2017 Asian Technology Outlook

Multiple themes emerging to shine

- A cyclical upturn in the tech space has unfolded well and looks set to be sustained in 2017, thanks to healthy inventory rebuild
- But we view chip cycles as irrelevant to investment; we flag 6 themes for growth in 2017: multi-cam, FP, OLED, OC, ADAS and IIoT
- We cherry-pick 15 stocks that we believe will capitalise on these 6 themes to gain market/order shares and outperform their peers

Negative | Neutral | Positive

Positive
(unchanged)

Rick Hsu
(886) 2 8758 6261
rick.hsu@daiwacm-cathay.com.tw

Martin Lee
(886) 2 8758 6262
martin.lee@daiwacm-cathay.com.tw

See important disclosures, including any required research certifications, beginning on page 97

Sector

Daiwa Capital Markets

Table of contents

Daiwa Capital Markets

2017 Asian Technology Outlook

Multiple themes emerging to shine

- A cyclical upturn in the tech space has unfolded well and looks set to be sustained in 2017, thanks to healthy inventory rebuild
- But we view chip cycles as irrelevant to investment; we flag 6 themes for growth in 2017: multi-cam, FP, OLED, OC, ADAS and IIoT
- We cherry-pick 15 stocks that we believe will capitalise on these 6 themes to gain market/order shares and outperform their peers

Negative | Neutral | Positive

Positive
(unchanged)

Rick Hsu
(886) 2 8758 6261
rick.hsu@daiwacm-cathay.com.tw

Martin Lee
(886) 2 8758 6262
martin.lee@daiwacm-cathay.com.tw

What's new: 2016 saw the tech upturn unfold in line with our expectation, and the stocks that outperformed the benchmark indices were those gaining market/order shares, such as Largan, AAC, Disco and TSMC. We expect this upturn to continue in 2017, thanks to prudent inventory control, but the cycles are effectively irrelevant as investment considerations due to structural "de-growth" in smartphone demand. That said, we highlight 6 emerging themes in the tech space to shine in 2017, and expect the stocks in the table on the right to outperform by capitalising on these themes.

What's the impact: Upturn to be sustained, albeit modestly. Global fabless chip inventory, one barometer we use to monitor the health of the tech sector, came off its peak in the 2015 downturn and has since hovered around its seasonal average on Android restocking followed by iPhone rebuild. This is in line with our expectation, with rising demand from professional gaming and deep-learning computations looking compelling. We expect the chip sector to exit 2016 healthily due to ***lean inventory***, laying the foundations for the upturn to continue into 2017. However, with smartphone growth tapering off, we do not expect any meaningful revenue growth for the sector in 2017. That said, our 6 highlighted themes should lead to certain stocks outpacing the sector average revenue growth, laying the foundations for our 2017 stock ideas.

Focus on themes that shine. Since our 2015 ***Big Data report***, we have envisioned a multi-year transition from the mobile computing device (MCD) to Internet of Things (IoT) demand cycle, which should slow tech revenue growth during the transition. Nevertheless, in the MCD cycle, we expect 3 segments to outgrow revenue growth in 2017 – multiple cameras (multi-cam), fingerprint (FP) and organic light emitting diode (OLED) – thanks to their rising penetration in smartphones driven by spec-upgrades. In the BigData/IoT space, while it is likely to take time for this market to overtake MCD, we see 3 demand verticals rising faster than others – optical communications (OC), advanced driver assistance systems (ADAS) and industrial IoT (IIoT) – on data bandwidth upgrades, the increasing need for active safety, and a rising degree of intelligent industrial automation.

What we recommend: Our investment guideline is to be selective, and we like market/order share gainers able to capitalise on our themes: **Sony, Largan** (multi-cam), **SMIC** (FP proxy), **SEC, LGD** (OLED proxy), **LMO, Inari, WinSemi** (OC), **Nidec**, **Sunny Optical** (ADAS), **Ennoconn** (upgraded to Buy [1]), **Delta** (IIoT), and **TSMC, ASE** and **Hynix** (multi-theme).

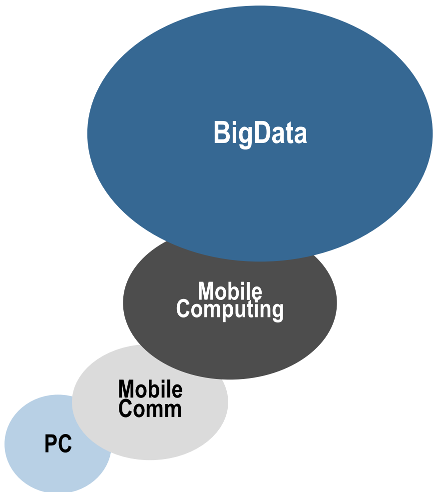
How we differ: We believe we are one of the few firms to identify the tech demand transition and growth themes during the transition for investment.

Daiwa's 2017 Pan-Asia tech picks

Stock	Ticker	Rating	TP*
Multi-cam			
Sony	6758 JP	Buy	4,200
Largan	3008 TT	Buy	4,350
FP			
SMIC	981 HK	Outperform	12.50
OLED			
SEC	005930 KS	Buy	2,200,000
LGD	034220 KS	Buy	36,000
OC			
LMO	3081 TT	Buy	385.00
Inari Amertron	INRI MK	Buy	3.54
WinSemi	3105 TT	Outperform	102.00
ADAS			
Nidec	6594 JP	Buy	12,000
Sunny Optical	2382 HK	Buy	44.30
IIoT			
Ennoconn**	6414 TT	Buy	550.00
Delta	2308 TT	Buy	195.00
Multi-theme			
TSMC	2330 TT	Buy	215.00
ASE	2311 TT	Buy	45.00
SK Hynix	000660 KS	Buy	54,000

Source: Daiwa forecasts
** Target prices in local currency*
*** Upgraded from Outperform (2)*

Global IT industry: evolving trends



Daiwa's Global Tech Team

Taiwan			
	**Rick HSU** Tech head/Semiconductors (886) 2 8758 6261 rick.hsu@daiwacm-cathay.com.tw	TSMC (2330 TT) UMC (2303 TT) SMIC (981 HK) ASE (2311 TT) SPIL (2325 TT) Win Semiconductor (3105 TT) LandMark Opto (3189 TT)	MediaTek (2454 TT) Novatek (3034 TT) Realtek (2379 TT)
	**Steven TSENG** Computing & data centre (886) 2 8758 6252 steven.tseng@daiwacm-cathay.com.tw	ASUSTeK Computer (2357 TT) Lenovo Group (992 HK) Pegatron Corp (4938 TT) Quanta Computer (2382 TT) Wistron (3231 TT) Ju Teng International (3336 HK) Voltronic (6409 TT)	Advantech (2395 TT) Ennoconn (6414 TT) Adlink (6166 TT) Delta Electronics (2308 TT) Hiwin Technologies Corp (2049 TT) Airtac International Group (1590 TT)
	**Kylie HUANG** Smart device food chain (886) 2 8758 6248 kylie.huang@daiwacm-cathay.com.tw	AAC Technologies (2018 HK) FIH Mobile (2038 HK) HTC Corp (2498 TT) Hon Hai Precision Industry (2317 TT) Largan Precision (3008 TT) TPK (3673 TT) TXC Corp (3042 TT)	Sunny Optical (2382 HK) GIS (6456 TT) Catcher Technology (2474 TT) Casetek Holdings (5264 TT)
	**Stanley LIN** Research associate (886) 2 8758 6256 stanley.lin@daiwacm-cathay.com.tw		
	**Jack LIN** Research associate (886) 2 8758 6253 jack.lin@daiwacm-cathay.com.tw		
	**Martin LEE** Research associate (886) 2 8758 6262 martin.lee@daiwacm-cathay.com.tw		
	**Anthony LIAO** Research associate (886) 2 8758 6262 anthony.liao@daiwacm-cathay.com.tw		

Daiwa's Global Tech Team (cont'd)

Korea

SK KIM
Semiconductor/Display & Hardware
(82) 2787 9173
sk.kim@kr.daiwacm.com

Samsung Electronics (005930 KS)
SK Hynix (000660 KS)
Samsung SDI (006400 KS)
Samsung Electro-Mechanics (009150 KS)
LG Display (034220 KS)
LG Electronics (066570 KS)

Henny JUNG
Research associate
(82) 2787 9182
henny.jung@kr.daiwacm.com

Japan

Takumi SADO
Electronic Components
(81) 3 5555 7085
takumi.sado@daiwa.co.jp

Ibiden (4062 JP)
Minebea (6479 JP)
Mabuchi Motor (6592 JP)
Nidec (6594 JP)
Sanken Electric (6707 JP)
TDK (6762 JP)
Alps Electric (6770 JP)
Hirose Electric (6806 JP)
Japan Aviation Electronics Industry (6807 JP)
Iriso Electronics (6908 JP)
Rohm (6963 JP)
Kyocera (6971 JP)
Taiyo Yuden (6976 JP)
Murata Manufacturing (6981 JP)
Nitto Denko (6988 JP)

Junya AYADA
Consumer Electronics
(81) 3 5555 7091
junya.ayada@daiwa.co.jp

Elecom (6750 JP)
Panasonic (6752 JP)
Sharp (6753 JP)
Fujitsu General (6755 JP)
Sony (6758 JP)
Pioneer (6773 JP)
Alpine Electronics (6816 JP)
Funai Electric (6839 JP)
Casio Computer (6952 JP)
Olympus (7733 JP)
Citizen Watch (7762 JP)

Toru SUGIURA
SPE & Precision Machinery
(81) 3 5555 7124
toru.sugiura@daiwa.co.jp

Fujifilm Holdings (4901 JP)
Konica Minolta (4902 JP)
Disco (6146 JP)
Brother Industries (6448 JP)
Renesas Electronics (6723 JP)
Seiko Epson (6724 JP)
Hitachi Kokusai Electric (6756 JP)
Advantest (6857 JP)
Ushio (6925 JP)
Shimadzu (7701 JP)
Nikon (7731 JP)
Screen Holdings (7735 JP)
Hoya (7741 JP)
Canon (7751 JP)
Ricoh (7752 JP)
Tokyo Electron (8035 JP)
Hitachi High-Technologies (8036 JP)

Kazuya NISHIMURA
Industrial Electronics
(81) 3 5555 7161
kazuya.nishimura@daiwa.co.jp

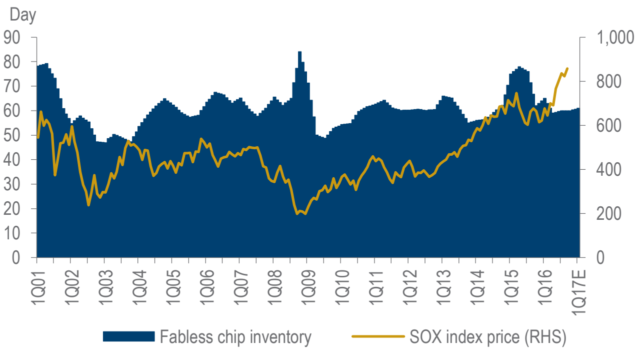
Affin Hwang's Tech Analyst

Malaysia

Kevin LOW
Telco, Technology & Small Caps
(603) 2146 7479
kevin.low@affinhwang.com

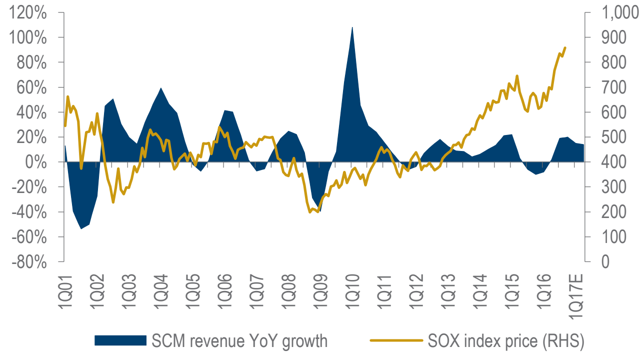
DiGi (DIGI MK)
Telekom (T MK)
Axiata (AXIATA MK)
Maxis (MAXIS MK)
Amcorp Properties (APRO MK)
Globetronics (GTB MK)
Inari Amertron (INRI MK)
MPI (MPI MK)
KESM (KESM MK)
Uchi (UCHI MK)
Unisem (UNI MK)

The chip inventory cycle vs. SOX*



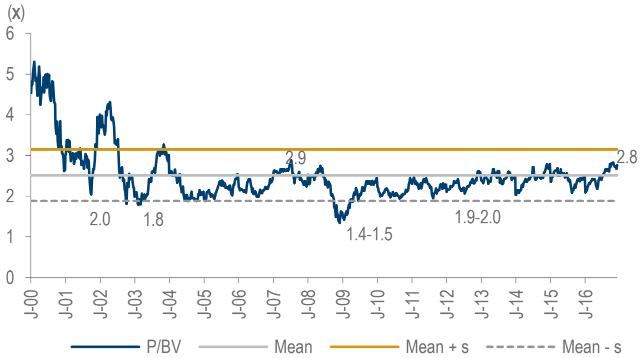
Source: Company, Bloomberg, Daiwa estimates
*Note: * A total of 15 fabless chipmakers in the world under Daiwa's monitor*

The SCM revenue cycle vs. SOX*



Source: Company, Bloomberg, Daiwa estimates
Note: SCM includes dedicated foundries and OSAT makers, ex-IDMs

SCM PBR valuation*

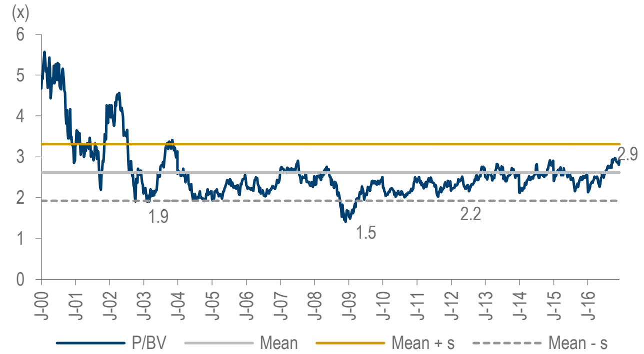


Source: Company, TEJ, Bloomberg, Daiwa forecasts
*Note: * Daiwa-covered only; foundries: TSMC, UMC, SMIC; OSAT: ASE, SPIL; **mean and standard deviation calculation period: 2000 to present*

SCM PBR valuation ex-TSMC

Source: Company, TEJ, Bloomberg, Daiwa forecasts
*Note: * Daiwa-covered only; foundries: TSMC, UMC, SMIC; OSAT: ASE, SPIL; **mean and standard deviation calculation period: 2000 to present*

Foundry PBR valuation*



Source: Company, TEJ, Daiwa forecasts
*Note: * Daiwa-covered only; foundries: TSMC, UMC, SMIC; **mean and standard deviation calculation period: 2000 to present*

OSAT PBR valuation*

Source: Company, TEJ, Daiwa forecasts
*Note: * Daiwa-covered only; OSAT: ASE, SPIL; **mean and standard deviation calculation period: 2000 to present*

Daiwa's tech valuation panel

Daiwa's tech stock valuation panel

			MktCap	Share price	PER (x)			PBR (x)			ROE (%)			EPS growth (%)		
Stock	Ticker	Rating	(USDm)	LC*	2015	2016E	2017E	2015	2016E	2017E	2015	2016E	2017E	2015	2016E	2017E
Greater China																
TSMC	2330 TT	Buy	147,387	269.50	15.5	14.3	12.4	3.9	3.4	3.0	27.0	25.3	25.6	16.2	7.9	15.9
LandMark Opto	3081 TT	Buy	765	32.80	24.8	27.2	21.7	6.8	6.7	6.0	39.0	24.9	29.1	49.9	-9.0	25.5
ASE	2311 TT	Buy	8,374	3,780.00	13.8	12.7	10.6	1.7	1.5	1.4	12.7	12.6	13.7	-17.9	8.9	19.9
Largan	3008 TT	Buy	15,749	71.45	21.0	21.8	14.7	8.0	6.5	4.9	44.1	32.8	37.7	24.3	-3.9	48.3
AAC Tech	2018 HK	Buy	11,312	36.60	25.3	20.3	15.8	6.9	5.5	4.4	30.0	30.0	30.9	34.1	24.9	28.2
Sunny Optical	2382 HK	Buy	5,082	153.00	46.3	29.9	22.2	9.2	7.4	5.8	21.5	27.3	29.4	34.0	54.8	35.1
Hiwin	2049 TT	Buy	1,305	245.50	25.1	27.6	19.7	3.0	3.2	2.8	12.4	11.4	15.3	-33.7	-9.2	40.5
Airtac	1590 TT	Buy	1,365	183.00	32.1	21.3	19.6	4.3	4.2	3.9	13.6	19.9	20.6	-26.4	51.0	8.9
Ennoconn	6414 TT	Buy	986	420.00	33.8	30.0	19.3	9.2	8.3	6.1	31.0	30.2	36.4	51.7	12.8	55.5
Delta	2308 TT	Buy	12,707	157.50	21.9	21.0	17.7	3.3	3.3	3.1	16.5	15.6	17.8	-15.2	3.9	18.6
MediaTek	2454 TT	Outperform	10,547	216.00	13.1	13.9	11.9	1.4	1.4	1.3	10.6	10.0	11.3	-44.1	-6.1	16.6
Advantech	2395 TT	Outperform	4,912	250.00	30.9	27.6	23.8	6.8	6.2	5.6	22.4	23.5	24.6	3.9	12.1	15.8
WinSemi	3105 TT	Outperform	1,132	89.40	20.0	11.4	11.3	3.1	2.0	1.8	16.1	18.1	16.9	70.7	74.7	0.9
Novatek	3034 TT	Outperform	2,032	107.50	10.2	13.0	10.8	2.3	2.3	2.3	22.6	17.9	21.4	-11.4	-21.0	19.8
SMIC	981 HK	Outperform	6,321	11.62	27.6	19.0	14.2	1.7	1.5	1.3	7.4	10.0	11.9	30.3	45.9	33.4
Catcher	2474 TT	Outperform	5,360	224.00	6.9	8.8	8.1	1.5	1.3	1.2	23.7	15.5	14.9	40.5	-22.2	8.7
Lenovo**	992 HK	Outperform	6,981	4.90	8.1	na	10.2	1.7	2.3	1.4	23.4	0.0	17.0	-1.5	0.0	0.0
TXC	3042 TT	Outperform	391	40.60	13.4	12.4	11.2	1.2	1.1	1.1	9.6	9.3	10.1	-5.7	8.0	11.1
GIS	6456 TT	Outperform	888	92.40	12.5	12.4	10.8	2.5	2.2	2.0	23.4	18.9	19.3	58.1	0.9	15.0
Pegatron	4938 TT	Hold	6,336	79.20	8.7	9.9	9.0	1.4	1.2	1.1	16.8	12.9	12.8	47.8	-12.1	9.0
Quanta	2382 TT	Hold	7,198	60.00	13.0	14.5	12.0	1.7	1.6	1.6	13.4	11.6	13.3	-5.6	-10.4	20.9
UMC	2303 TT	Hold	4,450	11.35	10.8	16.9	15.4	0.6	0.6	0.6	6.0	3.8	4.1	10.5	-36.2	9.5
TPK	3673 TT	Hold	622	57.80	na	na	8.8	0.7	0.7	0.6	na	na	7.3	na	na	na
SPIL	2325 TT	Hold	4,598	47.50	18.2	16.8	16.1	2.1	2.2	2.2	12.3	13.8	15.0	-25.7	8.2	4.9
Voltronic	6409 TT	Hold	1,105	452.00	23.7	25.3	21.3	8.3	11.6	10.2	37.9	39.4	51.0	35.6	-6.2	18.6
Wistron	3231 TT	Hold	1,897	24.75	20.6	11.4	9.9	1.0	0.9	0.9	4.4	8.2	9.1	-17.2	80.8	14.9
Asustek	2357 TT	Hold	6,160	267.00	11.6	11.0	11.4	1.2	1.2	1.1	10.3	10.7	10.0	-12.2	5.7	-3.7
Casetek	5264 TT	Hold	904	85.70	5.2	10.7	7.5	0.9	0.9	0.9	19.0	8.7	12.1	14.5	-51.6	42.9
Ju Teng	3336 HK	Hold	364	2.42	3.2	5.5	4.1	0.4	0.4	0.4	13.4	7.8	10.0	14.9	-41.9	33.6
FIH Mobile	2038 HK	Hold	2,526	2.53	11.1	26.2	19.8	0.7	0.7	0.7	5.9	2.6	3.5	31.6	-57.8	32.6
Hon Hai	2317 TT	Hold	45,319	84.20	9.8	11.0	10.3	1.4	1.3	1.3	15.2	12.6	12.5	11.8	-10.8	6.3
TCL Comm	2618 HK	Hold	1,221	7.47	8.8	13.5	10.5	2.3	2.2	1.9	25.8	16.8	19.5	-7.4	-34.7	28.7
Adlink	6166 TT	Hold	422	62.60	20.8	34.8	17.9	3.2	3.1	2.9	16.2	9.5	16.9	-6.2	-40.3	94.3
Realtek	2379 TT	Underperform	1,576	100.50	21.9	15.9	14.0	2.4	2.1	1.9	10.9	13.7	13.9	-38.3	37.6	13.2
HTC	2498 TT	Sell	2,098	81.80	na	na	na	1.1	1.2	1.3	na	na	na	na	na	na
Korea																
SEC	005930 KS	Buy	211,332	1,808,000	14.2	11.8	9.0	1.7	1.6	1.4	11.2	12.5	15.1	-19.0	20.3	31.8
SK Hynix	000660 KS	Buy	27,702	46,500	7.8	13.9	7.3	1.6	1.4	1.2	21.9	10.8	17.9	1.6	-43.7	90.7
SEMCO	009150 KS	Buy	3,209	51,700	12.8	44.9	19.6	0.9	0.9	0.9	7.2	2.1	4.7	-51.0	-71.4	128.5
CrucialTec	114120 KS	Buy	194	8,260	26.8	12.0	7.1	2.7	2.2	1.7	12.5	19.9	26.4	na	123.4	68.0
LG Display	034220 KS	Buy	9,350	31,450	11.6	21.9	10.6	0.9	0.9	0.8	8.2	4.2	8.5	6.9	-46.9	107.1
Samsung SDI	006400 KS	Outperform	6,196	108,500	34.5	-28.3	19.0	0.7	0.7	0.6	1.9	0.0	3.5	-34.5	na	na

Source: Daiwa forecasts, Factset
*Note: *local currency, based on share prices as of 4 January 2017; ** March year end for Lenovo, 2015E=FY16E, 2016E=FY17E, 2017E= FY18E*

Multiple themes emerging to shine

Upturn looks set to continue in 2017 …

Following our December 2015 upgrade to our sector stance (see ***2016 Global Technology Outlook: Heading for the light***), the cyclical recovery in the global semiconductor contract manufacturing (SCM), as well as the semiconductor/technology sectors that started in 2Q16, has unfolded in line with our expectations. Indeed, the trajectory of the recovery in revenue terms has been slightly better than we had expected thanks to TSMC's order-share gain. We expect the chip sector to exit 2016 with inventory build close to its seasonal average in terms of days, healthy enough to lay the foundations for this cyclical upturn to continue into 2017, regardless of any seasonal volatility.

