

# China CIS Sector

## Can non-mobile CIS strength offset handset weakness? We remain cautiously optimistic

CIS market revenue remained nearly flat in 2021, with 1.0% YoY decline. Mobile CIS, the largest segment, experienced -6.6% YoY rev. growth, while security/auto CIS sales increased by 32.5%/14.1% YoY, respectively. **We are optimistic on the CIS sector** as security/auto CIS segments are expected to maintain healthy growth and applications in AR/VR are gaining momentum. Constraints in the supply chain are likely to ease gradually. Among CIS players, we suggest to be selective and focus on names with diversified market exposure (especially to non-mobile) or share gain story. **Top picks include Willsemi (603501 CH) and GalaxyCore (688728 CH).**

- Mobile CIS remains under pressure.** 2021 rev. was US\$13.1bn, declining 6.6% YoY. We expect mobile CIS's market share will keep shrinking in 2022 (64%/69% of CIS rev. in 2021/19) due to tepid growth in mobile segment vs. stronger growth in non-mobile CIS. Android OEMs are facing several challenges: 1) Apple's sales momentum remains strong; 2) lukewarm response from consumers to newly released Android flagship models; 3) higher than average inventory built in past months; and 4) slowdown consumption amid partial lockdown led by resurgent COVID cases. As domestic mobile CIS players are Android suppliers, we stay cautious. Investors should be selective and focus on names with potential share gain and favorable product mix, such as Willsemi and GalaxyCore.
- Increasing adoption of ADAS and continuous transition from ordinary vehicles to electrified intelligent vehicles will underpin auto CIS's growth.** Auto CIS sales was US\$1.6bn in 2021, 8% of overall CIS market share. Segment revenue growth was 14.1% YoY (vs. 40.6% YoY in 2019), lower than expected due to chip shortage. Looking forward, we remain optimistic in auto CIS given demand remains strong. The growth drivers in auto CIS are from both increasing average number of camera per car (est. 10% 2021-27E CAGR) and higher ASP as camera upgrades. We believe Willsemi will outperform its peers as some competitors are currently facing supply chain bottleneck or waiting for long verification time.
- Demand for security CIS stays healthy.** Security CIS, the 2nd largest segment, reached US\$2.2bn rev. in 2021. Security CIS has experienced rapid growth in the past three years. Segment revenue growth rates were 27.6%/36.2%/32.5% YoY for the period from 2019 to 2021, driven by demand for touchless access control solutions, remote monitoring (e.g., healthcare), surveillance, etc. Security CIS benefited significantly from COVID. We expect to see solid growth in security CIS in the following years amid security camera upgrade and healthcare/surveillance demand. Chinese players, such as Willsemi, GalaxyCore and Smartsens, are well poised to enjoy robust growth.
- VR/AR could offer upside surprise.** Over 11 million VR/AR devices shipped worldwide in 2021 (+92% YoY vs. 2020) according to IDC. And total shipment number is expected to cross 15 million in 2022. As enormous amount of capital keeps being deployed into metaverse related fields to improve the infrastructure, hardware, content, and ecosystem, CIS players like Willsemi should positively ride on this upcycle.

**OUTPERFORM**  
(Maintain)

### China Technology Sector

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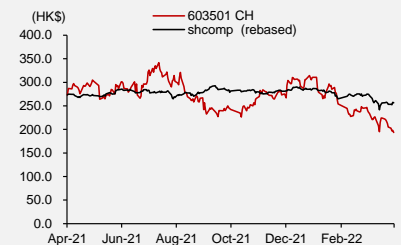
**Willsemi (603501 CH)**  
TP: RMB292.0, BUY

#### Stock Data

Mkt Cap (RMBmn)	169,365
Avg 3 mths t/o (RMBmn)	1,637
52w High/Low (RMB)	345/189
Total Issued Shares (mn)	875.7

Source: Bloomberg

#### 12-mth Price Performance



Source: Bloomberg

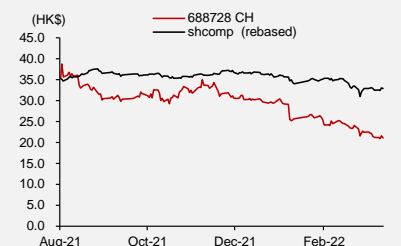
**GalaxyCore (688728 CH)**  
TP: RMB28.5, BUY

#### Stock Data

Mkt Cap (RMB mn)	52,627
Avg 3 mths t/o (RMB mn)	96
52w High/Low (RMB)	41.0/20.8
Total Issued Shares (mn)	2,498.9

Source: Bloomberg

#### 12-mth Price Performance



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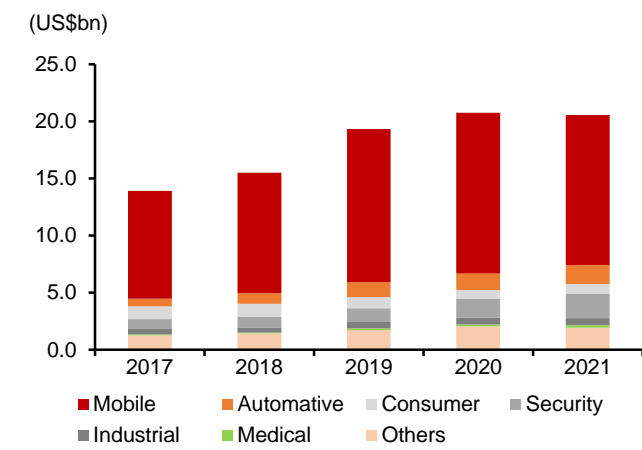
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## CIS market review and outlook

### CIS market revenue remained flat in 2021

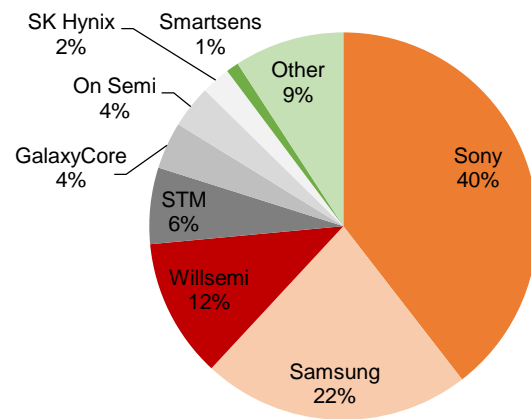
CIS market revenue was US\$20.5bn in 2021, according to Yole. The market remained nearly flat in 2021 (~1.0% YoY decline from 2020). Mobile CIS, the largest segment, experienced -6.6% YoY rev. growth, amid weak mobile CIS growth, prolonged supply chain/logistic constraints, tough macro environment, etc. Security/auto CIS sales increased by 32.5%/14.1% YoY, respectively, driven by solid demand for security camera and ADAS/auto electrification.

**Figure 1: CIS revenue of US\$ 20.5bn, nearly flat in 2021**



Source: Yole, CMBIGM estimates

**Figure 2: CIS revenue breakdown (2020)**



Source: Yole, CMBIGM estimates

**We are cautiously optimistic on the CIS sector** as security/auto CIS segments are expected to maintain healthy growth and applications in AR/VR are gaining momentum. Constraints in the supply chain are likely to ease gradually.

**Looking forward, CIS market is still expected to grow at 8% YoY in 2022**, suggesting a recovery from two-year pandemic disruption as global re-open (ex. China), gradually easing semi shortage, strong security and auto CIS demand, etc.

Sony/Samsung/Willsemi are the top three CIS players in terms of 2020 revenue, with 40%/22%/12% market share. Among CIS players, we recommend investors to be selective and focus on names with diversified market exposure (especially to non-mobile) or share gain. **Top picks include Willsemi (603501 CH) and GalaxyCore (688728 CH).**

## Mobile CIS

**Mobile CIS’s revenue was US\$13.1bn, declined by 6.6% YoY.** Although the segment remains the largest, we expect mobile CIS’s market share will keep shrinking in 2022 (64%/69% of CIS rev. in 2021/19) amid tepid growth in mobile segment vs. stronger growth in non-mobile CIS.

**Mobile CIS is currently under pressure.** Android OEMs are facing several challenges: 1) Apple’s sales momentum remains strong; 2) lukewarm response from consumers to newly released Android flagship models; 3) higher than average inventory built in past months; and 4) slowdown consumption amid partial lockdown led by resurgent COVID cases.

**Looking forward, we expect mobile CIS to maintain mid-single-digit growth in 2022,** as average CIS content per smartphone will continue growing. **As domestic mobile CIS players are Android suppliers, we recommend to be selective** and focus on names with potential share gain and favorable product mix, such as Willsemi and GalaxyCore.

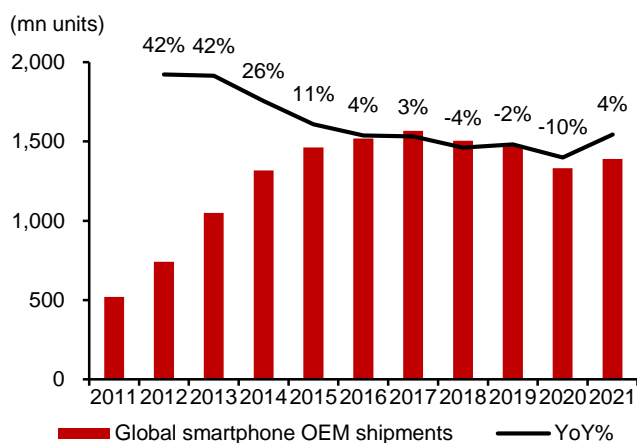
### ■ Slow recovery of global smartphone shipment

Global smartphone shipment grew 4.5% YoY in 2021, turning positive for the 1st time since 2017, as a result of low base in 2020. However, **full year shipment was still below pre-pandemic level (1.49bn in 2019)**, according to Counterpoint.

