catcher Technology	2474 TT	Not Rated	194.00	N/A	N/A	4,258	11.6	16.6	17.3	-16.1%	0.8	0.8	4.3%	4.6%	11.8	4.4	5.4%	5.5%
Jabil	JBL US	Not Rated	127.35	N/A	N/A	16,294	15.0	14.0	11.9	4.8%	6.0	12.3	48.8%	51.4%	6.6	6.8	0.3%	0.3%
Average							23.3	15.9	13.2	23.2%	2.6	3.5	16.7%	17.8%	10.4	7.3	1.6%	1.9%
Handset components - Displays																		
BOE Technology	000725 CH	Hold	3.80	4.10	8%	19,869	82.2	20.7	11.2	N/A	1.1	1.0	1.3%	5.0%	7.6	5.6	0.2%	0.7%
Tianma Microelectronics	000050 CH	Add	10.18	13.34	31%	3,501	19.5	15.7	N/A	N/A	0.7	0.6	3.5%	4.1%	10.0	9.3	0.5%	0.6%
LG Display	034220 KS	Hold	13,050	13,000	0%	3,578	na	na	(18.7)	N/A	0.7	0.9	-34.8%	-29.3%	19.5	10.7	0.0%	0.0%
Average							50.9	18.2	(3.7)	N/A	0.8	0.8	-10.0%	-6.7%	12.4	8.5	0.2%	0.5%
Handset components - Opticals																		
Cowell e Holdings	1415 HK	Add	21.95	27.80	27%	2,395	33.1	21.1	15.2	18.1%	5.4	4.4	17.9%	22.8%	20.7	12.4	0.0%	0.0%
Q Technology	1478 HK	Add	3.85	4.80	25%	584	16.8	8.5	6.6	52.1%	0.9	0.8	5.3%	9.9%	5.4	3.1	0.0%	1.2%
Sunny Optical Tech	2382 HK	Add	64.00	98.80	54%	8,989	42.8	20.3	14.5	19.6%	3.1	2.8	7.3%	15.1%	11.2	7.8	0.5%	1.0%
Will Semiconductor	603501 CH	Add	98.17	132.00	34%	16,699	137.2	48.3	29.8	N/A	6.2	5.4	4.7%	12.0%	39.6	20.1	0.1%	0.2%
Largan Precision	3008 TT	Not Rated	2,650	N/A	N/A	11,411	19.2	18.4	17.0	-4.1%	2.2	2.0	10.9%	11.4%	11.0	8.6	2.6%	2.6%
LG Innotek	011070 KS	Add	229,000	400,000	75%	4,153	9.2	6.9	6.2	N/A	1.1	1.0	13.1%	15.4%	3.3	3.0	1.3%	1.3%
Average							43.0	23.4	16.7	21.4%	4.0	3.6	7.4%	13.8%	21.0	10.8	0.6%	0.9%
Handset components - others																		
AAC Technologies	2018 HK	Add	21.50	26.20	22%	3,300	25.5	16.1	13.3	28.2%	1.1	1.0	4.3%	6.3%	6.6	5.3	0.6%	1.0%
Avary Holding Shenzhen	002938 CH	Not Rated	21.25	N/A	N/A	6,899	11.3	9.7	8.6	4.3%	1.6	1.4	13.8%	14.5%	6.2	5.0	2.7%	3.1%
GoerTek Inc	002241 CH	Not Rated	19.67	N/A	N/A	9,413	34.1	23.0	19.1	-2.6%	2.2	2.0	5.4%	8.8%	12.3	9.2	0.7%	1.1%
Sunwoda Electronics	300207 CH	Not Rated	14.07	N/A	N/A	3,666	24.3	16.9	11.8	22.8%	1.2	1.1	5.1%	6.9%	11.6	8.3	0.6%	0.9%
Universal Scientific Industrial	601231 CH	Add	14.68	18.32	25%	4,539	12.0	10.0	N/A	N/A	1.2	0.9	11.1%	10.2%	3.7	1.7	5.0%	6.0%
Nanofilm Technologies	NANO SP	Reduce	0.92	0.75	-18%	446	na	29.3	14.8	-1.2%	1.4	1.4	-0.2%	4.7%	15.4	8.7	0.4%	0.9%
Delta Electronics Inc	2308 TT	Not Rated	304.00	N/A	N/A	25,476	23.4	19.9	17.2	10.6%	4.1	3.7	16.6%	18.2%	12.6	10.7	2.6%	2.8%
Pegatron	4938 TT	Not Rated	84.60	N/A	N/A	7,272	14.5	12.9	11.8	6.7%	1.2	1.2	8.2%	9.1%	7.6	6.1	4.7%	5.2%
Zhen Ding Technology	4958 TT	Not Rated	110.00	N/A	N/A	3,361	15.4	10.1	8.6	-5.3%	1.0	1.0	6.7%	9.5%	5.1	3.9	3.4%	4.1%
SEMCO	009150 KS	Add	152,000	200,000	32%	8,700	19.6	14.4	13.0	-4.9%	1.5	1.4	8.0%	9.8%	7.5	5.5	1.4%	1.4%
BH Co.	090460 KS	Add	19,550	27,000	38%	516	7.1	6.2	5.5	-5.3%	1.0	0.9	15.8%	15.7%	3.7	2.4	1.3%	1.3%
Pi advanced Materials	178920 KS	Add	30,100	36,000	20%	677	191.0	26.5	24.0	-6.9%	2.7	2.6	1.4%	10.0%	30.1	11.8	1.2%	2.3%
Average							34.4	16.2	13.4	4.2%	1.7	1.5	8.0%	10.3%	10.2	6.5	2.1%	2.5%

PRICES AS AT 04 JAN 2024

SOURCES: CGS-CIMB RESEARCH ESTIMATES, BLOOMBERG

Note: Estimates for Not rated companies are based on Bloomberg consensus estimates



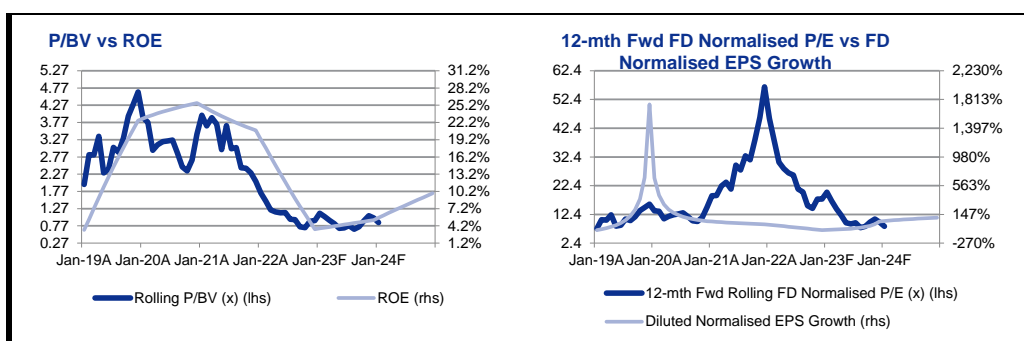
ESG in a nutshell

In FY22, Q Tech achieved some significant progress in its environmental performance. The company utilised its ESG task force to emphasise ESG elements in almost every part of its operations. Moreover, Q Tech called on the healthy relationship with employees such as by providing channels to giving feedback. Simultaneously, the company provides substantial internship chances for potential young people and participates in community building.

From our perspective, Q Tech is not involved in any environmentally detrimental industry practices. It also makes effort to integrate ESG with its own industry.

Environmental	Implications
<p>In FY22, the company's wastewater discharge and non-hazardous waste increased, while the greenhouse gas (GHG) emission and hazardous waste declined. Q Tech also tries to reduce consumption and improve sustainability during the daily operation.</p>	<p>In FY22, Q Tech's total GHG emission decreased c.15.0% yoy to 119,786 tonnes, while GHG emission intensity declined from 0.24 tonnes/000 pcs sales volume to 0.23.</p> <p>Total wastewater discharge volume rose c.292.0% yoy to 2,677m³, while the total wastewater recycling volume increased c.16.8% yoy to 46,613m³.</p> <p>For non-hazardous waste, industrial waste increased 150.0% yoy to 845 tonnes, while household waste declined 4.4% yoy to 425 tonnes.</p> <p>For hazardous waste, hydrocarbons and water mixtures for ultrasonic cleaning reduced 21.6% yoy to 108.7 tonnes.</p> <p>Simultaneously, the company is changing the conventional lighting to energy-saving LED lighting to conserve energy. Q Tech also emphasised garbage disposal to improve the sustainability and environmental performance.</p>
<p>Q Tech cares for the organic development of current employees and is willing to give new opportunities to potential employees. The company also takes social responsibility by helping the community and engaging in volunteerism.</p>	<p>Q Tech emphasises talent management. With the aim of building the best employer brand and working with outstanding individuals, the company focuses on high salaries, high standards, performance, development and caring in its relationships with employees. The company provides a wide range of platforms for employees to give feedback and comments. Moreover, Q Tech requires employees to undergo induction training, work licence training and mentorship training to improve talent cultivation. During the pandemic, Q Tech also actively participated in volunteer activities to promote social development.</p>
<p>The company has a healthy corporate structure for high-quality governance. With the ESG task force, Q Tech can add more ESG elements during the operation. Furthermore, compliance is reinforced by the company with well-rounded regulations and whistle-blowing policies.</p>	<p>Q Tech established specific ESG task force under the board to coordinate organisation for ESG work and formulate a sustainable development strategy. During the operation, the company focuses on supplier management and analysed suppliers' resource pool, material supply risks and procurement price regularly. The company provided integrity training for suppliers to ensure cooperation in good faith and maintain sound and effective communication with suppliers. Furthermore, Q Tech practises fairness, honesty, integrity and transparency during its operations.</p>