… but irrelevant to our stock calls

That said, we stick with our big-picture view that, although this upturn looks to be sustainable, the sector's revenue growth is likely to be only modest due to the slowdown in smartphone demand growth. Being selective remains our guideline for stock investments as we view the chip cycles as largely irrelevant. We focus on companies able to outpace sector average revenue growth by capitalising on several themes in the tech space that we see starting to shine in 2017, post the smartphone era.

We focus on 6 themes that look likely to shine

In the current demand cycle for the MCD market, while smartphone demand growth appears to be tapering off, we expect 3 market segments to expand rapidly in 2017 – multiple cameras (multi-cam), fingerprint (FP) and organic light emitting diode display (OLED) – thanks to their rising penetration in smartphones as a result of vendors' constant spec upgrades to retain consumer traction.

MCD: multi-cam, FP, OLED

BigData: OC, ADAS, IIoT

In the next demand cycle for the BigData/IoT market, as we have been highlighting since the publication of our thematic report in January 2015 (***Big Data: the next big thing***), while it is likely to take time for this market to overtake the MCD market in revenue terms, we see 3 demand verticals rising faster than others – optical communications (OC), advanced driver assistance systems (ADAS) and industrial IoT (IIoT) – thanks to the bandwidth upgrades for data transmission infrastructure, increasing demand for active safety, driving comfort and energy efficiency to enhance the degree of autonomous driving, and rising degree of intelligent industrial automation towards the implementation of smart factories.

We have chosen 15 stocks for investment under these themes

Differing from our investment approach for 2016, in which we picked stocks that would benefit from 3 themes — namely, a cyclical recovery, 4G penetration and recovery of the Apple supply chain — this time we recategorise our picks according to the 6 themes we identify for outperformance in 2017. We suggest a total of 15 tech stocks under coverage by Daiwa and our partner in Malaysia, Affin Hwang, that we believe will benefit from the 6 themes of multi-cam, FP, OLED, OC, ADAS and IIoT, directly or indirectly, as summarised in the table on the next page. In addition, we will watch some other names that we believe could benefit from these themes, although we actively follow them but carry no ratings on them at this point in time.

Daiwa's 2017 Pan-Asia tech stock picks

Stock	Ticker	Price (LC)*	Rating	PER (x) 2015	PER (x) 2016E	PER (x) 2017E	PBR (x) 2015	PBR (x) 2016E	PBR (x) 2017E	ROE (%) 2015	ROE (%) 2016E	ROE (%) 2017E	Earnings growth (%) 2015	Earnings growth (%) 2016E	Earnings growth (%) 2017E
Add															
Multi-cam															
Sony**	6758 JP	3,333	Buy	27.9	67.9	17.5	1.7	1.7	1.6	6.2	2.5	9.2	na	-58.9	287.4
Largan	3008 TT	3,780	Buy	21	21.8	14.7	8	6.5	4.9	44.1	32.8	37.7	24.3	-3.9	48.3
Fingerprint															
SMIC	981 HK	11.62	Outperform	27.6	19	14.2	1.8	1.8	1.6	7.4	10	11.9	61	61.7	33.4
OLED															
SEC	005930 KS	1,808,000	Buy	14.2	11.8	9	1.7	1.6	1.4	11.2	12.5	15.1	-19	17.6	27.8
LG Display	034220 KS	31,450	Buy	11.6	21.9	10.6	0.9	0.9	0.8	8.2	4.2	8.5	6.9	-46.9	107.1
OC															
LandMark Opto	3081 TT	269.5	Buy	24.8	27.2	21.7	6.8	6.7	6	39	24.9	29.1	61.1	-8.4	25.5
Inari Amertron***	INRI MK	3.4	Buy	21.1	18.7	15.8	4.8	4.2	3.6	23.9	24.8	26.2	15.4	30.3	18.5
WinSemi	3105 TT	89.4	Outperform	20	11.4	11.3	3.1	2	1.8	16.1	18.1	16.9	36.1	19.4	0.9
ADAS															
Nidec**	6594 JP	10,500	Buy	34.6	29.9	26.2	4.1	4.1	3.6	11.9	13.6	14.6	18.3	15.6	14.4
Sunny Optical	2382 HK	36.6	Buy	46.3	29.9	22.2	9.2	7.4	5.8	21.5	27.3	29.4	34.5	55.1	35.1
IIoT															
Ennoconn	6414 TT	420	Buy	33.8	30	19.3	9.2	8.3	6.1	31	30.2	36.4	54	22.3	55.5
Delta	2308 TT	157.5	Buy	21.9	21	17.7	3.3	3.3	3.1	16.5	15.6	17.8	-9.6	3.9	18.6
Multi-theme															
TSMC	2330 TT	183	Buy	15.5	14.3	12.4	3.9	3.4	3	27	25.3	25.6	16.2	7.9	15.9
ASE	2311 TT	32.8	Buy	13.8	12.7	10.6	1.7	1.5	1.4	12.7	12.6	13.7	-17.4	8.9	19.9
SK Hynix	000660 KS	46,500	Buy	7.8	13.9	7.3	1.6	1.4	1.2	21.9	10.8	17.9	3	-44.5	87.7
Avoid															
HTC	2498 TT	81.8	Sell	na	na	na	1.1	1.2	1.3	na	na	na	na	na	na
Realtek	2379 TT	100.5	Underperform	21.9	15.9	14	2.4	2.1	1.9	10.9	13.7	13.9	-37.6	34	13.2
SPIL	2325 TT	47.5	Hold	18.2	16.8	16.1	2.1	2.2	2.2	12.3	13.8	15	-25.3	8.2	4.9
Adlink	6166 TT	62.6	Hold	20.8	34.8	17.9	3.2	3.1	2.9	16.2	9.5	16.9	3.2	-35.7	94.3
Wistron	3231 TT	24.75	Hold	20.6	11.4	9.9	1	0.9	0.9	4.4	8.2	9.1	-17.2	80.8	14.9

Source: Daiwa forecasts, Factset
*Note: * Local currency based on share price as of 4 January 2017, ** March year-end for Sony and Nidec, ***June year end for Inari (covered by Daiwa alliance partner Affin Hwang)*

Daiwa's 2017 Pan-Asia tech stocks to watch*

Stock	Ticker	MktCap** (USDm)	Daily T/O (USDm)	PER (x) 2015	PER (x) 2016E	PER (x) 2017E	PBR (x) 2015	PBR (x) 2016E	PBR (x) 2017E	ROE (%) 2015	ROE (%) 2016E	ROE (%) 2017E	Earnings growth (%) 2015	Earnings growth (%) 2016E	Earnings growth (%) 2017E
Multi-cam															
XinTec	3374 TT	278	4.2	60.9	na	na	1.5	na	na	2.8	na	na	-76.6	na	na
Kingpak	6238 TT	319	11.0	26.3	na	na	9.9	na	na	49.4	na	na	1,106.0	na	na
Fingerprint															
EgisTec	6462 TT	513	5.2	nm	13.8	8.0	12.2	6.2	3.6	-8.9	66.3	55.7	na	na	72.6
FocalTech	3545 TT	324	6.1	44.2	17.7	12.4	0.9	0.9	0.9	2.5	4.6	6.4	-64.5	149.2	42.5
Goodix	603160 CH	6,885	56.2	126.4	44.2	38.2	40.7	14.5	11.1	36.7	39.6	33.6	-1.4	185.8	15.6
OLED															
AP Systems	054620 KS	611	17.5	85.1	11.6	10.6	6.7	3.3	2.5	8.4	32.0	26.6	570.8	636.0	9.3
Wonik IPS	240810 KS	874	5.8	na	12.9	11.4	na	3.6	2.8	na	32.1	28.6	na	na	13.2
OC															
VPEC	2455 TT	279	2.3	15.1	16.3	13.2	2.5	3.0	2.8	16.7	18.6	22.6	26.5	-6.9	23.6
Accelink	002281 CH	2,331	52.3	71.9	41.6	31.4	6.6	5.4	4.7	9.7	13.1	15.1	68.8	72.8	32.5
ADAS															
IntelliEPI	4971 TT	97	1.5	27.6	22.7	17.0	2.1	16.8	na	9.1	8.2	11.3	-34.6	21.6	33.6
Tung Thih	3552 TT	781	20.6	31.8	15.4	11.9	6.7	4.5	3.8	22.6	34.2	35.2	66.1	106.7	29.4
Cub Elecparts	2231 TT	733	4.7	21.1	16.4	13.6	9.3	6.5	5.1	50.2	44.7	44.0	50.3	28.5	20.6
Hana Microelec.	HANA TB	888	1.9	15.4	13.7	13.1	1.6	1.5	1.5	10.9	11.0	11.5	-39.3	12.5	4.6
Multi-theme															
Vanguard	5347 TT	2,851	4.7	22.1	15.4	13.9	3.3	3.0	2.9	15.1	20.1	21.6	-23.6	43.2	11.2
CHPT	6510 TT	1,152	15.5	89.7	41.6	28.4	33.0	11.9	8.3	43.7	35.5	33.2	110.5	115.7	46.4

Source: Company, Bloomberg
*Note: * Stocks Daiwa actively follows but does not carry a rating for, ** Based on prices as of 4 January 2017*

MCD: multi-cam, FP, OLED

We forecast a 5-year CAGR (2015-20) of 11% for the smartphone-enabled multi-cam market, reaching a total market size of USD20bn, a 20% CAGR for the Android-smartphone FP market to surpass USD2bn, and a 28% CAGR for the mobile OLED market to exceed USD30bn, all by 2020. These compare with just a low-single-digit CAGR for the global MCD market for the same period, in revenue terms.

Sony, Largan, SMIC, SEC and LGD

Under Daiwa's coverage, we expect the Japan-based **Sony** and Taiwan-based **Largan** to be the key beneficiaries of the multi-cam trend, given their industry leaderships in CMOS image sensor (CIS) chip supply and in high-end lens component supply, respectively. For FP, since Daiwa has yet to cover any pure-exposure names, we pick **SMIC** as a proxy in this space given that 10%+ of its revenue is sensor-related, including smartphone FP and automotive CIS, in addition to its foundry leadership in China which allows it to benefit from fast-growing IoT demand potential domestically. For OLED, Korean makers are likely to dominate during the initial years so our focus of investment lies with the Korean OLED food-chain players, such as Samsung Display, where we use **SEC** as a proxy despite its conglomerate status as a fully integrated system house with multiple-theme exposure. We also like **LG Display (LGD)** which we believe will be the most viable second-source in 2017 and beyond. We initiated on LGD with a Buy (1) rating on 18 November 2016 (see ***LG Display: key beneficiary of the LCD market recovery***).

BigData/IoT: OC, ADAS, IIoT

We forecast 5-year CAGRs of 20%/90% for the fibre-to-the-x (FTTX)/Silicon Photonics (SiPh) segments of the OC market, a 10-year CAGR (2015-25) of 24-25% for the ADAS market at both the system device and chip levels, and a 5-year CAGR of c.15% for the IIoT market, all in revenue terms. This growth is comparable to, if not stronger than, that of the fast-growing themes within the aforementioned MCD cycle, thanks to the younger status of the BigData/IoT cycle (refer to our ***2015 Big Data report*** for more details).

LMO, Inari, WinSemi, Nidec, Sunny Optical, Delta and Ennoconn

For OC, we like the Taiwan-based **LandMark Opto (LMO)** for its industry leadership in the epiwafer-growing segment of the fibre-optic (FO) food chain and the Malaysia-based **Inari Amertron** for its hybrid status in both RF filter and FO assembly & test. We also like **WinSemi** for its expanding footprint into this space to grab value in upstream areas such as epi-wafer growing and chip fabrication by leveraging its leadership in the RF power amplifier (PA) foundry industry. For ADAS, we see Japan-based **Nidec** as one of the best exposures through its offerings of advanced motors to facilitate autonomous emergency braking systems (AEB), and we like the China-based **Sunny Optical** for its industry leadership in the vehicle-lens segment. For IIoT, our picks go to Taiwan-based **Delta** for its industry leadership in the industrial automation and energy management (see ***Upgrading: multiple catalysts ahead, 4 January 2017***), and **Ennoconn** for its leverage on the Hon Hai group to offer competitive solutions for market-share gains through acquisitions. We upgrade Ennoconn by one notch to Buy (1) on valuation grounds (see the company section of this report).

Multi-theme exposure

TSMC, ASE and SK Hynix

In addition, some companies operate diversified product portfolios which find business exposure across a multiple of the themes we like, including **TSMC** as the tech leader in the foundry space particularly enjoying demand potential from high-performance processors in datacentres and ADAS that demand cutting-edge process technologies. As the global leader in the OSAT space with the HoldCo deal adding to potential for ROE and valuation accretions (***What HoldCo means for ASE/SPIL: pro forma analysis, 15 July 2016***), **ASE** should stand to benefit given its strategic food-chain position with the foundries. Last but not the least, we consider **SK Hynix** to be a potential beneficiary in Korea across multiple themes of sensors, micro-controlling units (MCU) and datacentres that require a variety of memory solutions including embedded and discrete DRAM, NAND flash and other non-volatile memory (NVM) devices. This comes on top of our positive view that the commodity memory market recovery will be sustained into 2017 to benefit memory majors under our coverage, including **SEC** and **SK Hynix**.

Summary of investment thesis for 2017 Daiwa's Pan-Asia tech picks

Stock	Ticker	Investment thesis
Sony	6758 JP	• The increasing adoption of dual/multi-lens cameras in the smartphone market bodes well for Sony's CMOS image sensor (CIS) business given its leadership in the CIS chip food chain and the potential contributions to sales volume and product mix. • Profitability in the semiconductor segment deteriorated significantly in 1H FY16 due to fallout from yen appreciation and the Kumamoto earthquakes, but it seems set to improve substantially in FY17 if the yen remains weak vs. the dollar going forward. Our focus is also on the potential in the automotive market over the medium term.
Nidec	6594 JP	• Business is expanding at the world's top brushless DC motor producer on the back of aggressive M&A activities. • New growth areas include next-generation brake motors, sensor units, and robotics. Our eyes are also on the impact of utilising IIoT in its own factories. We view the stock as an attractive long-term play.
SEC	005930 KS	• In 2017, more FCF will be used for shareholders return and dividend will be increased by 30% YoY. Upon continuous enhancement of shareholders return policy, we believe further enhancement is likely in a long-term perspective. • In a near-term perspective, the performance of company's existing component business including memory and display will drive its earnings. However, SEC also prepares its longer-term growth momentum while actively executing mergers and acquisition in new business area such as automobile. The company recently announced to acquire Harmon, an ADAS play at system levels.
LGD	034220 KS	• While LCD panel price started rebounding from 2Q16, we expect LGD to enjoy favourable LCD market condition going through 2017, thanks to its price and quality competitiveness in LCD and markets' solid demand for high-end LCD panels. • Rising OLED penetration in both large-size and small/mid-size area should be positive to LGD, while it has been keeping dominant position in OLED TV panel and ramping up presence in small/mid OLED panels.
SK Hynix	000660 KS	• Thanks to positive market condition of DRAM, driven especially by smartphone and PC, we believe Hynix's operating margin in DRAM to improve from 25% in 2016 to 36% in 2017. • While the company's plan to shift to 48-layer based 3D-NAND is right on the route, contents growth for smartphones and solid demand for SSD drive both ASP and bit growth.
TSMC	2330 TT	• Thanks to its technology leadership, we expect TSMC to benefit from a multiple themes that we've flagged for growth, particularly in the high-performance computations that help facilitate the brains of applications like ADAS and datacentres, on top of the mobile smart devices where it has already dominated. • Near term, we see 2017 as another good year for TSMC thanks to strong demand for its advanced tech nodes of 16nm, 12nm and 10nm, with a variety of demand applications from professional gaming/VR, ADAS, datacentre and mobile AP including likely full order allocation of A11 that goes to the next iPhones.
ASE	2311 TT	• Given its leadership in the global OSAT sector that enjoys a strategic position with the foundry in the SCM food chain, ASE should be a multi-theme beneficiary with its offering of the backend packaging, testing and SiP services to accommodate rising demand from the likes of sensors, FO, ADAS and datacentres. • Valuations have been discouraged since 2016 after the announcement of the HoldCo deal, which we expect to go through some time in 2017 to help enhance the new ASE's structural profitability and rerate valuations as a result of the ASE+SPIL business synergy and HoldCo's financial reengineering.
LMO	3081 TT	• Suffering from severe inventory correction in China's passive optical networking (PON) supply chain in 2016, LMO has found its business bottomed in 4Q16, in terms of both dollar revenue and YoY growth. However, any meaningful recovery may not be seen until 3Q17 since it takes time for 10G PON demand to ramp up. • Being the industry leader in the FO epi-wafer supply, LMO stands to benefit and capture the most value of the food chain from the constant bandwidth upgrades of wire-line data transmission infrastructures to facilitate the next BigData/IoT cycle, in our view.
WinSemi	3105 TT	• Although WinSemi looks to be facing revenue growth slowdown due to the 4G demand cycle tapering off, we remain positive on its structural business outlook when the 5G cycle begins. During the transition, growth should primarily come from carrier aggregation (CA) and WiFi MIMO upgrades. • WinSemi is expanding footprint to fibre-optic (FO) business aiming to bridge the gap during the 4G-to-5G transition; we are positive on this strategic move and expect to see revenue contribution from FO in 2H17. Therefore, we expect WinSemi to benefit from our OC theme.
SMIC	981 HK	• In our view, the BigData/IoT demand cycle should push the tech envelops both for advanced (more for Moore) and legacy/specialty tech (more than Moore), where as opposed to TSMC likely dominating in more-for-Moore, SMIC stands to benefit from more-than-Moore given its strategic foundry status in China. • We believe SMIC is expanding capacity timely to capitalize on the rising demand for legacy/specialty tech from a variety of sensors such as fingerprint and CIS, as well as PMIC, connectivity, light-performance computation and embedded NVM solutions, to facilitate growth themes like ADAS, MCD and other IoT.
Largan	3008 TT	• Largan is well positioned to benefit from rising multi-cam adoption trend in smartphone on back of its leading industry position and solid customer profile, in our view. • We expect Largan to deliver stellar earnings growth of 48% YoY in 2017E driven by on-going spec upgrade, better product mix, and scale benefits from the operating margin expansion.
Sunny Optical	2382 HK	• We view Sunny as a beneficiary of the rising ADAS adoption in smart cars on its dominant position in vehicle lens sets. In addition, Sunny should enjoy rising multi-cam adoption in smartphone as a major supplier of handset camera module and handset lens sets for android smartphone, in our view. • We expect Sunny's earnings to grow 35% YoY in 2017E driven by the favorable industry trends in smart cars and smartphones as well as operating margin expansion due to better product mix; and we see the recent pullback as an opportunity for long-term investor to build their position.
Ennoconn	6414 TT	• We expect Ennoconn to be a major beneficiary of the shift to Industrial IoT. With EMS support from its parent Hon Hai group, Ennoconn is focused on the ODM business, which has been riding on growth opportunities of industrial upgrades in various segments, including telecom, network security, automation and retail. • We expect Ennoconn's M&As in 2016 will start to unveil promising synergies in 2017. M&A has been one of the key growth drivers for the company, and it also enjoys a solid M&A track record. Its latest deals include Kontron Canada (KCI) in January 2016 and S&T in October 2016.
Delta	2308 TT	• We expect industrial automation to be the key driver for Delta. The company aims at double-digit YoY revenue growth in industrial automation area, which it deems an important long-term growth driver. As such, it continues to extend its product line-up and expand the global distribution network for industrial automation business. • We are positive on Delta's profit margin trend, driven mainly by favourable product mix shift, due to declining revenue from PC related legacy power supplies and more contributions from higher-margin businesses (eg, industrial automation). The steady margin improvement of Eltek will help Delta's blended profit margins as well.
Inari Amertron	INRI MK	• As the largest RF test house in the region, Inari remains an exciting RF play as mobile device complexity increases and global LTE coverage widens. The push into the chip fab/wafer cert and data server chips business will however make Inari an interesting IoT proposition. • To reduce single customer risk exposure, Inari is targeting opportunities with Osram for a new biometric product. Inari also recently acquired a 10% stake in Taiwan-listed PCL Technologies Inc (***A proxy for IDMs in the Asian fibre optics food chain***, 19 Dec 2016), which is targeted to expand its footprint in the China market.

Source: Daiwa forecasts

Recap of 2016 key highlights in the tech sector

A year of cyclical upturn	We turned positive and upgraded SCM stocks in December 2015 as we expected a cyclical upturn in the chip/tech sector from March 2016 after the inventory correction. Our view appears to have played out well, as the SCM revenue recovered in 2Q16, followed by above-seasonal strength in 2H16, thanks to sustainable restocking demand and TSMC's order-share gain in the A10/InFO business.
Android back in sight	The first leg of the recovery was driven by Android smartphones. Although such ASP-dilutive restocking due to competition resulted in a sub-seasonal recovery in 2Q16, volume expanded strongly in 3Q16 thanks to MediaTek gaining volume share. This echoed our view that continued 4G penetration should help drive incremental growth in silicon content per box, despite a slowdown in the overall smartphone demand.
Followed by new iPhone	After heavy stock selloffs in Asia's iPhone 6S/S+ supply chain due to inventory issues, Apple plays rallied as the street's expectations were reset and market noises on the iPhone 7/7+, in areas such as dual-cams, eased. We projected iPhone 7/7+ shipments of 81m for 2016 (production base), roughly comparable to iPhone 6S/S+ shipments but with upside potential for 1Q17 likely on preorder strength and SEC's Note 7 issue.
FO, sensor and storage	In line with our expectations, FO and sensors, among other BigData demand verticals, saw strong growth in 2016, thanks to bandwidth upgrades and rising adoption of FP sensors in the smartphone space. However, we did not anticipate any severe production cuts in the Asian FO supply chain, as a result of China telcos' inventory adjustment spurred by the ZTE issue.