Turning to quarterly data, **we saw weaker seasonality since 2020 due to pandemic.** Usually, second half of the year was peak seasons for smartphone sales. However, 3Q21 shipment showed -6% decline, mainly a result of component shortages.

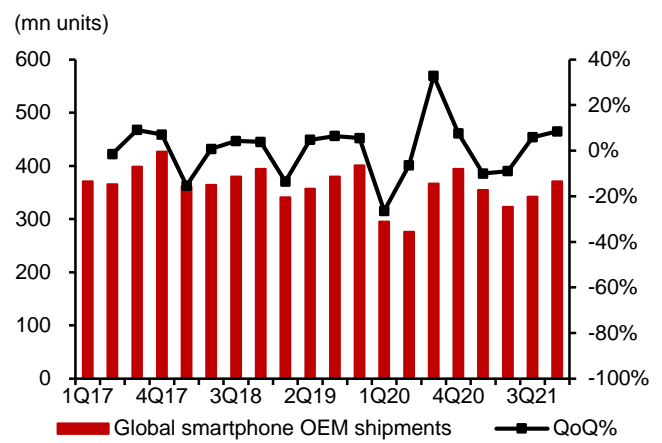
We think global smartphone shipment is expected to grow at low-single digit in 2022. IDC forecasted 3.0% for 2022 and 3.5% five-year CAGR for 2023 and beyond as component shortage and logistical issues ease. 5G model penetration will continue with improved infrastructure, increasing demand and lower ASP.

**Figure 3: Global smartphone OEM shipment grew 4.5% YoY in 2021 given low base in 2020**



Source: Counterpoint, CMBIGM estimates

**Figure 4: Weaker seasonality due to pandemic impact**

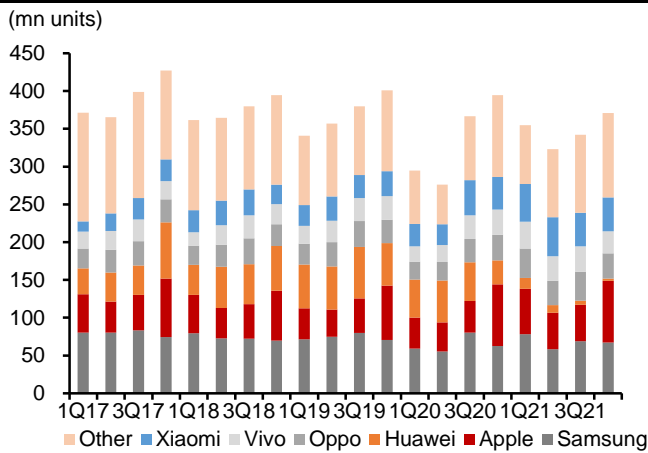


Source: Counterpoint, CMBIGM estimates

■ **Android OEMs are facing several challenges as Apple’s sales momentum remains strong**

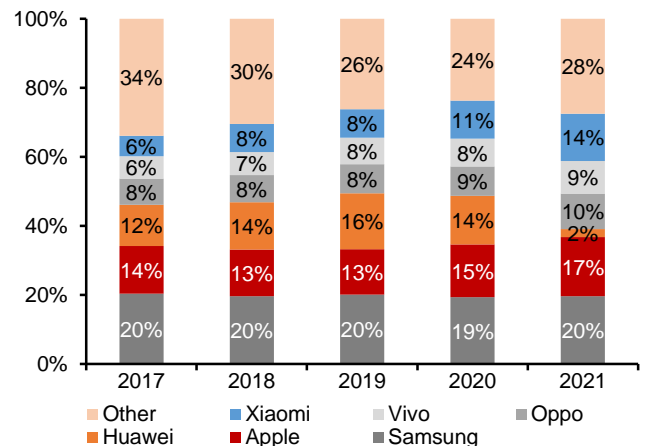
**Apple became No.1 in 4Q21 in terms of shipment.** The company’s shipment jumped to 22% in 4Q21 vs. 14% in 3Q21 and 21% in 4Q20. The market previously expected Android OEMs to take Huawei’s share. However, it seems that Apple has taken some of Huawei’s share with its recent release of 13 series. **Strong performance of Apple’s iPhone has kept the sluggish sentiment for Android supply chain lately.**

**Figure 5: Apple retook the top spot in global smartphone shipment in 4Q21**



Source: Counterpoint, CMBIGM estimates  
Note: Huawei includes HONOR in all quarters except 2021 reflecting the separation of the two brands.

**Figure 6: Apple, Samsung and Chinese OEMs enjoy share gain as Huawei’s share shrinks**

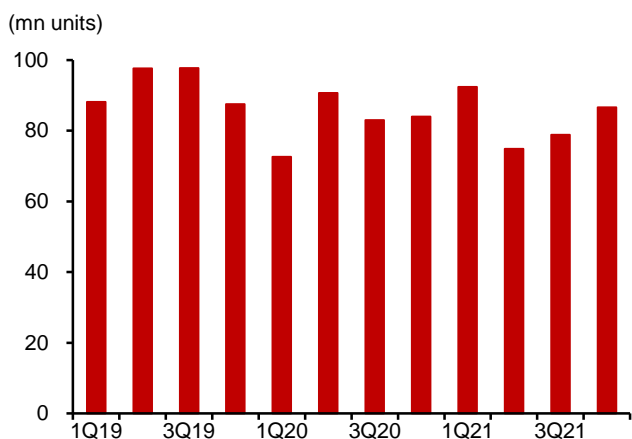


Source: Counterpoint, CMBIGM estimates  
Note: Huawei includes HONOR in all quarters except 2021 reflecting the separation of the two brands.

■ **China’s smartphone market: a rollercoaster year in 2021**

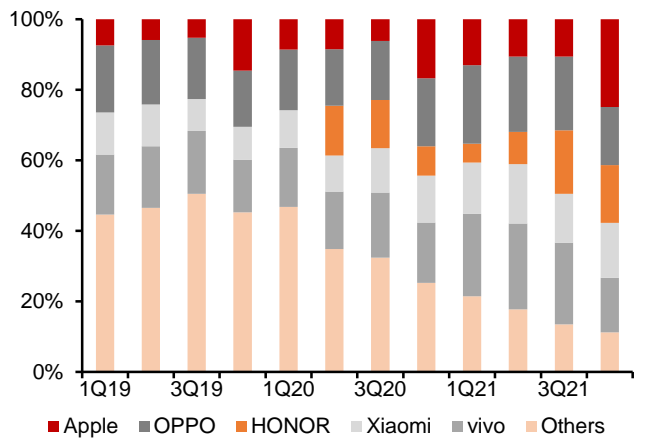
According to Canalys, total number of China smartphone shipment reached 332.7mn in 2021, that was slightly higher than 2020 (330.3mn) but still below 2019 level (370.9mn).

**Figure 7: A rollercoaster year: China mobile market grew weaker in 2Q21 but ticked up in 4Q21**



Source: Canalys, CMBIGM estimates

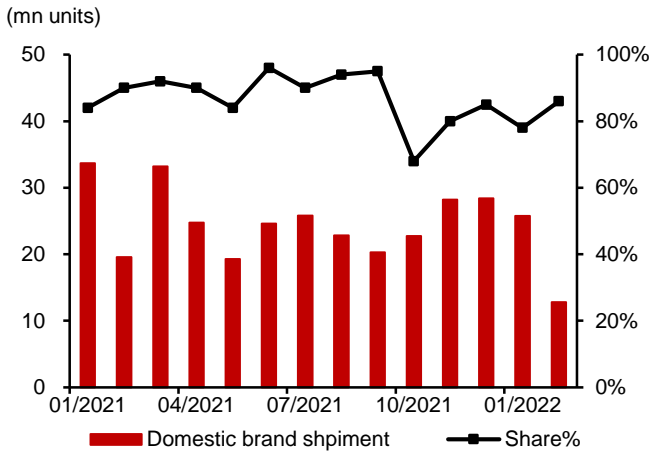
**Figure 8: Apple became No.1 smartphone brand in China for the first time since 4Q15**



Source: Canalys, CMBIGM estimates

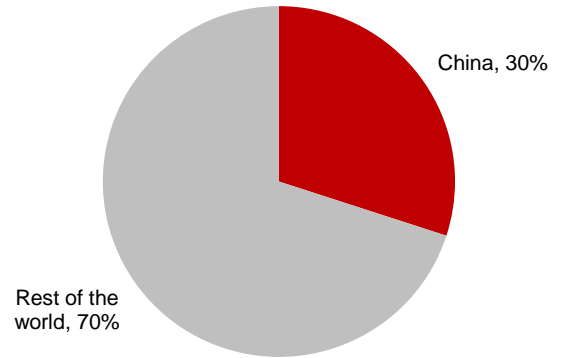
Apple dominated high-end market in China as competition became less intensive. At the same time, Apple adopted favorable pricing strategy by upgrading its entry and medium smartphones while keeping prices largely unchanged. This strategy worked well in attracting mid/high-end consumers and put significant pressures on Android OEMs. In order to compete with Apple, several domestic brands tried to gain share in high-end model market by launching foldable phones, continuous upgrade phone specs. However, the results were underwhelming as we observed.