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS

Profit & Loss

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	18,663	13,759	11,760	12,388	12,944
Gross Profit	1,762	541	686	1,084	1,270
Operating EBITDA	1,435	353	600	948	1,096
Depreciation And Amortisation	-500	-437	-457	-435	-423
Operating EBIT	935	-84	143	513	673
Financial Income/(Expense)	94	228	160	8	14
Pretax Income/(Loss) from Assoc.	-52	-37	-50	45	45
Non-Operating Income/(Expense)	0	0	0	0	0
Profit Before Tax (pre-EI)	978	107	253	566	732
Exceptional Items	-21	0	0	0	0
Pre-tax Profit	957	107	253	566	732
Taxation	-94	63	-6	-73	-96
Exceptional Income - post-tax					
Profit After Tax	863	170	246	493	636
Minority Interests	0	1	2	0	0
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	863	171	248	493	636
Normalised Net Profit	884	170	246	493	636
Fully Diluted Normalised Profit	884	171	248	493	636

Cash Flow

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	1,435	353	600	948	1,096
Cash Flow from Inv. & Assoc.	52	37	50	-45	-45
Change In Working Capital	-927	409	-52	-98	-43
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense					
Other Operating Cashflow	1,224	288	130	77	71
Net Interest (Paid)/Received	-12	-15	-10	-12	-6
Tax Paid	-176	-23	-6	-73	-96
Cashflow From Operations	1,596	1,048	711	797	976
Capex	-924	-408	-250	-350	-350
Disposals Of FAs/subsidiaries	0	0	0	0	0
Acq. Of Subsidiaries/investments	0	0	0	0	0
Other Investing Cashflow					
Cash Flow From Investing	-924	-408	-250	-350	-350
Debt Raised/(repaid)	-351	631	-190	65	56
Proceeds From Issue Of Shares	59	10	0	0	0
Shares Repurchased	0	0	0	0	0
Dividends Paid	-49	0	0	0	-49
Preferred Dividends					
Other Financing Cashflow	-602	-172	-130	-56	-57
Cash Flow From Financing	-942	468	-320	9	-50
Total Cash Generated	-270	1,109	141	456	576
Free Cashflow To Equity	321	1,272	271	512	682
Free Cashflow To Firm	702	701	591	503	683

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS... cont'd

Balance Sheet

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	2,554	2,790	2,931	3,387	3,963
Total Debtors	4,446	3,436	2,937	3,094	3,233
Inventories	2,258	1,184	992	1,013	1,046
Total Other Current Assets	57	1,184	1,002	1,056	1,103
Total Current Assets	9,315	8,594	7,862	8,550	9,345
Fixed Assets	3,144	3,140	2,933	2,848	2,774
Total Investments	344	325	325	325	325
Intangible Assets	20	26	26	26	26
Total Other Non-Current Assets	224	200	180	180	180
Total Non-current Assets	3,733	3,691	3,464	3,379	3,306
Short-term Debt	1,708	2,616	2,426	2,491	2,547
Current Portion of Long-Term Debt					
Total Creditors	6,283	4,600	3,854	3,934	4,063
Other Current Liabilities	89	33	33	33	33
Total Current Liabilities	8,079	7,249	6,313	6,458	6,643
Total Long-term Debt	50	0	0	0	0
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	214	262	224	236	247
Total Non-current Liabilities	264	262	224	236	247
Total Provisions	0	7	7	7	7
Total Liabilities	8,343	7,518	6,544	6,701	6,896
Shareholders' Equity	4,699	4,762	4,778	5,224	5,750
Minority Interests	6	5	5	5	5
Total Equity	4,705	4,767	4,783	5,229	5,755

Key Ratios

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	7.3%	(26.3%)	(14.5%)	5.3%	4.5%
Operating EBITDA Growth	3.5%	(75.4%)	70.0%	58.1%	15.7%
Operating EBITDA Margin	7.69%	2.56%	5.10%	7.65%	8.47%
Net Cash Per Share (Rmb)	0.67	0.15	0.43	0.76	1.20
BVPS (Rmb)	3.98	4.02	4.03	4.41	4.85
Gross Interest Cover	31.13	-1.41	1.10	9.23	11.80
Effective Tax Rate	9.9%	0.0%	2.4%	12.9%	13.1%
Net Dividend Payout Ratio	NA	NA	NA	10.00%	10.00%
Accounts Receivables Days	78.6	104.5	98.9	89.1	89.2
Inventory Days	45.37	47.53	35.87	32.46	32.19
Accounts Payables Days	132.5	149.7	138.8	125.6	124.6
ROIC (%)	27.4%	(1.7%)	2.4%	9.2%	11.9%
ROCE (%)	16.5%	(0.6%)	3.6%	7.5%	9.0%
Return On Average Assets	6.65%	(0.01%)	1.07%	4.19%	5.09%

Key Drivers

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Handset camera module shipments (yoy change %)	22.1%	-11.6%	-12.0%	10.0%	5.0%
Fingerprint recognition module shipments (yoy chan	0.2	(0.0)	-	-	-
Handset camera module GPM (%)	9.7%	4.9%	5.5%	7.3%	7.4%
Fingerprint recognition module GPM (%)	5.2%	-4.0%	4.0%	4.0%	4.0%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Hong Kong

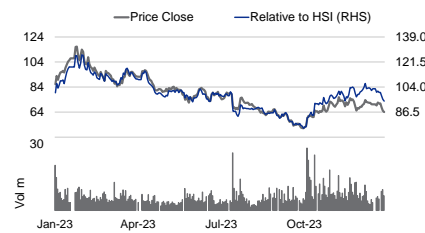
ADD (no change)

Consensus ratings*: Buy 30 Hold 11 Sell 1

Current price:	HK\$64.00
Target price:	HK\$98.80
Previous target:	HK\$88.00
Up/downside:	54.4%
CGS-CIMB / Consensus:	22.6%
Reuters:	2382.HK
Bloomberg:	2382 HK
Market cap:	US\$8,989m HK\$70,194m
Average daily turnover:	US\$70.53m HK\$549.3m
Current shares o/s:	1,097m
Free float:	52.1%
*Source: Bloomberg	

Key changes in this note

- FY23-25F revenue decreased by 3-4% due to slower HLS/HCM shipment growth.
- FY23-25F GPM decreased by 0.3-0.6% pt due to change in product mix in HCM/HLS.
- FY23-25F EPS decreased by 12-18% due to lower shipments growth and GPM in HCM/HLS.



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-6.9	23.9	-25.8
Relative (%)	-6.9	27.1	-5.8

Major shareholders	% held
Wang Wenjian	47.9

Analyst



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Sunny Optical Technology

All key segments' shipments resume growth

- We expect Sunny's FY24F EPS to recover strongly due to increased high-end production output, more HLS sales to Apple, robust VLS shipments.
- Vehicle camera products should drive earnings in FY24-25F.
- Reiterate Add with a higher TP of HK\$98.80, based on 22x FY25F P/E.

FY24F EPS set to recover on customer orders returning

We believe Sunny Optical Technology's (Sunny) FY24F net profit should recover 111% yoy to Rmb3.38bn, driven by 1) increased sophisticated high-end components demand from Chinese brands underpinned by robust high-end phone sales, 2) Apple's continued supply chain market share gains, and 3) robust vehicle lens set (VLS) shipment growth due to a steady-growing ADAS penetration rate in Chinese EV market. Nonetheless, we cut our FY23F EPS forecast by 18% to reflect a slower-than-expected ASP and GPM recovery in handset lens sets (HLS) and handset camera modules (HCM) in 2H23F due to weak smartphone market in 3Q23. We cut our FY24F-25F EPS forecasts by 12% due to lower GPM assumptions in HCM/HLS on product mix changes.

