

## China Smartphones: Jan shipments -17% YoY; 20MPx+ cameras in expansion

### Jan smartphone shipments in China were -17% YoY to 25m units, or -24% MoM.

Monthly shipments were down to 25m units in Jan on weak seasonality, post recovery in Oct - Dec 2024 shipment at 28m~32m units. Nation-wide subsidies announced in early Jan could support the demand in 1Q25 ([report link](#)). We expect the market to be +1% YoY in 1Q25E ([report link](#)), vs. 4% YoY in 4Q24 per MIIT data.

**For cameras**, the number of cameras per phone peaked in 2022 at 3.8 cameras and down to 3.3/ 3.3 cameras in 2024/ 2025 YTD; however, 20MPx+ penetration increased to 52%/ 54% in 2024/ 2025 YTD (vs. 39%/ 31% in 2023/22), in line with our view of camera specification upgrades for China smartphones ([report link](#)). Read more: [Smartphone TAM](#).

**Buy:** Hon Hai, AAC (on CL), Largan, Luxshare, SZS, Fositek, BYDE, Transsion, Maxscend, Will Semi, MediaTek, and TSMC.

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### Key China smartphone data in Jan

#### China 5G phone market in Jan

- 5G phone shipments in China came in at 24m units in Jan, -22% MoM, -10% YoY, with an 87% penetration rate, per MIIT.
- The number of new 5G smartphone models launched in China was +133% YoY to 21 models in Jan 2025 vs. -55% YoY to 5 models in Dec 2024, per MIIT.

#### China smartphone market in Jan

- Smartphone shipments in China were -17% YoY to 25m units in Jan vs. +21% YoY in Dec 2024, per MIIT.
- The number of new smartphone models launched in China was +47% YoY to 25 models in Jan 2025 vs. -26% YoY to 14 models in Dec 2024, per MIIT.
- Replacement ratio: Of the 1,727m mobile phone subscribers as of Dec 2023, around 13% had replaced their phones from Jan 2024 to Dec 2024.

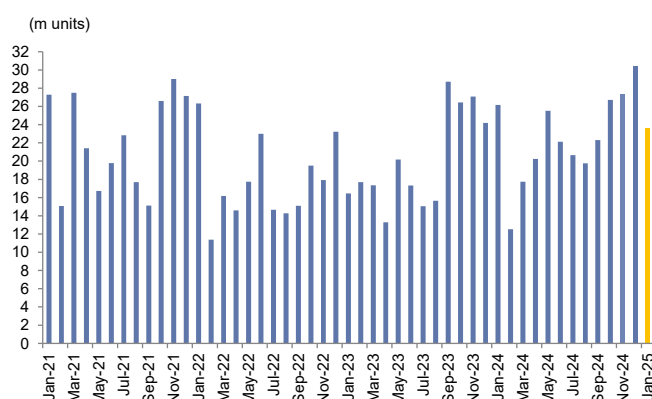
#### Smartphone camera pixels in leading China smartphone brands in 2025 YTD

- We reviewed the 37 models launched by Honor, Xiaomi, OPPO, Vivo and Transsion in 2025 YTD, totaling 121 cameras.

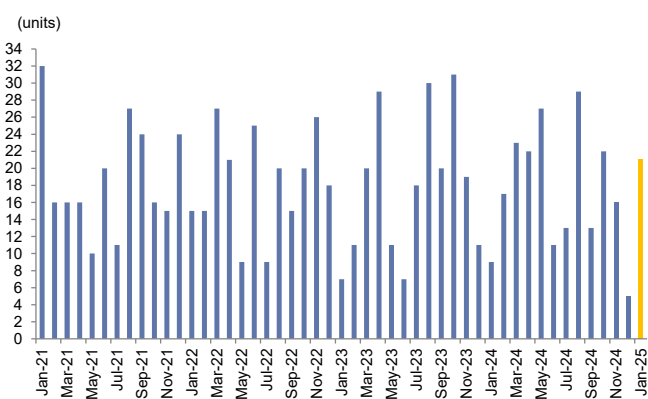
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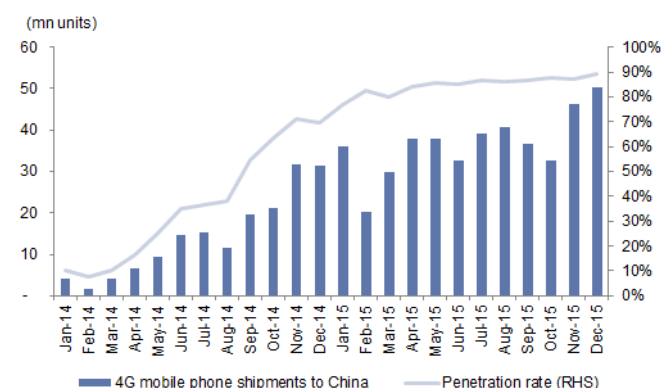
- Average number of cameras per model was at 3.3 in 2025 YTD, vs. 3.3/ 3.5/ 3.8 / 4.1 / 4.9 / 4.0 in 2024/ 2023 / 2022 / 2021 / 2020 / 2019. Among the 121 cameras, 39% of cameras were 2MPx/5MPx/8MPx, vs. 36%/ 45% / 51% / 50% / 57% / 46% in 2024/ 2023 / 2022 / 2021 / 2020 / 2019.
- 1 model has been launched by Honor in 2025 YTD with a total of 3 cameras, or 3.0 cameras per model, vs. Huawei at 3.3 cameras, OPPO at 3.2 cameras, Xiaomi at 3.5 cameras, Vivo at 3.0 cameras, and Transsion at 3.0 cameras.
- Among the 29 cameras in the 9 models that Oppo has launched in 2025 YTD, 45% were 2MPx/5MPx/8MPx, vs. Huawei at 50%, Honor at 33%, Xiaomi at 39%, Vivo at 33%, and Transsion at 27%.