**Figure 9: Domestic smartphone market remains weak**



Source: MIIT, CMBIGM estimates

**Figure 10: China is expected to remain as largest global high-end market (ASP >US\$500) in 2022**

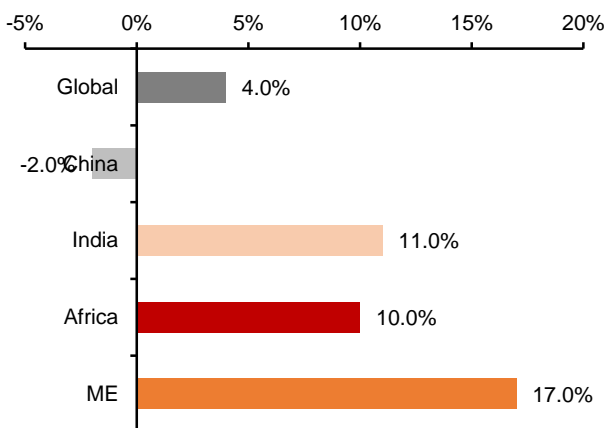


Source: Counterpoint, CMBIGM estimates

■ **MEA: one of the few regions enjoyed growth as digital adoption accelerated**

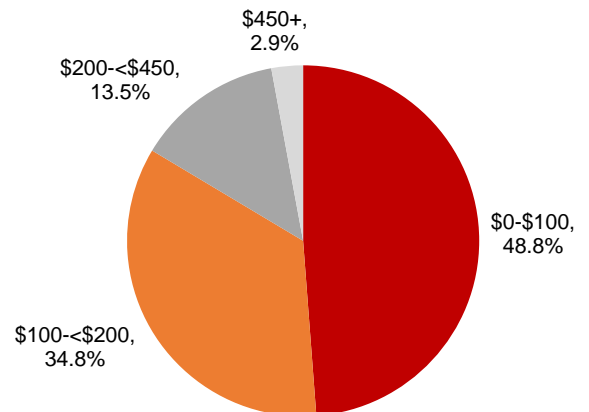
Middle East and Africa are one of the few regions that still enjoy smartphone shipment growth as mobile/internet penetration continues. These markets have large potentials given the majority of shipment were within \$0-\$100 price range, e.g., Africa. The market is experiencing major transition from budget phones to smartphones.

**Figure 11: MEA: one of the few regions that enjoyed growth as mobile penetration accelerates**



Source: Counterpoint, CMBIGM estimates

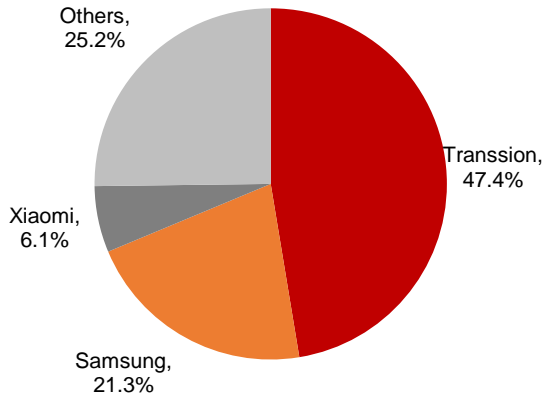
**Figure 12: Africa smartphone shipment by price ranges: ~49% shipment in budget phones in 3Q21**



Source: IDC, CMBIGM estimates

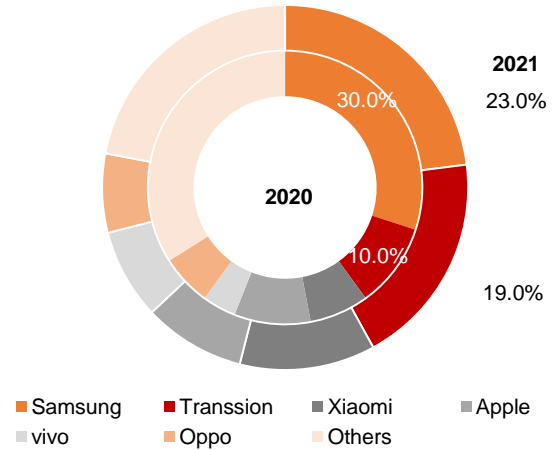
**Transsion (688036 CH, NR)** has been the leader in Africa market in recent years. According to IDC, the company accounted for 47% of market share in Africa, followed by Samsung (21%) and Xiaomi (6%). Although other OEMs also have been operating in Africa for many years, **Transsion managed to keep its dominant position with a few well-recognized brands (e.g., TECNO, itel and Infinix).**

**Figure 13: Transsion accounted for 47% of market share in Africa, maintaining No.1 position (2021)**



Source: IDC, CMBIGM estimates

**Figure 14: Transsion's market share grew to 19% in ME market in 2021 (vs. 10% in 2020)**



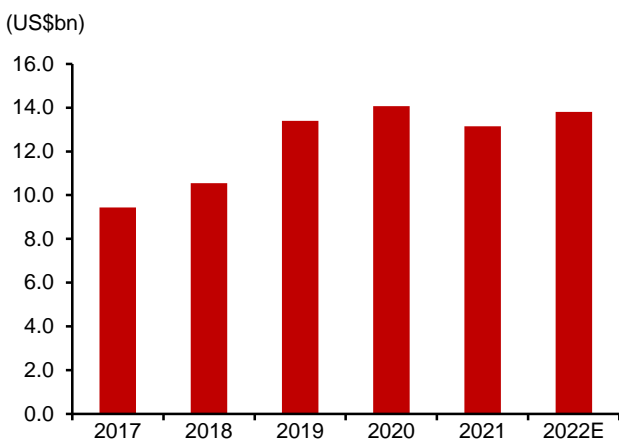
Source: Counterpoint, CMBIGM estimates

**GalaxyCore is a major CIS supplier for Transsion.** We believe the shipment growth and smartphone upgrade cycle in MEA will provide solid support to the CIS demand.

■ **Mobile CIS to maintain mid-single-digit growth in 2022**

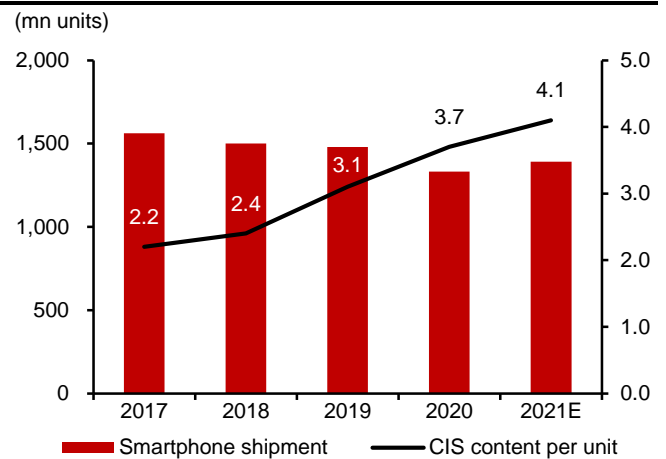
As smartphone shipment slowly recovered in 2021, we also saw the average number of cameras installed per smartphone slowed down in 2021. As OEMs are settling with triple/quad camera settings, average CIS content per smartphone is expected to continue growing. We expect **mobile CIS to maintain mid-single-digit growth in 2022.**

**Figure 15: Mobile CIS is expected to grow mid-single-digit YoY in 2022**



Source: Counterpoint, CMBIGM estimates

**Figure 16: Average CIS content per smartphone is expected to grow 11% in 2021**



Source: Counterpoint, CMBIGM estimates

Android OEMs are expected to lead the upgrade, offering cameras with higher resolution. In addition, although Apple maintain the 12M camera setup for 13 series, we believe the upgrade is likely to come with next generation. This will push Android OEMs to further upgrade the image sensor and compete with Apple in premium smartphone market.

**Although the domestic mobile CIS players are Android suppliers, we think top players, such as Willsemi (603501 CH) and GalaxyCore (688728 CH), will deliver good growth in mobile CIS business by gaining share and favorable product mix.**

**Willsemi (603501 CH):** We expect the company will have share gain in certain price bands (RMB1k-2k/RMB3k+) in smartphone market with new products released at the beginning of the year (50MP/100MP/200MP products). This January, Willsemi has announced the first 200MP CIS (0.61-micron pixel size) for high-end smartphones. Later on 19 Feb 2022, the company has announced another significant development of world's smallest 0.56-micron pixel size CIS, which leads the pixel shrink race.

**GalaxyCore (688728 CH):** FY21 sales was largely affected by component shortage and weak consumer demand, as ~75% of the company's revenue was from mobile CIS. Due to capacity constraints, GalaxyCore has reduced its 8MP production to satisfy the clients demand for 2MP/5MP products (current market share is est. to be 70%). Looking forward, we believe such headwind will partially ease as the domestic production of 8MP to gradually pick up. Meanwhile, Transsion (688036 CH, NR) has 47% of market share in Africa, where is expected to be one of the few regions to enjoy growth as mobile penetration accelerates. In addition, the company is currently transiting from fabless to fab-lite and expected to ramp up production of higher resolution CIS in the near future.