Source: Daiwa

Key themes for 2017 tech sector

Upturn to continue	Our chip inventory monitor expects the 2016 cyclical upturn to be sustained into 2017, although growth should not be meaningful due to a slowdown in smartphone demand. Being selective remains our guideline for investment and we continue to focus on market-share gainers in the SCM and SPE domain, such as TSMC, SMIC, HoldCo (ASE+SPIL) and Disco.
Commodity recovery to be sustained	The commodity memory market (including NAND and DRAM) picked up in 2016 as a result of demand growth (for example, SSD) and supply constraints on tech advances. We expect this cyclical upturn to sustain in 2017; key beneficiaries should be SK Hynix and SEC, in our view.
MCD: multi-cam, FP, OLED	Although we seem to be approaching an end in the MCD cycle as a result of a slowdown in smartphone demand, we flag 3 themes to shine and grow ahead of the market average: multi-cam, FP and OLED, thanks to their rising penetration in the smartphone space on vendors' constant spec-upgrades. Key beneficiaries: Sony, Largan, SEC, LGD and SMIC. Other names to watch include EgisTec, Goodix, AP Systems and Wonik IPS.
BigData: OC, ADAS, IIoT	We believe the IT market is still in a transition from MCD to the BigData/IoT cycle, but we see 3 demand verticals as rising faster than others: OC, ADAS and IIoT, thanks to bandwidth upgrades, rising degrees of autonomous driving and intelligent industrial automations. Key beneficiaries: LMO, WinSemi, Inari, Nidec, Sunny Optical, Ennoconn, Delta and MediaTek. Names to watch: VPEC, Accelink, Tung Thih and Cub.

Source: Daiwa

Upturn to be sustained, albeit modestly

Lean inventory looks set to sustain current upturn into 2017

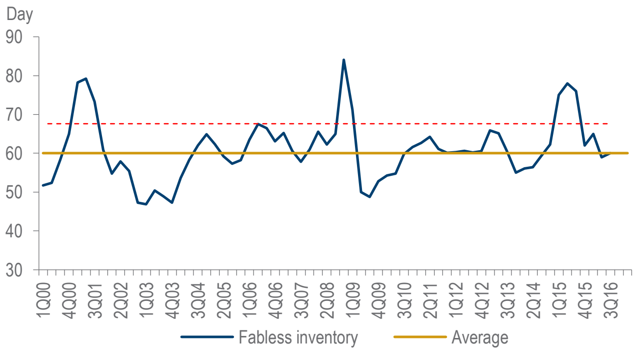
As usual, we begin our discussion of tech outlook with chip inventory to locate where we are in the cycle. A gauge we use to monitor the health of the tech industry is global fabless chip inventory, which has fallen after its 2015 peak, finishing below its seasonal average of 60 days at end-2Q16 and remaining at around this level at end-3Q16. We attribute this healthy inventory build to the strong chip revenue recovery driven by Android smartphone food-chain restocking, professional gaming and deep-learning computations, followed by new iPhone food-chain restocking. Apart from the gaming and deep-learning computations, the demand drivers in 2016 unfolded in line with our expectation (see our ***2016 Tech Outlook report***). We expect the fabless chip inventory to have exited 2016 still around its seasonal average level, suggesting a healthy upturn in the chip cycle beginning in 2Q16 and continuing into 2017. This should set the stage for us to retain our Positive stance on the SCM/tech sector.

Healthy inventory lays a foundation for upturn to be sustained

Aggregate fabless revenue should contract by a low-single-digit QoQ for 4Q16

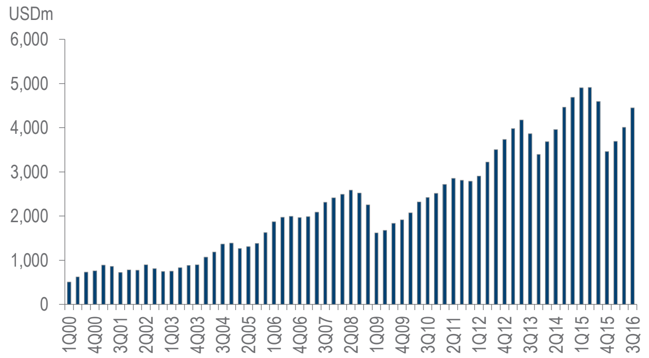
At end-2Q16, most of the fabless chipmakers we monitor had seen inventory declines or inventory at healthy levels. At end-3Q16, iPhone-related chipmakers such as Dialog Semi and Cirrus Logic had largely worked down their inventory, while heavyweights like Qualcomm, Nvidia, MediaTek and Marvell continued to see healthy inventory levels. Based on company guidance, we expect aggregate fabless chip revenue to drop by a low-single-digit percentage QoQ in 4Q16, slightly below seasonality due to the high comparison base. Note that aggregate fabless chip revenue rose by 10% QoQ in 3Q16, beating guidance of 0-9% QoQ and following on from above-seasonal 12% QoQ growth in 2Q16. We see 4Q16 demand strength being led by Nvidia, Cirrus Logic and Xilinx on gaming demand and iPhone supply-chain restocking.

Major fabless inventory trend*



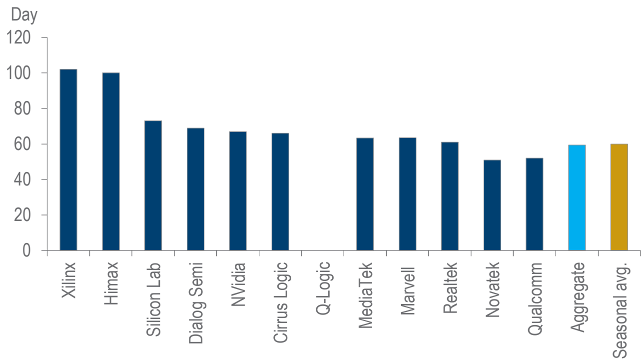
Source: Company, Daiwa estimates
*Note: * A total of 15 fabless chipmakers monitored by Daiwa*

Global fabless inventory in dollar terms*



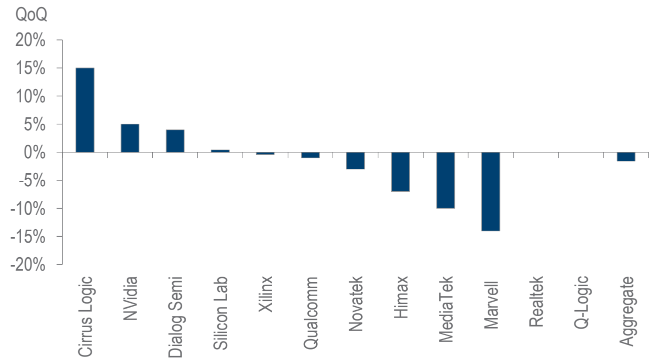
Source: Company, Daiwa estimates
*Note: * A total of 15 fabless chipmakers monitored by Daiwa excluding BRCM and ALTR due to M&A*

Major fabless inventory status at September-quarter end*



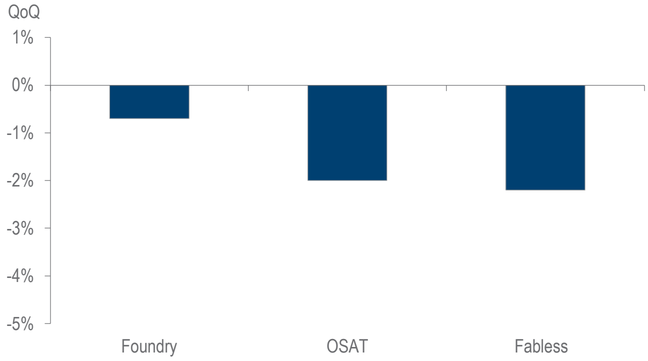
Source: Company, Daiwa estimates
*Note: * Q-Logic was acquired by Cavium*

Major fabless revenue growth guidance for December-quarter*



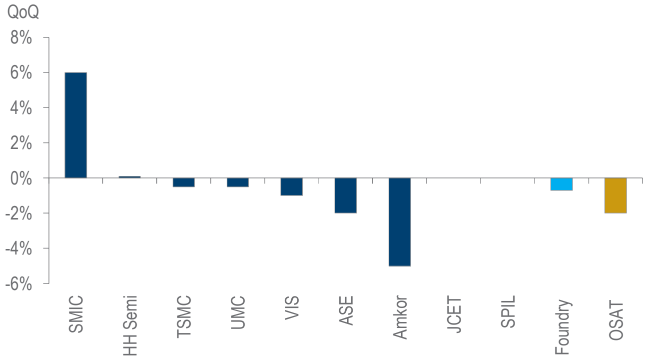
Source: Company, Daiwa forecasts
*Note: *Mid-point of guidance range; Realtek and Q-Logic not available*

Foundry/OSAT/fabless revenue growth differentials in 4Q16



Source: Company, Daiwa forecasts
*Note: * Dedicated foundries only, excluding part-IDMs such as SEC and Intel; ** Dedicated OSAT makers only, excluding par-time IDMs*

Major SCM revenue growth guidance for December-quarter*



Source: Company, Daiwa forecasts
*Note: * Mid-point of guidance range; ASE on OSAT business only; SPIL and JCET not available*

Inventory remained lean at end-2016 and opens up revenue upside for foundries in 1Q17

We again look at the growth differential among front-end foundry, back-end outsourced semiconductor assembly and test (OSAT) and fabless chipmakers as a precursor to gauge inventory dynamics. Although aggregate revenue for the fabless chipmakers is likely to fall by a low-single-digit percentage QoQ for 4Q16 based on their aggregate guidance, we expect the combined revenue of the foundries and OSAT majors to also fall by a similar level in the same quarter. These growth differentials suggest roughly no addition to the fabless inventory by end-2016, barring any skewing factors such as M&A.

Our inventory day assessment for the sector looks more positive than that of TSMC, which calls for 2 days above seasonal at end-2016. As a result, we could see above-seasonal business strength in 1Q17 for the front-end foundries, evidenced by our market research on order additions at TSMC's 16nm FF from customers in the high-end smartphone and datacentre applications. We upgraded TSMC to Buy (1) on 2 December 2016 (see ***TSMC: enjoy the party first***).

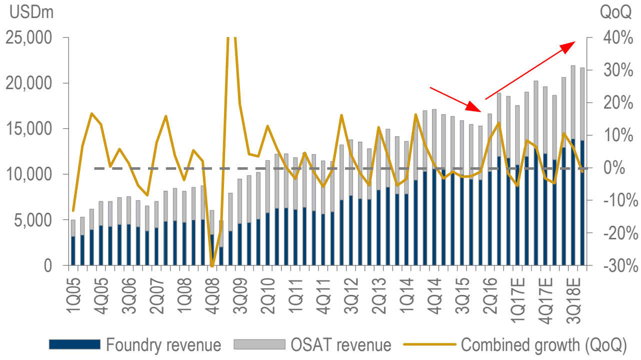
But revenue growth should be modest due to …

We now forecast SCM's revenue to increase by 8% YoY in 2016 and 9% YoY in 2017

The healthy inventory rebuild cycle leads us to believe that the SCM sector could face only modest seasonal weakness in 4Q16 and 1Q17, and then see a sustained upturn through 2017. We now forecast revenue growth of 8% YoY in 2016 and 9% YoY in 2017 (previous: 7% and 8%) for the sector, thanks to the foundry strength, yet the growth should be modest given the slowdown in smartphone demand growth. Using the SCM sector as a proxy, we expect a similar pattern in the global chip sector, but with lower growth since the SCM players have been structurally gaining market share.

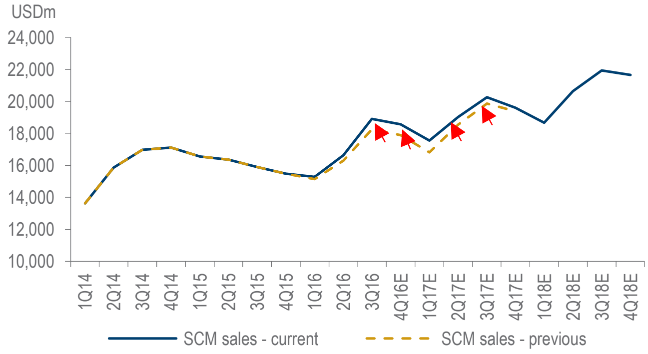
Our revised forecasts call for SCM revenue, after contracting by 1-4% QoQ over 1Q15-1Q16 due to the inventory glut in 2015, to begin recovering from 2Q16 with 9% QoQ growth, followed by growth of 14% QoQ in 3Q16 and -2% QoQ in 4Q16, with Android smartphones the demand driver for 1H16 and iPhone restocking for 2H16. We expect the SCM sector to consistently outgrow the global chip average, posting a 9% CAGR over 2015-18 vs. the global chip average of 3%.

Global SCM revenue forecasts (quarterly)*



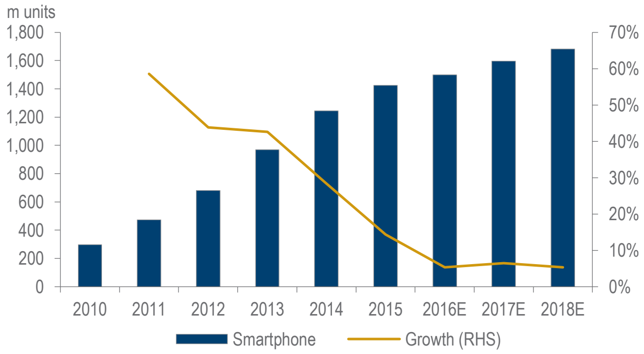
Source: Company, Daiwa forecasts
*Note: *Dedicated foundries and OSAT makers only, excluding part-time IDMs*

Global SCM revenue forecast revisions*



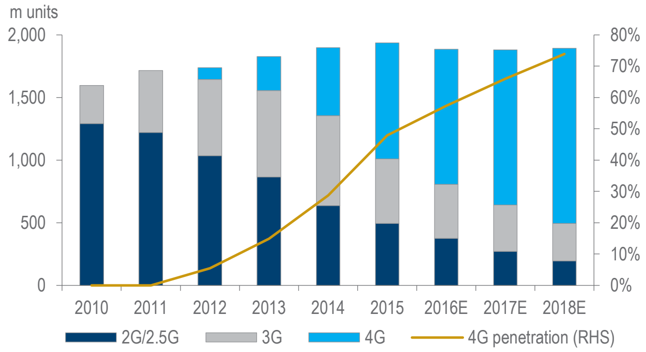
Source: Company, Daiwa forecasts
*Note: * Dedicated foundries and OSAT makers only, excluding part-time IDMs*

Global smartphone demand forecasts



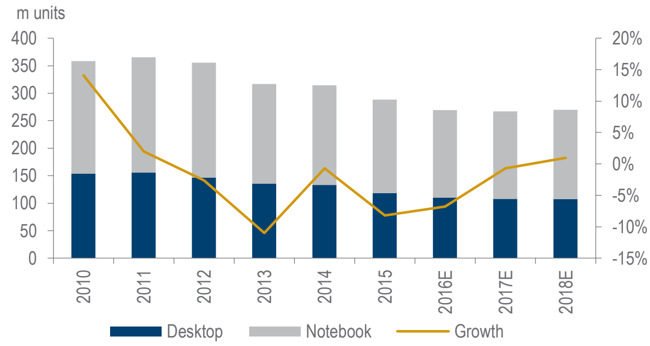
Source: IDC, Daiwa forecasts

4G penetration in global mobile handset market



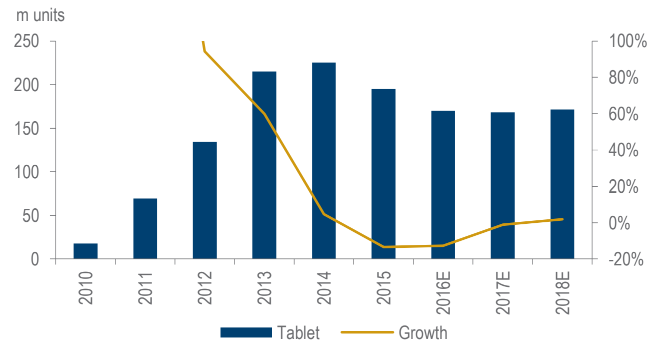
Source: IDC, Daiwa forecasts

Global PC demand forecasts*



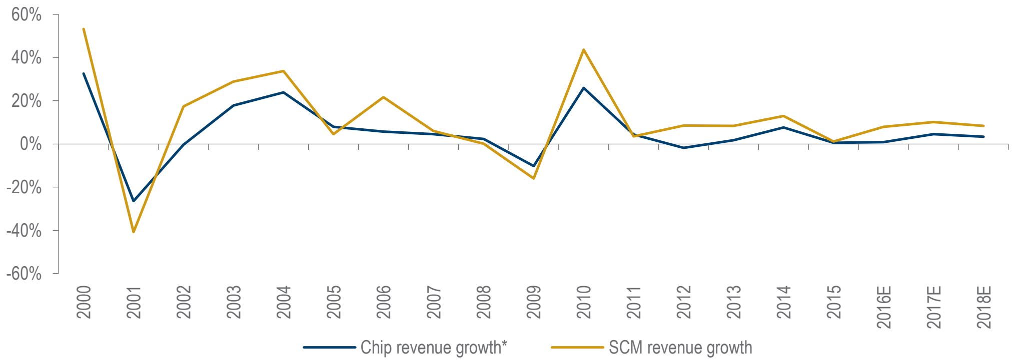
Source: IDC, Daiwa forecasts
*Note: *excluding tablet PCs*

Global tablet PC forecasts



Source: IDC, Daiwa forecasts

Revenue growth comparison: SCM vs. global chip average*



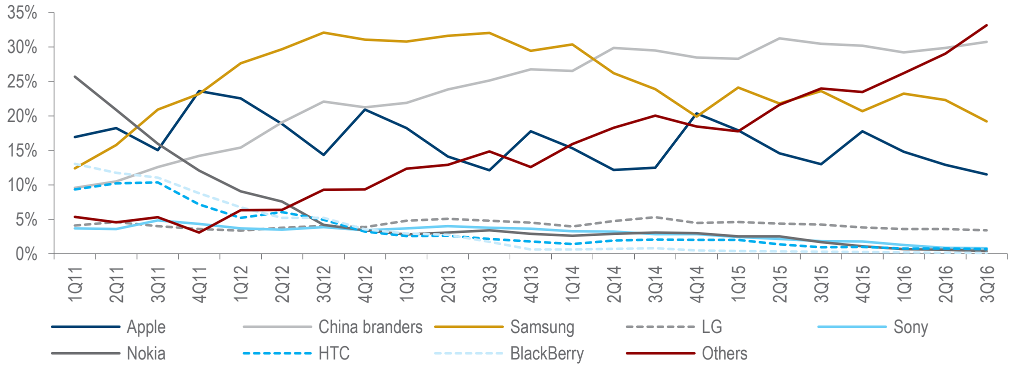
Source: WSTS, Daiwa forecasts
*Note: * Excluding memory devices*

… slowdown in smartphone demand growth

We look for global smartphone shipment growth of c.5% per year over 2016-18

Demand for big-ticket-item smartphones (c. 1/3 of chip demand) is tapering off in growth terms which, together with muted PC and digital consumer demand (growth likely down by mid- to high-single-digit percentage YoY in 2016), appears to have prompted cautious inventory rebuild in the supply chain since the recovery, despite demand turning out more robust than expected. We forecast smartphone shipments to rise by 5% YoY in 2016 and hover around the same growth levels over our forecast horizon, with incremental growth being driven by the continued 4G migration in emerging markets. We expect 4G penetration to rise from 48% in 2015 to over 70% in 2018. As the next demand cycle, namely BigData/IoT, may not accelerate rapidly until 2H18 at the earliest, we expect only modest growth for SCM/chip sales over 2015-18 during the MCD-to-BigData transition.