**Exhibit 1: 5G smartphone shipments in China: 24m units in Jan**

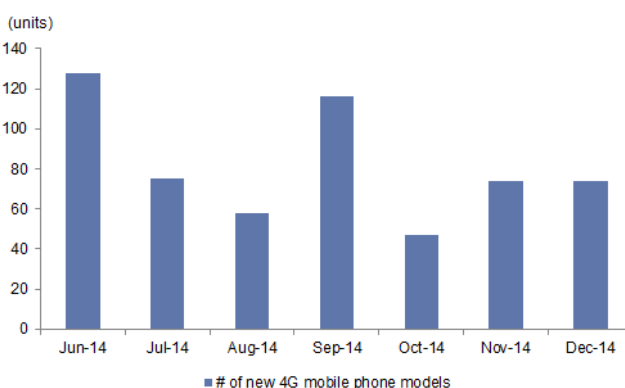
Source: MIIT

**Exhibit 2: Monthly # of new 5G smartphone models launched in China**

Source: MIIT

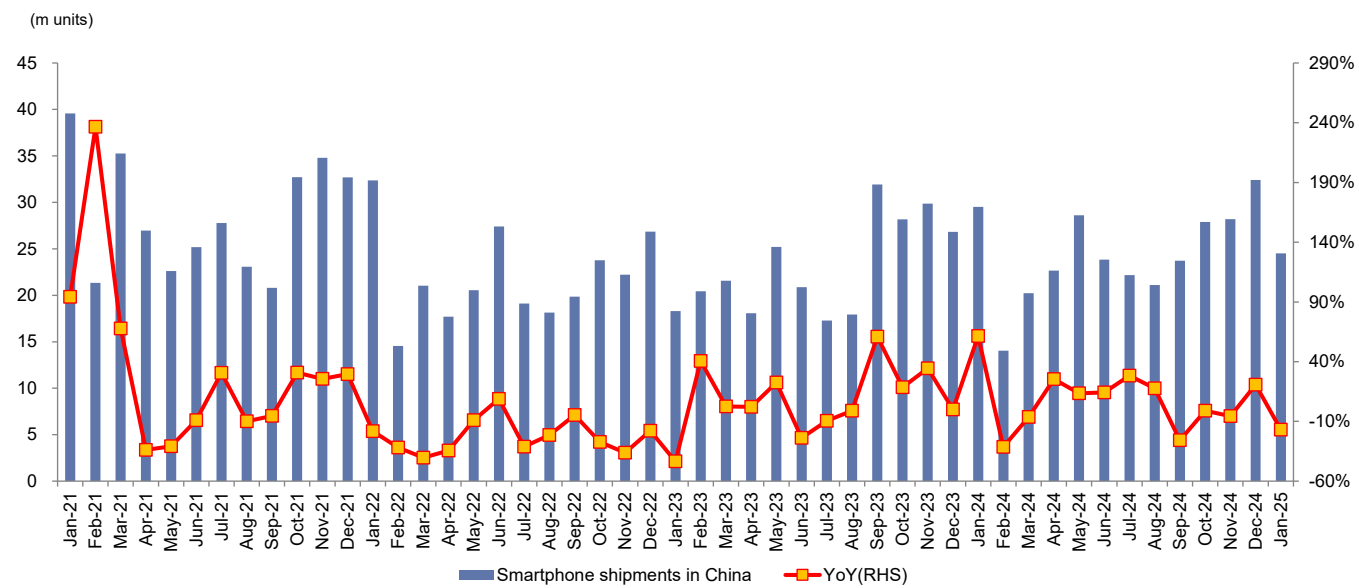
**Exhibit 3: 2014-15 4G mobile phone shipments and penetration rate**