## Auto CIS

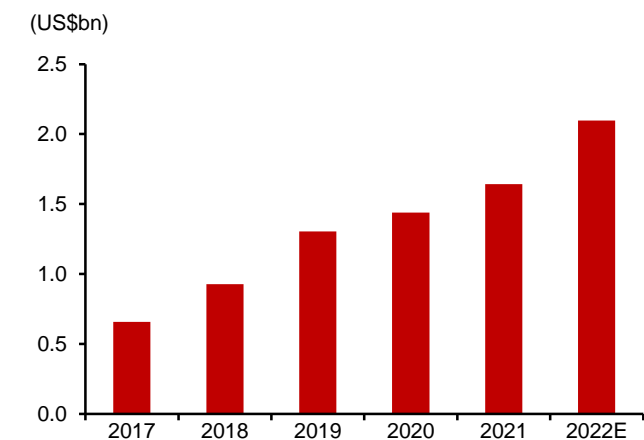
In 2021, auto CIS reached US\$1.6bn, 14% YoY. The lower-than-expected growth was mainly caused by component shortage. Camera modules sold for automotive was US\$4.6bn and 210mn units. According to IHS, global light vehicle production was 75.5mn, suggesting an average of 2.78 cameras per car and ~35% camera cost comes from CIS. Currently, there is 1-10 chips per car in 60% of the cars. Technology nodes are from 90nm to 28nm, approx. US\$10 per chip according to Yole.

In 2022, we think the **chip shortage is likely to continue** to impact on auto CIS, given the capacity for mature nodes will still be tight. But the situation is expected to gradually ease.

In the long-term, we expect auto CIS to experience continuous strong growth. This is driven by increasing number of cameras per car as: 1) the transition from ordinary vehicles to electrified intelligent vehicles will require installation of a large number of cameras; 2) Advanced Driver Assistance Systems (“ADAS”) toward Autonomous Driving (“AD”) demand. Prototypes presented nowadays are typically installed with 10+ cameras.

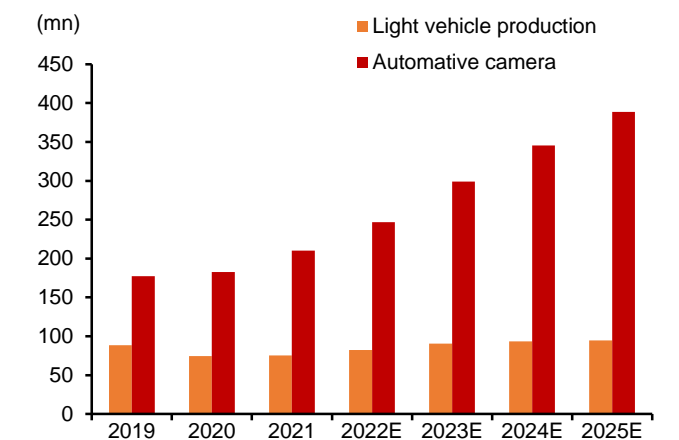
It is expected that the average number of camera per car will grow at 10% 2021-27E CAGR. In 2020, there were 1,300mn light vehicles in operations, with a 12.3% ADAS penetration rate. This ratio is expected to reach 49% in 2030 according to Yole’s estimate. For auto CIS suppliers, we expect **Onsemi, Willsemi** and **Sony** to lead the auto CIS market share in the future.

**Figure 17: Revenue of auto CIS is expected to grow 23.5% YoY**

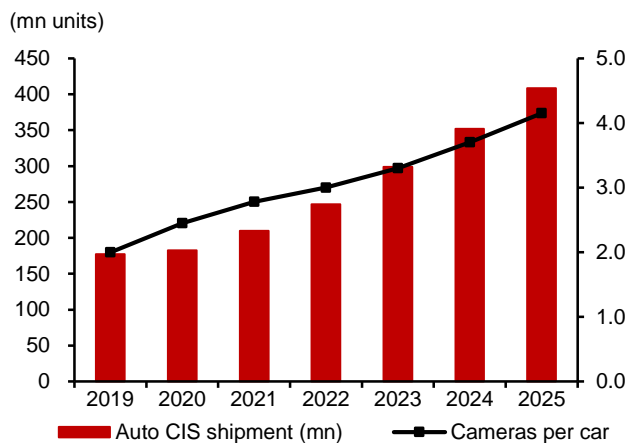


Source: Yole, CMBIGM estimates

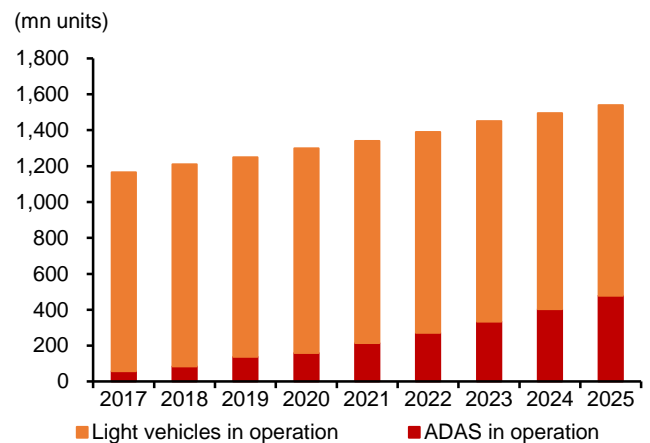
**Figure 8: Global light vehicle production vs. automotive CIS & camera module volume forecasts**



Source: Yole, HIS, CMBIGM estimates

**Figure 19: Average number of camera per car is estimated to grow at 10% 2021-27E CAGR**


Source: Yole, HIS, CMBIGM estimates

**Figure 10: ADAD penetration rate is expected to accelerate**


Source: Yole, CMBIGM estimates

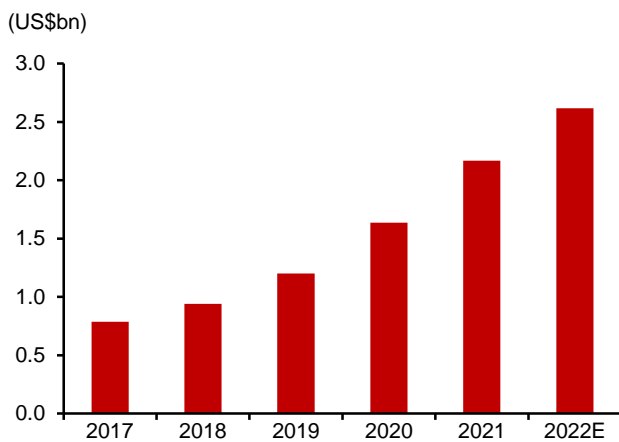
Among these players, we like how Willsemi is positioned. According to Digitimes, “since the company’s first car-use CIS hit the market in 2005, OmniVision (Willsemi) has sold over 800mn automotive CIS chips, ranking as the world’s No.2 supplier of such chips”. Willsemi’s current auto CIS clients include Mercedes-Benz, BMW, Volkswagen, Toyota, Tesla and China’s Changan Auto, Great Wall Motor, BYD Auto, and Geely Automobile. In 2021, Willsemi’s auto CIS sales reached RMB2.3bn, with 85% YoY growth. **Looking forward, we believe Willsemi (603501 CH) will outperform its peers as some competitors are currently facing supply chain bottleneck or waiting for long verification time to satisfy automotive grade requirement .**

## Security CIS

**Security CIS is the second largest segment with a total revenue of US\$2.2bn in 2021.** We've observed rapid growth (27.6%/36.2%/32.5% YoY growth rate from 2019 to 2021) in this segment in recent years. The key drivers include demands for touchless access control solutions, remote monitoring (e.g. healthcare), surveillance, etc.

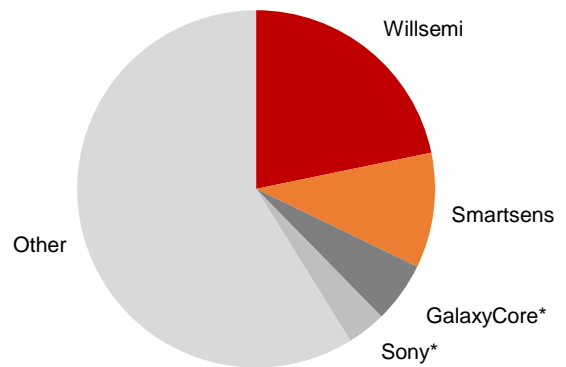
Security CIS is one of the few markets that benefited from COVID situation. The demand for health monitoring and surveillance are expected to continue growing as the world reopens. In addition, we will continue to see upgrade of security camera (i.e., resolution and integrated new features). Currently, 2MP/5MP accounted for 90% of market share. Therefore, security CIS will be another growth driver for CIS in the upcoming years. **We expect the segment revenue to grow 10.5% 2021-26E CAGR.**

**Figure 11: The revenue growth of security CIS was strong and stable**



Source: Yole, CMBIGM estimates

**Figure 22: Estimated market share of security CIS suppliers**



Source: Company filings, Yole, CMBIGM estimates

\*Sony: LTM revenue as of Sep. 30, 2021

GalaxyCore' revenue include CIS sales from security and AIoT.