HCM and HLS shipments to resume growth in FY24F

We expect Sunny's HCM shipments to resume 5% yoy growth in FY24F and HLS to resume 15% yoy growth in FY24F, primarily due to a recovery in Chinese handset customers' smartphone shipment. We expect Xiaomi/Oppo/Vivo's (XOV) and Huawei's smartphone shipments to increase 12%/8%/16%, and 75% yoy, respectively, in 2024F, driven by 1) growing high-end phone demand in China, and 2) improving consumer sentiment in emerging markets such as India, LATAM, the EU and Southeast Asia. We anticipate HCM ASP and GPM to improve, owing to strong high-end smartphone sales, and robust competition from Huawei's flagship models, especially the Mate and P series. Meanwhile we think that ASP and GPM should improve in HLS as a result of higher shipments for Apple and less pricing competition from other major suppliers.

Vehicle camera products should drive earnings in FY24-25F

We forecast VLS shipment growth of 25% in FY24F, supported by 1) ongoing market share gains from new product launches, and 2) increased ADAS adoption rate in new models from Chinese EV OEMs. In addition to higher contribution from high solution sensing products and vehicle camera module commencing mass production, we believe that vehicle camera products would be the key earnings driver in FY24-25F thanks to its long product cycle and higher GPM.

Reiterate Add with a higher TP of HK\$98.80

Sunny is our top pick in China smartphone sector. We retain our Add call on Sunny due to steady recovery in its HCM/HLS shipments and GPM, as well as growing VLS contribution. Although we reduce our EPS forecasts, we raise our TP to HK\$98.80 as we roll over to FY25F, based on 22x P/E, its 3-year average, reflecting the recovering global smartphone market and sustained VLS growth. Share price catalysts are faster shipments and GPM recovery for HCM/HLS. Downside risks include lower-than-expected spec upgrades by Chinese brands which could impact Sunny's ASP and GPM in HCM/HLS segments.

Financial Summary

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (Rmbm)	37,497	33,197	32,257	38,608	45,132
Net Profit (Rmbm)	4,988	2,408	1,501	3,171	4,423
Normalised EPS (Rmb)	4.57	2.21	1.37	2.89	4.03
Normalised EPS Growth	3%	(52%)	(38%)	111%	39%
FD Normalised P/E (x)	12.84	26.49	42.83	20.28	14.53
Price To Sales (x)	1.71	1.93	1.99	1.66	1.42
DPS (Rmb)	0.91	0.44	0.27	0.58	0.81
Dividend Yield	1.55%	0.75%	0.47%	0.99%	1.38%
EV/EBITDA (x)	8.06	11.06	11.31	7.76	5.71
P/FCFE (x)	15.95	10.32	49.82	19.36	13.53
Net Gearing	(46.3%)	(70.4%)	(79.0%)	(81.0%)	(84.4%)
P/BV (x)	2.99	2.82	3.10	2.77	2.42
ROE	26.9%	11.4%	7.2%	15.1%	18.5%
% Change In Normalised EPS Estimates			(17.5%)	(11.6%)	(11.6%)
Normalised EPS/consensus EPS (x)			1.04	1.23	1.29

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

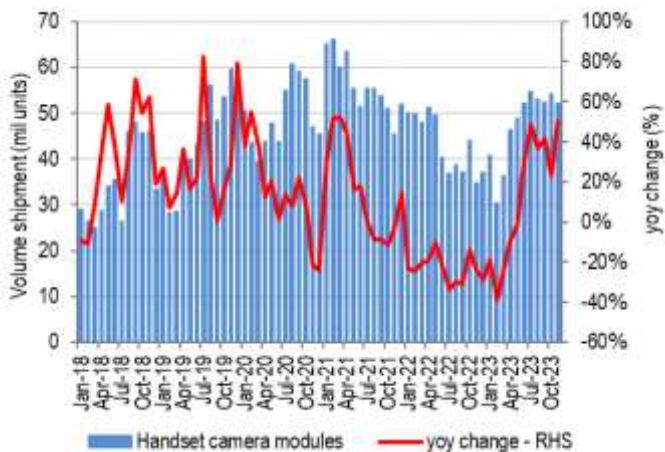
All key segments' shipments resume growth

Figure 1: Sunny Optical's monthly shipments, by key product (Nov 22 to Nov 2023)

Monthly shipment	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23
Volume shipment ('000 units)													
Handset camera modules	34,682	36,921	40,720	30,246	36,389	46,187	48,869	52,154	54,554	52,963	52,238	54,075	51,998
Other optoelectronic	3,422	3,194	2,617	2,263	1,971	1,822	1,080	1,196	2,601	5,507	5,590	3,297	1,771
Handset lens sets	91,034	72,401	66,673	80,671	84,334	95,599	94,471	91,012	95,664	108,286	111,689	117,835	117,695
Vehicle lens sets	7,405	4,915	9,181	7,921	7,206	7,796	7,585	7,389	8,082	8,089	8,261	7,806	6,784
Volume shipment (yoy %)													
Handset camera modules	-23%	-29%	-19%	-39%	-24%	-10%	-1%	29%	48%	37%	41%	23%	50%
Other optoelectronic	-28%	-27%	-24%	-19%	-59%	-61%	-79%	-79%	-42%	18%	18%	-4%	-48%
Handset lens sets	-26%	-40%	-49%	-26%	-30%	-25%	4%	26%	7%	17%	17%	17%	29%
Vehicle lens sets	47%	1%	22%	40%	23%	23%	26%	19%	25%	15%	8%	0%	-8%
Volume shipment (mom %)													
Handset camera modules	-21%	6%	10%	-26%	20%	27%	6%	7%	5%	-3%	-1%	4%	-4%
Other optoelectronic	0%	-7%	-18%	-14%	-13%	-8%	-41%	11%	117%	112%	2%	-41%	-46%
Handset lens sets	-9%	-20%	-8%	21%	5%	13%	-1%	-4%	5%	13%	3%	6%	0%
Vehicle lens sets	-5%	-34%	87%	-14%	-9%	8%	-3%	-3%	9%	0%	2%	-6%	-13%

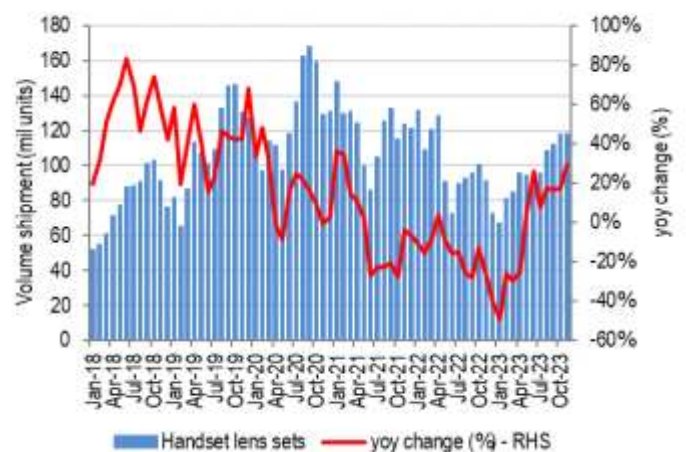
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 2: Sunny Optical's handset camera module shipments, monthly (Jan 2018 to Nov 2023)



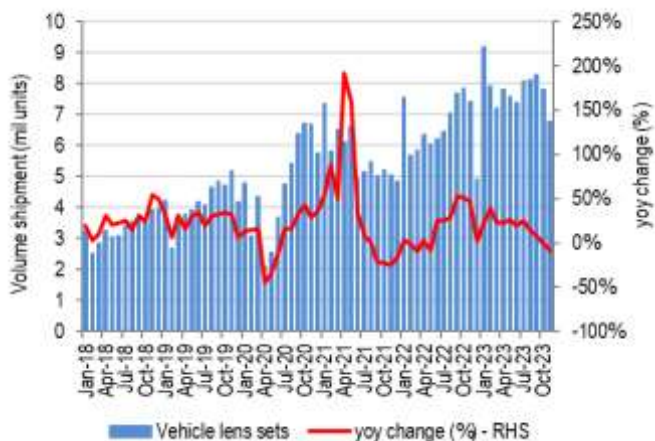
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 3: Sunny Optical's handset lens sets shipments, monthly (Jan 2018 to Nov 2023)



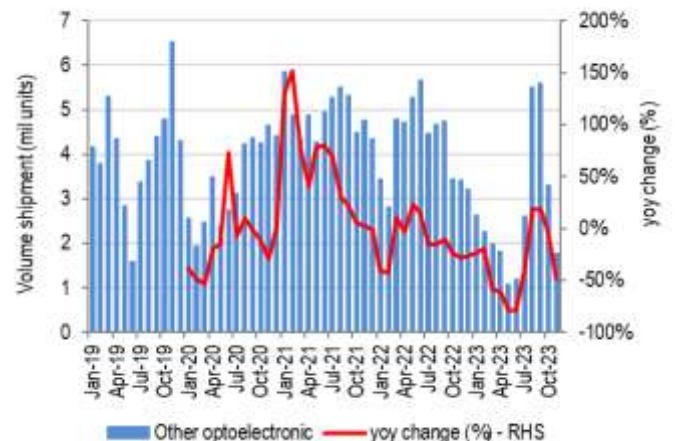
SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 4: Sunny Optical's vehicle lens sets shipments, monthly (Jan 2018 to Nov 2023)



SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 5: Sunny Optical's other optoelectronic products shipments, monthly (Jan 2019 to Nov 2023)



SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

Figure 6: Earnings revisions

FYE Dec 31 (Rmb m)	FY23F			FY24F			FY25F		
	Old	New	% chg	Old	New	% chg	Old	New	% chg
Total revenue	33,255	32,257	-3%	40,048	38,608	-4%	46,528	45,132	-3%
Gross profit	6,214	5,834	-6%	8,208	7,681	-6%	10,062	9,489	-6%
Gross margin (%)	18.7%	18.1%	-0.6% pts	20.5%	19.9%	-0.3% pts	21.6%	21.0%	-0.3% pts
EBITDA	4,656	4,283	-8%	6,252	5,939	-5%	7,858	7,465	-5%
EBITDA margin (%)	13.9%	13.3%	-0.7% pts	16.0%	15.4%	-0.5% pts	17.1%	16.5%	-0.5% pts
Net profit	1,820	1,501	-18%	3,587	3,171	-12%	5,006	4,423	-12%
Core net profit	1,820	1,501	-18%	3,587	3,171	-12%	5,006	4,423	-12%
EPS (Rmb)	1.66	1.37	-18%	3.27	2.89	-12%	4.56	4.03	-12%

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS


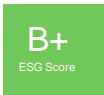
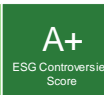
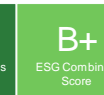

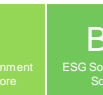

Figure 7: Peer comparison

Company	Bloomberg Code	Recom.	Price Target price		Upside (%)	Market Cap (US\$m)	P/E (x)			3-year EPS CAGR %	P/BV (x)		Recurring ROE(%)		EV/EBITDA (x)		Dividend yield (%)	
			(local curr)	(local curr)			CY2023F	CY2024F	CY2025F		CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F	CY2023F	CY2024F
Handset vendors																		
Lenovo Group	992 HK	Add	10.70	10.70	0%	16,818	14.3	13.8	11.1	-7.2%	2.2	1.7	17.7%	14.0%	4.4	3.8	2.3%	2.5%
Xiaomi	1810 HK	Add	15.08	22.80	51%	48,424	18.3	17.9	14.9	50.8%	1.8	1.4	11.3%	8.9%	13.1	13.0	0.0%	0.0%
Samsung Electronics	005930 KS	Add	76,600	115,000	50%	350,408	42.5	16.0	14.4	-13.0%	1.5	1.4	3.5%	8.9%	12.9	7.2	1.9%	1.9%
Apple	AAPL US	Not Rated	184.25	N/A	N/A	2,865,595	30.4	27.9	25.8	2.5%	49.1	39.0	N/A	N/A	22.2	21.0	0.5%	0.5%
Average							26.4	18.9	16.6	8.3%	13.6	10.9	10.8%	10.6%	13.2	11.2	1.2%	1.2%
Handset components - Casings / EMS																		
BYD Electronic	285 HK	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Lens Technology	300433 CH	Add	12.64	18.30	45%	8,813	20.5	15.3	12.4	24.0%	1.4	1.3	7.1%	9.0%	11.1	9.2	2.0%	2.6%
Luxshare Precision	002475 CH	Not Rated	35.50	N/A	N/A	10,245	18.7	14.5	11.3	51.5%	2.5	2.2	15.4%	16.2%	11.2	8.1	0.9%	1.1%
Shezhen Everwin in Precision	300115 CH	Not Rated	12.06	N/A	N/A	2,031	55.6	20.2	15.0	N/A	2.5	2.3	9.1%	9.6%	N/A	N/A	0.1%	0.7%
Catcher Technology	2474 TT	Not Rated	194.00	N/A	N/A	4,258	11.6	16.6	17.3	-16.1%	0.8	0.8	4.3%	4.6%	11.8	4.4	5.4%	5.5%
Jabil	JBL US	Not Rated	127.35	N/A	N/A	16,294	15.0	14.0	11.9	4.8%	6.0	12.3	48.8%	51.4%	6.6	6.8	0.3%	0.3%
Average							23.3	15.9	13.2	23.2%	2.6	3.5	16.7%	17.8%	10.4	7.3	1.6%	1.9%
Handset components - Displays																		
BOE Technology	000725 CH	Hold	3.80	4.10	8%	19,869	82.2	20.7	11.2	N/A	1.1	1.0	1.3%	5.0%	7.6	5.6	0.2%	0.7%
Tianma Microelectronics	000050 CH	Add	10.18	13.34	31%	3,501	19.5	15.7	N/A	N/A	0.7	0.6	3.5%	4.1%	10.0	9.3	0.5%	0.6%
LG Display	034220 KS	Hold	13,050	13,000	0%	3,578	na	na	(18.7)	N/A	0.7	0.9	-34.8%	-29.3%	19.5	10.7	0.0%	0.0%
Average							50.9	18.2	(3.7)	N/A	0.8	0.8	-10.0%	-6.7%	12.4	8.5	0.2%	0.5%
Handset components - Opticals																		
Cowell Holdings	1415 HK	Add	21.95	27.80	27%	2,395	33.1	21.1	15.2	18.1%	5.4	4.4	17.9%	22.8%	20.7	12.4	0.0%	0.0%
Q Technology	1478 HK	Add	3.85	4.80	25%	584	16.8	8.5	6.6	52.1%	0.9	0.8	5.3%	9.9%	5.4	3.1	0.0%	1.2%
Sunny Optical Tech	2382 HK	Add	64.00	98.80	54%	8,989	42.8	20.3	14.5	19.6%	3.1	2.8	7.3%	15.1%	11.2	7.8	0.5%	1.0%
Will Semiconductor	603501 CH	Add	98.17	132.00	34%	16,699	137.2	48.3	29.8	N/A	6.2	5.4	4.7%	12.0%	39.6	20.1	0.1%	0.2%
Largan Precision	3008 TT	Not Rated	2,650	N/A	N/A	11,411	19.2	18.4	17.0	-4.1%	2.2	2.0	10.9%	11.4%	11.0	8.6	2.6%	2.6%
LG Innotek	011070 KS	Add	229,000	400,000	75%	4,153	9.2	6.9	6.2	N/A	1.1	1.0	13.1%	15.4%	3.3	3.0	1.3%	1.3%
Average							43.0	23.4	16.7	21.4%	4.0	3.6	7.4%	13.8%	21.0	10.8	0.6%	0.9%
Handset components - others																		
AAC Technologies	2018 HK	Add	21.50	26.20	22%	3,300	25.5	16.1	13.3	28.2%	1.1	1.0	4.3%	6.3%	6.6	5.3	0.6%	1.0%
Avary Holding Shenzhen	002938 CH	Not Rated	21.25	N/A	N/A	6,899	11.3	9.7	8.6	4.3%	1.6	1.4	13.8%	14.5%	6.2	5.0	2.7%	3.1%
Goertek Inc	002241 CH	Not Rated	19.67	N/A	N/A	9,413	34.1	23.0	19.1	-2.6%	2.2	2.0	5.4%	8.8%	12.3	9.2	0.7%	1.1%
Sunwoda Electronics	300207 CH	Not Rated	14.07	N/A	N/A	3,666	24.3	16.9	11.8	22.8%	1.2	1.1	5.1%	6.9%	11.6	8.3	0.6%	0.9%
Universal Scientific Industrial	601231 CH	Add	14.68	18.32	25%	4,539	12.0	10.0	N/A	N/A	1.2	0.9	11.1%	10.2%	3.7	1.7	5.0%	6.0%
Nanofilm Technologies	NANO SP	Reduce	0.92	0.75	-18%	446	na	29.3	14.8	-1.2%	1.4	1.4	-0.2%	4.7%	15.4	8.7	0.4%	0.9%
Delta Electronics Inc	2308 TT	Not Rated	304.00	N/A	N/A	25,476	23.4	19.9	17.2	10.6%	4.1	3.7	16.6%	18.2%	12.6	10.7	2.6%	2.8%
Pegatron	4938 TT	Not Rated	84.60	N/A	N/A	7,272	14.5	12.9	11.8	6.7%	1.2	1.2	8.2%	9.1%	7.6	6.1	4.7%	5.2%
Zhen Ding Technology	4958 TT	Not Rated	110.00	N/A	N/A	3,361	15.4	10.1	8.6	-5.3%	1.0	1.0	6.7%	9.5%	5.1	3.9	3.4%	4.1%
SEMCO	009150 KS	Add	152,000	200,000	32%	8,700	19.6	14.4	13.0	-4.9%	1.5	1.4	8.0%	9.8%	7.5	5.5	1.4%	1.4%
BH Co.	090460 KS	Add	19,550	27,000	38%	516	7.1	6.2	5.5	-5.3%	1.0	0.9	15.8%	15.7%	3.7	2.4	1.3%	1.3%
PI Advanced Materials	178920 KS	Add	30,100	36,000	20%	677	191.0	26.5	24.0	-6.9%	2.7	2.6	1.4%	10.0%	30.1	11.8	1.2%	2.3%
Average							34.4	16.2	13.4	4.2%	1.7	1.5	8.0%	10.3%	10.2	6.5	2.1%	2.5%