Source: MIIT

**Exhibit 4: Monthly # of new 4G mobile phone models launched in China**

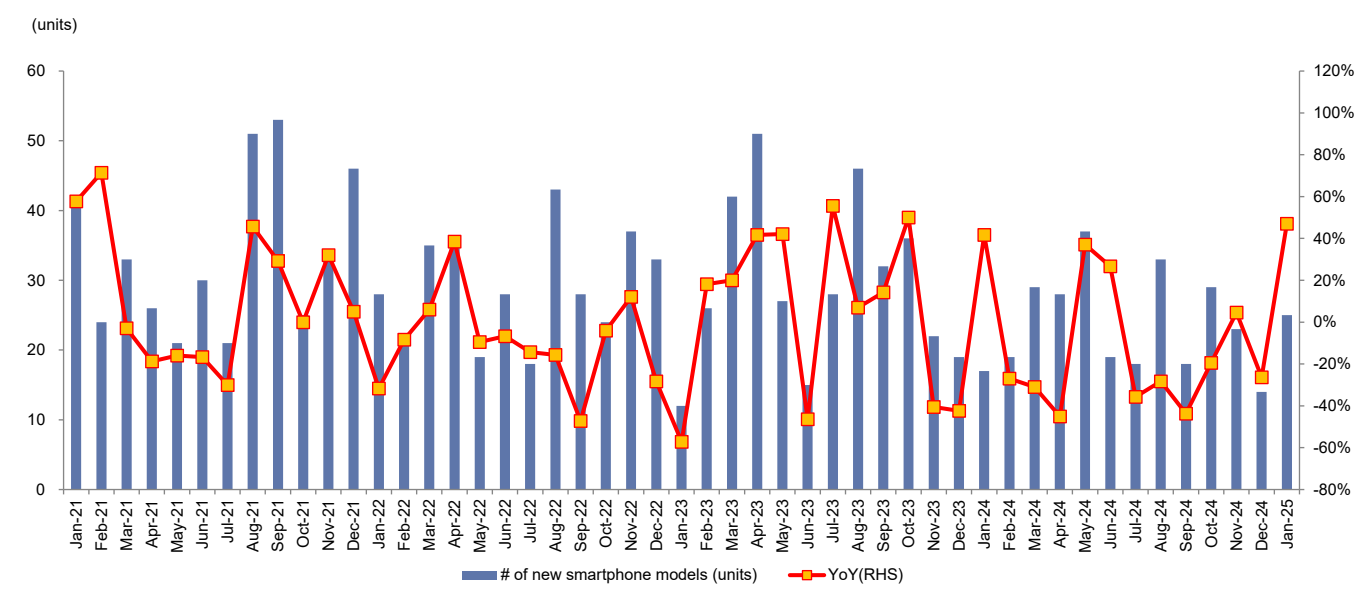
Source: MIIT

Exhibit 5: Smartphone shipments in China



Source: MIIT

Exhibit 6: Number of new smartphone models launched in China



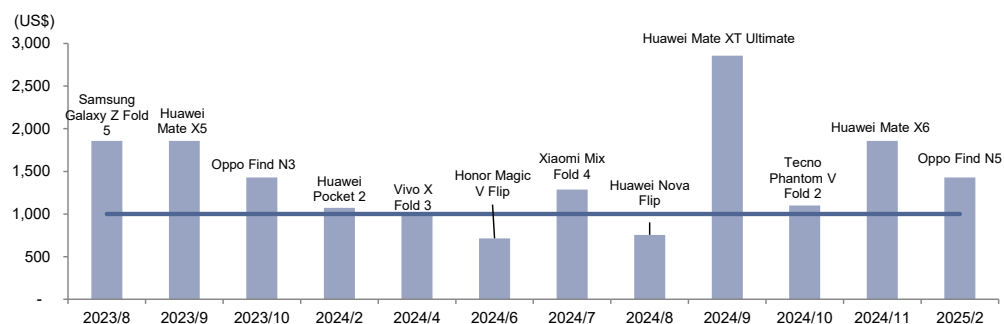
Source: MIIT

## Exhibit 7: Mobile phone shipments in China

m units	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25
Mobile phones	32	14	21	24	30	25	24	24	25	30	30	35	27
YoY	68%	-33%	-5%	29%	16%	12%	30%	27%	-24%	2%	-5%	22%	-14%
MoM	12%	-55%	50%	13%	26%	-18%	-3%	-1%	6%	17%	0%	17%	-21%
<b>5G</b>	<b>26.2</b>	<b>12.5</b>	<b>17.7</b>	<b>20.2</b>	<b>25.5</b>	<b>22.1</b>	<b>20.7</b>	<b>19.8</b>	<b>22.3</b>	<b>26.7</b>	<b>27.3</b>	<b>30.4</b>	<b>23.6</b>
5G to mobile phones	82%	88%	83%	84%	84%	89%	85%	82%	88%	90%	92%	88%	87%
Chinese Brands	26	12	18	21	25	22	22	22	20	23	27	31	23
Chinese Brands to mobile phones	83%	83%	82%	85%	83%	88%	90%	92%	80%	79%	90%	89%	84%
<b>Smartphone</b>	<b>30</b>	<b>14</b>	<b>20</b>	<b>23</b>	<b>29</b>	<b>24</b>	<b>22</b>	<b>21</b>	<b>24</b>	<b>28</b>	<b>28</b>	<b>32</b>	<b>25</b>
<b>YoY</b>	<b>61%</b>	<b>-31%</b>	<b>-6%</b>	<b>25%</b>	<b>14%</b>	<b>14%</b>	<b>28%</b>	<b>18%</b>	<b>-26%</b>	<b>-1%</b>	<b>-6%</b>	<b>21%</b>	<b>-17%</b>
MoM	10%	-52%	44%	12%	26%	-17%	-7%	-5%	12%	18%	1%	15%	-24%
Smartphone to mobile phones	93%	98%	95%	94%	94%	96%	92%	88%	93%	94%	95%	94%	90%
# of new smartphone models (units)	17	19	29	28	37	19	18	33	18	29	23	14	25
YoY	42%	-27%	-31%	-45%	37%	27%	-36%	-28%	-44%	-19%	5%	-26%	47%
MoM	-11%	12%	53%	-3%	32%	-49%	-5%	83%	-45%	61%	-21%	-39%	79%
# of new mobile models (units)	29	21	47	33	49	26	29	47	35	37	40	28	36
<b>5G</b>	<b>9</b>	<b>17</b>	<b>23</b>	<b>22</b>	<b>27</b>	<b>11</b>	<b>13</b>	<b>29</b>	<b>13</b>	<b>22</b>	<b>16</b>	<b>5</b>	<b>21</b>
5G to total new mobile models	31%	81%	49%	67%	55%	42%	45%	62%	37%	59%	40%	18%	58%