Global smartphone market-share trend

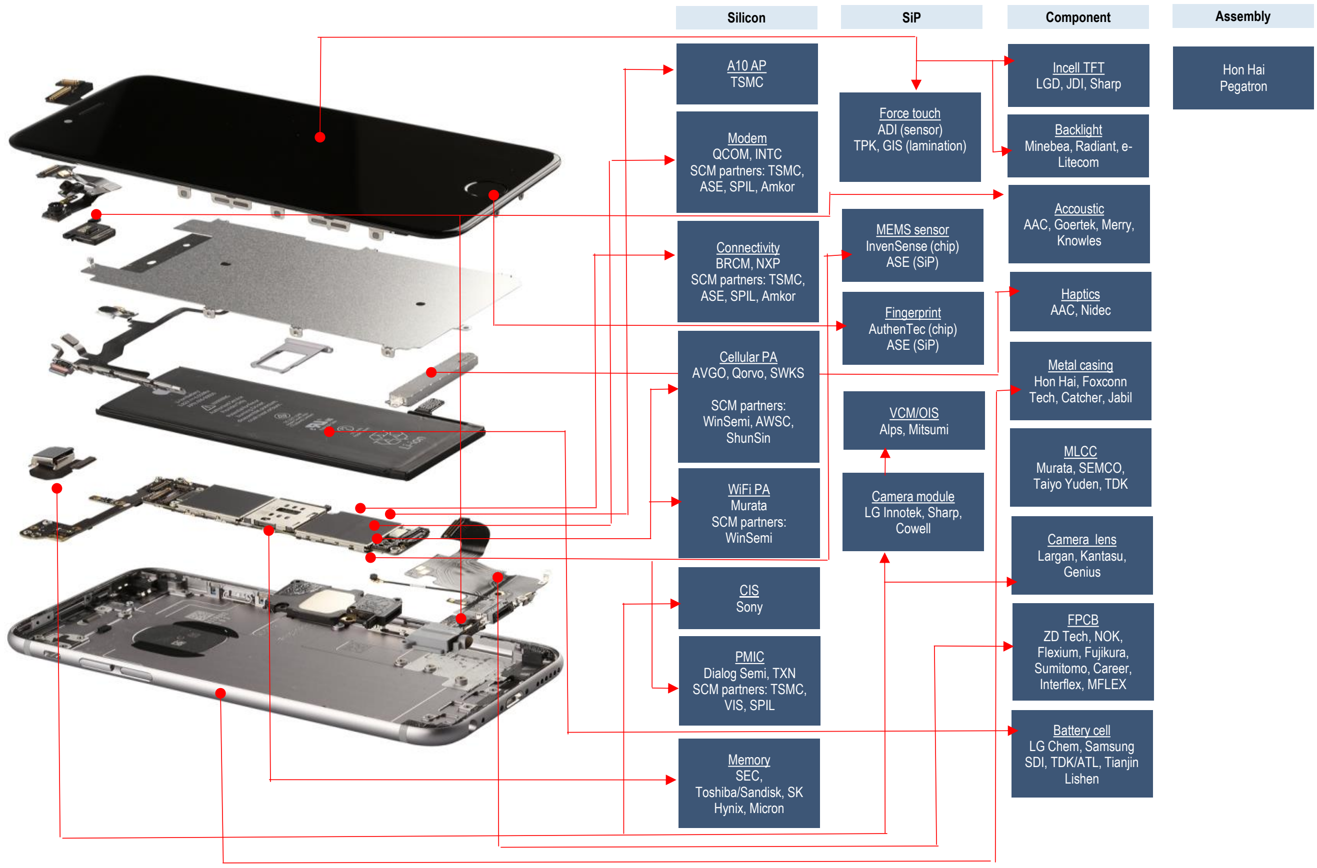


Source: Gartner Market Share: Devices, All Countries, 4Q15 Update", authors include Mikako Kitagawa, Anshul Gupta, Roberta Cozza, Ranjit Atwal, David Glenn, Isabelle Durand, Kanae Maita, Meike Escherich, Annette Jump, Lillian Tay, Tuong Huy Nguyen, Bruno Lakehal, Tracy Tsai, Eileen He, Vishal Tripathi, Annette Zimmerman, Atsuro Sato and CK Lu, published on 16 February 2016

Growth looks to be shifting to EM due to demand slowdown

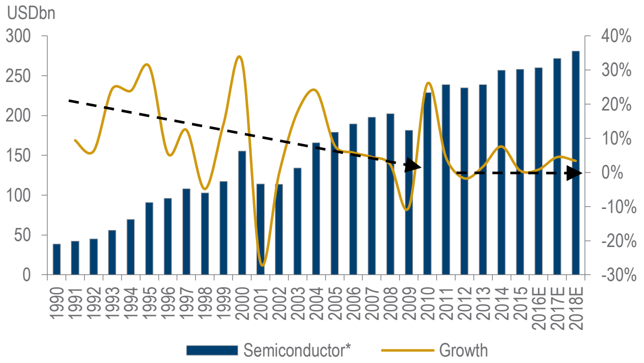
In terms of smartphone market share, Chinese companies were leaders from the period after the GFC until 2Q16 when other brands from the emerging markets (EM) took over in aggregate – evidence of the demand shift to EM as a result of an overall growth slowdown. Apple's market share has been seasonally volatile, but has more or less hovered around the 15% level over the past 2 years (12% in 3Q16), while SEC's has hovered in the low 20% range, though ended 3Q16 at 19%. We believe the smartphone market is consolidating into 2 segments: low-cost and premium. While Apple and SEC dominate in the premium segment, brands from China and EM should continue to lead the low-cost segment.

iPhone teardown by key supply-chain vendor



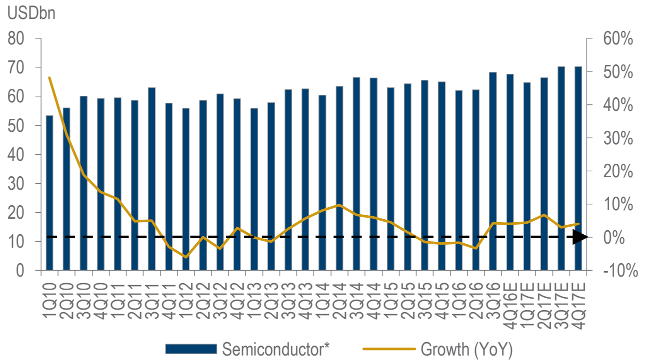
Source: Daiwa

Global chip revenue growth forecast (annual)



Source: Company, Daiwa forecasts
*Note: *excluding memory devices like DRAM and NAND*

Global chip revenue growth forecast (quarterly)*



Source: WSTS, Daiwa forecasts
*Note: * excluding memory devices like DRAM and NAND*

We forecast only a 3% CAGR for global chip revenue over 2015-18

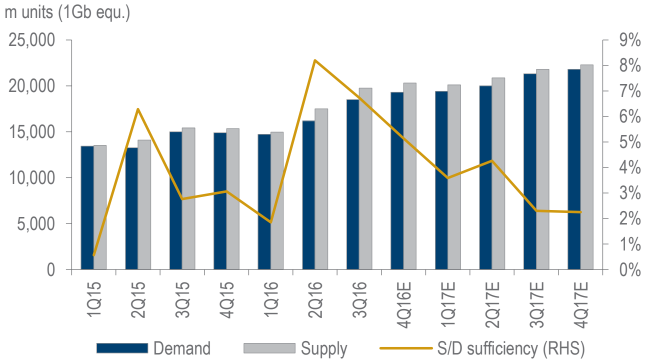
Our modest growth forecast for the SCM sector, resulting from the smartphone demand slowdown, implies mild growth for global chip revenue over our forecast period. Although the structural slowdown in demand growth in the chip sector over 1990-2010 appears to have stabilised post the GFC, the growth has been consolidating within a narrow range of -5% to +10% YoY, averaging just 2% YoY. We forecast global chip revenue ex-memory to expand by just 1% YoY in 2016 and 4% YoY in 2017, for a 3% CAGR over 2015-18. On a quarterly basis, we forecast the revenue to contract by 1-2% QoQ in 4Q16, after strong growth of 10% QoQ in 3Q16 and flat in 2Q16. We expect revenue growth to hover in a range of 3-7% over 1Q17-4Q17 in YoY terms.

Despite modest chip growth, commodity demand to be robust

Commodity DRAM and NAND should remain robust

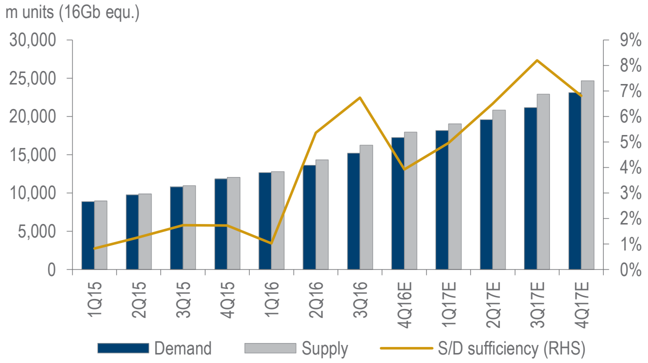
That said, whereas we only look for modest growth in the logic space, we remain bullish on the commodity memory segment of the chip industry and expect memory makers such as SEC and SK Hynix to benefit from an improved supply/demand (S/D) imbalance in the DRAM market in 2017. Our Korean tech team forecasts global DRAM oversupply to improve in 2017 after peaking in 2Q16, driven by technology constraints as the industry migrates to the 1xnm process. NAND S/D sufficiency should remain unpromising but volume strength should be solid thanks to the rising demand for commercial solid state drive (SSD) from datacentre applications as a result of hard disc drive (HDD) replacement.

Global DRAM supply/demand forecasts



Source: Daiwa forecasts

Global NAND supply/demand forecasts



Source: Daiwa forecasts

Focus on themes that shine

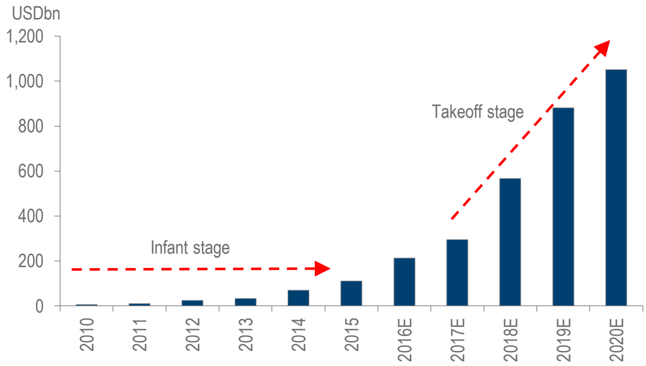
Since the publication of our BigData/IoT report in 2015 (***Big Data: the next big thing, 2 January 2015***), we have envisioned the current MCD demand cycle, led by the smartphones, tapering off in growth terms. On the other hand, the BigData/IoT cycle, spurred by the proliferation of IoT demand, should overtake MCD to become the next secular demand cycle. But we also believe the transition from the MCD to the IoT cycle may not be a smooth one. We forecast IoT to overtake the MCD market in dollar terms only in 2H18, at the earliest, leaving a transitional gap of 2015-18 with just mediocre growth for the tech sector as a whole. Nevertheless, we see a few themes gaining prominence, which may lead to some companies outpacing average sector demand growth during this transition, including multi-cam, FP and OLED penetration in the smartphone space of the MCD cycle, and OC, ADAS and IIoT in the BigData/IoT cycle.

MCD growth theme No.1: multi-cam

We forecast multi-cam revenue CAGR of 11%, vs. a smartphone average of only a 2%

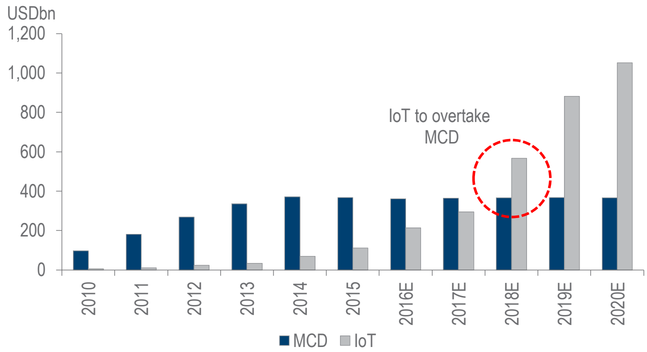
Smartphone vendors' continual search for better image quality is perhaps one of the most compelling differentiating features to retain consumers' traction, since amid the smartphone demand slowdown, spec upgrades through hardware and/or software enhancement are crucial to create differentiated growth, in our opinion. As such, we see the multi-cam trend as a stronger theme for growth in the smartphone market as vendors are starting to adopt dual-cam or triple-cam for the optimisation among light sensitivity, pixel size and form factor (Z-height) in order to enhance image quality and facilitate the rising trend of augmented/virtual reality (AR/VR) (***The more the merrier: multi-cameras are the next mega trend in smartphones; 2 August 2016***).

Global IoT market forecasts



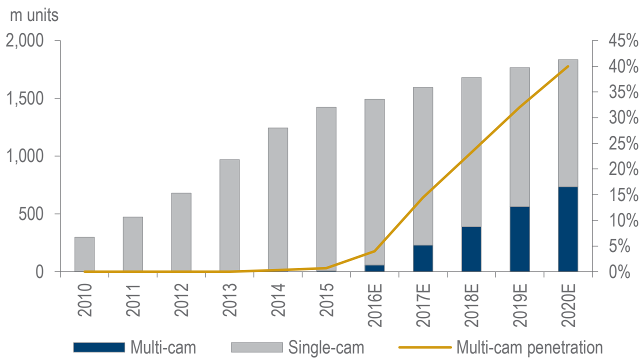
Source: Cisco White Pager, Daiwa forecasts

Crossover between MCD and IoT market in revenue scale



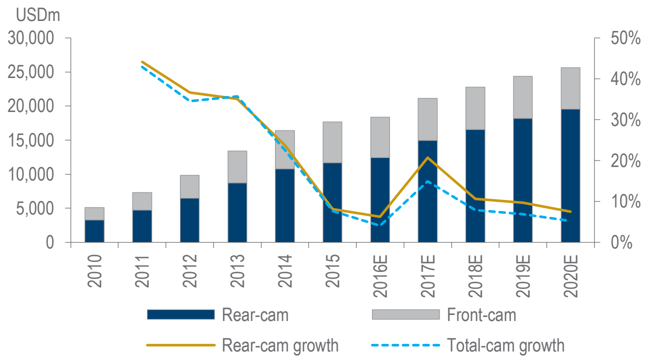
Source: Daiwa forecasts

Multi-cam penetration in the smartphone market



Source: Daiwa forecasts

Smartphone camera market forecasts: front vs. rear



Source: Daiwa forecasts

Smartphone camera module food chain

CIS wafer fabrication	CIS chip packaging & testing	Key component manufacture	Camera module assembly
IDM Sony, SEC, Canon, OnSemi, Toshiba, STMicro, Nikon **Fabless** OVTi, Aptina, GalaxyCore, PixArt, Novatek **Foundry** TSMC, SMIC (LFoundry), Vanguard, UMC	XinTec Kingpak Terrasem Co Lite-On Tong Hsing	**Lens set** Largan, Kantatsu, SEMCO, Sunny Optical, Genius, Glorytek, Sekonix, Kolen, Diostech **VCM/OIS** Alps, Mitsuni, TDK	Lite-On Tech Sunny Optical SEMCO LG Innotek Primax Cowell O-Film Truly Qtech Sharp Hon Hai

Source: Daiwa

We forecast a multi-cam smartphone shipment CAGR of 139% over 2015-20, from 10m in 2015 to 60m in 2016, 230m in 2017 and over 700m in 2020, with penetration rising from 1% in 2015 to 4% in 2016, 14% in 2017 and 40% in 2020. Based on rear-cam phone installation, we forecast a total multi-cam CAGR of 11% over 2015-20, from USD11.7bn in 2015 to USD12.4bn in 2016, USD15bn in 2017 and c.USD20bn in 2020. This compares with an estimated total revenue CAGR of only 2% for smartphones over the same period.

We see Sony and Largan as the key beneficiaries of the multi-cam theme

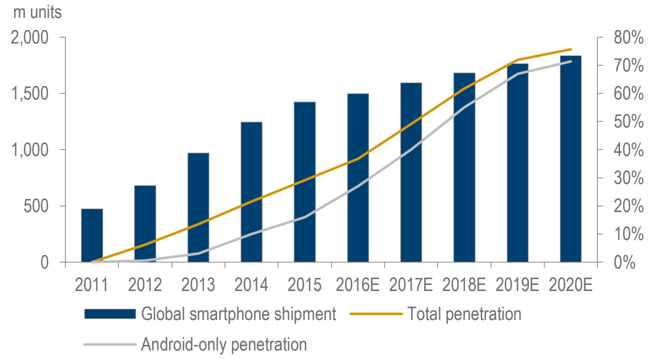
As illustrated in the chart above, among players across the smartphone camera food-chain that could benefit from the multi-cam story, our investment focus is on the segment leaders which we believe will capture the most value in the chain. We like Sony (IDM), TSMC (foundry) and SMIC (foundry) at the CMOS image sensor (CIS) chip end, Largan in high-end lens components, and Sunny Optical at the lens/module end. CIS chip packagers XinTec and Kingpak are potential beneficiaries to watch, in our view. Indeed, the camera food chain is high in terms of product application scalability, from smartphones to ADAS and IIoT. We discuss these applications later in this report.

MCD growth theme No.2: FP

Android smartphone FP is our focus; we forecast a revenue CAGR of 20% over 2015-20

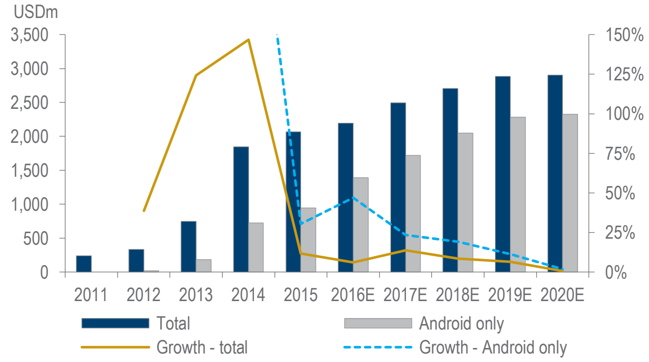
Thanks to vendors' push of mobile payment ecosystems to implement security controls, together with advances in FP authentication technologies, we see smartphones equipped with FP authentication solutions rising to become another growth theme in the global smartphone market. We forecast FP-enabled smartphone penetration to reach over 70% of total smartphone shipments in 2020, from 29%/16% of total/Android-only shipments in 2015, and 37%/27% in 2016. We see the Android smartphones as the source of growth given their industry-follower status relative to their iOS counterparts, posting a CAGR of 40% over 2015-20 in shipment terms, based on our forecasts. In dollar terms, we forecast a 20% CAGR for the Android smartphone FP market, exceeding USD2bn in 2020 from USD0.9bn in 2015 and USD1.4bn in 2016.

FP penetration in the smartphone market



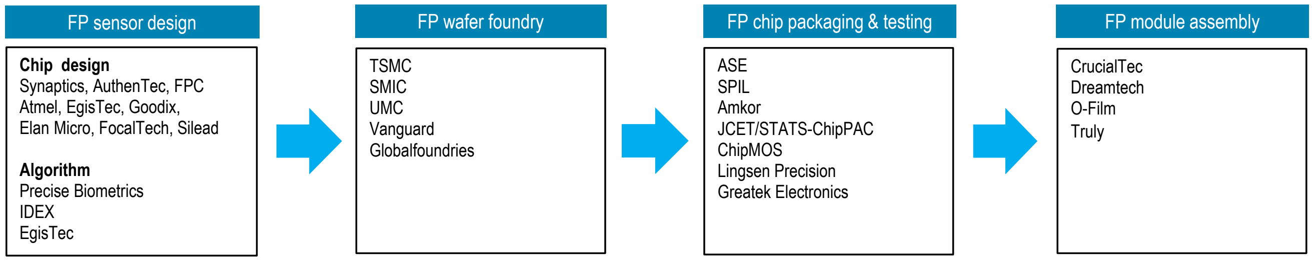
Source: Daiwa forecasts

Global smartphone FP market forecasts



Source: Daiwa forecasts

Smartphone FP module food chain



Source: Daiwa

In the Android smartphone FP space, we like SMIC as a proxy beneficiary

In our view, the FP market is a commodity business where scale is crucial to cope with fast price erosion for volume expansion in the mass-smartphone market. Companies able to offer integrated hardware and software solutions should differentiate themselves for their better authentication and faster time to market to add value. Among players across the food chain to benefit from accelerating FP penetration in the smartphone space, our focus for investment in Asia is firstly SMIC at the foundry end, which is benefiting from strong FP demand in China by offering foundry work for the largest FP sensor chip supplier, FPC. Korea-based CrucialTec at the module end should also benefit from economies of scale and potential vertical integration, despite facing competition from newcomers like O-Film, while other names worth watching are EgisTec, Goodix, FocalTech and Vanguard.

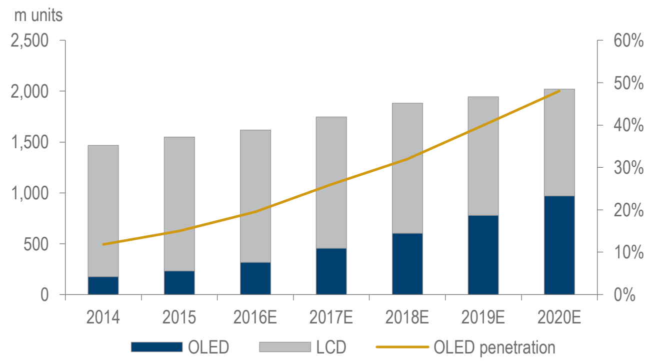
MCD growth theme No.3: OLED

We expect the adoption of smartphones with OLED panels to surge

Whereas liquid crystal display (LCD) is currently the mainstream panel solution for smartphones, OLED is gaining traction from consumers given its better display quality and attractive features (curved, bendable, etc.), despite its higher cost. Thanks to SEC's push followed by Apple's decision to include OLED in one of its next iPhone models per our market research (likely a 5.8" screen size), we expect OLED-configured smartphone shipments to accelerate in 2017 and see a 33% CAGR over 2015-20.

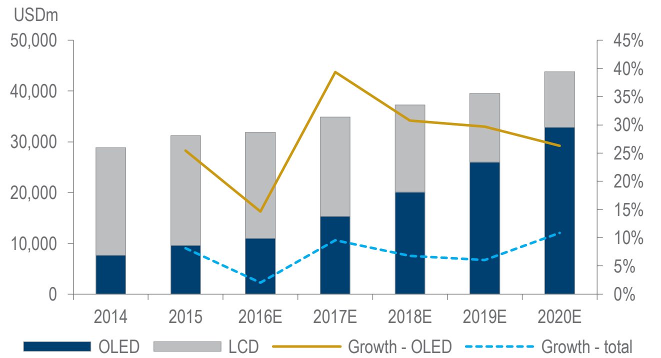
We forecast OLED penetration in the mobile-display market – a proxy for smartphones – to reach nearly 50% in 2020, from 15% in 2015, 20% in 2016 and 26% in 2017, resulting in a 28% CAGR for the OLED market in dollar terms over 2015-20, exceeding USD30bn in 2020. This compares with just a 7% CAGR for the total mobile display market over the same period.