A few Chinese players are well positioned to enjoy the growth. According to Yole, **Willsemi** (603501 CH) is **“confirmed as the most important sensor supplier for security, followed by Smartsens and GalaxyCore** (688728 CH)”. Willsemi's security CIS sales grew 70% YoY in 2021.

For downstream security camera suppliers, **Hikvision and Dahua were leading in the securities market, representing a combined market share of 53%**. From 2018 to 2021, security camera market grew from US\$19.9bn to US\$32.3bn, 18% CAGR, while Hikvision and Dahua's shares remain stable.

**We hold optimistic view on domestic security CIS business growth.** We believe Chinese ecosystem including upstream CIS players and downstream camera suppliers will drive market growth. Considering continuous security camera upgrade and growing health monitoring/surveillance demand (such as autonomous checkout and anti-lifting). Among the players, we are particularly positive on Willsemi given its leading position and the ability to monetize both its CIS and ISP solution for cameras.

### Consumer CIS

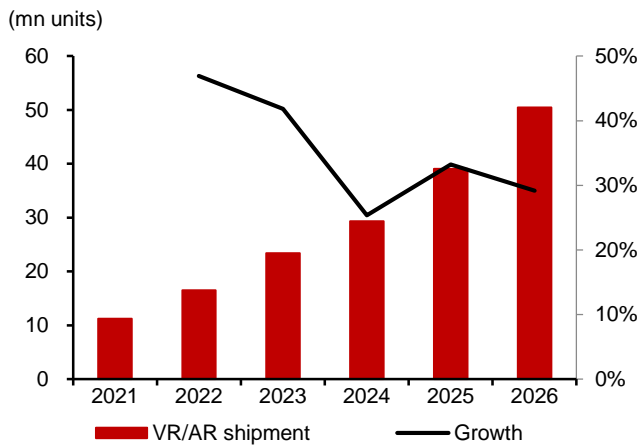
The demand for low-to-mid-end consumer electronics has slowed down amid softening demand, tough macro situations, geopolitical issue, etc. However, demand for high-end products, such as VR/AR, is expected to remain strong.

**Global VR/AR shipment was 11.2mn units, growing at 92.1% YoY**, according to IDC. 4Q21 contributed ~50% of full year shipment, driving by strong consumer demand for high-end consumer electronics during holiday season.

VR/AR is the trending investment theme lately. As enormous capital keep being deployed to improve the hardware, content, and ecosystem, CIS players are well poised to enjoy fast growth in this category. IDC projected 2022 total shipment to reach 16.5mn, representing 46.9 YoY growth. In long-term, the number will surpass 50mn units by 2026, with 35.1% 2021-26E CAGR.

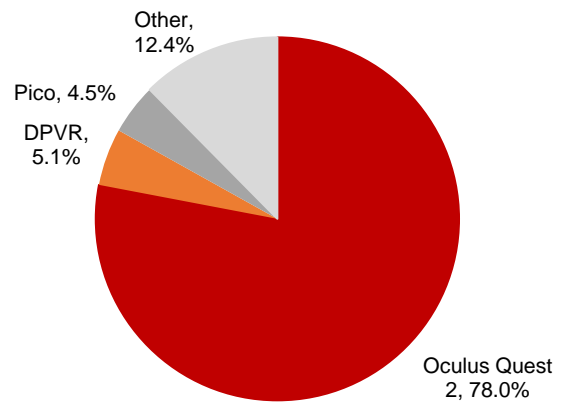
**Among CIS peers, we particularly opportunistic about Willsemi (603501 CH).** The company is a major CIS supplier for Oculus Quest 2, which is the most popular VR headset by far, with a 78% market share.

**Figure 23: Global VR/AR headset to maintain strong growth**



Source: IDC, CMBIGM estimates

**Figure 24: Oculus is the most popular VR headset, taking 78% market share**



Source: IDC, CMBIGM estimates

# Willsemi (603501 CH)

## Take a toll on Mobile CIS due to China's Covid-19 lockdowns; Non-mobile CIS remains strong

As we are moving into 2Q22, we would like to update our view on CIS sector and Willsemi's outlook, based on latest COVID-19 resurgence in China. We think the Company's operation will stay largely intact; however, China's zero-COVID policy will hurt consumer demand. Especially on the low-to-mid end consumer electronics, we believe domestic demand is likely to delay, if not disappearing. Although non-mobile CIS is expected to be the key driver going forward and offset some weakness from mobile CIS, we think the impact of recent partial lockdown on economics is bigger than our prev. estimation. Therefore, we trim our FY22/23E forecasts and lower target P/E multiple to 45x from 50x. **TP revised to RMB292. Maintain BUY.**

- Mixed impact on mobile CIS sales as a result of share gain and weak consumer demand.** In 2022, we expect mobile CIS to maintain mid-single-digit growth, slightly higher than global smartphone shipment growth. We believe Willsemi still have share gain potentials, which could partially offset the headwinds. The Company has announced new products at the beginning of the year (50MP/100MP/200MP products) targeting certain price bands (RMB1k-2k/RMB3k+).
- Non-mobile CIS remains strong.** We expect auto/security CIS to grow 23.5%/20.8% YoY in 2022. We are confident that Willsemi will outperform its peers, given its leading position, technology advancement, etc. The Company is currently ranked No.2 in auto CIS, with a broad client coverage. In 2021, Willsemi's auto CIS grew 85% YoY. The Company has competition advantages since some competitors were facing supply chain bottleneck or waiting for long verification time. Willsemi is also the most important sensor supplier for security, according to Yole. The Company security CIS sales grew 70% YoY. Meanwhile, Willsemi is one of major VR/AR CIS supplier, ready to ride the tailwind of market booming.
- Reiterate BUY with revised TP at RMB292.0 based on 45x FY22E P/E.** We trim our FY22/23E forecasts and lower target P/E multiple, considering the impact of recent partial lockdown on economics is bigger than our prev. estimation. Potential downside risks include: 1) worse-than-expected global economy that curbs consumer spending (i.e. continuous weaker Android smartphone sales) and 2) unfilled demand caused by semi shortage.

### Earnings Summary

(YE 31 Dec)	FY19A	FY20A	FY21E	FY22E	FY23E
Revenue (RMB mn)	13,632	19,824	23,989	29,899	35,485
YoY growth (%)	-	45.4%	21.0%	24.6%	18.7%
Gross profit margin %	27.4%	29.9%	34.1%	34.5%	34.4%
Net profit (RMB mn)	466	2,706	4,686	5,781	6,915
Net profit margin %	3.4%	13.7%	19.5%	19.3%	19.5%
EPS (RMB)	0.76	3.21	5.26	6.48	7.76
YoY growth (%)	-	322.4%	63.7%	23.4%	19.6%
Consensus EPS (RMB)	-	3.21	5.34	6.77	8.62
P/E (x)	254.5	60.2	36.8	29.8	24.9
ROE (%)	5.9%	23.5%	29.2%	24.8%	22.0%
Net gearing (%)	23.5%	6.7%	net cash	net cash	net cash

Source: Company data, Bloomberg, CMBIGM estimates

**BUY (Maintain)**

Target Price	RMB292.00
(Previous TP)	RMB333.00)
Up/Downside	+51%
Current Price	RMB193.40

### China Technology Sector

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### Stock Data

Mkt Cap (RMBmn)	169,365
Avg 3 mths t/o (RMBmn)	1,637
52w High/Low (RMB)	345/189
Total Issued Shares (mn)	875.7

Source: Bloomberg

### Shareholding Structure

Yu Renrong	30.32%
SX Weihao Equity Invest. FD	9.23%
HKSCC	6.55%

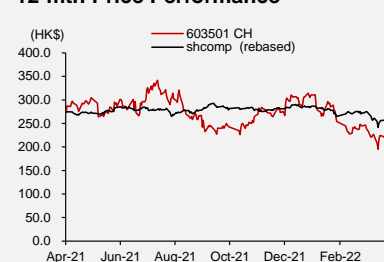
Source: Company data

### Share Performance

	Absolute	Relative
1-mth	-21.3%	-16.2%
3-mth	-37.8%	-30.4%
6-mth	-20.3%	-12.5%

Source: Bloomberg

### 12-mth Price Performance



Source: Bloomberg

Auditor: BDO

### Related Reports

- FY21 revenue in line; Growth story stays intact – 10 Mar 2022 ([Link](#))
- Solid 4Q; Well poised to embrace 2022. Reiterate BUY – 28 Jan 2022

Figure 12: Earnings revision

US\$ mn	New			Old			Diff (%)		
	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E
Revenue	23,989	29,899	35,485	24,039	31,208	37,762	0%	-4%	-6%
Gross Profit	8,176	10,315	12,224	8,146	10,637	12,850	0%	-3%	-5%
Operating Profit	5,171	6,322	7,579	5,134	6,494	7,940	1%	-3%	-5%
Net profit	4,686	5,781	6,915	4,652	5,938	7,244	1%	-3%	-5%
EPS (US\$ cents)	5.256	6.483	7.756	5.218	6.660	8.125	1%	-3%	-5%
Gross Margin	34.1%	34.5%	34.4%	33.9%	34.1%	34.0%	0.2 ppt	0.4 ppt	0.4 ppt
Operating Margin	21.6%	21.1%	21.4%	21.4%	20.8%	21.0%	0.2 ppt	0.3 ppt	0.3 ppt
Net Margin	19.5%	19.3%	19.5%	19.4%	19.0%	19.2%	0.2 ppt	0.3 ppt	0.3 ppt