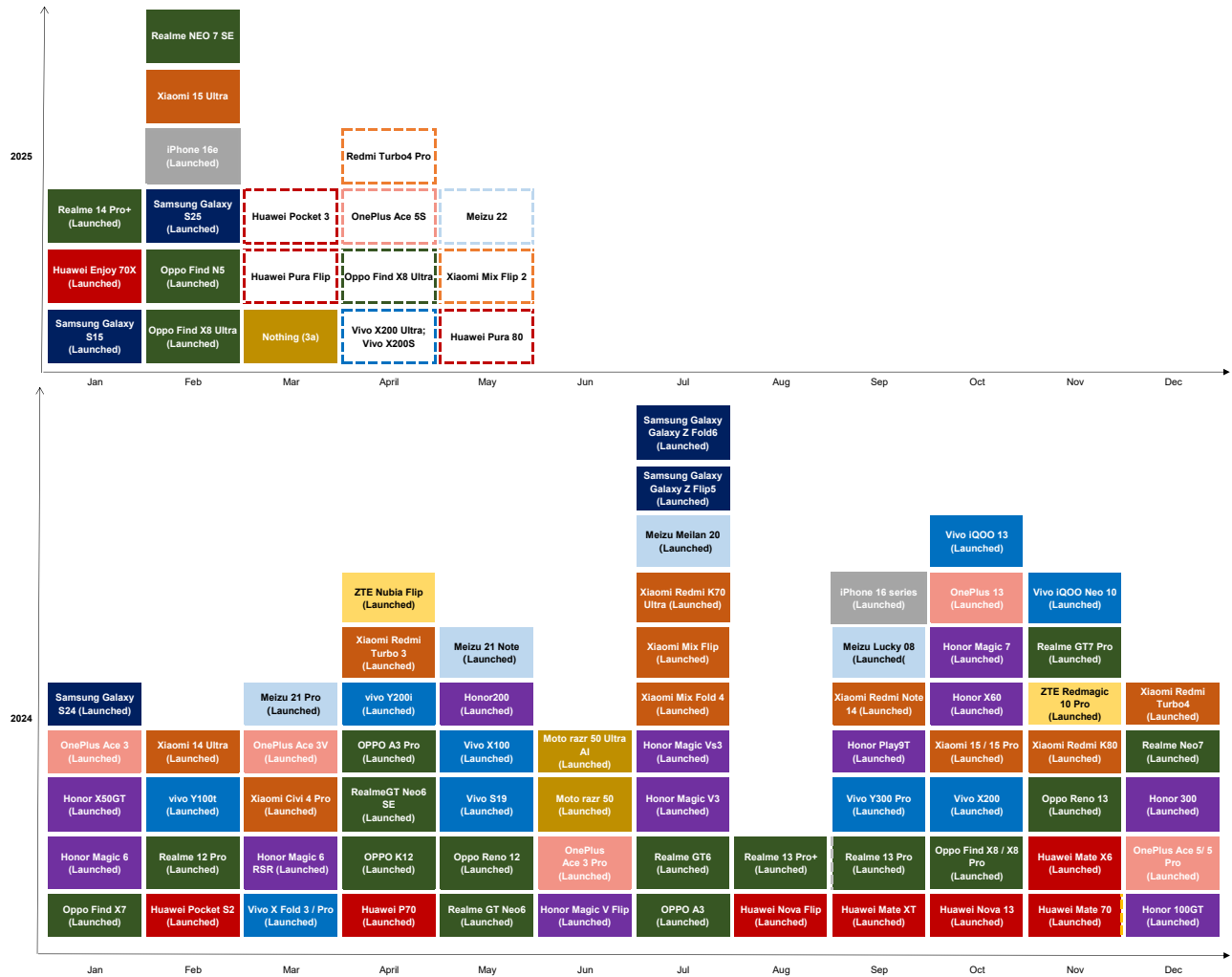
Source: MIIT

## Exhibit 8: Model pricing for various foldable smartphone brands



Source: Company data, Goldman Sachs Global Investment Research

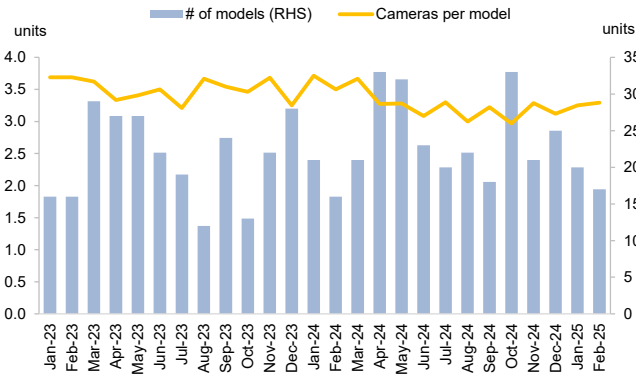
Exhibit 9: 2024 to 2025 smartphone model launch pipeline across key vendors



Expected model and launch date for those cells with white background

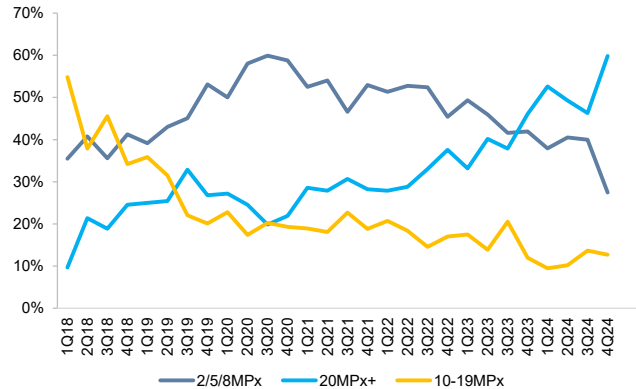
Source: Company data, Compiled by Goldman Sachs Global Investment Research