OLED penetration in the mobile device market



Source: Daiwa forecasts

Mobile device OLED market forecasts



Source: Daiwa forecasts

Mobile OLED panel food chain

Key materials	Evaporation	Encapsulation	Post process
LG Chem, Samsung SDI, Dow Chemical, Merck, Duksan Neolux, Tosoh SMD, Doosan, UDC, NSSC, Chisso, Heesung Electronics, SFC, Idemitsu Kosan, Toray, LTC	**Cleaner** KCTech, SEMES, DMS, STI, Invenia **Evaporator** Tokki, SFA Engineering, Yas, AP Systems, Wonik, Sunic System	**Encap** Jusung Engineering, AVACO, Top Engineering, AP Systems, Invenia, Kateeva **Flexible** Tera Semicon, AP Systems, Viatron Technologies, EO Technics	**Tester** Soulbrain ENG, KMAC, Invenia, HB Technology, Orbotech, Youngwoo DSP, Gigalane **Module** SFA Engineering, Top Engineering **Logistics** SFA, Toptec, AVACO, Vessel

Source: Daiwa

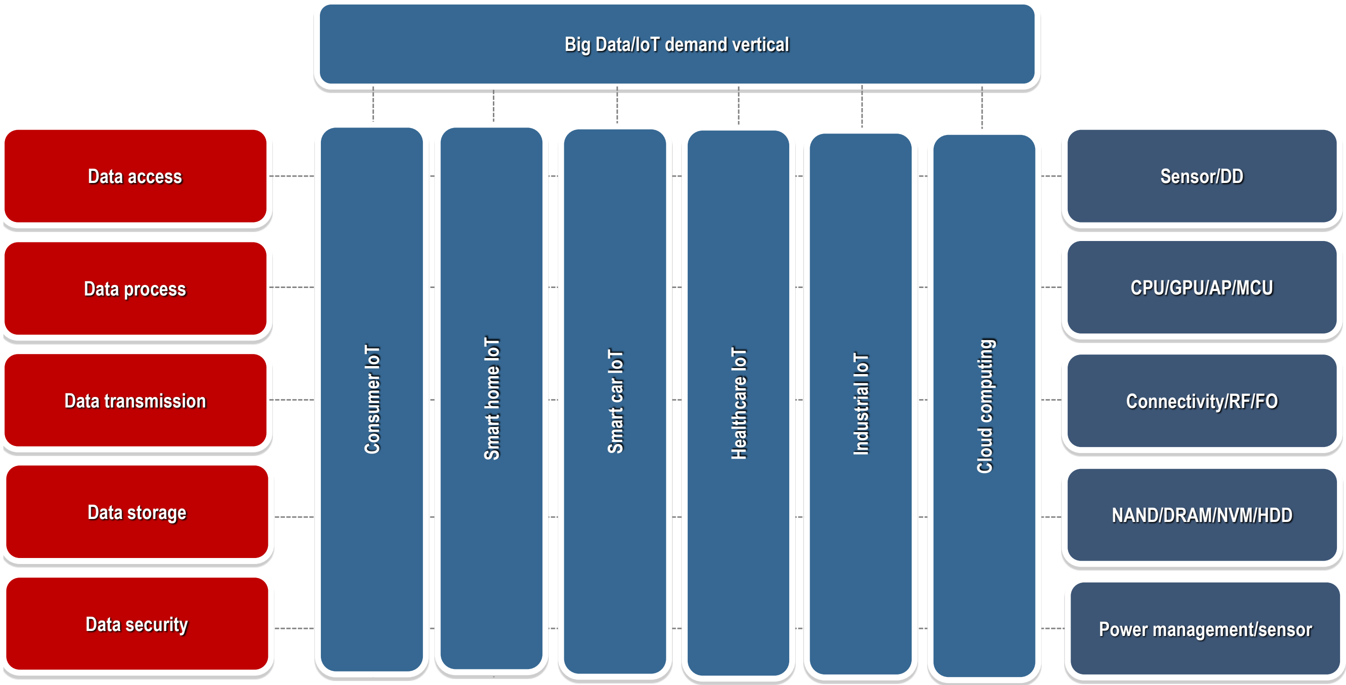
In the OLED space, we prefer the industry leaders and their related food-chain partners owing to the technology complexity where we believe yields are crucial to meet demand, rather than any aggressive investment in capacity. This should make the Korean food chain perhaps the biggest beneficiaries during the initial years given their early-bird developments in this space. We understand second-tier panel makers in China have announced aggressive expansion plans to tap into the OLED market, yet execution remains to be seen given their lack of a track record. We see SEC (through Samsung Display) as the key beneficiary given the group's industry dominance. Other names worth watching could include AP Systems and Wonik IPS. Among the newcomers with market-share potential, LG Display stands out as becoming the most viable second-source in 2017 and beyond.

BigData/IoT growth theme No.1: OC

We expect OC to grow ahead of the pack given its infrastructure focus for bandwidth upgrades of data transmission

In our OC report on 17 February 2016 (***Regional Optical Communications Sector Report: Head for the leading lights***), we concluded that in the global IT demand evolution, although it took time for the IoT cycle to ramp up in revenue scale and bridge the transitional gap with the MCD cycle, the OC sector, which belongs to one of the "5+1" demand verticals we've defined under the BigData/IoT cycle (ie, the cloud infrastructure or datacentre as depicted in the chart on the next page), should ramp up ahead of the pack due to its infrastructure status of handling bandwidth upgrades to facilitate the rise in data flows, both wire and wireless, across applications of telecom, datacom and cellular infrastructures. Recall that in our January 2015 Big Data report, we categorised the 5+1 demand verticals under the BigData/IoT ecosystem in which we observed that only consumer IoT demand, such as that for smartphones and wearable devices, has grown in scale, while others such as smart-car and smart-home IoT would still take time. Nevertheless, the cloud-computing infrastructure that helps facilitate datacentres including data transmissions within the ecosystem should ramp up first.

The BigData/IoT matrix: demand application vs. tech functionality

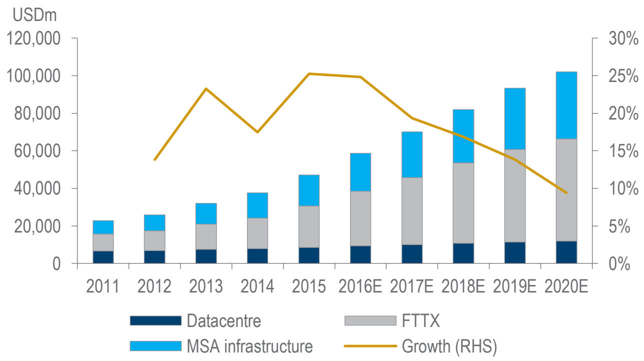


Source: Daiwa

We look for an OC CAGR of 17% over 2015-20

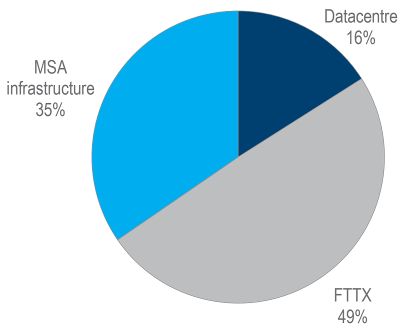
We forecast the global OC market to see a 5-year CAGR of 17% to surpass USD100bn in 2020, from USD47bn in 2015, driven by fibre-to-the-x (FTTX) and datacentres where the high bandwidth (≥ 25 gigabits per second [Gbps]) fibre-optic (FO) transceivers, including the alternative SiPh solutions, are replacing the low-bandwidth ones, which in turn are replacing the traditional copper counterparts. Despite a likely slowdown in China's FTTX build, the global FTTX market should still be robust and enjoy both volume (number of transceivers) and content (bandwidth upgrade) growth, since FTTX penetration in other countries of the world remains low. The next bandwidth upgrade cycle in China's passive optical networking (PON) infrastructure will likely begin in 2017, at the commercial end of the optical line terminals (OLT). We estimate the OC market to reach USD58-59bn in 2016.

Global OC market forecasts



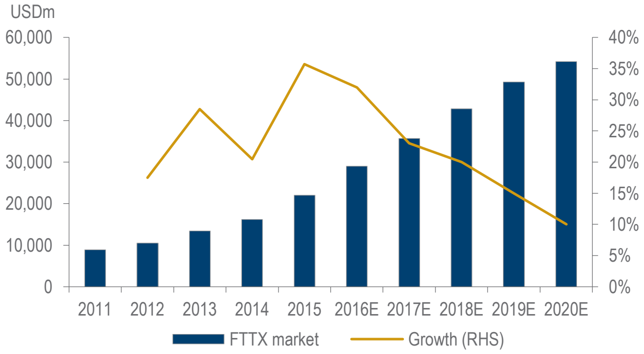
Source: PTIDA, Daiwa forecasts

Global OC market breakdown (2016E)



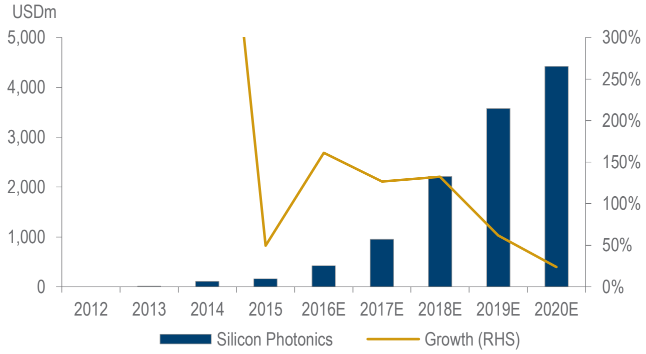
Source: Daiwa estimates

Global FTTX market forecasts



Source: Daiwa forecast

Global SiPh market forecasts



Source: Daiwa forecasts

As the big-ticket item in the OC space (about half the global OC revenue based on our estimates), the FTTX market should rise, in revenue terms, by 32% YoY in 2016, 2% faster than our February 2016 forecast, thanks to the strong build in China, with household penetration running ahead of our original target. Although the supply-chain's production failed to keep up with the build due to ZTE being investigated by the US and China telcos' destocking, followed by white-box transceiver module makers dumping inventory, we still forecast FTTX market revenue to see a 20% CAGR over 2015-20, with the growth contributed by countries other than China. We expect China's FTTX demand growth to slow in 2017, which is earlier than we had anticipated in early 2016 due to the fast build creating an unfavourable comparison base.

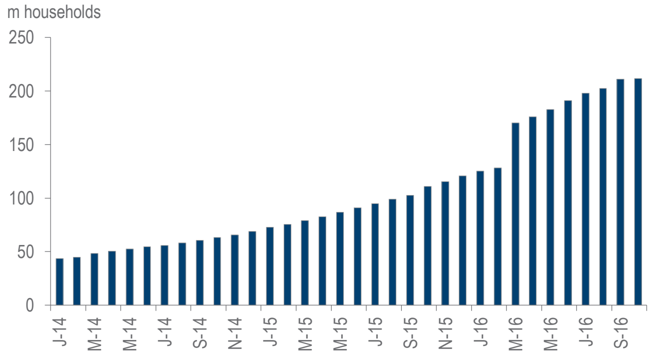
China's FTTX build will likely slow, but content growth should continue

FTTX has been a cash-cow business for the FO supply-chain in Asia, as most (>60%) of the FTTX revenue has been geared towards China, which accounts for over half of the global FTTX market. China's FTTX coverage has risen rapidly, from 15% in 2014 to 26% in 2015 and over 45% in 4Q16, according to monthly data released by MIIT (工信部), with the household base exceeding 210m, or 90m+ new additions YoY. This figure is ahead of our original target of 50-60m set in early 2016, likely due to the ZTE issue. While at what level the FTTX build would see saturation in China remains debatable, we think the faster build in 2016 may compress room for growth in 2017. Nevertheless, content growth should help mitigate the likely slowdown in unit growth, in our opinion, meaning that we expect the bandwidth upgrade in China's 2017 PON market to start migrating to 10Gbps (or 10G), from the existing 1.25/2.5G, at the commercial end of fibre-to-the-building (FTTB) OLT devices.

SiPh should be the high-flyer

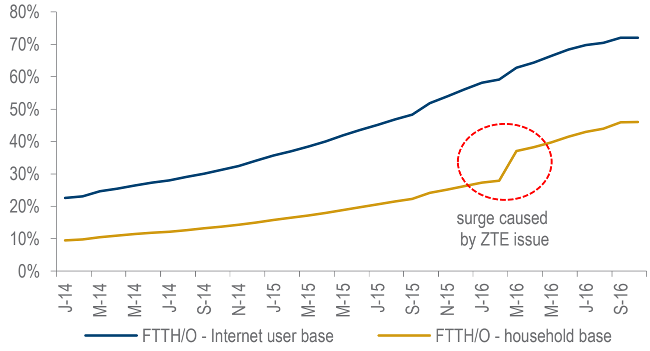
The growth slowdown in the FTTX market should make SiPh the key growth driver in the next 3-5 years, while the FTTX will represent the cash-cow as it contributes most of the OC market. Despite our cuts in SiPh revenue forecasts on 5 October 2016 (***LMO report: mid-cycle correction about to end***), we forecast SiPh market revenue to see a strong 90% CAGR over 2015-20, more than double each year over 2016-18, thanks to Intel's push to gain share in the datacentre FO transceiver market. LMO should be the key beneficiary given its exclusive position of epi-wafer supplier to Intel, in our view.

China: FTTX build on household base



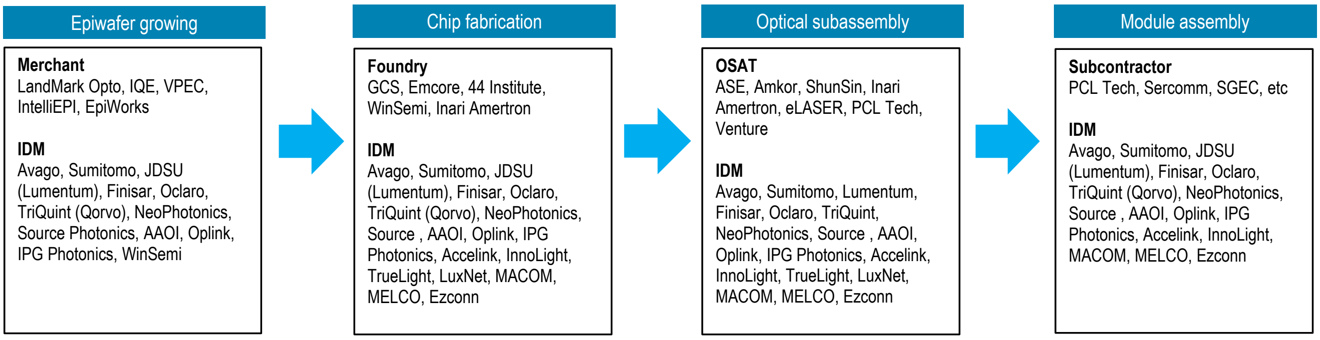
Source: MIIT

China: FTTX penetration



Source: MIIT

Global FO transceiver food chain



Source: Daiwa

In the OC space, we prefer LMO and Inari; WinSemi a potential beneficiary

In the global OC/FO transceiver food-chain, we believe the highest value proposition, in terms of margins enjoyed from value-add processes, lies in the fully integrated IDMs and the upstream epi-wafer makers due to the high barriers to entry technology-wise relative to the downstream optical subassembly (OSA) makers and module assemblers. In the epi-wafer-growing segment, our investment focus is LMO – the global leader in the merchant market. We think VPEC could be another name to watch given its expanded footprint in OC. And 3 other beneficiaries could be packagers, such as Inari, PCL Tech and ASE, given their strategic positions in the Avago food chain. Penetrating the epi-wafer-growing and optical chip foundries like photo and laser diodes, WinSemi, which focuses on the higher-valued upstream, is also our investment focus, though we think it may take time for the company to ramp up any meaningful revenue contribution. China-based Accelink is another name worth of monitoring, in our view, given its leadership position in China's OC IDM space.

BigData/IoT growth theme No.2: ADAS

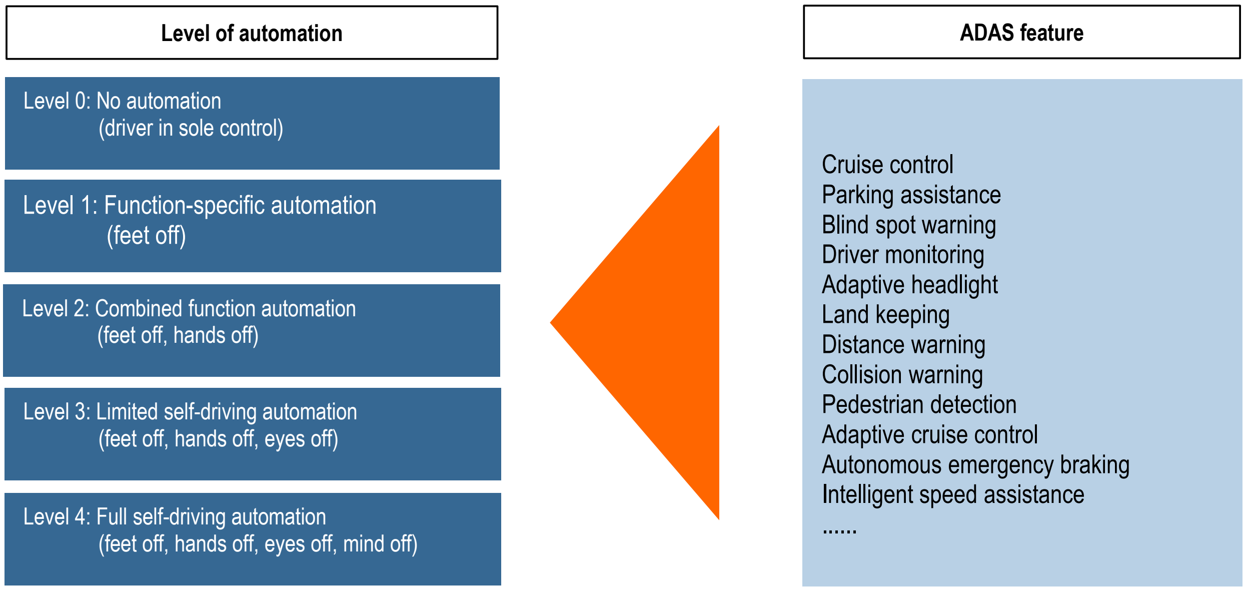
ADAS needed to facilitate smart-car IoT and deliver the ultimate goal of fully autonomous driving

The smart-car IoT is one of the 5+1 demand verticals we have identified as growth drivers under the BigData/IoT theme. By Daiwa's definition (***Smart cars: who has the head start? 26 June 2015***), a smart car requires 4 features: infotainment, telematics, vehicle-to-the-x (V2X) communications and autonomous driving. From a tech perspective, smart-car IoT promises to be multi-year evolution of cars equipped with advanced driver assistance system (ADAS) features that will support the eventual adoption of autonomous driving (levels 1 to 4, as depicted on the next page). We see the rising need for silicon, especially the high-performance computation of complex processors, as well as advanced sensors such as CIS, radio frequency (RF) radar and light detection and ranging (LiDAR), as a crucial factor in making full autonomous driving possible in the long run.

We forecast the ADAS market to see a 24-25% CAGR over 2015-25 at both the system and chip levels

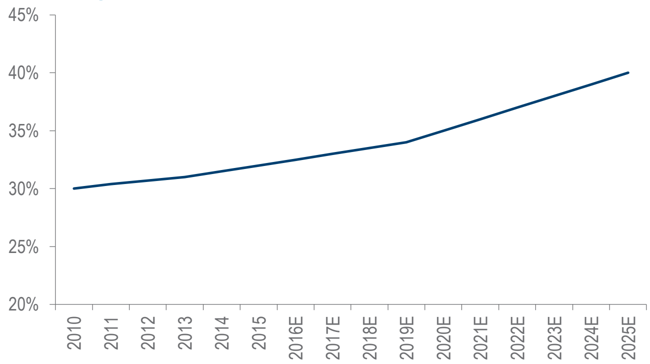
From 32% of the bill of materials (BoM) per car in 2015, electronics component costs look set to rise to 35% in 2020 and 40% in 2025, on our forecasts, with ADAS likely to be the main driver of such incremental growth. We forecast ADAS-related silicon content per car to rise from USD21 in 2015 to USD42 in 2020 and USD133 in 2025, for a CAGR of 20% over 2015-25. With the active adoption of ADAS, which should see growth accelerate over 2020-25 as the industry closes in on a high level of autonomous driving, supported by regulatory change and the deployment of 5G cellular infrastructure, we forecast the ADAS-driven smart-car IoT market to see in value terms a 25% CAGR over 2015-25 at the system device level, with the market value exceeding USD100bn in 2025, from c.USD13bn in 2015 and USD30bn in 2020.

Levels of autonomous driving defined by NHTSA



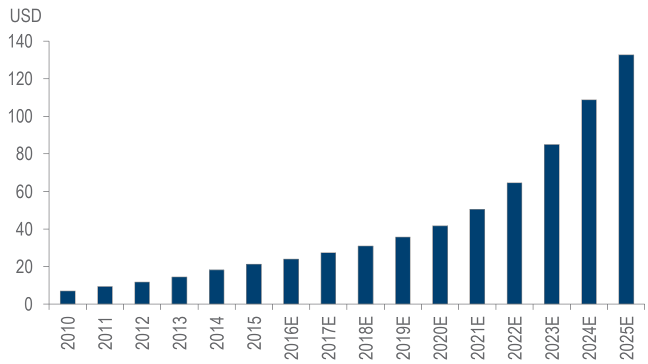
Source: National Highway Traffic Safety Administration (NHTSA)

Percentage of electronics costs per car



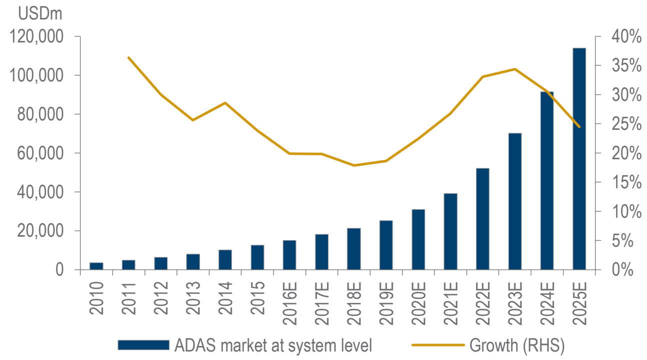
Source: Daiwa forecast

ADAS silicon content per car



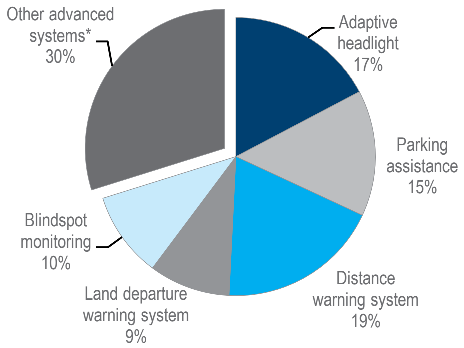
Source: Daiwa forecasts

AS market forecast at system level



Source: Daiwa forecasts

ADAS market breakdown by system device (2016E)

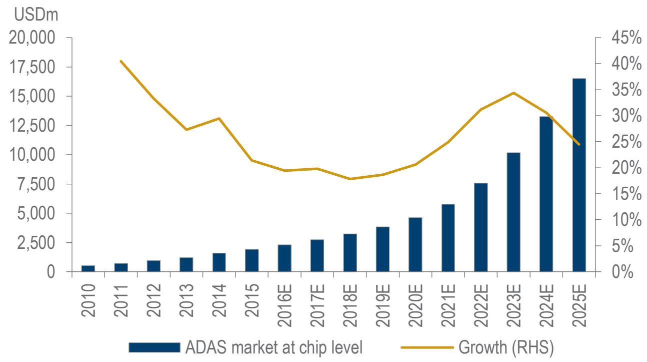


Source: Daiwa estimates
*Note: * Including AEB, ACC, ISA, CWS, PDS and other ADAS*

Growth focus: AEB, ACC, CWS, PDS and ISA

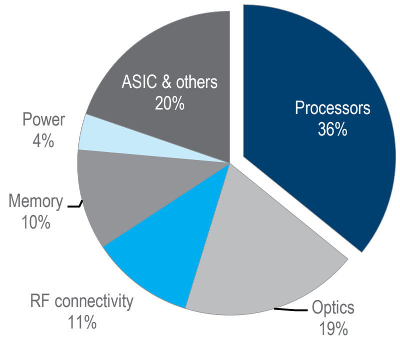
Among the different ADAS, we believe active safety and driving comfort, on top of energy efficiency and pollution control, will lead the pack of demand interests, where we see the following driving incremental growth over the next decade: autonomous emergency braking system (AEB), adaptive cruise control system (ACC), collision warning system (CWS), pedestrian detection system (PDS) and intelligent speed assistance (ISA) system.

