

17 December 2018

Greater China

## EQUITIES

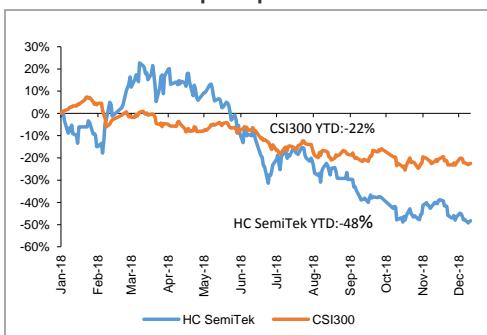
300323 CH	Not rated	
Stock price as of 17/12/2018 RMB\$	8.47	
GICS sector	Technology	
Market cap	US\$m	1,396
Avg Value Traded (3m)	US\$m	13
12m high/low	RMB\$	21.09/8.37
PER FY19	x	10.2
P/BV FY 19	x	1.6

## Historical financials

YE Dec (RMB m)	2015A	2016A	2017A
Revenue	955	1,582	2,630
% growth	35%	66%	66%
EBITDA	246	692	1,153
% growth	-24%	181%	67%
EPS	-0.09	0.24	0.46
% growth	NA	NA	88%
EBIT Margin	-2%	25%	27%

Source: Company data, FactSet, December 2018

## HC SemiTek share price performance



Source: FactSet, December 2018

## Share Price Driver

Thematic
Growth
Value
Event

Source: Macquarie Research, December 2018

## Analysts

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Please refer to page 7 for important disclosures and analyst certification, or on our website [www.macquarie.com/research/disclosures](http://www.macquarie.com/research/disclosures).

## MacVisit: HC SemiTek

## Another LED supplier moving to semis

## Key points

- HC SemiTek is the second-largest LED chip supplier in China, next only to Sanan, mainly in blue / green light LED chips (62% / 9% of 1H18 revenues).
- Private placement announced in Oct, for: 1) white light LED, Mini/Micro LED (US\$362m), 2) IR VCSEL (US\$101m), 3) Mems sensors (US\$91m).
- The private placement will fund SemiTek's move to semiconductors, like Sanan's, echoing our positive view on the semiconductor business.

## Event

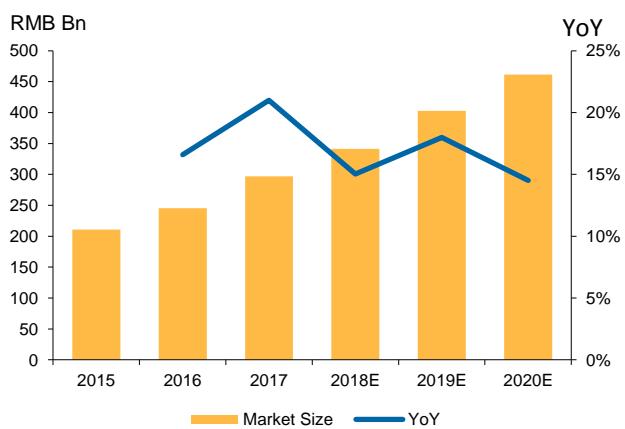
- HC SemiTek is the second-largest LED chip supplier in China, next only to Sanan, according to the company.** HC SemiTek supplies blue light LED chips (62% of 1H18 revenues), LED substrate (17%) and green light LED chips (9%). It announced a private placement in Oct, to fund investment in 1) white light LED, Mini / Micro LED (estimated investment Rmb2.5bn, or US\$362m), 2) VCSEL (Rmb700m, or US\$101m), and 3) Mems sensors (Rmb625m, or US\$91m).
- HC SemiTek, like Sanan, plans to move to semiconductors, targeting IR VCSEL and Mems sensors,** while Sanan is targeting III-V compound semiconductors for RF modules, high-power laser transmitters, power discrete (MOSFET, IGBT), power IC, etc. The move echoes our positive view on semiconductors and cautious view on LED. **Read-across: Sanan – soft market likely to continue, DG to Neutral, [link](#), Oct 17.**