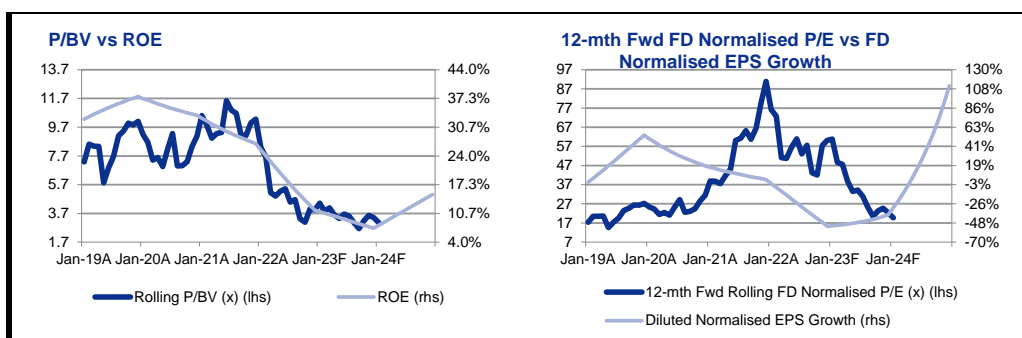
PRICES AS AT01 JAN 2024

SOURCES: CGS-CIMB RESEARCH ESTIMATES, BLOOMBERG

Note: Estimates for Not Rated companies are based on Bloomberg consensus' estimates

 Refinitiv ESG Scores	
     	
<p>ESG in a nutshell</p> <p>In FY22, Sunny Optical Technology (Sunny) was ranked 46th on the "2021 Hurun China 100 Most Sustainable Private Companies" and was also in the "2022 Forbes China Sustainable Development Industrial Enterprises Top 50" by Hurun Research Institute and Forbes China, indicating progressive improvements in Sunny's ESG initiatives. Under its well-rounded governance structure, Sunny has improved its environmental performance while also taking its social responsibility seriously.</p> <p>Sunny achieved A+ (the highest rating) in ESG Controversies as accessed by Refinitiv, implying zero exposure to ESG controversies and negative events reflected in global media. In our view, Sunny is not involved in any environmentally detrimental industry practices and has made efforts to integrate ESG into its day-to-day business activities.</p>	
<p>Environmental</p> <p>In FY22, Sunny's energy and water consumption both increased; its hazardous and non-hazardous wastes also increased, but its greenhouse gas (GHG) emissions decreased. Nevertheless, we expect Sunny to make improvements in its environmental performance in the future.</p>	<p>Implications</p> <p>In FY22, Sunny's total energy consumption rose 12.0% yoy to 605,485.5 MWh, while its energy consumption intensity (MWh/Rmb million revenue) rose from 14.6 in FY21 to 19.7 in FY22. Total water consumption increased 8.2% yoy to 2,318,717.7, while water intensity (tonnes/Rmb million revenue) rose 30.4% yoy to 75.5 in FY22. Total GHG emission declined 4.0% yoy to 367,380.1 tCO₂e, while GHG emission intensity (tCO₂e/Rmb million revenue) rose 16.5% yoy to 12.0 in FY22. Total hazardous waste surged c.86.3% yoy to 86.8 tonnes in FY22, while total non-hazardous waste increased c.2.5% yoy to 8,706.0 tonnes in FY22.</p> <p>According to Refinitiv, it was rated B for its Environmental pillar, ranking 16th out of 94 in the global electronic equipment & parts sector in FY22.</p>
<p>Social</p> <p>Sunny continues to improve its range of employee benefits, thus raising its employee satisfaction score. It also takes social responsibility seriously and takes an active role in community development.</p>	<p>Implications</p> <p>Sunny has formulated well-rounded policies for remuneration management, welfare management and performance management to encourage and retain talent. Sunny also provides substantial benefits for employees, such as supplementary insurance. The company also encourages employees to participate in development and training for personal enrichment. Numerous communication channels are provided for employees to give feedback. The employee satisfaction score (100-mark system) rose from 82.6 in FY21 to 83.4 in FY22. Sunny is also actively engaged in community welfare, including supporting education, in conjunction with various universities, and promoting voluntary services.</p> <p>According to Refinitiv, Sunny was rated B+ for its Social pillar and was ranked 18th of 94 in the global electronic equipment & parts sector in FY22.</p>
<p>Governance</p> <p>Sunny has good internal management for ESG and healthy communication with suppliers in the supply chain. The company also has a well-rounded structure for product liability.</p>	<p>Implications</p> <p>Sunny has good management of product liability, thanks to its high investments in R&D, formulation of a well-rounded product management system, and numerous channels for customer complaints. For internal governance, Sunny has put in place an ESG strategy and set major targets, overseen by an ESG Management and Promotion Team. The company continues to provide anti-corruption training sessions to foster a clean and upright corporate environment. Sunny also ensures a healthy supply chain, whereby suppliers need to agree to CSR-related undertakings.</p> <p>According to Refinitiv, it was rated A- for the Governance pillar, and was ranked 11th of 94 in the global electronic equipment & parts sector in FY22.</p>

SOURCES: CGS-CIMB RESEARCH, REFINITIV

BY THE NUMBERS

Profit & Loss

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	37,497	33,197	32,257	38,608	45,132
Gross Profit	8,736	6,605	5,834	7,681	9,489
Operating EBITDA	6,757	4,390	4,283	5,939	7,465
Depreciation And Amortisation	-1,694	-1,870	-2,345	-2,627	-2,840
Operating EBIT	5,062	2,520	1,938	3,313	4,625
Financial Income/(Expense)	182	110	-60	-132	-22
Pretax Income/(Loss) from Assoc.	19	-6	-3	-2	-1
Non-Operating Income/(Expense)	377	101	0	696	712
Profit Before Tax (pre-EI)	5,640	2,726	1,875	3,874	5,313
Exceptional Items	-5	-11	0	0	0
Pre-tax Profit	5,635	2,715	1,875	3,874	5,313
Taxation	-579	-241	-300	-620	-797
Exceptional Income - post-tax					
Profit After Tax	5,056	2,474	1,575	3,254	4,516
Minority Interests	-68	-66	-74	-83	-93
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	4,988	2,408	1,501	3,171	4,423
Normalised Net Profit	5,061	2,485	1,575	3,254	4,516
Fully Diluted Normalised Profit	4,993	2,418	1,501	3,171	4,423

Cash Flow

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	6,757	4,390	4,283	5,939	7,465
Cash Flow from Inv. & Assoc.					
Change In Working Capital	224	3,821	152	10	38
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense					
Other Operating Cashflow	857	936	743	1,430	1,386
Net Interest (Paid)/Received	182	110	-60	-132	-22
Tax Paid	-627	-386	-300	-620	-797
Cashflow From Operations	7,391	8,872	4,819	6,627	8,070
Capex	-2,146	-2,671	-3,500	-3,500	-3,500
Disposals Of FAs/subsidiaries	-443	-443	0	0	0
Acq. Of Subsidiaries/investments	0	0	0	0	0
Other Investing Cashflow	-988	847	0	0	0
Cash Flow From Investing	-3,577	-2,266	-3,500	-3,500	-3,500
Debt Raised/(repaid)	203	-398	-28	193	182
Proceeds From Issue Of Shares	0	0	0	0	0
Shares Repurchased	0	0	0	0	0
Dividends Paid	-987	-1,059	-482	-300	-634
Preferred Dividends					
Other Financing Cashflow	-393	-637	-435	-426	-366
Cash Flow From Financing	-1,177	-2,094	-945	-533	-818
Total Cash Generated	2,637	4,511	374	2,594	3,751
Free Cashflow To Equity	4,017	6,207	1,290	3,320	4,752
Free Cashflow To Firm	4,044	6,898	1,819	3,617	5,001