**Exhibit 10: Cameras per smartphone model peaking out**  
Smartphone models launched by Huawei, Honor, Xiaomi, OPPO, Vivo, Transsion since Dec 2020



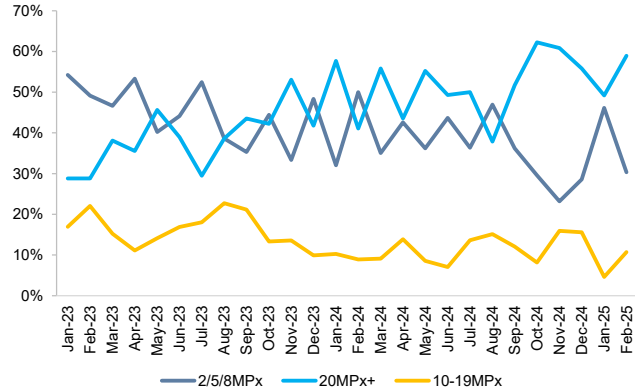
Data as of Mar 17, 2025  
Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 12: Huawei/Honor/Xiaomi/OPPO/Vivo/Transsion: 20MPx+ becomes the main contributor**  
Cameras on smartphones launched by Huawei, Honor, Xiaomi, OPPO, Vivo, Transsion since 2018: % of cameras in terms of pixels