## Key takeaways

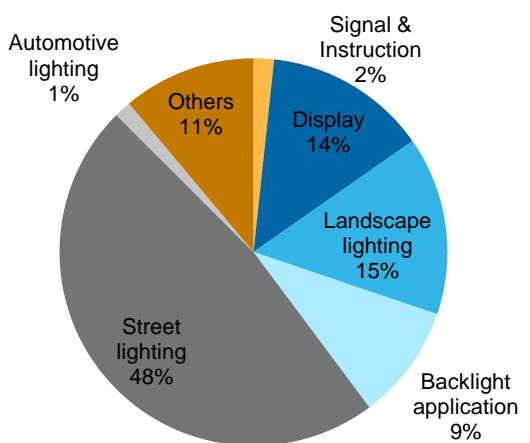
- IR VCSEL, targeting smartphones, VR/AR, optic transceiver, surveillance, LiDAR:** HC SemiTek's Infrared VCSEL will focus on 850nm VCSEL and 940nm VCSEL, providing both chips and epi-wafers. Management highlights that the technology in Infrared VCSEL is similar to Infrared LED as they have the same wavelength, and the substrate of VCSEL is GaAs, also the same as red / yellow-light LED. Management highlights that the company's red-light LED chips' quality is comparable to that of global-tier peers, and its infrared LED chips are in mass production. HC SemiTek plans to complete construction in three years, with payback expected in 6 years.
- MEMS sensors (Geomagnetic sensor and Gyroscope) for smartphones:** Main suppliers of MEMS sensors are non-Chinese companies, among them AKM (JP), MEMSIC (US), Yamaha (JP), Alps (JP), ST (EU), InvenSense (US), Bosch (US), etc. HC SemiTek acquired MEMSIC in 2Q18, penetrated MEMS sensors, providing Geomagnetic sensors to smartphones. The private placement will focus on Geomagnetic sensors and Gyroscope for smartphones, targeting construction in 3 years, with payback targeted in 6 years.
- We maintain our cautious view on LED:** The LED market remains competitive. Global LED bulb prices remain low, with average price of 60W LEDs down 1.5% MoM in Nov to US\$7.2. LED chips suppliers' inventory days continued to rise in 3Q18, with Sanan's up to 159 days (vs 101 days in 3Q17), HC SemiTek's up to 167 days (vs 124 days in 3Q17), and Epistar's up to 102 days (vs 83 days in 3Q17). HC SemiTek also targets to build new capacity in 3 years, adding 7.2m 2-inch white-light LED epi-wafer per year.

## Financials

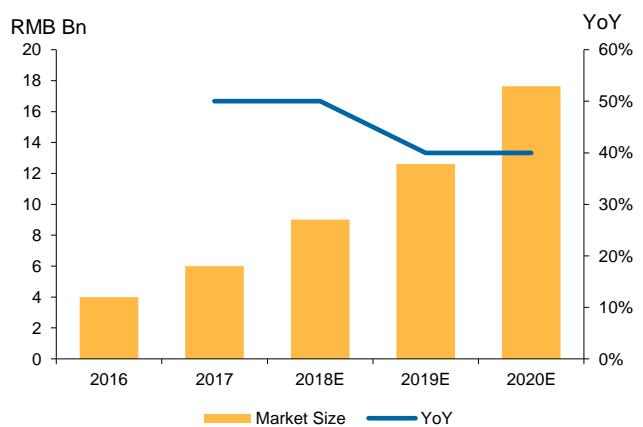
- The stock is trading at 1.6x 2019E PB with a 16% ROE in 2019E, based on Bloomberg consensus estimates.