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS... cont'd

Balance Sheet

(Rmbm)	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	15,032	17,605	17,914	20,443	24,129
Total Debtors	7,448	7,205	7,001	8,380	9,796
Inventories	5,482	4,721	4,691	5,491	6,328
Total Other Current Assets	28	1,115	0	0	0
Total Current Assets	27,989	30,646	29,605	34,313	40,253
Fixed Assets	8,808	10,732	9,633	10,506	11,166
Total Investments	202	201	201	201	201
Intangible Assets	307	251	251	251	251
Total Other Non-Current Assets	1,468	1,172	1,172	1,172	1,172
Total Non-current Assets	10,785	12,356	11,256	12,130	12,790
Short-term Debt	1,539	1,990	1,962	2,155	2,337
Current Portion of Long-Term Debt					
Total Creditors	9,869	17,095	16,987	19,882	22,914
Other Current Liabilities	466	252	252	252	252
Total Current Liabilities	11,873	19,337	19,200	22,289	25,503
Total Long-term Debt	3,816	0	0	0	0
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	1,174	632	614	735	859
Total Non-current Liabilities	4,989	632	614	735	859
Total Provisions	1,016	850	850	850	850
Total Liabilities	17,879	20,819	20,664	23,874	27,212
Shareholders' Equity	20,588	21,838	19,854	22,225	25,487
Minority Interests	307	344	344	344	344
Total Equity	20,895	22,182	20,198	22,569	25,831

Key Ratios

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	(1.3%)	(11.5%)	(2.8%)	19.7%	16.9%
Operating EBITDA Growth	1.1%	(35.0%)	(2.4%)	38.7%	25.7%
Operating EBITDA Margin	18.0%	13.2%	13.3%	15.4%	16.5%
Net Cash Per Share (Rmb)	9.20	14.85	15.17	17.39	20.72
BVPS (Rmb)	19.58	20.77	18.88	21.13	24.24
Gross Interest Cover	21.99	8.60	3.88	6.75	10.73
Effective Tax Rate	10.3%	8.9%	16.0%	16.0%	15.0%
Net Dividend Payout Ratio	20.0%	19.9%	20.0%	20.0%	20.0%
Accounts Receivables Days	76.22	80.56	80.37	72.90	73.49
Inventory Days	71.48	70.02	65.01	60.24	60.51
Accounts Payables Days	130.7	156.4	177.9	164.8	165.6
ROIC (%)	30.4%	14.3%	18.5%	45.1%	61.2%
ROCE (%)	21.5%	11.2%	9.9%	15.1%	18.4%
Return On Average Assets	13.3%	5.9%	3.9%	7.7%	9.1%

Key Drivers

	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Handset lens sets revenue (yoy change %)	-22.8%	-6.4%	-22.6%	26.5%	17.6%
Vehicle lens sets revenue (yoy change %)	25.7%	38.7%	28.1%	31.3%	31.3%
Handset camera module revenue (yoy change %)	-4.2%	-24.3%	-5.6%	17.9%	13.9%
Handset lens sets shipment (yoy change %)	-5.9%	-17.2%	-10.0%	15.0%	12.0%
Vehicle lens sets shipment (yoy change %)	21.0%	16.1%	22.0%	25.0%	25.0%
Handset camera module shipment (yoy change %)	13.6%	-23.3%	10.0%	5.0%	5.0%
Handset lens sets ASP (yoy change %)	-18.0%	13.0%	-14.0%	10.0%	5.0%
Vehicle lens sets ASP (yoy change %)	3.8%	19.5%	5.0%	5.0%	5.0%
Handset camera module ASP (yoy change %)	-15.7%	-1.2%	-14.1%	12.3%	8.5%
Handset lens sets GPM (%)	40.0%	27.5%	14.0%	20.0%	25.0%
Vehicle lens sets GPM (%)	41.0%	41.0%	41.0%	41.0%	41.0%
Handset camera module GPM (%)	13.7%	10.7%	8.2%	9.5%	9.5%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

China

ADD (no change)

Consensus ratings*: Buy 27 Hold 2 Sell 1

Current price:	Rmb98.17
Target price:	Rmb132.0
Previous target:	Rmb131.2
Up/downside:	34.5%
CGS-CIMB / Consensus:	5.9%
Reuters:	603501.SS
Bloomberg:	603501 CH
Market cap:	US\$16,699m
	Rmb119,353m
Average daily turnover:	US\$133.7m
	Rmb962.2m
Current shares o/s	875.7m
Free float:	51.8%

*Source: Bloomberg



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-9.5	5.5	26
Relative (%)	-7.2	10.5	31.4

Major shareholders	% held
Yu Renrong (Chairman)	31.9
Zhaoqing Will Semiconductor Equity	9.2
Qingdao Rongtong Minhe Investment	7.1

Analyst

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Will Semiconductor Ltd-A

CIS shipment growth resumes

- We remain positive on Will Semi due to its strong market position among Chinese handset brands.
- We expect Will Semi's FY24F revenue will increase 25%, owing to strong shipment growth by both its handset and automotive CIS segments.
- Reiterate Add. TP raised to Rmb132.0, based on 40x FY25F P/E.

Will Semi likely to gain share in Chinese high-end phone market

- We remain positive on Will Semiconductor (Will Semi) as we believe its 50MP CMOS image sensor (CIS) OV50H, released in 1Q23, will help it reclaim market share in high-end Chinese handphone market and improve its GPM in the handset CIS segment in FY24F. We estimate Will Semi's share in the market of high-end CIS for Chinese brands will increase from 3-5% in 2023F to 10-15% in 2024F. Meanwhile, we believe its auto CIS revenue will continue to grow rapidly in FY24F as a result of enhanced product offerings and accelerated advanced driver assistance systems (ADAS) development.

Handset CIS revenue to recover in FY24F due to new products

- Will Semi's 3Q23 GPM improved 4.5% pts qoq to 21.8%, owing primarily to the introduction of OV50H and increased auto CIS shipments. As Xiaomi's Mi 14 series uses Will Semi's 50MP CIS as the primary camera, we anticipate a wider adoption of OV50H among high-end China-branded models in FY24F. We anticipate that Will Semi's high-end CIS will continue to penetrate Chinese mid-range smartphone models, boosting its handset CIS shipments. We expect its handset CIS revenue to rise 30% in FY24F (+2% in FY23F) as a result of its expanded market share in China high-end segment from c.3-5% in 2023F to c.10-15% in 2024F. Meanwhile, we expect its handset CIS GPM to rise significantly from c.20% in FY23F to c.26% in FY24F, owing to an improved product mix and stronger capacity utilisation from c.65-70% in FY23F to 75-80% in FY24F.

Auto CIS to be the key net profit driver in FY24-25F

- We estimate that Will Semi's auto CIS revenue rose c.25% yoy to c.Rmb4.0bn in FY23F (c.19% of revenue), and will rise a further 28% in FY24F due to new customer wins in the US and Japan, as well as benefiting from the rapid growth of the Chinese electric vehicle (EV) market. We believe the company's strong product portfolio, which includes technologically-advanced 12MP and 16MP CIS, will help it gain market share in Europe and China. We believe auto CIS will be its key net profit driver in FY24-25F.

Reiterate Add with a higher target price of Rmb132.0

- We reiterate our Add call as we believe it will regain market share in the China's high-end CIS market and grow its market share in the global auto CIS market, thanks to its new product launches. We slightly lift our TP to Rmb132.0 as we roll over our valuation year to FY25F but lower our target P/E multiple to 40x (from 50x previously), its three-year average, to reflect lower handset CIS revenue. Share price catalysts are sustained CIS market share gain, and recovery of handset CIS shipments and GPM. Downside risks: increased competition in the auto and handset CIS markets affecting its revenue growth, and slower handset CIS market recovery which would affect its GPM.

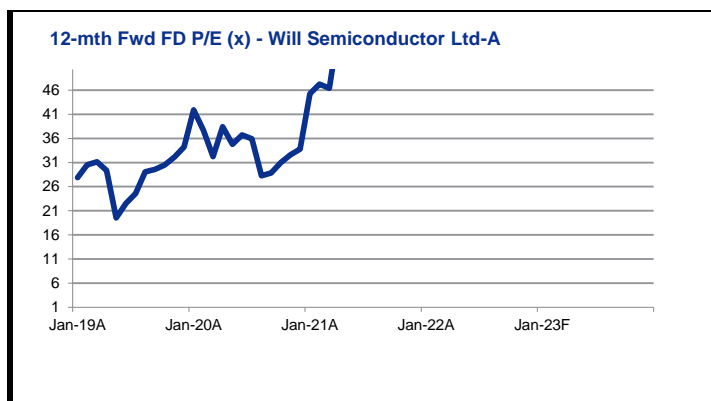
Financial Summary	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (Rmbm)	24,104	19,972	20,487	25,566	31,151
Net Profit (Rmbm)	4,476	990	870	2,474	4,006
Normalised EPS (Rmb)	5.11	1.13	0.72	2.03	3.29
Normalised EPS Growth	63%	(78%)	(37%)	184%	62%
FD Normalised P/E (x)	19.2	87.1	137.2	48.3	29.8
Price To Sales (x)	3.57	4.30	5.83	4.67	3.83
DPS (Rmb)	0.52	0.12	0.07	0.21	0.34
Dividend Yield	0.53%	0.12%	0.07%	0.21%	0.34%
EV/EBITDA (x)	15.18	29.66	53.90	27.21	18.61
P/FCFE (x)	44.1	NA	NA	273.4	70.2
Net Gearing	12.1%	48.5%	50.2%	43.5%	33.0%
P/BV (x)	5.31	6.46	6.20	5.41	4.66
ROE	32.6%	5.8%	4.7%	12.0%	16.8%
% Change In Normalised EPS Estimates					
Normalised EPS/consensus EPS (x)			0.92	0.81	0.91