Source: Company data, CMBIGM estimates

Figure 13: CMBIGM estimates vs consensus

US\$ mn	CMBIGM			Consensus			Diff (%)		
	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E
Revenue	23,989	29,899	35,485	25,623	32,726	40,356	-6%	-9%	-12%
Gross Profit	8,176	10,315	12,224	8,680	11,032	13,650	-6%	-7%	-10%
Operating Profit	5,171	6,322	7,579	5,158	6,632	8,428	0%	-5%	-10%
Net profit	4,686	5,781	6,915	4,650	5,861	7,508	1%	-1%	-8%
EPS (US\$ cents)	5.256	6.483	7.756	5.340	6.774	8.621	-2%	-4%	-10%
Gross Margin	34.1%	34.5%	34.4%	33.9%	33.7%	33.8%	0.2 ppt	0.8 ppt	0.6 ppt
Operating Margin	21.6%	21.1%	21.4%	20.1%	20.3%	20.9%	1.4 ppt	0.9 ppt	0.5 ppt
Net Margin	19.5%	19.3%	19.5%	18.1%	17.9%	18.6%	1.4 ppt	1.4 ppt	0.9 ppt

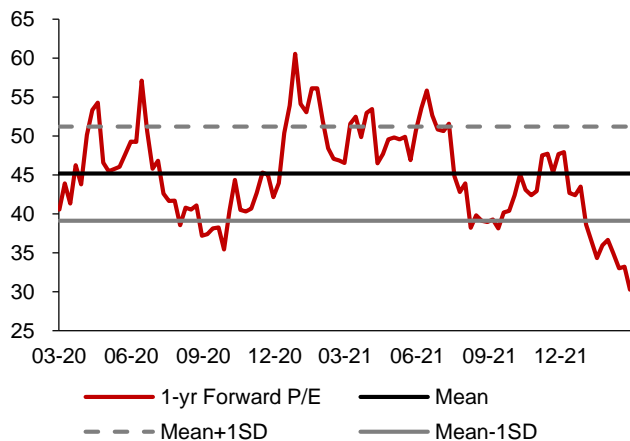
Source: Company data, CMBIGM estimates

Figure 14: Peers' valuation

Company	Ticker	Rating	12m TP (LC)	Price (LC)	Upside/Downside	Mkt. Cap (US\$ mn)	P/E (x)		ROE (%)	
							FY19E	FY20E	FY19E	FY20E
<b>Global peers</b>										
Willsemi	603501 CH	BUY	292.00	193.40	51%	26,714	34.2	26.2	26.0	24.4
Sony	SONY US	NR	NA	103.86	NA	130,976	17.9	17.2	14.2	16.3
Samsung	005930 KS	NR	NA	69600.00	NA	342,164	9.9	8.7	14.5	14.7
STM	STM FP	NR	NA	39.59	NA	39,978	14.0	13.3	27.4	22.5
ON Semi	ON US	NR	NA	64.48	NA	27,885	15.5	14.4	33.5	27.6
<b>Average</b>							<b>18.3</b>	<b>16.0</b>	<b>23.1</b>	<b>21.1</b>
<b>Domestic peers</b>										
Willsemi	603501 CH	BUY	292.00	193.40	51%	26,714	34.2	26.2	26.0	24.4
GalaxyCore	688728 CH	BUY	28.50	21.06	35%	8,301	29.6	24.1	21.5	20.9
Gigadevice	603986 CH	NR	NA	141.03	NA	14,847	33.1	26.3	19.5	20.1
Maxscend	300782 CH	NR	NA	209.92	NA	11,045	26.0	20.1	35.4	32.5
Goodix	603160 CH	NR	NA	70.90	NA	5,128	27.7	21.2	12.6	14.4
SG Miceo	300661 CH	NR	NA	326.52	NA	12,155	84.8	61.5	33.1	32.6
<b>Average</b>							<b>39.2</b>	<b>29.9</b>	<b>24.7</b>	<b>24.1</b>

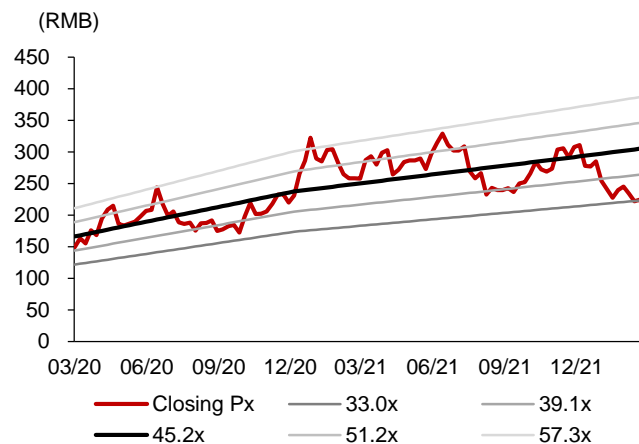
Source: Bloomberg, CMBIGM estimates

**Figure 15: 12M forward P/E chart**



Source: Company data, CMBIGM estimates

**Figure 16: 12M forward P/E band**



Source: Company data, CMBIGM estimates

## Financial Summary

### Income statement

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Revenue</b>	<b>13,632</b>	<b>19,824</b>	<b>23,989</b>	<b>29,899</b>	<b>35,485</b>
COGS	-9,898	-13,894	-15,813	-19,584	-23,261
<b>Gross Profit</b>	<b>3,734</b>	<b>5,930</b>	<b>8,176</b>	<b>10,315</b>	<b>12,224</b>
SG&A	-1,132	-1,147	-1,139	-1,286	-1,526
R&D exp.	-1,282	-1,727	-1,967	-2,392	-2,839
Financing exp.	-274	-275	-290	-310	-246
Other opex	-260	176	391	-5	-34
<b>Operating profit</b>	<b>785</b>	<b>2,956</b>	<b>5,171</b>	<b>6,322</b>	<b>7,579</b>
Non-operating income	6	44	1	34	21
Non-operating exp.	-6	-9	-4	-9	-8
<b>Pre-tax profit</b>	<b>784</b>	<b>2,991</b>	<b>5,169</b>	<b>6,347</b>	<b>7,592</b>
Income tax expenses	-79	-308	-436	-508	-607
<b>Net profit</b>	<b>705</b>	<b>2,683</b>	<b>4,733</b>	<b>5,839</b>	<b>6,985</b>
Non-controlling interests	240	-23	47	58	70
<b>Net profit to shareholders</b>	<b>466</b>	<b>2,706</b>	<b>4,686</b>	<b>5,781</b>	<b>6,915</b>

### Cash flow summary

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Pretax profit</b>	<b>705</b>	<b>2,683</b>	<b>4,733</b>	<b>5,839</b>	<b>6,985</b>
D&A	578	765	851	937	1,129
Change in working capital	-1,037	-221	-1,821	-730	-1,812
Others	560	117	7	482	520
<b>Net cash from operating</b>	<b>805</b>	<b>3,345</b>	<b>3,769</b>	<b>6,528</b>	<b>6,822</b>
Capex	-743	-1,133	-1,011	-1,399	-1,676
Purchase/sale of	-93	-373	-59	0	0
Purchase/sale of subs	-805	-1,163	-607	42	42
Other	-87	38	527	178	150
<b>Net cash from investing</b>	<b>-1,728</b>	<b>-2,631</b>	<b>-1,150</b>	<b>-1,179</b>	<b>-1,484</b>
Change in shares	380	683	-97	2,153	1,725
Change in debt	1,017	1,567	3,413	891	-946
Dividend/interests paid	-319	-413	-645	-927	-1,036
Other	41	-3	320	-164	63
<b>Net cash from financing</b>	<b>1,120</b>	<b>1,835</b>	<b>2,991</b>	<b>1,953</b>	<b>-194</b>
<b>Net change in cash</b>	<b>198</b>	<b>2,548</b>	<b>5,611</b>	<b>7,301</b>	<b>5,144</b>
Cash, beginning	2,921	3,116	5,423	10,973	18,213
Exchange difference	-2	-241	-61	-61	-61
<b>Cash, end</b>	<b>3,116</b>	<b>5,423</b>	<b>10,973</b>	<b>18,213</b>	<b>23,296</b>