ADAS market forecast at chip level



Source: Daiwa forecast

ADAS market breakdown by chip device (2016E)



Source: Daiwa estimates

Advanced processors and sensors are our focus

Technological advances should play a crucial role in facilitating these advanced assistance systems for better safety, comfort and efficiency, including advanced processors and sensors at the silicon level. Accordingly, like system devices, the ADAS market in terms of chip revenue should also grow rapidly, in our view. We forecast a 24% CAGR over 2015-25 with value exceeding USD15bn in 2025 from c.USD2bn in 2015 and USD4.6bn in 2020. Chipmakers, among others, should capture the most value in the food chain when the smart-car trend rises to approach its ultimate goal of full automation in driving, in our view. Those leading the curve of the Moore's Law (ie, More for Moore) to offer advanced processors for deep-/self-learning of the machine should capture the most incremental value under this smart-car evolution.

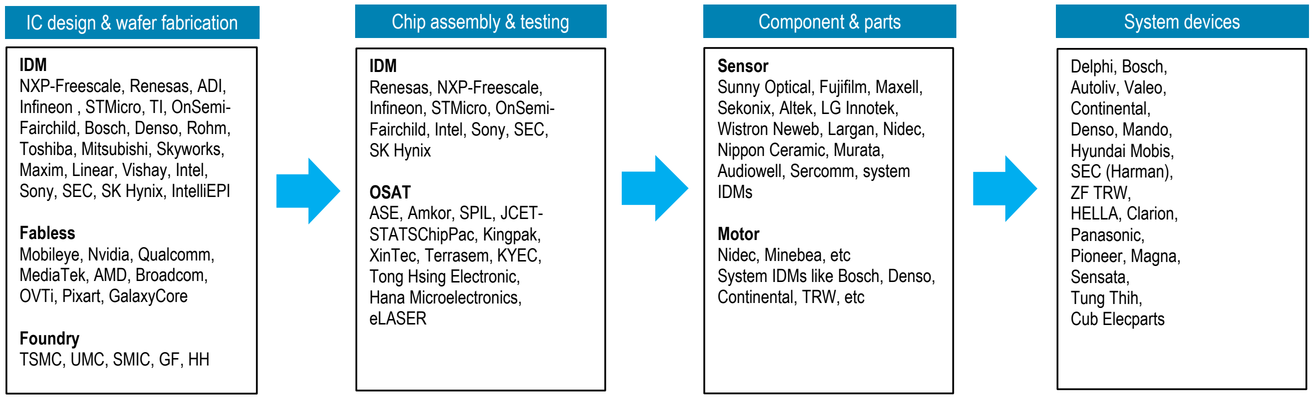
2 types of ADAS processors: CCU and ECU

There are 2 types of ADAS processors: 1) high-performance processors (eg, Nvidia's Tegra CPU for Tesla's AutoPilot) that act as a centralised control unit (CCU) to process and control interactions among the smart-car systems of infotainment, V2X communications and a variety of ADAS with heavy processing; and 2) micro-controlling units (MCU) for various types of electronics control units (ECU) to collect data from a variety of sensors with light processing, including ultrasonic sensors, CIS, RF radars and the laser-based LiDAR. We expect revenue contribution of these processors to reach 45% in 2025, from 35% in 2015 and 40% in 2020, achieving a CAGR of 27% over 2015-25.

A variety of ADAS sensors: ultrasonic, CIS, RF and LiDAR

Apart from processors, the other beneficiaries would include optics (optical sensors like CIS and LiDAR), RF connectivity and other application-specific ICs (ASIC) such as micro-electro-mechanical systems (MEMS), analogue and mixed-signal chips. These chips don't necessarily demand advanced process technologies but help broaden the demand scope for legacy/specialty technologies to facilitate the concept of "More than Moore" – more demand than Moore's Law could have offered in the early years.

Global ADAS food chain



Source: Daiwa

We believe ADAS beneficiaries include TSMC, ASE, Sony, Sunny Optical and Nidec

In our opinion, although a handful of food-chain players should benefit under the ADAS theme, including chipmakers, components, parts and system device suppliers, we prioritise the component makers and chipmakers as our focus of investment from Daiwa's tech hardware research perspective. In upstream tech, we identify TSMC for key exposure to processor advances in ADAS, thanks to its leadership in high-performance computational technologies to help its fabless customers such as Nvidia, Qualcomm and MediaTek penetrate the ADAS processor/SoC market. ASE, as the OSAT leader, should benefit from the food chain through its comprehensive product offerings of advanced packaging and testing to facilitate these processors in variety of chip forms, including system-in-package (SiP).

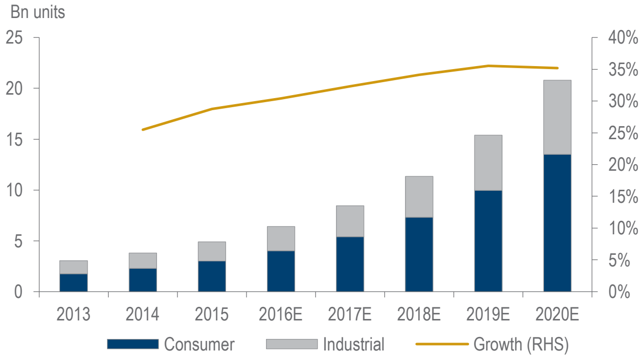
In the sensor food chain, we like Sony and Sunny Optical for their leadership in the CIS chip and vehicle lens set markets. We like Nidec for its leadership in advanced motors to facilitate ADAS, especially the AEB systems. Other names to watch are: IntelliEPI, Kingpak, XinTec, Tung Thih and Cub.

BigData/IoT growth theme No.3: IIoT

We expect the IIoT market to see around a 15% CAGR over 2015-20

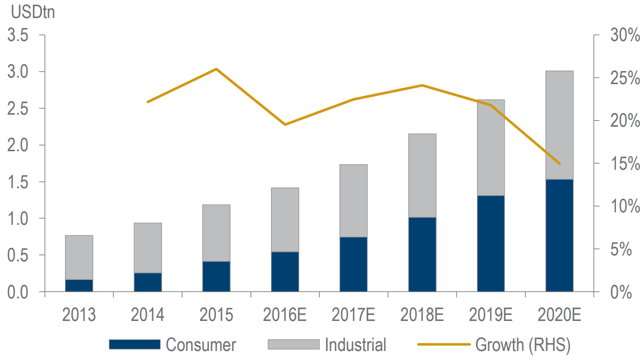
Last but not the least, still another demand vertical under our BigData/IoT definition that we expect to grow faster than the others is industrial IoT (IIoT), which describes automated, intelligent processes enabled by a big set of data from the connected devices used in industrial applications. The industrial PC (IPC) and automation (IA) sectors under our coverage stand to benefit, in our view. As we discussed in our report (***IPC sector initiation: now they're talking, 23 March 2016***), although the global IoT devices will likely see a 30%+ CAGR over 2015-20 in terms of installed base, with consumer IoT accounting for the majority of the base, IIoT should drive most of the incremental growth in revenue terms. We look for a total IIoT-related market CAGR of around 15% to reach USD1.5tn over the same period, from USD0.8tn in 2015.

IoT market growth at installed base: industrial vs. consumer



Source: Daiwa forecasts

IoT market growth at dollar spending: industrial vs. consumer



Source: Daiwa estimates

Global IIoT food chain

Connected device/equipment	Embedded computing system	Software platform & application	Service & system integration
Sensing device food chain Avago, STM, Qorvo, TI, Bosch, Sensortech, etc **Equipment food chain** ABB, Siemens, Schneider, GE, Honeywell, Emerson, Cisco, Fanuc, SMC, NSK, THK, Delta, Hiwin, Airtac, Techman/Quanta, etc.	**Processor** Intel, AMD, Qualcomm **ODM** Ennoconn, Flytech, IEI, Quanta, etc. **OBM** Advantech, Kontron, Radisys, Posiflex, Adlink, NCR, IBM, HPE, Dell, etc.	**Software platform** Microsoft, GE, IBM, Oracle, SAP, etc. **Software application** Microsoft, SAP, Salesforce, Bosch, HPE, etc.	**Cloud services/ IIoT analytics** Microsoft, AWS, IBM, Google, Cisco, AT&T, Bosch, GE, etc. **System Integration** Accenture, Capgemini, IBM, S&T, etc.

Source: Daiwa

For IIoT, we like Ennoconn and Delta

In our view, IIoT is synonymous with "The 4th Industrial Revolution" and involves a wide range of different sectors and vertical applications. In order to cope with the new opportunities triggered by IIoT, many companies are moving beyond their traditional comfort zones. As such, the capability to identify the right counterparts for alliance and/or M&A is becoming crucial. We like Ennoconn for its solid earnings growth potential, driven by proactive M&A strategies and sustained support from its parent, the Hon Hai group, and upgrade Ennoconn by one notch to Buy (1) on valuation grounds (see the company section of this report). We are also positive on Delta Electronics, which we believe is well positioned in the upcoming IIoT era, in the light of its strength in the industrial automation, energy management and electric-component-related areas.

Other industry themes for 2017

TSMC, ASE, CHPT

High-performance computation. As depicted in our BigData/IoT matrix by application vs. functionality shown on page 23, in the next IoT demand cycle, companies able to offer cross-demand-vertical solutions stand out, as we believe IoT is a market of integration in both depth (tech functionality) and breadth (demand application). Among the 5 functionalities, we believe data processing should capture the most value, especially the high-performance computation of processors (CPU, GPU, AP/SoC) which help facilitate computational power advances across different verticals of MCD, ADAS, robotics and datacentres for deep-/self-learning of the machines (ie, artificial intelligence [AI]) and sustain the life of Moore's Law. Since this is an advanced logic segment with a high degree of industry consolidation and capex requirements, we see TSMC (foundry) and ASE (OSAT) as key beneficiaries in the Asian chip food chain. We also flag CHPT (advanced probe) as a name to watch.

SEC, Silergy

Enterprise solid state disc drive (SSD). In the demand vertical of the cloud-computing/datacentre infrastructure, we had flagged data storage and transmission bandwidth upgrades as two key focuses of business growth for the datacentres in our February 2016 OC report. Against the backdrop of the NAND-based SSD to replace the hard disk drive (HDD) in the commercial market, we see business opportunities for enterprise SSD players in the food chain, especially the market leader, SEC (NAND flash). We also flag SEC's supply-chain partner, Silergy (SSD PMIC), as one other name to watch.

Vanguard

Structural 8" supply constraints. We note that 8" foundry wafer capacity has become tight in the MCD cycle due to the adoption of FP solutions and rising demand for power management ICs (PMIC), CIS and MEMS, which have diluted capacity for display drivers (D/D). The availability of 8" equipment has added to capacity constraints. Therefore, despite some applications migrating to 12", such as CIS and PMIC, we expect a structurally tight supply of 8"/specialty technologies in the foundry space to continue into the BigData/IoT cycle, which would augur well for the pure 8" foundry players. A name to watch in this space would be Vanguard.

ShinEtsu, GlobalWafers, Topco

A year of price hikes for silicon wafers? Living through a long-muted cycle lasting nearly the past decade, the silicon wafer sector will likely enter a new phase in 2017 with firm pricing, if not seeing price hikes, after a slew of consolidations, including GlobalWafers' eye-catching acquisition of SunEdison in 2016. China's active fab builds have added further concerns of silicon wafer supply constraints in the global chip industry. Potential names to watch could be ShinEtsu Chemical, GlobalWafers and Topco Scientific.

Appendices

Appendix 1: global chip inventory monitor (quarterly)

Day	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16
Fabless												
ALTR	102	97	94	100	92	90	120	115	109	na	na	na
XLNX	99	101	118	140	129	128	129	126	105	97	101	102
BRCM	47	48	52	52	52	54	60	52	na	na	na	na
QCOM	40	41	39	44	48	63	64	62	49	56	50	52
PMC Sierra	77	74	76	75	81	84	85	83	na	na	na	na
NVDA	67	71	74	66	74	84	77	69	63	67	69	67
Cirrus Logic	64	84	96	89	53	53	64	75	70	109	102	66
MRVL	71	65	71	75	73	84	75	86	77	72	63	64
OVTi	118	106	80	93	142	146	119	111	109	na	na	na
Q-Logic	37	37	41	49	48	50	67	96	82	76	na	na
MediaTek	47	50	60	68	74	92	111	94	70	67	59	63
Realtek	66	64	60	57	72	94	103	92	64	60	62	61
Sunplus	73	95	81	81	90	110	90	94	103	106	92	89
Novatek	57	59	58	55	54	67	68	57	49	55	57	51
Himax	105	109	104	88	86	121	133	129	116	121	113	100
Siliconlab	71	70	73	68	70	77	82	82	73	71	72	73
Richtek	83	78	80	76	75	69	70	73	85	na	na	na
Dialog Semi	58	73	76	79	48	55	61	67	58	98	102	69
Fabless aggregate	**55**	**56**	**57**	**60**	**62**	**74**	**78**	**74**	**62**	**66**	**60**	**59**
IDM												
Intel	75	70	72	72	75	79	85	83	87	89	95	91
AMD	80	88	88	91	82	89	96	87	97	110	91	55
Cypress	101	94	92	89	89	92	91	87	78	73	70	66
IFX	92	93	91	88	95	80	91	102	106	103	104	102
STM	89	99	98	95	95	99	95	99	103	108	104	99
Freescale	110	107	99	99	114	111	109	118	na	na	na	na
TXN	114	114	112	109	117	124	126	116	119	135	132	120
ADI	119	114	129	109	125	126	127	113	128	137	122	104
Skyworks	73	75	59	54	57	61	60	55	55	71	93	96
Agilent	123	120	118	109	101	105	100	99	102	103	100	94
NXP	97	102	96	85	82	91	89	88	122	93	94	82
Fairchild	91	86	84	90	102	98	103	119	131	118	103	na
On Semi	117	123	117	113	113	118	118	115	122	127	121	134
Avago/Broadcom Ltd	70	78	41	57	57	59	53	56	66	78	83	75
RFMD	71	76	70	71	73	na	na	na	na	na	na	na
TriQuint	77	124	106	97	74	na	na	na	na	na	na	na
Qorvo	na	na	na	na	na	67	82	82	94	108	95	74
Maxim	90	101	97	112	110	105	96	96	118	98	96	95
IDM aggregate	**88**	**88**	**87**	**86**	**89**	**90**	**93**	**92**	**100**	**102**	**101**	**94**
IDM aggregate ex-Intel	**95**	**99**	**95**	**94**	**97**	**96**	**96**	**96**	**108**	**110**	**105**	**95**
Total aggregate inventory	**77**	**78**	**76**	**77**	**79**	**84**	**86**	**86**	**90**	**92**	**88**	**83**
Total aggregate inventory ex-Intel	**77**	**80**	**78**	**79**	**80**	**86**	**86**	**87**	**91**	**93**	**86**	**80**

Source: Company, Daiwa estimates

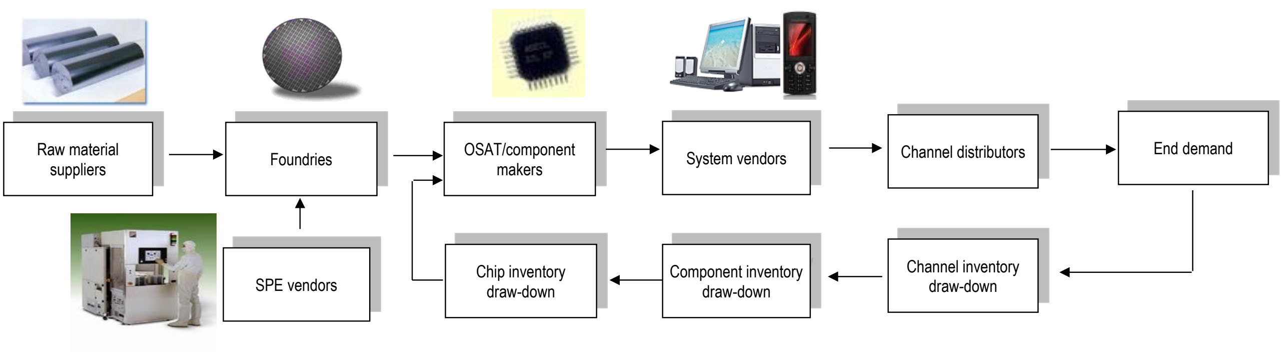
*Note: * ALTR, BRCM, PMC Sierra, Q-Logic, Richtek, Freescale and Fairchild were acquired; OVTi was privatized; RFMD and TriQuint merged into Qorvo*

Appendix 2: global chip revenue and guidance monitor (quarterly)

	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	December-quarter guidance			QoQ growth		
USDm							**mid**	**hi**	**low**	**mid**	**hi**	**low**
Fabless												
ALTR	414	400	na	na	na	na	na	na	na	na	na	na
XLNX	549	528	566	571	575	579	575	575	575	0%	0%	0%
BRCM	2,096	2,187	na	na	na	na	na	na	na	na	na	na
QCOM	5,832	5,456	5,775	5,551	6,044	6,184	6,100	6,500	5,700	-1%	5%	-8%
PMC Sierra	125	134	na	na	na	na	na	na	na	na	na	na
NVDA	1,153	1,305	1,401	1,305	1,428	2,004	2,100	2,140	2,060	5%	7%	3%
MRVL	710	675	616	541	626	654	565	578	552	-14%	-12%	-16%
OVTi	330	341	na	na	na	na	na	na	na	na	na	na
Cirrus Logic	283	307	348	232	259	429	495	515	475	15%	20%	11%
Q-Logic	113	103	123	119	na	na	na	na	na	na	na	na
MediaTek	1,527	1,791	1,893	1,689	2,232	2,466	2,214	2,314	2,114	-10%	-6%	-14%
Realtek	232	249	283	272	303	323	310	314	307	-4%	-3%	-5%
Sunplus	75	70	63	54	64	59	55	55	55	-7%	-7%	-7%
Novatek	404	411	387	331	352	378	367	373	360	-3%	-1%	-5%
Himax	169	166	178	180	201	218	204	209	198	-7%	-4%	-9%
Silicon Lab	165	156	160	162	175	178	179	181	176	0%	2%	-1%
Richtek	101	104	92	na	na	na	na	na	na	na	na	na
Dialog Semi	316	330	397	241	246	346	360	375	345	4%	8%	0%
Total fabless	**14,597**	**14,713**	**12,283**	**11,249**	**12,505**	**13,818**	**13,524**	**14,130**	**12,918**	**-2%**	**2%**	**-7%**
IDM												
Intel	13,195	14,465	14,914	13,702	13,533	15,778	15,700	16,200	15,200	0%	3%	-4%
AMD	942	1,061	958	832	1,027	1,307	1,072	1,111	1,033	-18%	-15%	-21%
Cypress	485	464	450	419	450	524	525	540	510	0%	3%	-3%
IFX	1,755	1,777	1,703	1,778	1,843	1,870	1,795	1,832	1,757	-4%	-2%	-6%
STM	1,760	1,764	1,668	1,613	1,703	1,797	1,855	1,917	1,792	3%	7%	0%
Freescale	1,198	1,120	na	na	na	na	na	na	na	na	na	na
TXN	3,232	3,429	3,189	3,008	3,273	3,675	3,300	3,430	3,170	-10%	-7%	-14%
Skyworks	810	881	927	775	752	835	902	911	894	8%	9%	7%
ADI	863	979	769	779	870	1,004	870	900	840	-13%	-10%	-16%
Agilent	1,014	1,035	1,028	1,019	1,044	1,111	1,050	1,060	1,040	-5%	-5%	-6%
NXP	1,506	1,522	1,606	2,224	2,365	2,469	2,440	2,490	2,390	-1%	1%	-3%
Fairchild	355	342	317	327	350	220	na	na	na	na	na	na
On Semi	881	904	840	817	878	951	1,215	1,240	1,190	28%	30%	25%
Maxim	583	563	511	555	566	561	540	560	520	-4%	0%	-7%
Avago/Broadcom Ltd	1,735	1,840	1,771	3,541	3,740	na	na	na	na	na	na	na
RFMD	na	na	na	na	na	na	na	na	na	na	na	na
TriQuint	na	na	na	na	na	na	na	na	na	na	na	na
Qorvo	674	708	621	608	699	865	820	840	800	-5%	-3%	-7%
Total IDM	**30,987**	**32,854**	**31,273**	**31,997**	**33,092**	**32,966**	**32,083**	**33,031**	**31,135**	**-3%**	**0%**	**-6%**
Total sales	**45,584**	**47,567**	**43,556**	**43,246**	**45,597**	**46,784**	**45,607**	**47,161**	**44,053**	**-3%**	**1%**	**-6%**
Growth (QOQ)												
Total	0%	4%	-7%	-2%	5%	na						
Fabless	-6%	1%	-17%	-8%	11%	na						
IDM	4%	6%	-3%	0%	3%	na						
Growth (YoY)												
Total	-5%	-5%	-10%	-5%	0%	na						
Fabless*	-10%	-13%	-28%	-28%	-14%	na						
IDM	-2%	-1%	0%	7%	7%	na						
Mix												
Fabless	32%	31%	28%	26%	27%	na						
IDM	68%	69%	72%	74%	73%	na						

Source: Company, Daiwa estimates
*Note: * Growth distorted due to the BRCM-AVGO acquisition*

Appendix 3: global technology food chain



Source: Daiwa

Company Section

Daiwa Securities

Sony (6758 JP)

Target price: **Y4,200** (from Y4,200 as of 9 Jun)

Share price (4 Jan): Y3,333 | Up/downside: +26.0%

5 4 3 2 **1**

Buy
(unchanged)

Image sensor business environment improving

- Boost from shift to dual/multi-camera phones
- We envisage greater sales volume on better product mix
- Reiterating Buy (1) call and TP of Y4,200

Junya Ayada
81-3-5555-7091
junya.ayada@daiwa.co.jp

What's new: Of Sony's two struggling segments (semiconductors, pictures), we believe the semiconductor segment will see increasing adoption of dual/multi-lens cameras in mobile phones which would help improve its profitability. This puts Sony in our growth category for rising multi-cam smartphone penetration. We reaffirm our Buy (1) call with a TP of Y4,200.

What's the impact: As Sony has a global market share of approximately 45% for CMOS image sensors (CIS), the increasing adoption of dual/multi-cameras by mobile-phone makers would be positive in terms of its sales volumes and product mix. The profitability of its semiconductor segment declined in 1H FY16 due to earthquake damage to its Kumamoto factory, sluggish sales at major clients, a rise in the proportion of general-purpose products, and a stronger yen.