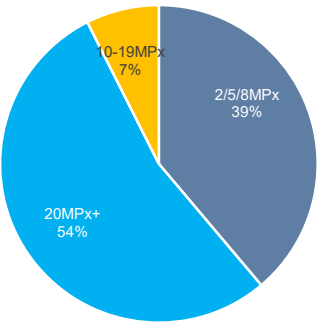
Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 11: 20MPx+ becomes the main contributor**  
Cameras on smartphones launched by Huawei, Honor, Xiaomi, OPPO, Vivo, Transsion since Dec 2020, % of cameras in terms of pixels



Data as of Mar 17, 2025  
Source: Company data, compiled by Goldman Sachs Global Investment Research

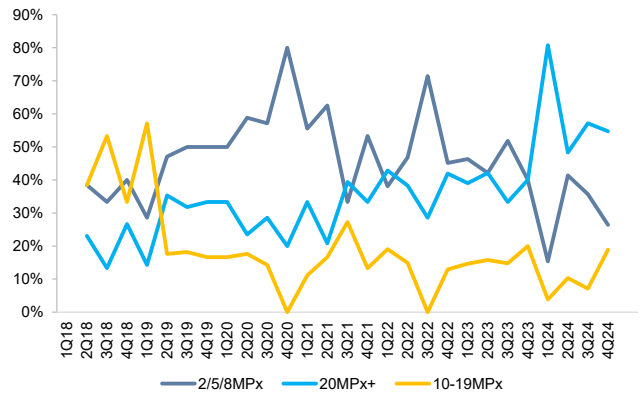
**Exhibit 13: 2/5/8MPx at 39% in 2025 YTD**  
121 cameras on 37 models launched by Huawei, Honor, Xiaomi, OPPO, Vivo, Transsion in 2025 YTD, divided by pixel count



Data as of Mar 17, 2025  
Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 14: Honor: 20MPx+ remains the main contributor**

Cameras on smartphones launched by Honor since 2018: % of cameras in terms of pixels

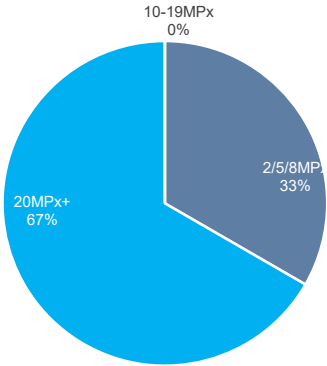


Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 15: Honor: 33% at 2/5/8MPx**

6 cameras on 22 models launched by Honor in 2025 YTD, by pixel number

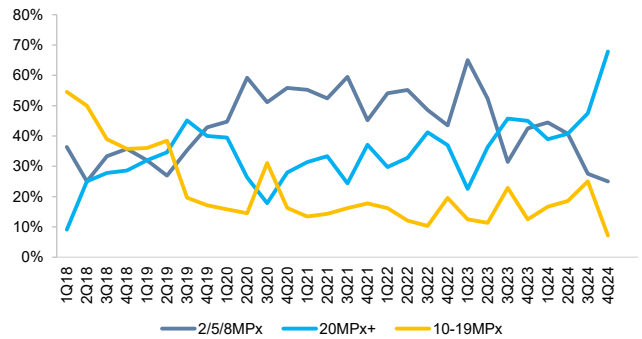


Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 16: Xiaomi: 20MPx+ increasing**

Cameras on smartphones launched by Xiaomi since 2018: % of cameras in terms of pixel

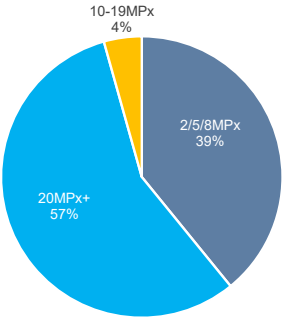


Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 17: Xiaomi: 39% at 2/5/8MPx**

46 cameras on 13 models launched by Xiaomi in 2025 YTD, by pixel number

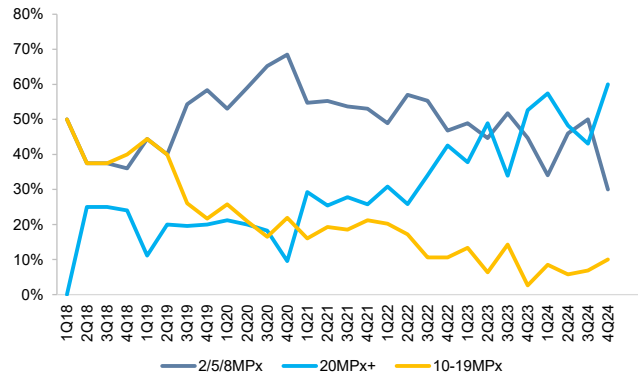


Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 18: OPPO: 20MPx+ becomes the main contributor**