### Balance sheet

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Current assets</b>	<b>10,881</b>	<b>13,913</b>	<b>21,324</b>	<b>30,872</b>	<b>38,363</b>
Cash & equivalents	3,161	5,456	10,989	18,230	23,313
Trade & other receivables	2,577	2,583	3,058	3,816	4,461
Inventories	4,366	5,274	6,573	7,840	9,477
Other current assets	777	600	704	985	1,112
<b>Non-current assets</b>	<b>6,596</b>	<b>8,735</b>	<b>9,943</b>	<b>10,466</b>	<b>11,365</b>
PPE	1,588	1,871	1,769	1,944	2,226
Intangibles	1,334	1,509	1,690	1,412	1,138
Goodwill	2,249	2,800	3,005	2,964	2,922
Other non-current assets	1,425	2,556	3,479	4,146	5,079
<b>Total assets</b>	<b>17,476</b>	<b>22,648</b>	<b>31,267</b>	<b>41,338</b>	<b>49,728</b>
<b>Current liabilities</b>	<b>7,606</b>	<b>6,845</b>	<b>8,452</b>	<b>10,602</b>	<b>9,821</b>
ST debt & LT debt to	4,101	3,041	4,218	5,041	3,400
Trade & other payables	3,027	2,544	3,348	3,842	4,698
Other current liabilities	478	1,260	887	1,719	1,723
<b>Non-current liabilities</b>	<b>1,915</b>	<b>4,278</b>	<b>6,781</b>	<b>7,386</b>	<b>8,409</b>
LT debt	928	3,182	3,193	3,484	4,180
Bonds payables	0	0	2,225	2,000	2,000
Other non-current liabilities	987	1,096	1,364	1,902	2,228
<b>Total liabilities</b>	<b>9,521</b>	<b>11,123</b>	<b>15,234</b>	<b>17,989</b>	<b>18,229</b>
<b>Total equity</b>	<b>7,955</b>	<b>11,525</b>	<b>16,033</b>	<b>23,349</b>	<b>31,499</b>
Share capital	864	868	892	892	892
Reserves	6,650	7,248	11,911	12,094	12,277
Treasury stock	-649.3	-255.4	-5,040.4	-3,070.3	-1,527.5
Retained earnings	1,002	3,895	7,839	12,569	18,208
Other equities	60.3	-516.2	97.8	472.5	1,187.4
Minority interests	29	286	334	392	462
<b>Total liabilities and equity</b>	<b>17,476</b>	<b>22,648</b>	<b>31,267</b>	<b>41,338</b>	<b>49,728</b>

### Key ratios

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Revenue by segment</b>					
CMOS	9,779	14,697	16,341	19,893	23,337
TDDI	0	744	1,942	2,980	3,621
Others	3,853	4,383	5,706	7,026	8,528
<b>Total</b>	<b>13,632</b>	<b>19,824</b>	<b>23,989</b>	<b>29,899</b>	<b>35,485</b>
CMOS %	71.7%	74.1%	68.1%	66.5%	65.8%
<b>Growth (%)</b>					
Revenue	40.5%	45.4%	21.0%	24.6%	18.7%
Adj. EBITDA	92.4%	173.1%	61.8%	20.5%	20.0%
Net profit	221.1%	481.2%	73.2%	23.4%	19.6%
<b>Profit &amp; loss ratio (%)</b>					
Gross margin	27.4%	29.9%	34.1%	34.5%	34.4%
EBITDA margin	10.0%	18.8%	25.1%	24.3%	24.5%
Net profit margin	3.4%	13.7%	19.5%	19.3%	19.5%
<b>Balance sheet ratio</b>					
Net debt/total equity (%)	23.5%	6.7%	net	net	net
Debt/EBITDA	3.7	1.7	1.6	1.5	1.1
Interest coverage	4.8	12.5	16.2	16.0	19.3
Cash conversion cycle (days)	130.9	123.1	133.5	128.0	128.5
<b>Profitability (%)</b>					
ROE	5.9%	23.5%	29.2%	24.8%	22.0%
ROA	2.7%	11.9%	15.0%	14.0%	13.9%
<b>Per share data (RMB)</b>					
EPS	0.76	3.21	5.26	6.48	7.76
BVPS	12.94	13.33	17.61	25.75	34.81

Source: Company data, CMBIGM estimates



# GalaxyCore (688728 CH)

## Hitting on all cylinders to move into 16mn & 32mn markets

We believe GalaxyCore remains as a “show-me” story while the company tries to expand into mid-to-high end CIS segments. The company currently has a dominant position in low-end mobile CIS market (2MP-5MP) and is expected to ramp up production in 16MP/32MP CIS and above. Meanwhile, the Company is transiting into fab-lite model, strengthening its high-end CIS’s research and production. We remain positive on GalaxyCore, but trim the target P/E multiple to 40x from 47x, due to stronger-than-expected impact on economics from the recent partial lockdown. **TP revised to RMB28.5. Maintain BUY.**

- Mid-to-high end CIS to ramp up production.** GalaxyCore’s 2MP-8MP CIS products are widely-used in Android smartphone models. The Company’s low-end mobile CIS shipment ranked No.1 globally, confirming its dominating market share in 2MP/5MP CIS products. In 2021, the demand for 2MP/5MP CIS was strong due to chip shortage and Android’s BOM pressure. The unfavorable product mix limited revenue growth for FY21. Looking forward, such headwind is expected to ease as the domestic production of 8MP will gradually pick up. In addition, its 16MP CIS has passed the clients’ validation test and is expected to win orders in 2H22. 32MP and above sensors may reach mass production in 2023. We think its product mix will turn favorable in 2022/23E, which could drive revenue growth and improve profitability.
- Positive outlook for its high-end CIS competitiveness as the company is transforming from fables to fab-lite.** Senior mgmt. (CEO, COO, etc.) are experienced in fab operations. Given this strength, we are positive on its high-end CIS competitiveness once the new production line begins mass production by the year-end. In a recent announcement, ASML equipment has moved into its 12-inch fab. Looking forward, we expect the fab-lite business model will secure capacity and serve as a foundation for tech advancement to gain market share in high-end CIS.
- Maintain BUY rating with TP revised to RMB28.5.** We remain positive on the Company’s development, but trim our target P/E multiple to 40x vs. prev. 45x, as the impact of recent partial lockdown on economics is bigger than our expectation. Potential risks include 1) weaker-than-expected market growth and continuous semi shortage, 2) intensified competition and 3) slower-than-expected development of its CIS 12-inch fab.

### Earnings Summary

(YE 31 Dec)	FY19A	FY20A	FY21E	FY22E	FY23E
Revenue (RMB mn)	3,690	6,456	7,001	9,449	12,346
YoY growth (%)	-	74.9%	8.4%	35.0%	30.7%
Gross profit (RMB mn)	961	1,839	2,323	3,162	4,011
Gross profit margin (%)	26.0%	28.5%	33.2%	33.5%	32.5%
Net profit (RMB mn)	359	773	1,259	1,778	2,185
YoY growth (%)	-	115.2%	62.8%	41.3%	22.9%
EPS (RMB)	0.19	0.37	0.54	0.71	0.87
Consensus EPS (RMB)	-	-	0.53	0.67	0.87
P/E (x)	110.8	56.9	39.0	29.6	24.1
ROE (%)	135.0%	28.4%	19.4%	21.5%	20.9%
Net gearing (%)	108.0%	11.0%	net cash	net cash	net cash

Source: Company data, Bloomberg, CMBIGM estimates

**BUY (Maintain)**

Target Price **RMB28.5**  
(Previous TP **RMB34.1**)  
Up/Downside **+35%**  
Current Price **RMB21.06**

### China Technology Sector

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### Stock Data

Mkt Cap (RMB mn)	52,627
Avg 3 mths t/o (RMB mn)	96
52w High/Low (RMB)	41.0/20.8
Total Issued Shares (mn)	2,498.9

Source: Bloomberg

### Shareholding Structure

Uni Sky	42.02%
COSMOS	12.43%
Hopefield	7.0%

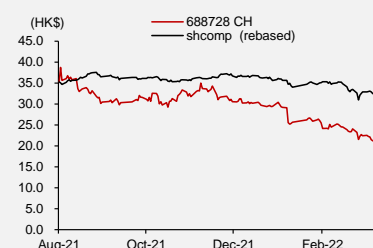
Source: Bloomberg

### Share Performance

	Absolute	Relative
1-mth	-16.4%	-11.0%
3-mth	-30.2%	-21.9%
6-mth	-30.5%	-23.7%

Source: Bloomberg

### 12-mth Price Performance



Source: Bloomberg

Auditor: PWC

### Related Reports

- GalaxyCore - Transiting into fab-lite model to secure capacity and support tech advancement – 7 Mar 2022
- GalaxyCore - Rising star well poised to ride the CIS boom – 24 Aug 2021

## Earnings revision

Figure 17: Earnings revision

US\$ mn	New			Old			Diff (%)		
	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E
Revenue	7,001	9,449	12,346	7,001	9,512	12,699	0%	-1%	-3%
Gross Profit	2,323	3,162	4,011	2,323	3,216	4,243	0%	-2%	-5%
Operating Profit	1,428	1,975	2,427	1,428	2,018	2,603	0%	-2%	-7%
Net profit	1,259	1,778	2,185	1,259	1,817	2,344	0%	-2%	-7%
EPS (RMB)	0.540	0.711	0.873	0.540	0.726	0.936	0%	-2%	-7%
Gross Margin	33.2%	33.5%	32.5%	31.8%	32.1%	30.1%	1.4 ppt	1.4 ppt	2.4 ppt
Operating Margin	20.4%	20.9%	19.7%	18.5%	18.9%	16.8%	1.9 ppt	2.1 ppt	2.9 ppt
Net Margin	18.0%	18.8%	17.7%	16.5%	16.9%	15.0%	1.4 ppt	1.9 ppt	2.7 ppt

Source: Company data, CMBIGM estimates

Figure 18: CMBIGM estimates vs consensus

US\$ mn	CMBIGM			Consensus			Diff (%)		
	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E	FY21E	FY22E	FY23E
Revenue	7,001	9,449	12,346	7,488	9,636	13,449	-7%	-2%	-8%
Gross Profit	2,323	3,162	4,011	2,436	3,124	4,249	-5%	1%	-6%
Operating Profit	1,428	1,975	2,427	1,460	1,893	2,469	-2%	4%	-2%
Net profit	1,259	1,778	2,185	1,280	1,648	2,089	-2%	8%	5%
EPS (RMB)	0.540	0.711	0.873	0.534	0.671	0.874	1%	6%	0%
Gross Margin	33.2%	33.5%	32.5%	32.5%	32.4%	31.6%	0.6 ppt	1 ppt	0.9 ppt
Operating Margin	20.4%	20.9%	19.7%	19.5%	19.6%	18.4%	0.9 ppt	1.3 ppt	1.3 ppt
Net Margin	18.0%	18.8%	17.7%	17.1%	17.1%	15.5%	0.9 ppt	1.7 ppt	2.2 ppt