**Fig 1 Global LED lighting market scale**

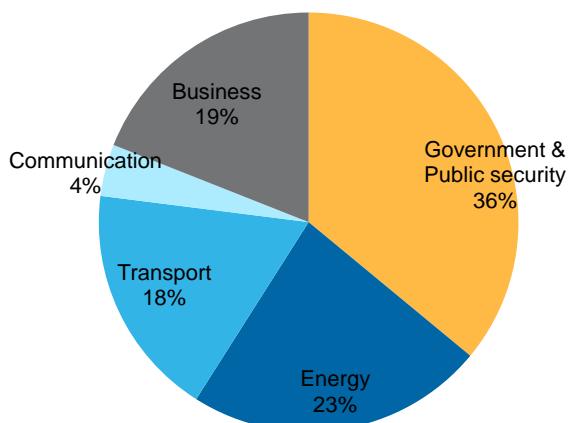
Source: Company data, December 2018

**Fig 2 LED end applications (2017)**

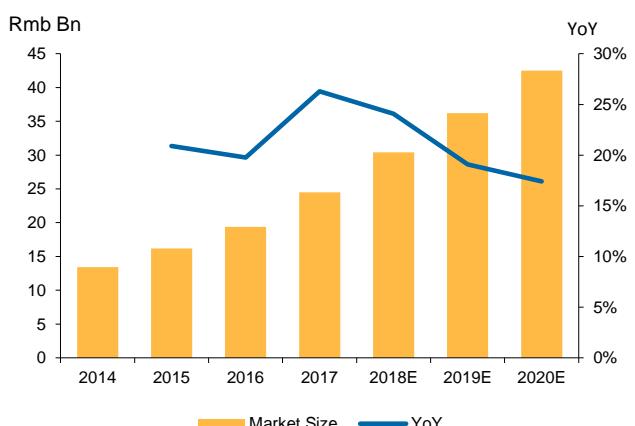
Source: Wind, December 2018

**Fig 3 Global small pixel pitch LED market size**

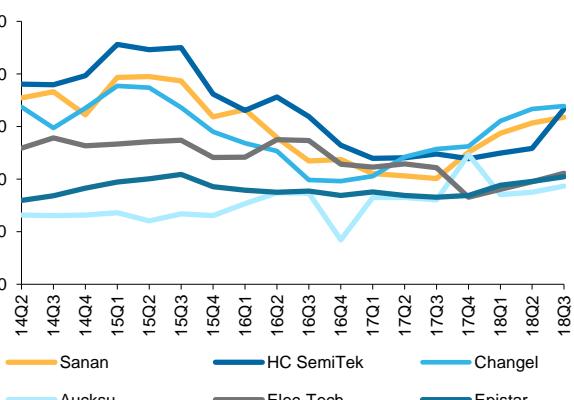
Source: CHYXX, December 2018

**Fig 4 Small pixel pitch LED customer mix (2017)**

Source: CHYXX, December 2018

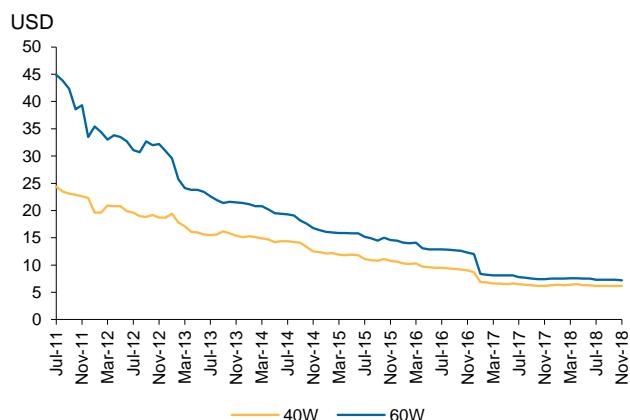
**Fig 5 China Automotive LED lights market size**