Cameras on smartphones launched by OPPO since 2018: % of cameras in terms of pixels

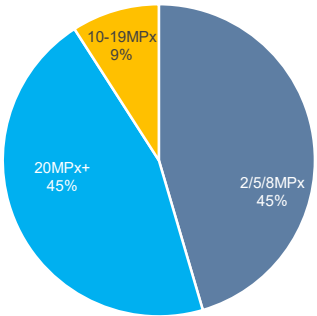


Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 19: OPPO: 45% at 2/5/8MPx**

29 cameras on 9 models launched by OPPO in 2025 YTD, by pixel number

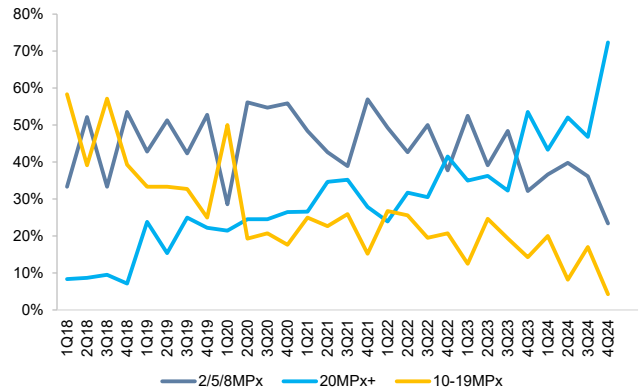


Data as of Mar 17, 2025

Source: Company data, Goldman Sachs Global Investment Research

**Exhibit 20: Vivo: 20MPx+ becomes the main contributor**

Cameras on smartphones launched by Vivo since 2018: % of cameras in terms of pixels

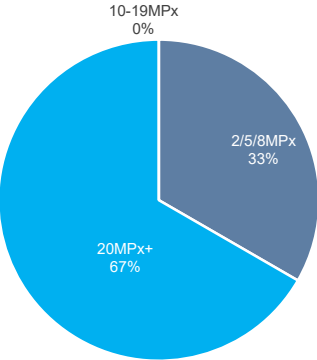


Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 21: Vivo: 33% at 2/5/8MPx**

18 cameras on 6 models launched by Vivo in 2025 YTD, by pixel count

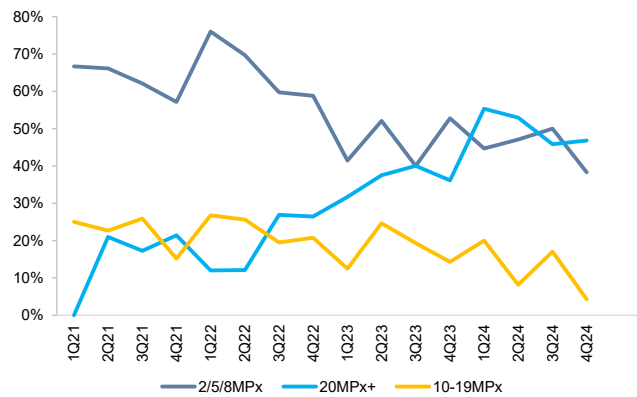


Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research



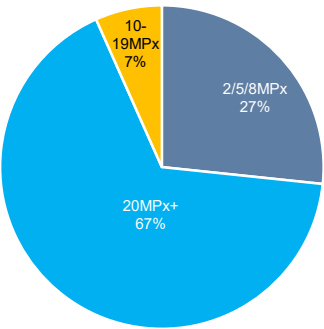
**Exhibit 22: Transsion: Decreasing 2/5/8MPx contribution**  
Cameras on smartphones launched by Transsion since 2021: % of cameras in terms of pixels



Data as of Mar 17, 2025

Source: Company data, compiled by Goldman Sachs Global Investment Research

**Exhibit 23: Transsion: 27% at 2/5/8MPx**  
15 cameras on 5 model launched by Transsion in 2025 YTD, by pixel



Data as of Mar 17, 2025

Source: Company data, Goldman Sachs Global Investment Research

# Apple Supply Chain: Greater China Ecosystem

Company	Product / service	2025E Apple sales exposure
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## Camera / IR filters

Largan	Handset lens	40-45%
Sunny Optical	Handset lens	3%
Genius (handset lens), Crystal-Optech (prism), Cowell (camera modules)		

## Semiconductors

Win Semi	Power amplifier, VCSEL	30-35%
Parade	Timing controller	25-30%
ASE Tech	OSAT	25-30%
TSMC	Logic foundry	20-25%
Novatek	IC design	5-8%
Vanguard	Logic foundry	5-8%
Realtek	IC design	<5%
Winbond (NOR Flash)		