Source: Company data, CMBIGM estimates

Figure 19: Peers' valuation

Company	Ticker	Rating	12m TP (LC)	Price (LC)	Upside/Downside	Mkt. Cap (US\$ mn)	P/E (x)		ROE (%)	
							FY19E	FY20E	FY19E	FY20E
<b>Global peers</b>										
GalaxyCore	688728 CH	BUY	28.50	21.06	35%	8,301	29.6	24.1	21.5	20.9
Willsemi	603501 CH	BUY	292.00	193.40	51%	26,714	34.2	26.2	26.0	24.4
Sony	SONY US	NR	NA	103.86	NA	130,976	17.9	17.2	14.2	16.3
Samsung	005930 KS	NR	NA	69600.00	NA	342,164	9.9	8.7	14.5	14.7
STM	STM FP	NR	NA	39.59	NA	39,978	14.0	13.3	27.4	22.5
ON Semi	ON US	NR	NA	64.48	NA	27,885	15.5	14.4	33.5	27.6
<b>Average</b>							<b>20.2</b>	<b>17.3</b>	<b>22.8</b>	<b>21.0</b>
<b>Domestic peers</b>										
GalaxyCore	688728 CH	BUY	28.50	21.06	35%	8,301	29.6	24.1	21.5	20.9
Willsemi	603501 CH	BUY	292.00	193.40	51%	26,714	34.2	26.2	26.0	24.4
Gigadevice	603986 CH	NR	NA	141.03	NA	14,847	33.1	26.3	19.5	20.1
Maxscend	300782 CH	NR	NA	209.92	NA	11,045	26.0	20.1	35.4	32.5
Goodix	603160 CH	NR	NA	70.90	NA	5,128	27.7	21.2	12.6	14.4
SG Miceo	300661 CH	NR	NA	326.52	NA	12,155	84.8	61.5	33.1	32.6
<b>Average</b>							<b>39.2</b>	<b>29.9</b>	<b>24.7</b>	<b>24.1</b>

Source: Bloomberg, CMBIGM estimates

## Financial Summary

### Income statement

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Revenue</b>	<b>3,690</b>	<b>6,456</b>	<b>7,001</b>	<b>9,449</b>	<b>12,346</b>
COGS	-2,729	-4,617	-4,678	-6,287	-8,336
<b>Gross Profit</b>	<b>961</b>	<b>1,839</b>	<b>2,323</b>	<b>3,162</b>	<b>4,011</b>
SG&A	-165	-228	-232	-309	-404
R&D exp.	-357	-595	-490	-709	-926
Financing exp.	-19	-103	-182	-205	-228
Other opex	-36	-28	9	35	-26
<b>Operating profit</b>	<b>384</b>	<b>885</b>	<b>1,428</b>	<b>1,975</b>	<b>2,427</b>
Non-operating income	0	0	0	1	1
Non-operating exp.	-0	-13	-5	0	0
<b>Pre-tax profit</b>	<b>384</b>	<b>872</b>	<b>1,424</b>	<b>1,976</b>	<b>2,428</b>
Income tax expenses	-25	-99	-165	-198	-243
<b>Net profit</b>	<b>359</b>	<b>773</b>	<b>1,259</b>	<b>1,778</b>	<b>2,185</b>
Non-controlling interests	0	0	0	0	0
<b>Net profit to shareholders</b>	<b>359</b>	<b>773</b>	<b>1,259</b>	<b>1,778</b>	<b>2,185</b>

### Cash flow summary

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Pretax profit</b>	<b>359</b>	<b>773</b>	<b>1,259</b>	<b>1,778</b>	<b>2,185</b>
D&A	22	39	42	55	64
Change in working capital	-143	-1,295	-929	284	-924
Others	115	177	180	136	209
<b>Net cash from operating</b>	<b>353</b>	<b>-306</b>	<b>552</b>	<b>2,253</b>	<b>1,534</b>
Capex	-104	-405	-633	-463	-479
Purchase/sale of investments	-15	-8	-59	-33	-28
Purchase/sale of subs	0	0	0	0	0
Other	66	29	-47	34	41
<b>Net cash from investing</b>	<b>-53</b>	<b>-384</b>	<b>-740</b>	<b>-462</b>	<b>-465</b>
Change in shares	0	0	2,499	0	0
Change in debt	512	983	2,641	666	406
Dividend/interests paid	-128	-83	-163	-185	-200
Other	-558	866	25	0	0
<b>Net cash from financing</b>	<b>-174</b>	<b>1,765</b>	<b>5,002</b>	<b>481</b>	<b>206</b>
<b>Net change in cash</b>	<b>126</b>	<b>1,076</b>	<b>4,815</b>	<b>2,272</b>	<b>1,274</b>
Cash, beginning	202	329	1,374	6,189	8,461
Exchange difference	2	-31	0	0	0
<b>Cash, end</b>	<b>329</b>	<b>1,374</b>	<b>6,189</b>	<b>8,461</b>	<b>9,736</b>

### Balance sheet

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Current assets</b>	<b>2,506</b>	<b>4,815</b>	<b>10,433</b>	<b>12,686</b>	<b>15,193</b>
Cash & equivalents	484	1,470	6,355	8,627	9,902
Trade & other receivables	594	1,026	659	925	1,065
Inventories	1,180	2,077	3,087	2,731	3,735
Other current assets	249	242	332	402	491
<b>Non-current assets</b>	<b>455</b>	<b>902</b>	<b>2,002</b>	<b>2,596</b>	<b>3,251</b>
PPE	182	248	323	413	521
Intangibles	74	201	196	196	200
Goodwill	0	0	0	0	0
Other non-current assets	199	452	1,483	1,987	2,530
<b>Total assets</b>	<b>2,961</b>	<b>5,716</b>	<b>12,436</b>	<b>15,281</b>	<b>18,444</b>
<b>Current liabilities</b>	<b>2,599</b>	<b>2,785</b>	<b>5,163</b>	<b>6,159</b>	<b>6,952</b>
ST debt & LT debt to	687	1,568	3,993	4,467	4,858
Trade & other payables	1,814	1,030	817	1,292	1,580
Other current liabilities	98	188	353	401	514
<b>Non-current liabilities</b>	<b>96</b>	<b>212</b>	<b>772</b>	<b>843</b>	<b>1,027</b>
LT debt	84	201	417	609	623
Bonds payables	0	0	0	0	0
Other non-current liabilities	11	11	355	234	404
<b>Total liabilities</b>	<b>2,695</b>	<b>2,997</b>	<b>5,934</b>	<b>7,002</b>	<b>7,980</b>
<b>Total equity</b>	<b>266</b>	<b>2,719</b>	<b>6,501</b>	<b>8,280</b>	<b>10,465</b>
Share capital	0	0	2,502	2,502	2,502
Reserves	59	1,712	2,316	2,316	2,316
Retained earnings	267	1,041	2,173	3,774	5,740
Other equities	-60	-33	-490	-313	-94
Minority interests	0	0	0	0	0
<b>Total liabilities and equity</b>	<b>2,961</b>	<b>5,716</b>	<b>12,436</b>	<b>15,281</b>	<b>18,444</b>

### Key ratios

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
<b>Revenue by segment</b>					
CMOS	3,194	5,864	5,950	6,543	8,033
TDDI	486	591	1,045	2,906	4,313
Others	10	0	6	0	0
<b>Total</b>	<b>3,690</b>	<b>6,456</b>	<b>7,001</b>	<b>9,449</b>	<b>12,346</b>
CMOS %	87%	91%	85%	69%	65%
<b>Growth (%)</b>					
Revenue	68.2%	74.9%	8.4%	35.0%	30.7%
Adj. EBITDA	-21.0%	127.6%	59.1%	38.1%	22.7%
Net profit	-28.1%	115.2%	62.8%	41.3%	22.9%
<b>Profit &amp; loss ratio (%)</b>					
Gross margin	26.0%	28.5%	33.2%	33.5%	32.5%
EBITDA margin	11.0%	14.3%	21.0%	21.5%	20.2%
Net profit margin	9.7%	12.0%	18.0%	18.8%	17.7%
<b>Balance sheet ratio</b>					
Net debt/total equity (%)	108.0%	11.0%	net	net	net
Debt/EBITDA	1.3	1.4	3.0	2.5	2.2
Interest coverage	26.3	17.4	9.0	11.0	12.5
Cash conversion cycle (days)	20.1	43.6	148.5	127.0	96.8
<b>Profitability (%)</b>					
ROE	135.0%	28.4%	19.4%	21.5%	20.9%
ROA	12.1%	13.5%	10.1%	11.6%	11.8%
<b>Per share data (RMB)</b>					
EPS	0.19	0.37	0.54	0.71	0.87
BVPS	0.14	1.30	2.79	3.31	4.18

Source: Company data, CMBIGM estimates

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