Source: Elecfans, December 2018

**Fig 6 LED chips suppliers' inventory days**

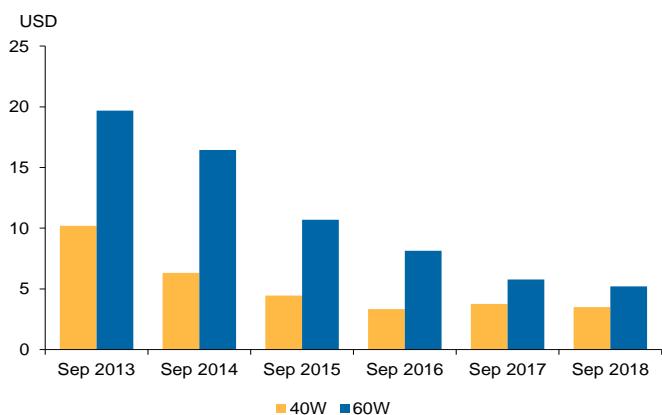
Source: Bloomberg, December 2018

Fig 7 Global LED bulb price



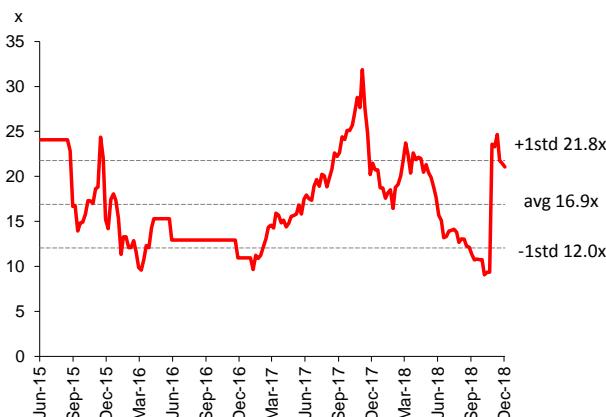
Source: Bloomberg, December 2018

Fig 8 China LED bulb price



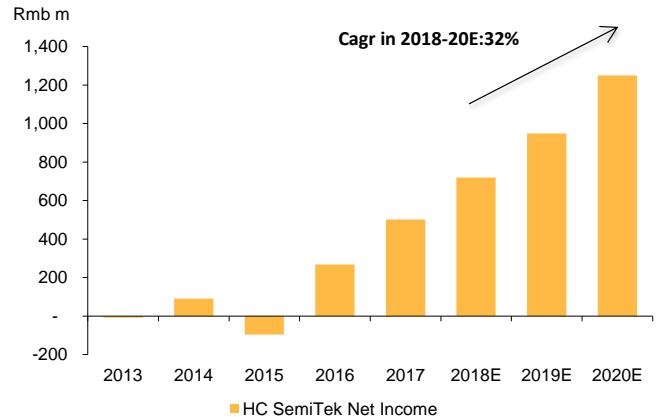
Source: Bloomberg, December 2018

Fig 9 HC SemiTek 12M forward PE ratio



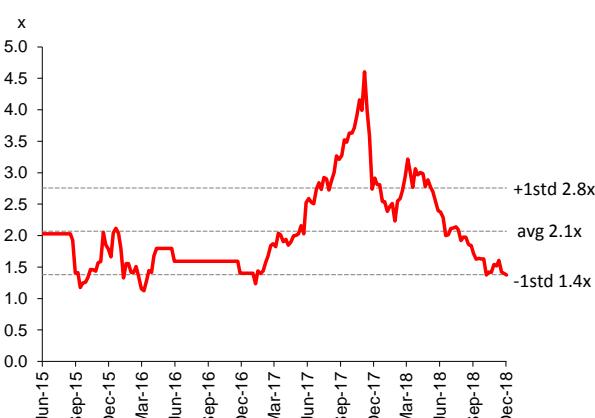
Source: Bloomberg, December 2018

Fig 10 HC SemiTek NI trend, per Bloomberg consensus



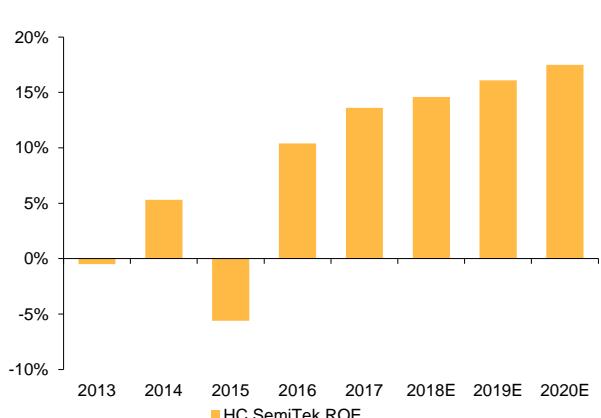
Source: Bloomberg, December 2018

Fig 11 HC SemiTek 12M forward P/BV ratio



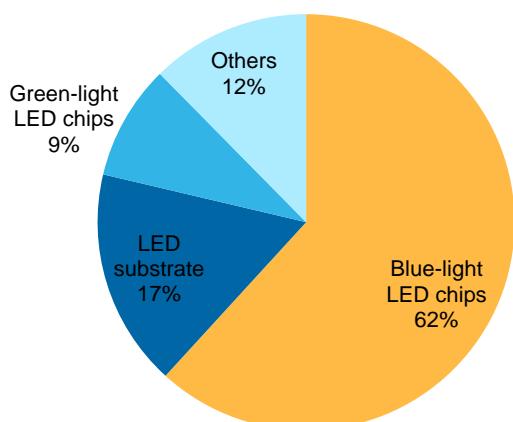
Source: Bloomberg, December 2018

Fig 12 HC SemiTek ROE trend, per Bloomberg consensus



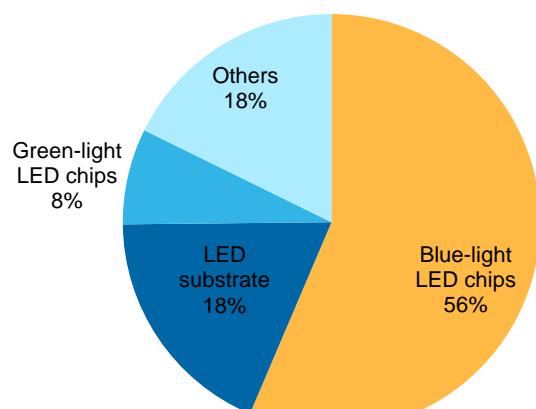
Source: Bloomberg, December 2018

Fig 13 HC SemiTek revenue mix by products in 1H18



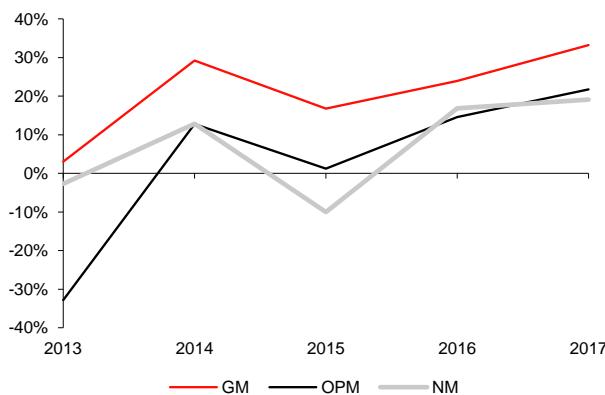
Source: Company data, December 2018

Fig 14 HC SemiTek gross profit by products in 1H18



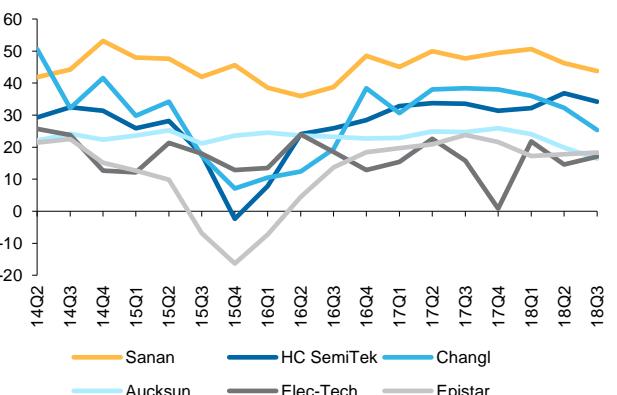
Source: Company data, December 2018

Fig 15 HC SemiTek margin trend



Source: Company data, December 2018

Fig 16 LED chips suppliers' gross margin trend



Source: Bloomberg, December 2018

Fig 17 HC SemiTek P&amp;L