## Acoustics

Luxshare	Acoustics, haptics, wireless charging, antenna, airpods, Apple watch, MR, metal casing / middle frame / top module, cable / connector	80-85%
AAC	Acoustics, haptics, notebook casing	35-40%
Merry (acoustics), Guoguang (acoustics)		

## Panel / touch panel/backlight module

BOE	Panels	10-20%
GIS (touch panel), TPK (touch panel), Radiant (backlight module), Changxin (display module)		

## PCB

NYP CB	PCB / BT (SiP)	30-35%
Unimicron	PCB / BT (AiP) / ABF	20-25%
Kinsus	BT (AiP)	15-20%
EMC	CCL	10-15%
ZDT (PCB), Flexium (PCB), Dongshan Precision (PCB), Avary (PCB), Compeq (PCB), Golden Arrow (PCB)		

## Passive components

Yageo	MLCC, chip R	3%
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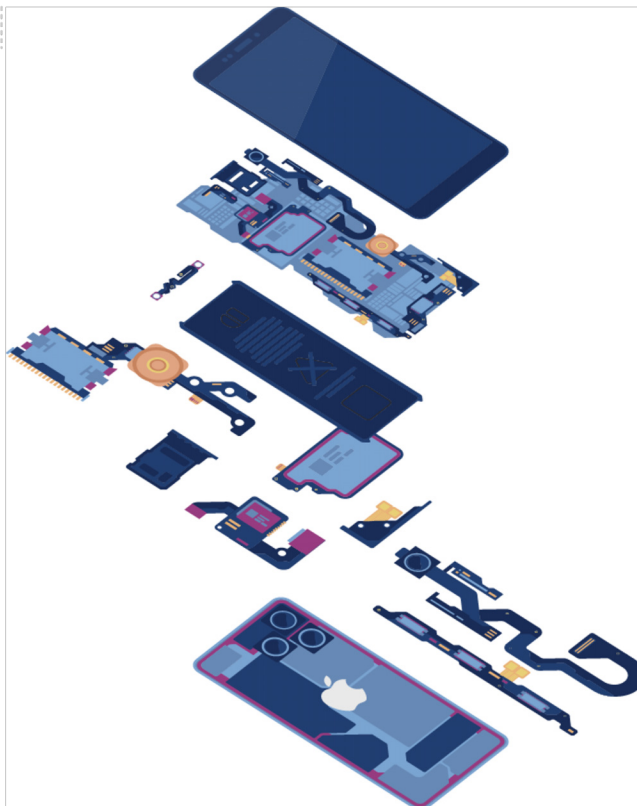
## Equipment

ASMPT	SMT equipment	< 5%
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Non – covered, coverage suspended or private company.

We note that the list of companies across the ecosystem we present above is not exhaustive, and the universe of companies involved is likely to be larger than what is presented.

Source: Company data, Goldman Sachs Global Investment Research



## Network and connection

Sunway (antenna)

## Casing / metal parts

SZS	Hinges	65-70%
FII	Metal middle frame	20-25%
Lenstech (casings, metal middle frame, glass components), BIEL Crystal (glass components), Everwin (metal parts), Lingyi iTech (precision functional parts)		

## Battery / thermal modules / cable

Delta Electronics	Power component / inductor	10-15%
Desay (battery), Sunwoda (battery), Simplo (battery), Dynapack (battery), Lite-ON (power supply), AcBel Polytech (PC power supply, adapter, converters), Cheng Uei (cables), FIT (cables), Tonytech (wireless charging module)		

## ODM/EMS

Pegatron	ODM	65-70%
Hon Hai	EMS, metal middle frame	45-50%
BYDE	ODM, metal middle frame	45-50%
Compal	ODM	15-20%
Quanta	ODM	10-15%
USI (SiP)		

# Disclosure Appendix

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**Growth** is based on a stock's forward-looking sales growth, EBITDA growth and EPS growth (for financial stocks, only EPS and sales growth), with a higher percentile indicating a higher growth company. **Financial Returns** is based on a stock's forward-looking ROE, ROCE and CROCI (for financial stocks, only ROE), with a higher percentile indicating a company with higher financial returns. **Multiple** is based on a stock's forward-looking P/E, P/B, price/dividend (P/D), EV/EBITDA, EV/FCF and EV/Debt Adjusted Cash Flow (DACF) (for financial stocks, only P/E, P/B and P/D), with a higher percentile indicating a stock trading at a higher multiple. The **Integrated** percentile is calculated as the average of the Growth percentile, Financial Returns percentile and (100% - Multiple percentile).

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