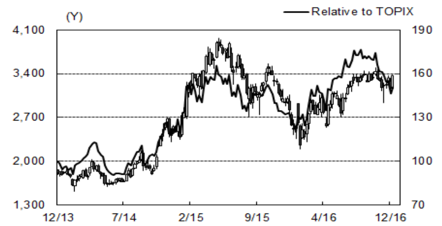
However, the segment should see improved momentum from 2H FY16 onwards, due to a recovery in sensor sales for digital/security camera applications following resumption of normal operations at the Kumamoto factory, as well as greater sales volume of mobile phone products on the back of new customer acquisitions, mainly in China.

In addition, we expect Sony's profitability to improve going forward owing to an increasing proportion of high value-added customised products and a weaker yen. The proportion of customised products, which fell from 75% in FY15 to an estimated 65% in FY16, will likely return to around 75% in FY17, in our view. We believe the adoption of dual-lens cameras in mobile phones will help to increase the proportion of high value-added products.

Outlook: We forecast operating profit of Y275bn for FY16, Y470bn for FY17 and Y515bn for FY18 (assuming Y105/USD, Y115/Euro). For the semiconductor segment, which includes CIS, we expect operating losses of Y48bn for FY16, but forecast operating profit of Y50bn for FY17 and Y60bn for FY18. The earnings environment appears to be improving as the yen is weakening against the dollar, and given that each one yen depreciation vs. the dollar boosts annual operating profit in the semiconductor segment by around Y3.5bn. Downside risks to our call would be weaker-than-expected take up rates of dual/multi-cameras by mobile-phone makers and adverse FX volatility (ie, a stronger yen).

What we recommend: We reiterate our Buy (1) rating and 12-month target price of Y4,200 based on a sum-of-the-parts (SOTP) valuation model.

Share price chart



Source: Compiled by Daiwa.

Market data

12-month range (Y)	2,199-3,493
Market cap (Y mn; 4 Jan)	4,207,023
Shares outstanding (000; 12/16)	1,262,233
Foreign ownership (%; 9/16)	56.5

Investment Indicators

	3/16	3/17 E	3/18 E
P/E (X)	27.9	67.9	17.5
EV/EBITDA (X)	4.6	4.9	3.5
P/B (X)	1.71	1.68	1.55
Dividend yield (%)	0.60	0.60	0.60
ROE (%)	6.2	2.5	9.2
Net debt/equity (X)	-0.4	-0.4	-0.5

Income Summary

(SEC; Y mn)	3/16	3/17 E	3/18 E
Sales	8,105,712	7,437,000	7,404,000
Op profit	294,197	275,000	470,000
Pretax income	304,504	255,000	455,000
Net income	147,791	62,000	240,000
EPS (Y)	119.4	49.1	190.2
DPS (Y)	20.00	20.00	20.00

Source: Company, Daiwa forecasts
See end of report for notes concerning indicators.

Sony: Income Summary (SEC; Ym; YoY %)

Year to	Sales		Op profit		Pretax income		Net income		EPS (Y)	DPS (Y)
3/14	7,767,266	(14)	26,495	(-88)	25,741	(-89)	-128,369	(loss)	-125.0	25.00
3/15	8,215,880	(6)	68,548	(159)	39,729	(54)	-125,980	(loss)	-113.0	0.00
3/16	8,105,712	(-1)	294,197	(329)	304,504	(666)	147,791	(profit)	119.4	20.00
3/17 E	7,437,000	(-8)	275,000	(-7)	255,000	(-16)	62,000	(-58)	49.1	20.00
3/18 E	7,404,000	(-0)	470,000	(71)	455,000	(78)	240,000	(287)	190.2	20.00
3/19 E	7,421,000	(0)	515,000	(10)	500,000	(10)	270,000	(13)	213.9	20.00
3/17 CP	7,400,000	(-9)	270,000	(-8)	250,000	(-18)	60,000	(-59)	-	-

E: Daiwa estimates.   CP: Company projections.

Note: Net income is that attributable to shareholders of parent.

Daiwa Securities

Financial Statements

(Y mn)	3/14	3/15	3/16	3/17 E	3/18 E	3/19 E
Income statement						
Sales / Revenue	7,767,266	8,215,880	8,105,712	7,437,000	7,404,000	7,421,000
Operating profit	26,495	68,548	294,197	275,000	470,000	515,000
EBITDA	403,190	423,172	691,288	646,000	838,000	883,000
Pretax income	25,741	39,729	304,504	255,000	455,000	500,000
Net income	-128,369	-125,980	147,791	62,000	240,000	270,000
Balance sheet						
Liquidity on hand	1,879,032	1,886,144	1,930,009	1,952,738	2,162,458	2,421,648
Fixed assets / Non-current assets	11,128,834	11,636,430	12,476,663	13,146,585	13,724,507	14,276,429
Total assets	15,333,720	15,834,331	16,673,390	17,225,780	18,006,869	18,821,357
Interest-bearing debt	1,294,402	933,612	893,545	893,545	893,545	893,545
Total liabilities	12,546,464	12,900,614	13,541,502	14,064,609	14,630,927	15,200,644
Total net assets / Total equity	2,783,141	2,928,469	3,124,410	3,161,171	3,375,942	3,620,713
Shareholders' equity	2,258,137	2,317,077	2,463,340	2,500,101	2,714,872	2,959,643
Cash flow statement						
Cash flows from operating activities	664,116	754,640	749,089	806,722	929,702	979,172
Net income	-128,369	-125,980	147,791	62,000	240,000	270,000
Depreciation and amortization	376,695	354,624	397,091	371,000	368,000	368,000
Cash flows from investing activities	-710,502	-639,636	-1,030,403	-923,922	-859,922	-859,922
Free cash flow	-46,386	115,004	-281,314	-117,200	69,780	119,250
Cash flows from financing activities	207,877	-263,195	380,122	139,930	139,940	139,940
Increase (decrease) in cash and cash equivalents	220,105	-97,053	34,199	22,730	209,720	259,190

Accounting standards	SEC	SEC	SEC	SEC	SEC	SEC

Financial indicators						
Growth						
Sales / Revenue (y/y %)	14.3	5.8	-1.3	-8.2	-0.4	0.2
Operating profit (y/y %)	-88.3	158.7	329.2	-6.5	70.9	9.6
Profitability						
Operating profit margin (%)	0.3	0.8	3.6	3.7	6.3	6.9
EBITDA margin (%)	5.2	5.2	8.5	8.7	11.3	11.9
ROE (%)	NA	NA	6.2	2.5	9.2	9.5
ROA (%)	NA	NA	0.9	0.4	1.4	1.5
Financial leverage/dividend policy						
Net debt-to-equity ratio (X)	-0.3	-0.4	-0.4	-0.4	-0.5	-0.5
Equity-to-assets ratio (%)	14.7	14.6	14.8	14.5	15.1	15.7
Total dividends / shareholders' equity (%)	1.2	0.0	1.0	1.0	0.9	0.9
Dividend payout ratio (%)	NA	0.0	16.8	40.7	10.5	9.3
Per-share data						
EPS (Y)	-125.0	-113.0	119.4	49.1	190.2	213.9
DPS (Y)	25.00	0.00	20.00	20.00	20.00	20.00
Book value per share (Y)	2,163.6	1,982.5	1,952.8	1,980.8	2,151.0	2,344.9
Valuations Share price: Y3,368; market cap: Y4,250,901mn (9 Dec 2016)						
P/E (X)	NA	NA	28.2	68.6	17.7	15.7
EV/EBITDA (X)	9.1	7.8	4.6	4.9	3.6	3.1
P/B (X)	1.56	1.70	1.72	1.70	1.57	1.44
Dividend yield (%)	0.74	Nil	0.59	0.59	0.59	0.59

Source: Company materials; compiled by Daiwa.
E: Daiwa estimates.

Company Outline

Sony once boasted an overwhelmingly strong presence in the consumer electronics market, with runaway hits like its Trinitron CRT displays and the Walkman. It remains competitive in such fields as CMOS sensors, video games, and professional broadcasting equipment, but is implementing restructuring programs for struggling LCD TV and smartphone operations. Acquisitions of CBS Records and Columbia Pictures in the late 1980s helped it become a major global player in the music and movie industries. It initially entered the financial industry through a JV with Prudential, with domestic life insurance still a mainstay business on this front.

Translation: #.#. Style check: #.#. Accuracy check: #.#. Research Production Department ##London Translation Team ##New York Translation Team
Translation/style check/accuracy check: Research Production Department

Daiwa Capital Markets

Largan Precision (3008 TT)

Target price: **TWD4,350** (from TWD4,350)

Share price (4 Jan): **TWD3,780** | Up/downside: **+15.0%**

5 4 3 2 **1**

Buy
(unchanged)

Embracing the multi-cam mega trend in smartphones

- Intact favourable industry trends; dominant position should bear fruit
- Promising outlook; we see earnings growth of 23-48% YoY in 2017-18
- Reiterating Buy (1) and TP of TWD4,350; remains one of our top picks

Kylie Huang
(886) 2 8758 6248
kylie.huang@daiwacm-cathay.com.tw

Anthony Liao
(886) 2 8758 6251
anthony.liao@daiwacm-cathay.com.tw

What's new: As flagged in the accompanying sector report, we expect Largan to be a major beneficiary of the rising multi-cam trend in smartphones due to its dominance in high-end lens sets. Driven by favourable industry trends and improving product mix, we expect Largan to deliver 48% YoY earnings growth in 2017. We reaffirm our Buy (1) rating and our 12-month TP of TWD4,350. Largan continues to be one of our top picks in the Greater China smartphone space.

What's the impact: Well-positioned to benefit from rising multi-cam trend in smartphones. We see multi-cam adoption as a mega trend in smartphones – not only the rising adoption of dual-cams but also trio-cams, which could arrive in 2018, if not earlier, and could turn smartphones into augmented reality devices (see The more the merrier: multi-cameras are the next mega trend in smartphones). Globally, we expect the number of smartphones with dual cameras to grow to 230m in 2017 and 390m in 2018, up from 60m units in 2016 and 10m in 2015, representing a CAGR of 156% over 2016-18. This trend should broaden the addressable market for high-end lens sets, and we believe Largan is well positioned to benefit given its leading industry position and solid customer profile.

Promising outlook for 2017-18. Thanks to ongoing spec upgrades, we expect Largan to resume strong revenue growth of 21-32% YoY in 2017-18 from a 13% YoY decline in 2016. In addition, driven by better product mix and economies of scale, we forecast Largan's operating margin to expand to 63.7 % in 2017 and 65.3% in 2018 from 58.1% in 2016. In total, we expect Largan to deliver 23-48% YoY earnings growth in 2017-18.

Near-term outlook solid. We expect Largan to have a strong 4Q16 with operating profit growth of 23% YoY on a ramped-up contribution from iPhone 7/7+. In 1Q17, despite a sequential QoQ revenue decline due to normal seasonality, we expect Largan to deliver strong YoY revenue and bottom-line growth on increasing orders for high-end lens driven by spec upgrades.

What we recommend: We reaffirm our Buy (1) rating and 12-month TP of TWD4,350, based on 18x our 1-year forward EPS, the mid-point of the stock's past-5-year range of 8-24x. We view its current valuation (trading at a 14.7x 2017E PER) as attractive for strong long-term earnings growth. Key risk: weaker-than-expected smartphone sell-through.

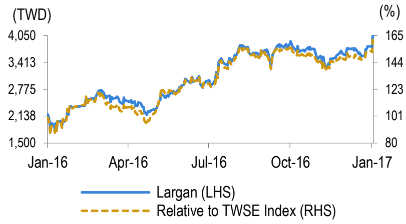
How we differ: Our 2017-18E EPS are 12-13% above consensus as we are more upbeat on dual-cam adoption for the new iPhones in 2017.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	1,830-3,910
Market cap (USDbn)	15.73
3m avg daily turnover (USDm)	57.25
Shares outstanding (m)	134
Major shareholder	Ch'en Shih Ch'ing (5.0%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	48,456	63,728	76,800
Operating profit (m)	28,138	40,582	50,150
Net profit (m)	23,213	34,435	42,484
Core EPS (fully-diluted)	173.050	256.710	316.715
EPS change (%)	(3.9)	48.3	23.4
Daiwa vs Cons. EPS (%)	(0.9)	11.8	12.7
PER (x)	21.8	14.7	11.9
Dividend yield (%)	1.7	1.6	2.4
DPS	63.0	60.6	89.8
PBR (x)	6.5	4.9	3.8
EV/EBITDA (x)	16.1	10.8	8.2
ROE (%)	32.8	37.7	35.5

Source: FactSet, Daiwa forecasts

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Mobile phone lens shipment ('000 units)	286,554	344,730	539,156	869,054	998,771	885,579	1,043,165	1,219,500
Blended ASP of handset lens (USD)	1.33	1.34	1.35	1.47	1.47	1.57	1.87	1.96
Gross margin of VCM assembly (%)	6.8	5.3	6.0	7.4	8.4	7.5	7.5	7.5

Profit and loss (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Mobile Phone Lens Revenues	11,300	13,647	21,615	38,140	45,970	44,205	62,448	76,495
VCM Aseembly Revenue	3,943	5,543	5,268	7,370	9,781	4,055	1,034	267
Other Revenue	742	882	550	301	118	196	246	37
Total Revenue	**15,984**	**20,072**	**27,433**	**45,810**	**55,869**	**48,456**	**63,728**	**76,800**
Other income	0	0	0	0	0	0	0	0
COGS	(9,043)	(11,710)	(14,472)	(21,291)	(23,812)	(15,700)	(17,653)	(20,659)
SG&A	(506)	(530)	(887)	(1,349)	(1,817)	(1,906)	(2,267)	(2,472)
Other op.expenses	(963)	(1,034)	(1,293)	(2,103)	(2,585)	(2,712)	(3,226)	(3,518)
Operating profit	**5,472**	**6,798**	**10,781**	**21,067**	**27,655**	**28,138**	**40,582**	**50,150**
Net-interest inc./(exp.)	50	84	122	250	349	455	550	692
Assoc/forex/extraord./others	314	(71)	598	1,646	1,156	(285)	456	467
Pre-tax profit	**5,837**	**6,811**	**11,501**	**22,963**	**29,160**	**28,309**	**41,588**	**51,309**
Tax	(638)	(1,234)	(1,891)	(3,525)	(5,003)	(5,096)	(7,153)	(8,825)
Min. int./pref. div./others	0	0	0	0	0	0	0	0
Net profit (reported)	**5,199**	**5,578**	**9,610**	**19,438**	**24,157**	**23,213**	**34,435**	**42,484**
Net profit (adjusted)	**5,199**	**5,578**	**9,610**	**19,438**	**24,157**	**23,213**	**34,435**	**42,484**
EPS (reported)(TWD)	**38.755**	**41.581**	**71.640**	**144.909**	**180.084**	**173.050**	**256.710**	**316.715**
EPS (adjusted)(TWD)	**38.755**	**41.581**	**71.640**	**144.909**	**180.084**	**173.050**	**256.710**	**316.715**
EPS (adjusted fully-diluted)(TWD)	**38.755**	**41.581**	**71.640**	**144.909**	**180.084**	**173.050**	**256.710**	**316.715**
DPS (TWD)	**13.500**	**17.000**	**17.000**	**28.500**	**51.000**	**63.030**	**60.568**	**89.848**
EBIT	**5,472**	**6,798**	**10,781**	**21,067**	**27,655**	**28,138**	**40,582**	**50,150**
EBITDA	**6,372**	**8,005**	**12,229**	**22,728**	**29,495**	**28,138**	**40,582**	**50,150**

Cash flow (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	5,837	6,811	11,501	22,963	29,160	28,309	41,588	51,309
Depreciation and amortisation	900	1,208	1,448	1,661	1,841	2,056	2,529	3,001
Tax paid	(638)	(1,234)	(1,891)	(3,525)	(5,003)	(5,096)	(7,153)	(8,825)
Change in working capital	1,202	(783)	(363)	(920)	7,411	(1,528)	(10,130)	(4,417)
Other operational CF items	18	(2)	51	(32)	6	(5)	(6)	(7)
Cash flow from operations	**7,318**	**6,000**	**10,746**	**20,147**	**33,414**	**23,736**	**26,828**	**41,062**
Capex	(3,149)	(2,865)	(1,504)	(5,568)	(8,213)	(4,500)	(4,500)	(4,500)
Net (acquisitions)/disposals	(2)	(101)	9	194	(0)	(10)	(10)	(10)
Other investing CF items	(23)	(19)	(1,593)	(695)	125	(1,234)	0	0
Cash flow from investing	**(3,173)**	**(2,985)**	**(3,088)**	**(6,069)**	**(8,089)**	**(5,744)**	**(4,510)**	**(4,510)**
Change in debt	319	(356)	12	108	(32)	(80)	0	0
Net share issues/(repurchases)	0	0	0	0	0	0	0	0
Dividends paid	(1,811)	(2,280)	(2,280)	(3,823)	(6,841)	(8,455)	(8,125)	(12,052)
Other financing CF items	37	(43)	51	138	(127)	0	0	0
Cash flow from financing	**(1,456)**	**(2,679)**	**(2,217)**	**(3,577)**	**(7,000)**	**(8,535)**	**(8,125)**	**(12,052)**
Forex effect/others	0	0	0	0	0	0	0	0
Change in cash	**2,690**	**336**	**5,440**	**10,501**	**18,325**	**9,457**	**14,193**	**24,499**
Free cash flow	4,169	3,136	9,242	14,579	25,201	19,236	22,328	36,562

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (TWDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	11,268	11,604	17,045	27,546	45,871	55,328	69,521	94,020
Inventory	1,461	2,532	2,693	3,538	3,730	3,140	3,923	5,165
Accounts receivable	3,510	6,581	6,823	13,338	11,537	11,948	16,063	19,989
Other current assets	234	255	248	388	363	346	455	549
Total current assets	**16,473**	**20,973**	**26,809**	**44,809**	**61,500**	**70,762**	**89,962**	**119,723**
Fixed assets	8,057	9,731	9,800	13,722	20,115	22,558	24,530	26,028
Goodwill & intangibles	0	0	0	0	0	0	0	0
Other non-current assets	379	485	2,004	2,523	2,372	3,621	3,637	3,654
Total assets	**24,909**	**31,188**	**38,614**	**61,054**	**83,987**	**96,941**	**118,128**	**149,404**
Short-term debt	444	93	83	190	157	100	100	100
Accounts payable	1,358	3,555	2,507	4,999	2,864	2,495	2,902	3,396
Other current liabilities	3,243	4,426	5,507	9,594	17,506	16,152	10,621	10,971
Total current liabilities	**5,045**	**8,075**	**8,097**	**14,783**	**20,527**	**18,747**	**13,623**	**14,467**
Long-term debt	0	0	0	0	0	0	0	0
Other non-current liabilities	54	49	71	72	73	50	50	50
Total liabilities	**5,099**	**8,124**	**8,168**	**14,855**	**20,600**	**18,797**	**13,673**	**14,517**
Share capital	1,341	1,341	1,341	1,341	1,341	1,341	1,341	1,341
Reserves/R.E./others	18,469	21,723	29,104	44,857	62,045	76,803	103,114	133,546
Shareholders' equity	**19,810**	**23,064**	**30,445**	**46,198**	**63,386**	**78,144**	**104,455**	**134,887**
Minority interests	0	0	0	0	0	0	0	0
Total equity & liabilities	**24,909**	**31,188**	**38,614**	**61,054**	**83,987**	**96,941**	**118,128**	**149,404**
EV	496,226	495,539	490,088	479,694	461,336	451,822	437,629	413,130
Net debt/(cash)	**(10,824)**	**(11,511)**	**(16,962)**	**(27,356)**	**(45,713)**	**(55,228)**	**(69,421)**	**(93,920)**
BVPS (TWD)	**147.685**	**171.943**	**226.965**	**344.402**	**472.538**	**582.558**	**778.700**	**1,005.567**

Key ratios (%)

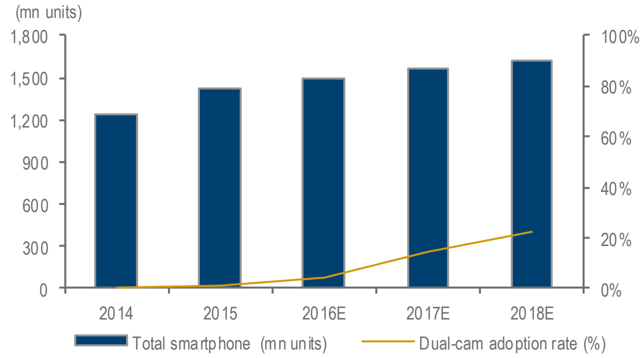
Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	29.4	25.6	36.7	67.0	22.0	(13.3)	31.5	20.5
EBITDA (YoY)	18.0	25.6	52.8	85.9	29.8	(4.6)	44.2	23.6
Operating profit (YoY)	17.4	24.2	58.6	95.4	31.3	1.7	44.2	23.6
Net profit (YoY)	28.5	7.3	72.3	102.3	24.3	(3.9)	48.3	23.4
Core EPS (fully-diluted) (YoY)	28.5	7.3	72.3	102.3	24.3	(3.9)	48.3	23.4
Gross-profit margin	43.4	41.7	47.2	53.5	57.4	67.6	72.3	73.1
EBITDA margin	39.9	39.9	44.6	49.6	52.8	58.1	63.7	65.3
Operating-profit margin	34.2	33.9	39.3	46.0	49.5	58.1	63.7	65.3
Net profit margin	32.5	27.8	35.0	42.4	43.2	47.9	54.0	55.3
ROAE	28.7	26.0	35.9	50.7	44.1	32.8	37.7	35.5
ROAA	23.7	19.9	27.5	39.0	33.3	25.7	32.0	31.8
ROCE	29.8	31.3	40.2	54.8	50.3	39.7	44.4	41.9
ROIC	57.7	54.2	72.0	110.3	125.5	113.7	116.0	109.3
Net debt to equity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Effective tax rate	10.9	18.1	16.4	15.4	17.2	18.0	17.2	17.2
Accounts receivable (days)	76.4	91.7	89.2	80.3	81.3	88.5	80.2	85.7
Current ratio (x)	3.3	2.6	3.3	3.0	3.0	3.8	6.6	8.3
Net interest cover (x)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net dividend payout	34.8	40.9	23.7	19.7	28.3	36.4	23.6	28.4
Free cash flow yield	0.8	0.6	1.8	2.9	5.0	3.8	4.4	7.2

Source: FactSet, Daiwa forecasts

Company profile

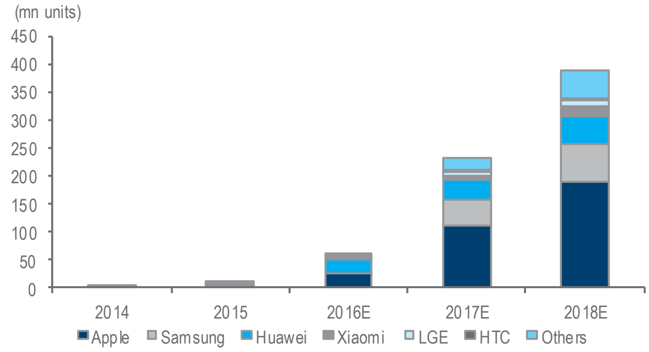
In Asia ex-Japan, Largan Precision is the leading lens manufacturer for mobile handsets. Nokia, Motorola, Sony Ericsson, Apple, HTC, and Blackberry are the company's major customers. It currently has about a 28% share of the global handset-lens market.