(RMB m)	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	2013	2014	2015	2016	2017
Revenue	506	687	679	758	710	912	713	316	706	955	1,582	2,630
Gross profit	168	234	230	241	233	340	246	10	206	160	379	874
Operating profit	117	166	159	129	140	236	144	- 104	90	11	231	572
Pretax income	104	159	183	132	169	180	175	10	107	- 92	310	579
Net income	81	135	156	130	143	171	184	- 9	91	- 96	267	502
EPS (RMB\$)	0.07	0.12	0.14	0.12	0.13	0.16	0.17	(0.01)	0.08	(0.09)	0.24	0.46
Margin												
Gross margin	33.2%	34.1%	33.9%	31.8%	32.9%	37.3%	34.5%	3.1%	29.2%	16.7%	23.9%	33.2%
Opex ratio	10.0%	9.9%	10.5%	14.8%	13.1%	11.4%	14.3%	35.8%	16.4%	15.6%	9.3%	11.5%
OP margin	23.2%	24.2%	23.5%	17.0%	19.8%	25.9%	20.2%	-32.8%	12.8%	1.2%	14.6%	21.7%
Net margin	16.0%	19.7%	22.9%	17.2%	20.1%	18.7%	25.8%	-2.7%	12.9%	-10.0%	16.9%	19.1%
QoQ												
Revenue	-1%	36%	-1%	12%	-6%	29%	-22%					
Gross profit	12%	39%	-2%	5%	-3%	46%	-28%					
Operating profit	11%	41%	-4%	-19%	9%	68%	-39%					
Net income	-36%	67%	15%	-16%	9%	19%	8%					
EPS	-36%	67%	15%	-16%	9%	19%	8%					
YoY												
Revenue	111%	84%	48%	48%	40%	33%	5%	123%	35%	66%	66%	
Gross profit	793%	159%	94%	60%	39%	45%	7%	na	-22%	137%	131%	
Operating profit	na	196%	106%	22%	19%	42%	-10%	na	-87%	1927%	147%	
Net income	na	102%	77%	3%	77%	26%	18%	na	na	na	88%	
EPS	na	102%	77%	3%	77%	26%	18%	na	na	na	88%	