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS

Profit & Loss				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	19,972	20,487	25,566	31,151
Gross Profit	6,092	4,636	7,391	10,097
Operating EBITDA	3,179	2,386	4,725	6,846
Depreciation And Amortisation	(888)	(1,012)	(1,130)	(1,210)
Operating EBIT	2,290	1,374	3,596	5,636
Financial Income/(Expense)	(946)	(251)	(332)	(328)
Pretax Income/(Loss) from Assoc.	(46)	0	0	0
Non-Operating Income/(Expense)	0	0	0	0
Profit Before Tax (pre-EI)	1,298	1,124	3,264	5,308
Exceptional Items	3	0	0	0
Pre-tax Profit	1,301	1,124	3,264	5,308
Taxation	(343)	(286)	(831)	(1,351)
Exceptional Income - post-tax				
Profit After Tax	958	838	2,433	3,957
Minority Interests	32	33	41	49
Preferred Dividends				
FX Gain/(Loss) - post tax				
Other Adjustments - post-tax				
Net Profit	990	870	2,474	4,006
Normalised Net Profit	955	838	2,433	3,957
Fully Diluted Normalised Profit	987	870	2,474	4,006

Cash Flow				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	3,179	2,386	4,725	6,846
Cash Flow from Inv. & Assoc.				
Change In Working Capital	(4,789)	(1,505)	(2,431)	(2,907)
(Incr)/Decr in Total Provisions				
Other Non-Cash (Income)/Expense				
Other Operating Cashflow	151	183	128	145
Net Interest (Paid)/Received	(494)	(494)	(515)	(536)
Tax Paid	(534)	(286)	(831)	(1,351)
Cash Flow From Operations	(2,487)	285	1,078	2,197
Capex	(2,259)	(1,352)	(1,200)	(1,080)
Disposals Of FAs/subsidiaries	0	0	0	0
Acq. Of Subsidiaries/investments	(206)	0	0	0
Other Investing Cashflow	(1,552)	0	0	0
Cash Flow From Investing	(4,017)	(1,352)	(1,200)	(1,080)
Debt Raised/(repaid)	3,242	535	559	584
Proceeds From Issue Of Shares	0	0	0	0
Shares Repurchased				
Dividends Paid	(822)	(136)	(89)	(252)
Preferred Dividends				
Other Financing Cashflow	329	273	273	273
Cash Flow From Financing	2,749	673	744	606
Total Cash Generated	(3,755)	(395)	622	1,722
Free Cashflow To Equity	(3,262)	(532)	437	1,700
Free Cashflow To Firm	(6,010)	(574)	392	1,653



Balance Sheet				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	4,040	3,645	4,267	5,989
Total Debtors	2,924	3,000	3,743	4,561
Inventories	12,356	14,110	16,179	18,742
Total Other Current Assets	292	292	292	292
Total Current Assets	19,613	21,047	24,482	29,585
Fixed Assets	2,540	3,426	4,042	4,458
Total Investments	534	534	534	534
Intangible Assets	5,188	5,188	5,188	5,188
Total Other Non-Current Assets	7,315	7,315	7,315	7,315
Total Non-current Assets	15,577	16,463	17,079	17,494
Short-term Debt	7,552	7,930	8,326	8,743
Current Portion of Long-Term Debt				
Total Creditors	2,284	2,608	2,991	3,465
Other Current Liabilities	537	741	751	1,370
Total Current Liabilities	10,373	11,280	12,069	13,577
Total Long-term Debt	5,259	5,416	5,579	5,746
Hybrid Debt - Debt Component				
Total Other Non-Current Liabilities	1,035	1,062	1,325	1,615
Total Non-current Liabilities	6,294	6,478	6,904	7,361
Total Provisions	423	423	423	423
Total Liabilities	17,090	18,181	19,395	21,361
Shareholders' Equity	18,018	19,247	22,084	25,637
Minority Interests	82	82	82	82
Total Equity	18,100	19,329	22,166	25,718

Key Ratios				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	(17.1%)	2.6%	24.8%	21.8%
Operating EBITDA Growth	(45.1%)	(24.9%)	98.0%	44.9%
Operating EBITDA Margin	15.9%	11.6%	18.5%	22.0%
Net Cash Per Share (Rmb)	(7.40)	(7.98)	(7.93)	(6.99)
BVPS (Rmb)	15.20	15.83	18.16	21.08
Gross Interest Cover	4.64	2.78	6.99	10.51
Effective Tax Rate	26.4%	25.5%	25.5%	25.5%
Net Dividend Payout Ratio	13.8%	10.2%	10.2%	10.2%
Accounts Receivables Days	49.16	45.15	41.29	41.62
Inventory Days	277.9	304.7	305.0	302.7
Accounts Payables Days	48.67	27.81	27.83	27.62
ROIC (%)	11.8%	4.9%	12.0%	17.1%
ROCE (%)	8.0%	4.5%	10.5%	14.8%
Return On Average Assets	5.7%	3.0%	7.0%	9.7%

Key Drivers				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Semiconductor distribution revenue (yoy %)	-2.6%	-10.0%	5.0%	5.0%
Semiconductor designs revenue (yoy %)	-19.2%	4.7%	29.9%	25.3%
Semiconductor distribution GPM (%)	9.0%	6.0%	12.0%	12.0%
Semiconductor designs GPM (%)	28.8%	26.3%	32.1%	35.9%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

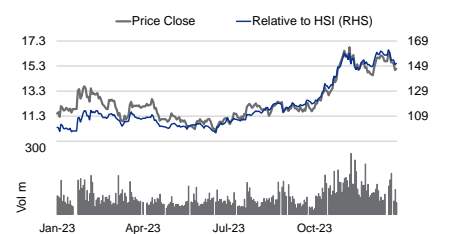
Hong Kong

ADD (no change)

Consensus ratings*: Buy 31 Hold 6 Sell 2

Current price:	HK\$15.08
Target price:	HK\$22.80
Previous target:	HK\$21.50
Up/downside:	51.2%
CGS-CIMB / Consensus:	18.6%
Reuters:	1810.HK
Bloomberg:	1810 HK
Market cap:	US\$48,424m HK\$378,111m
Average daily turnover:	US\$213.7m HK\$1,656m
Current shares o/s	24,977m
Free float:	58.5%

*Source: Bloomberg



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-0.9	27.2	31.1
Relative (%)	-0.9	30.4	51.1

Major shareholders	% held
Lei Jun	29.1
Lin Bin	12.4
Morningside China TMT Fund I and II,	12.6

Analyst

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Xiaomi Corporation

Premium phones to sustain GPM

- We expect Xiaomi's FY24F EPS to grow 5% yoy, driven by an increase in smartphone/IoT sales and improving Internet services GPM.
- We believe Xiaomi's foray into the EV space will be successful given its strong R&D expertise and healthy balance sheet.
- Reiterate Add and TP of HK\$22.80, still based on 22x FY24F P/E.

Aiming to enter China's new energy vehicle (NEV) market in 2024F

- We are positive on Xiaomi due to its solid EPS growth outlook (+117%/+5% in FY23F/24F), premised on a steady recovery in smartphone shipments, rising IoT revenue, improved GPM outlook for Internet services and success in its EV business.

Smartphone and Internet services recovery are earnings drivers

- We expect Xiaomi's smartphone shipments to recover 18% yoy to 178m units in FY24F from a 1% decline in FY23F, as we see steady sales growth in China's high-end segment and recovery in overseas markets, such as India, Europe, and LATAM. Despite Huawei's return to China's smartphone market in Sep 23, we believe Xiaomi's market share in China will remain stable as sales of flagship models (Mi 14 series) are likely to increase on the back of a trend of Xiaomi's users upgrading from low- to mid-range handsets to high-end models. Furthermore, we expect smartphone GPM to stay high at over 12% in FY24F (c.13% in FY23F) on the back of increasing premium phone sales overseas and reduced promotions.
- We believe Xiaomi will be successful in its EV business given its strong R&D and healthy balance sheet, which should enable long-term investment in the development of smart features and battery technology and allow it to capture market share in China's NEV market. Although we expect its first EV launch in 2Q24F to increase net loss to c.Rmb10bn for FY24F (c.Rmb7.0bn in FY23F), we believe Xiaomi will quickly achieve breakeven in FY26F. We forecast FY25F EV deliveries of 120k units (we estimate deliveries of only 30k-40k in FY24F, primarily in 2H24F, due to the time required to ramp up the new production line) on lower production costs per EV from economies of scale.
- Meanwhile, we expect Internet services GPM to continue to improve as a result of higher premium phone sales, a recovery in China's advertising revenue and increasing overseas income. In our view, IoT sales will be boosted by strong home appliance demand in China as well as improved smart TV sales in China, India, and Europe; we forecast a stable segment GPM of approximately 15%.