Source: Company data, December 2018

Fig 18 HC SemiTek balance sheet

(RMB m)	2013	2014	2015	2016	2017
Cash & equivalents	180	162	188	277	736
Receivables	368	575	960	1,796	1,757
Inventory	159	384	404	466	685
Other current assets	63	276	265	281	482
Total current assets	770	1,397	1,817	2,819	3,661
Fixed assets	944	2,034	1,921	2,397	4,686
LT investments	0	23	20	26	23
Other non-current assets	752	325	457	1,640	1,533
Total non-current assets	1,696	2,381	2,399	4,064	6,241
Total assets	2,466	3,779	4,215	6,883	9,902
Short term debt	327	189	675	1,119	1,445
Payables	319	503	554	873	1,378
Other current liabilities	-93	399	439	663	403
Total current liabilities	553	1,091	1,669	2,655	3,226
Long term debt	215	757	732	610	2,532
Other liabilities	20	162	145	161	220
Total LT liabilities	235	919	877	772	2,752
Total liabilities	788	2,010	2,546	3,427	5,977
Common stocks	1,677	1,768	1,669	3,456	3,925
Minority equity	0	0	0	0	0
Total equity	1,677	1,768	1,669	3,456	3,925
Total liabilities and equity	2,466	3,779	4,215	6,883	9,902

Source: Company data, December 2018

Fig 19 HC SemiTek cash flow statement

(RMB m)	2013	2014	2015	2016	2017
Net profit	-9	91	-96	267	502
Depreciation	98	164	254	276	424
Amortization	2	4	6	20	32
Associate share of (profits)/ loss	0	0	0	0	0
Total gross cash flow	92	260	165	563	958
Change in net working capital	0	-248	-353	-580	324
Others	-112	-401	-3	-229	-1,728
<b>Total operating cash flow</b>	<b>72</b>	<b>-130</b>	<b>-26</b>	<b>317</b>	<b>514</b>
Capex less disposals	-784	-666	-276	-447	-2,074
(Purchase) Sale of ST investment	0	0	0	-51	49
(Purchase) Sale of LT investment	0	-23	3	-7	4
Others	0	67	47	-96	-48
<b>Total investment cash flow</b>	<b>-784</b>	<b>-622</b>	<b>-226</b>	<b>-599</b>	<b>-2,069</b>
Increase (decrease) in debt	0	404	461	322	2,247
Cash dividends	0	0	0	-42	-103
Change in share capital	0	150	225	161	7
Others	487	179	-409	-107	-165
<b>Total financing cash flow</b>	<b>487</b>	<b>733</b>	<b>277</b>	<b>334</b>	<b>1,986</b>
Net cash flow	-225	-18	25	51	430
FX change	-1	1	2	1	-4
Net cash flow after FX change	-225	-17	26	52	426