Reiterate Add, with target price of HK\$22.80

- Xiaomi is our top pick in the China smartphone sector. We reiterate Add with a higher TP of HK\$22.80 as we roll over to FY25F, based on 22x P/E, its 3-year average, reflecting positive EV development and an improving smartphone market outlook. Re-rating catalysts include a successful first EV (the SU7 sedan) launch, stronger smartphone shipments and sustainable smartphone/IoT GPM. Risks: delay in SU7 launch, keener competition in China market due to strong Huawei sales, and higher-than-expected losses in EV business, hurting its profitability.

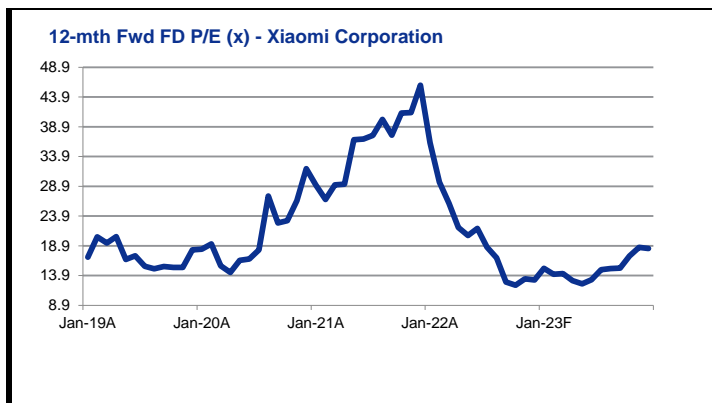
Financial Summary	Dec-21A	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue (Rmbm)	328,309	280,044	277,469	331,933	367,741
Net Profit (Rmbm)	19,339	2,474	19,616	17,776	19,710
Normalised EPS (Rmb)	0.88	0.34	0.75	0.78	0.95
Normalised EPS Growth	63%	(61%)	117%	5%	21%
FD Normalised P/E (x)	15.71	41.17	18.79	17.97	14.85
Price To Sales (x)	1.05	1.22	1.24	1.04	0.94
DPS (Rmb)	-	-	-	-	-
Dividend Yield	0%	0%	0%	0%	0%
EV/EBITDA (x)	13.17	33.75	13.32	13.04	9.09
P/FCFE (x)	NA	41.91	7.88	8.39	7.71
Net Gearing	(35.5%)	(37.9%)	(50.1%)	(57.7%)	(63.2%)
P/BV (x)	2.51	2.40	1.78	1.45	1.20
ROE	16.9%	6.1%	11.0%	9.1%	9.0%
% Change In Normalised EPS Estimates			0%	0%	(0%)
Normalised EPS/consensus EPS (x)			1.06	1.16	1.26

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS

Profit & Loss				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Net Revenues	280,044	277,469	331,933	367,741
Gross Profit	47,577	57,505	64,726	72,517
Operating EBITDA	8,545	18,615	15,925	18,040
Depreciation And Amortisation	-3,200	-4,618	-5,688	-6,477
Operating EBIT	5,345	13,996	10,237	11,563
Financial Income/(Expense)	1,117	1,945	1,766	2,145
Pretax Income/(Loss) from Assoc.	0	0	0	0
Non-Operating Income/(Expense)	3,515	7,324	10,380	13,095
Profit Before Tax (pre-EI)	9,978	23,265	22,382	26,803
Exceptional Items	-6,044	981	-1,778	-3,942
Pre-tax Profit	3,934	24,246	20,605	22,861
Taxation	-1,431	-4,610	-2,805	-3,129
Exceptional Income - post-tax				
Profit After Tax	2,503	19,636	17,800	19,732
Minority Interests	-29	-20	-24	-22
Preferred Dividends				
FX Gain/(Loss) - post tax				
Other Adjustments - post-tax				
Net Profit	2,474	19,616	17,776	19,710
Normalised Net Profit	8,547	18,655	19,577	23,674
Fully Diluted Normalised Profit	8,518	18,635	19,553	23,652

Cash Flow				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
EBITDA	8,545	18,615	15,925	18,040
Cash Flow from Inv. & Assoc.	0	0	0	0
Change In Working Capital	-22,094	-783	-3,143	-2,342
(Incr)/Decr in Total Provisions				
Other Non-Cash (Income)/Expense	7,788	2,000	2,000	2,000
Other Operating Cashflow	3,675	8,950	9,557	9,865
Net Interest (Paid)/Received	1,117	1,945	1,766	2,145
Tax Paid	-3,420	-4,610	-2,805	-3,129
Cash Flow From Operations	-4,390	26,117	23,300	26,578
Capex	-5,817	-7,517	-7,517	-7,517
Disposals Of FAs/subsidiaries	0	0	0	0
Acq. Of Subsidiaries/investments	-25	-2,500	-2,500	-2,500
Other Investing Cashflow	21,391	28,347	28,609	29,014
Cash Flow From Investing	15,549	18,330	18,592	18,996
Debt Raised/(repaid)	-2,791	0	0	0
Proceeds From Issue Of Shares	0	0	0	0
Shares Repurchased	-2,386	0	0	0
Dividends Paid	0	0	0	0
Preferred Dividends				
Other Financing Cashflow	-2,761	-1,419	-1,860	-1,886
Cash Flow From Financing	-7,939	-1,419	-1,860	-1,886
Total Cash Generated	3,220	43,028	40,031	43,689
Free Cashflow To Equity	8,368	44,446	41,891	45,575
Free Cashflow To Firm	11,706	45,865	43,751	47,460



Balance Sheet				
(Rmbm)	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Total Cash And Equivalents	78,227	120,862	161,213	204,879
Total Debtors	38,203	37,852	45,282	50,167
Inventories	50,438	47,725	57,975	64,054
Total Other Current Assets	10,335	10,308	10,886	11,223
Total Current Assets	177,203	216,747	275,356	330,322
Fixed Assets	9,138	13,416	16,625	19,031
Total Investments	63,912	65,162	66,412	67,662
Intangible Assets	4,630	4,630	4,630	4,630
Total Other Non-Current Assets	18,624	18,624	18,624	18,624
Total Non-current Assets	96,304	101,832	106,290	109,947
Short-term Debt	2,151	2,145	2,271	2,345
Current Portion of Long-Term Debt				
Total Creditors	71,534	67,687	82,225	90,846
Other Current Liabilities	15,943	14,944	15,801	15,298
Total Current Liabilities	89,628	84,776	100,297	108,488
Total Long-term Debt	21,493	21,493	21,493	21,493
Hybrid Debt - Debt Component				
Total Other Non-Current Liabilities	16,535	16,383	19,599	21,713
Total Non-current Liabilities	38,028	37,876	41,092	43,206
Total Provisions	1,929	1,924	2,020	2,075
Total Liabilities	129,584	124,576	143,409	153,769
Shareholders' Equity	143,658	193,738	237,973	286,235
Minority Interests	265	265	265	265
Total Equity	143,923	194,003	238,238	286,499

Key Ratios				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Revenue Growth	(14.7%)	(0.9%)	19.6%	10.8%
Operating EBITDA Growth	(62%)	118%	(14%)	13%
Operating EBITDA Margin	3.05%	6.71%	4.80%	4.91%
Net Cash Per Share (Rmb)	2.19	3.89	5.50	7.25
BVPS (Rmb)	5.75	7.76	9.53	11.46
Gross Interest Cover	9.78	9.87	5.50	6.13
Effective Tax Rate	36.4%	19.0%	13.6%	13.7%
Net Dividend Payout Ratio	NA	NA	NA	NA
Accounts Receivables Days	19.41	15.44	14.15	14.62
Inventory Days	80.73	81.44	72.39	75.44
Accounts Payables Days	100.3	85.7	76.2	79.4
ROIC (%)	11%	32%	21%	21%
ROCE (%)	6.3%	12.8%	10.1%	10.0%
Return On Average Assets	2.62%	5.64%	5.09%	5.24%

Key Drivers				
	Dec-22A	Dec-23F	Dec-24F	Dec-25F
Smartphone ASP growth (yoy %)	1.2%	-1.0%	3.0%	2.0%
Smartphone unit sales growth (yoy %)	-20.9%	-0.3%	18.7%	9.6%
MIUI users (million)	582.1	640.0	704.0	774.4
ARPU (Rmb)	51.9	49.2	51.5	53.9

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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.

#03c

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