Source: Company data, December 2018

Fig 20 HC SemiTek key financial ratios

(RMB m)	2013	2014	2015	2016	2017
Revenue	316	706	955	1,582	2,630
Gross profit	10	206	160	379	874
EBIT	14	154	-15	396	697
EBITDA	114	323	246	692	1,153
Pretax profit	10	107	-92	310	579
Net profit	-9	91	-96	267	502
YoY (%)					
Revenue	na	123%	35%	66%	66%
Gross profit	na	2038%	-22%	137%	131%
Net profit	na	na	na	na	88%
Per-share data (RMB)					
Sales per share	0.29	0.64	0.87	1.44	2.39
EPS	-0.01	0.08	-0.09	0.24	0.46
BVPS	1.53	1.61	1.52	3.15	3.57
DPS	0.00	0.00	0.00	0.04	0.09
FCF PS	-0.63	-0.56	-0.35	-0.35	-0.63
Net cash PS	-0.33	-0.60	-0.86	-1.07	-2.80
Net debt/Equity	0%	3%	-2%	5%	6%
Margin (%)					
Gross margin	3.1%	29.2%	16.7%	23.9%	33.2%
EBIT margin	4.3%	21.8%	-1.5%	25.0%	26.5%
EBITDA margin	36.1%	45.7%	25.8%	43.7%	43.9%
Pretax margin	3.2%	15.2%	-9.6%	19.6%	22.0%
Net margin	-2.7%	12.9%	-10.0%	16.9%	19.1%
Valuation multiples (x)					
P/E	-1,114.5	105.6	-100.1	35.9	19.1
P/B	5.7	5.4	5.8	2.8	2.4
FCF yield	-7.2%	-6.4%	-4.0%	-4.1%	-7.2%
ROE (%)	-0.5%	5.3%	-5.6%	10.4%	13.6%
Dividend yield	0.0%	0.0%	0.0%	0.4%	1.1%
Payout ratio	0%	0%	0%	16%	20%

Source: Company data, December 2018

Sanan Optoelectronics (A-Share) (600703 CH, Rmb14.23, Neutral, TP: Rmb13.00)

## Important disclosures:

Recommendation definitions	Volatility index definition*	Financial definitions
<b>Macquarie - Australia/New Zealand</b> Outperform – return >3% in excess of benchmark return Neutral – return within 3% of benchmark return Underperform – return >3% below benchmark return	This is calculated from the volatility of historical price movements.	All "Adjusted" data items have had the following adjustments made: Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests
Benchmark return is determined by long term nominal GDP growth plus 12 month forward market dividend yield, which is currently around 9%.	<b>Very high-highest risk</b> – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.	<b>EPS</b> = adjusted net profit / efpowa* <b>ROA</b> = adjusted ebit / average total assets <b>ROA Banks/Insurance</b> = adjusted net profit / average total assets
<b>Macquarie – Asia/Europe</b> Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%	<b>High</b> – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.	<b>ROE</b> = adjusted net profit / average shareholders funds <b>Gross cashflow</b> = adjusted net profit + depreciation
<b>Mazi Macquarie – South Africa</b> Outperform – expected return >+10% Neutral – expected return from -10% to +10% Underperform – expected return <-10%	<b>Medium</b> – stock should be expected to move up or down at least 30–40% in a year.	*equivalent fully paid ordinary weighted average number of shares
<b>Macquarie - Canada</b> Outperform – return >5% in excess of benchmark return Neutral – return within 5% of benchmark return Underperform – return >5% below benchmark return	<b>Low</b> – stock should be expected to move up or down at least 15–25% in a year. * Applicable to Asia/Australian/NZ/Canada stocks only	All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).
<b>Macquarie - USA</b> Outperform (Buy) – return >5% in excess of Russell 3000 index return Neutral (Hold) – return within 5% of Russell 3000 index return Underperform (Sell) – return >5% below Russell 3000 index return	<b>Recommendations</b> – 12 months <b>Note:</b> Quant recommendations may differ from Fundamental Analyst recommendations	

## Recommendation proportions – For quarter ending 30 September 2018

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	51.56%	59.51%	45.05%	46.88%	67.86%	46.70%	(for global coverage by Macquarie, 3.70% of stocks followed are investment banking clients)
Neutral	33.20%	28.92%	37.36%	47.70%	25.00%	42.73%	(for global coverage by Macquarie, 2.04% of stocks followed are investment banking clients)
Underperform	15.23%	11.57%	17.58%	5.42%	7.14%	10.57%	(for global coverage by Macquarie, 0.47% of stocks followed are investment banking clients)

## 600703 CH vs HSI, & rec history



(all figures in CNY currency unless noted)

Note: Recommendation timeline – if not a continuous line, then there was no Macquarie coverage at the time or there was an embargo period.  
Source: FactSet, Macquarie Research, December 2018

## 12-month target price methodology

600703 CH: Rmb13.00 based on a Price to Book methodology

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