Largan: dual-cam penetration in smartphones in 2014-18E



Source: Daiwa forecasts

Largan: dual-cam adoption in smartphones by brand 2014-18E



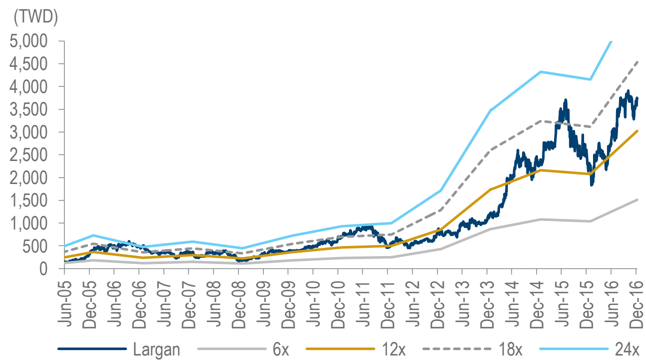
Source: Daiwa forecasts

Largan: quarterly and annual P&L statements

	2016E				2017E						
(TWDm)	1Q	2Q	3Q	4QE	1QE	2QE	3QE	4QE	2016E	2017E	2018E
Net sales	**8,271**	**10,044**	**14,315**	**15,827**	**10,806**	**14,178**	**17,674**	**21,070**	**48,456**	**63,728**	**76,800**
COGS	3,335	3,378	4,587	4,400	3,350	3,686	5,108	5,509	15,700	17,653	20,659
Gross profit	**4,936**	**6,666**	**9,728**	**11,427**	**7,456**	**10,492**	**12,566**	**15,562**	**32,756**	**46,075**	**56,141**
Operating costs	751	876	1,353	1,638	961	1,209	1,516	1,807	4,618	5,493	5,990
Operating profit	**4,185**	**5,790**	**8,365**	**9,799**	**6,495**	**9,283**	**11,050**	**13,754**	**28,138**	**40,582**	**50,150**
Pre-tax income	4,219	6,009	8,084	9,996	6,757	9,546	11,312	13,973	28,309	41,588	51,309
Net income	**3,623**	**3,690**	**6,961**	**8,940**	**5,811**	**7,255**	**9,729**	**11,641**	**23,213**	**34,435**	**42,484**
Net EPS (TWD)	**27.0**	**27.5**	**51.9**	**66.6**	**43.3**	**54.1**	**72.5**	**86.8**	**173.1**	**256.7**	**316.7**
Operating ratios											
Gross margin	59.7%	66.4%	68.0%	72.2%	69.0%	74.0%	71.1%	73.9%	67.6%	72.3%	73.1%
Operating margin	50.6%	57.6%	58.4%	61.9%	60.1%	65.5%	62.5%	65.3%	58.1%	63.7%	65.3%
Pre-tax margin	51.0%	59.8%	56.5%	63.2%	62.5%	67.3%	64.0%	66.3%	58.4%	65.3%	66.8%
Net margin	43.8%	36.7%	48.6%	56.5%	53.8%	51.2%	55.0%	55.2%	47.9%	54.0%	55.3%
YoY (%)											
Net revenue	-22%	-27%	-11%	3%	31%	41%	23%	33%	-13%	32%	21%
Gross profit	-18%	-16%	10%	24%	51%	57%	29%	36%	2%	41%	22%
Operating income	-19%	-19%	13%	23%	55%	60%	32%	40%	2%	44%	24%
Pre-tax income	-17%	-14%	-12%	27%	60%	59%	40%	40%	-3%	47%	23%
Net income	-18%	-24%	-15%	33%	60%	97%	40%	30%	-4%	48%	23%
QoQ (%)											
Net revenue	-46%	21%	43%	11%	-32%	31%	25%	19%			
Gross profit	-47%	35%	46%	17%	-35%	41%	20%	24%			
Operating income	-47%	38%	44%	17%	-34%	43%	19%	24%			
Pre-tax income	-47%	42%	35%	24%	-32%	41%	19%	24%			
Net income	-46%	2%	89%	28%	-35%	25%	34%	20%			

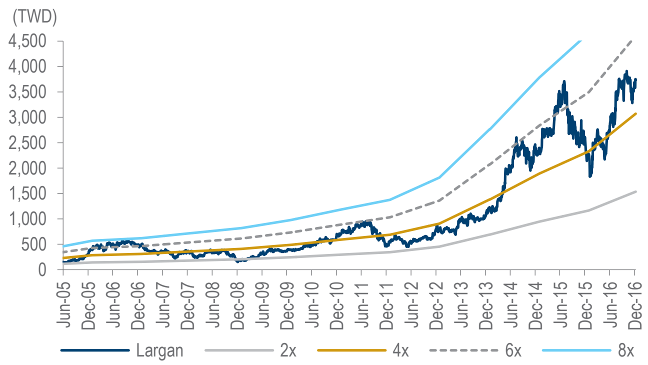
Source: Company, Daiwa forecasts

Largan: 1-year-forward PER



Source: Company, Daiwa forecasts

Largan: 1-year-forward PBR



Source: Company, Daiwa forecasts

China | Information Technology | 6 January 2017

Semiconductor Manufacturing Int'l Corp (981 HK)

Target price: **HKD12.50** (from HKD11.50)

Share price (4 Jan): **HKD11.62** | Up/downside: **+7.5%**

5 4 3 **2** 1

Outperform
(unchanged)

"More than Moore" with China leverage

- A multi-theme beneficiary of sensors and specialty foundries
- Prudent and timely expansion to capitalise on demand potential
- Per-share data reset on share consolidation; reiterating Outperform (2)

Rick Hsu
(886) 2 8758 6261
rick.hsu@daiwacm-cathay.com.tw

Martin Lee
(886) 2 8758 6262
martin.lee@daiwacm-cathay.com.tw

What's new: Given its strategic foundry status in China, a segment we expect to be a big contributor of demand for the IoT market, SMIC looks well placed to capture the multiple themes we flag in the accompanying sector report through its timely expansion to meet rising demand for a range of sensors, such as fingerprint and CMOS image sensors (CIS). Despite the share-price rally in 2016, we reaffirm Outperform (2) as SMIC's improved structural profitability argues for a "China premium" over Taiwan peers.

What's the impact: **Multi-theme exposure in sensor segment.** In contrast to TSMC, which we expect to dominate in the advanced high-performance computation segment, SMIC looks to find its differentiator in legacy/specialty foundries supplying various sensors (ie, fingerprint sensors for smartphones and CIS in advanced driver assistance systems [ADAS]). This comes on top of other applications that also require legacy tech, such as RF connectivity, power management IC, light-performance computation and embedded non-volatile memory, to meet diverse demand and facilitate the next IoT demand cycle (ie, "more than Moore" vs. "more for Moore").

Expansion to capitalise on demand. SMIC's capex of USD2.6bn in 2016 was an all-time high, marking a peak for capital intensity (capex/revenue) of 88%, on our estimates (see chart, next page). While some may question the discipline, we believe management is being prudent and timely by expanding its specialty capacity to realise business opportunities brought from the IoT demand cycle due to its strategic position in China. With flat gross-margin (GM) expansion after a turnaround in operating profit since 2Q12, we expect SMIC to resume GM expansion in 2017 when capital intensity tapers off (we forecast capital intensity to fall to its historical average of 45% in 2017).

Share consolidation. SMIC announced a 10-for-1 share consolidation on 6 December to improve liquidity and diversify its shareholding. This will reduce the number of outstanding shares by 90% to 4.2bn while lifting per-share data by 10x; therefore we adjust all relevant figures.

What we recommend: The 70% share-price rally in 2016 has enhanced its valuations, but we remain positive on SMIC's business. We reaffirm our Outperform (2) rating with a revised 12-month TP of HKD12.5 post share consolidation (previous: HKD1.15, pre share consolidation). The TP is based on a higher ROE-adjusted PBR of 1.5x (previous: 1.4x) applied to 2017E BVPS as we lift 2018E EPS by 20% to reflect its active expansion. Key downside risk: an oversupply of smartphone inventory in 1H17.

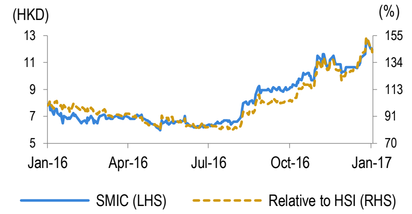
How we differ: We are 24%/15% above consensus on 2017/18E earnings, which we attribute to our more bullish revenue and margin assumptions.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	2.3
Net profit change	-	-	20.4
Core EPS (FD) change	-	-	20.4

Source: Daiwa forecasts

Share price performance



12-month range	5.90-12.18
Market cap (USDbn)	6.32
3m avg daily turnover (USDm)	391.26
Shares outstanding (m)	4,220
Major shareholder	Datang Investment Holdings (18.9%)

Financial summary (USD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	2,926	3,683	4,054
Operating profit (m)	410	529	558
Net profit (m)	397	530	560
Core EPS (fully-diluted)(USD cents)	7.905	10.544	11.131
EPS change (%)	45.9	33.4	5.6
Daiwa vs Cons. EPS (%)	5.5	23.5	14.5
PER (x)	19.0	14.2	13.5
Dividend yield (%)	0.0	0.0	0.0
DPS	0.000	0.000	0.000
PBR (x)	1.5	1.3	1.2
EV/EBITDA (x)	7.3	6.4	5.6
ROE (%)	10.0	11.9	11.2

Source: FactSet, Daiwa forecasts

Company

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Capacity utilisation (%)	72	88	95	87	95	96	97	98
Blended ASP (USD)	716	725	758	729	708	707	715	694
Wafer shipment ('000, 8" equ.)	1,704	2,217	2,574	2,559	3,016	3,981	4,967	5,625

Profit and loss (USDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Foundry Revenue	1,220	1,607	1,952	1,865	2,135	2,815	3,550	3,905
Other Revenue	100	95	117	105	102	111	133	149
Other Revenue	0	0	0	0	0	0	0	0
Total Revenue	**1,319**	**1,702**	**2,069**	**1,970**	**2,236**	**2,926**	**3,683**	**4,054**
Other income	0	0	0	0	0	0	0	0
COGS	(1,218)	(1,336)	(1,631)	(1,487)	(1,554)	(2,079)	(2,487)	(2,762)
SG&A	(94)	(139)	(174)	(178)	(255)	(201)	(336)	(369)
Other op.expenses	(191)	(210)	(145)	(190)	(237)	(236)	(331)	(365)
Operating profit	**(183)**	**16**	**119**	**116**	**190**	**410**	**529**	**558**
Net-interest inc./(exp.)	(16)	(33)	(29)	(6)	(7)	(10)	(21)	(23)
Assoc/forex/extraord./others	26	32	89	28	40	(15)	22	24
Pre-tax profit	**(173)**	**16**	**179**	**138**	**223**	**385**	**530**	**560**
Tax	(73)	1	(4)	(12)	(9)	(9)	(27)	(28)
Min. int./pref. div./others	(1)	(1)	(1)	27	31	21	27	28
Net profit (reported)	**(247)**	**16**	**174**	**153**	**246**	**397**	**530**	**560**
Net profit (adjusted)	**(247)**	**16**	**174**	**153**	**246**	**397**	**530**	**560**
EPS (reported)(USD cents)	**(8.994)**	**0.498**	**5.417**	**4.306**	**5.857**	**9.417**	**12.535**	**13.233**
EPS (adjusted)(USD cents)	**(8.994)**	**0.498**	**5.417**	**4.306**	**5.857**	**9.417**	**12.535**	**13.233**
EPS (adjusted fully-diluted)(USD cents)	**(8.994)**	**0.497**	**5.162**	**4.159**	**5.418**	**7.905**	**10.544**	**11.131**
DPS (USD)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
EBIT	**(183)**	**16**	**119**	**116**	**190**	**410**	**529**	**558**
EBITDA	**367**	**582**	**667**	**666**	**714**	**1,144**	**1,414**	**1,580**

Cash flow (USDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	(173)	16	179	138	223	385	530	560
Depreciation and amortisation	550	565	548	549	524	735	885	1,022
Tax paid	(73)	1	(4)	(12)	(9)	(9)	(27)	(28)
Change in working capital	(225)	(168)	(72)	294	(59)	(155)	(490)	330
Other operational CF items	300	20	87	(361)	(10)	21	27	28
Cash flow from operations	**379**	**435**	**738**	**608**	**669**	**977**	**925**	**1,911**
Capex	(950)	(499)	(650)	(653)	(1,231)	(2,576)	(1,550)	(1,750)
Net (acquisitions)/disposals	(32)	(18)	(219)	(444)	297	0	0	0
Other investing CF items	63	(25)	4	(47)	143	0	0	0
Cash flow from investing	**(919)**	**(541)**	**(865)**	**(1,144)**	**(791)**	**(2,576)**	**(1,550)**	**(1,750)**
Change in debt	(98)	37	224	120	(113)	907	664	(127)
Net share issues/(repurchases)	58	0	0	0	0	0	0	0
Dividends paid	0	0	0	0	0	0	0	0
Other financing CF items	309	147	(50)	286	141	0	0	0
Cash flow from financing	**269**	**184**	**173**	**407**	**28**	**907**	**664**	**(127)**
Forex effect/others	0	0	0	0	0	0	0	0
Change in cash	**(271)**	**78**	**46**	**(130)**	**(93)**	**(691)**	**39**	**34**
Free cash flow	(571)	(64)	88	(45)	(562)	(1,599)	(625)	161

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (USDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	264	377	703	1,247	1,288	414	403	437
Inventory	207	296	286	316	387	527	497	637
Accounts receivable	201	328	379	456	500	695	815	845
Other current assets	190	265	192	279	343	300	300	300
Total current assets	**862**	**1,266**	**1,560**	**2,298**	**2,518**	**1,936**	**2,015**	**2,219**
Fixed assets	2,594	2,459	2,666	3,130	3,995	6,130	6,972	7,853
Goodwill & intangibles	179	235	215	208	224	200	200	200
Other non-current assets	93	113	83	133	378	299	299	299
Total assets	**3,728**	**4,073**	**4,523**	**5,769**	**7,115**	**8,565**	**9,486**	**10,571**
Short-term debt	799	568	391	162	113	413	713	813
Accounts payable	376	424	394	794	1,048	1,228	828	1,328
Other current liabilities	77	116	154	194	606	386	477	532
Total current liabilities	**1,251**	**1,108**	**939**	**1,150**	**1,767**	**2,027**	**2,018**	**2,673**
Long-term debt	75	533	782	1,127	909	1,517	1,880	1,653
Other non-current liabilities	155	156	210	184	249	346	355	426
Total liabilities	**1,482**	**1,797**	**1,930**	**2,462**	**2,925**	**3,890**	**4,254**	**4,752**
Share capital	11	13	13	14	17	17	17	17
Reserves/R.E./others	2,234	2,263	2,471	2,934	3,713	4,177	4,707	5,267
Shareholders' equity	**2,245**	**2,276**	**2,484**	**2,948**	**3,730**	**4,194**	**4,724**	**5,284**
Minority interests	1	1	109	359	460	481	508	536
Total equity & liabilities	**3,728**	**4,073**	**4,523**	**5,769**	**7,115**	**8,565**	**9,486**	**10,571**
EV	6,934	7,047	6,901	6,724	6,517	8,320	9,021	8,887
Net debt/(cash)	**611**	**723**	**469**	**42**	**(266)**	**1,516**	**2,190**	**2,029**
BVPS (USD cents)	**81.674**	**71.116**	**77.371**	**83.174**	**88.875**	**99.393**	**111.722**	**124.955**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	(15.1)	29.0	21.6	(4.8)	13.5	30.8	25.9	10.1
EBITDA (YoY)	(40.4)	58.6	14.7	(0.2)	7.3	60.3	23.5	11.8
Operating profit (YoY)	n.a.	n.a.	627.0	(2.7)	64.1	115.1	29.1	5.7
Net profit (YoY)	n.a.	n.a.	991.9	(12.2)	61.0	61.7	33.4	5.6
Core EPS (fully-diluted) (YoY)	n.a.	n.a.	938.5	(19.4)	30.3	45.9	33.4	5.6
Gross-profit margin	7.7	21.5	21.2	24.5	30.5	28.9	32.5	31.9
EBITDA margin	27.8	34.2	32.2	33.8	31.9	39.1	38.4	39.0
Operating-profit margin	n.a.	1.0	5.8	5.9	8.5	14.0	14.4	13.8
Net profit margin	(18.7)	0.9	8.4	7.7	11.0	13.6	14.4	13.8
ROAE	n.a.	0.7	7.3	5.6	7.4	10.0	11.9	11.2
ROAA	n.a.	0.4	4.0	3.0	3.8	5.1	5.9	5.6
ROCE	n.a.	0.5	3.3	2.8	3.9	6.9	7.3	6.9
ROIC	(7.1)	0.6	3.8	3.3	5.0	7.9	7.4	6.9
Net debt to equity	27.2	31.8	18.9	1.4	n.a.	36.1	46.4	38.4
Effective tax rate	n.a.	n.a.	2.3	8.6	3.8	2.2	5.0	5.0
Accounts receivable (days)	56.4	56.7	62.4	77.4	78.0	74.5	74.8	74.7
Current ratio (x)	0.7	1.1	1.7	2.0	1.4	1.0	1.0	0.8
Net interest cover (x)	n.a.	0.5	4.2	17.9	27.1	41.8	25.8	24.3
Net dividend payout	n.a.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Free cash flow yield	n.a.	n.a.	1.4	n.a.	n.a.	n.a.	n.a.	2.6

Source: FactSet, Daiwa forecasts

Company profile

Incorporated in China in 2000, Semiconductor Manufacturing International Corp (SMIC) is the largest dedicated semiconductor foundry company in China. It offers product services, such as wafer fabrication, masking, packaging and testing. It operates one mega-fab (8") in Shanghai, one mega-fab in Beijing (12"), and one in Tianjin (8"). It has also set up a 12" JV fab with the government in Beijing, and is ramping up a new 8" fab in Shenzhen.

SMIC: quarterly P&L forecasts

USDm	1Q16	2Q16	3Q16	4Q16E	1Q17E	2Q17E	3Q17E	4Q17E	2015	2016E	2017E	2018E
Total revenue	**634.31**	**690.22**	**774.85**	**826.37**	**833.90**	**918.54**	**984.39**	**946.02**	**2,236**	**2,926**	**3,683**	**4,054**
COGS	-480.56	-472.41	-542.74	-583.31	-589.20	-617.89	-644.01	-636.13	-1,554	-2,079	-2,487	-2,762
Gross profit	153.75	217.81	232.10	243.06	244.70	300.65	340.37	309.89	683	847	1,196	1,293
Opex	-90.70	-106.25	-125.36	-114.88	-154.27	-165.34	-177.19	-170.28	-492	-437	-667	-734
Operating profit	**63.05**	**111.56**	**106.75**	**128.18**	**90.43**	**135.31**	**163.18**	**139.61**	**190**	**410**	**529**	**558**
EBITDA	222.74	280.47	292.44	348.79	312.43	357.31	385.18	358.92	714	1,144	1,414	1,580
Non-op gain/loss	-11.35	-23.78	7.82	2.91	1.50	0.80	-0.20	-0.60	33	-24	2	1
Pretax profit	51.71	87.79	114.57	131.10	91.93	136.11	162.98	139.01	223	385	530	560
Income taxes & MI	8.918	2.855	0.451	0.000	0.000	0.000	0.000	0.000	23	12.2	0.0	0.0
Net profit	**60.62**	**90.64**	**115.02**	**131.10**	**91.93**	**136.11**	**162.98**	**139.01**	**246**	**397**	**530**	**560**
FD O/S (bn)	4.63	4.64	5.03	5.03	5.03	5.03	5.03	5.03	4.54	5.03	5.03	5.03
FD EPS (US¢)	**1.31**	**1.96**	**2.29**	**2.61**	**1.83**	**2.71**	**3.24**	**2.77**	**5.42**	**7.90**	**10.54**	**11.13**
FD EPS/ADS (USD)	0.65	0.98	1.14	1.30	0.91	1.35	1.62	1.38	2.71	3.95	5.27	**5.57**
Margin												
Gross	24%	32%	30%	29%	29%	33%	35%	33%	31%	29%	32%	32%
Operating	10%	16%	14%	16%	11%	15%	17%	15%	9%	14%	14%	14%
EBITDA	35%	41%	38%	42%	37%	39%	39%	38%	32%	39%	38%	39%
Net	10%	13%	15%	16%	11%	15%	17%	15%	11%	14%	14%	14%
Growth (QoQ)												
Total revenue	4%	9%	12%	7%	1%	10%	7%	-4%				
Gross profit	-12%	42%	7%	5%	1%	23%	13%	-9%				
Operating profit	124%	77%	-4%	20%	-29%	50%	21%	-14%				
EBITDA	30%	26%	4%	19%	-10%	14%	8%	-7%				
Net profit	72%	50%	27%	14%	-30%	48%	20%	-15%				
FD EPS	69%	50%	17%	14%	-30%	48%	20%	-15%				
Growth (YoY)												
Total revenue	24%	26%	36%	35%	31%	33%	27%	14%	14%	31%	26%	10%
Gross profit	3%	23%	27%	40%	59%	38%	47%	27%	41%	24%	41%	8%
Operating profit	41%	86%	86%	354%	43%	21%	53%	9%	64%	115%	29%	6%
EBITDA	31%	52%	56%	104%	40%	27%	32%	3%	7%	60%	24%	12%
Net profit	7%	19%	47%	273%	52%	50%	42%	6%	61%	62%	33%	6%
FD EPS	-7%	7%	32%	236%	40%	38%	42%	6%	30%	46%	33%	6%

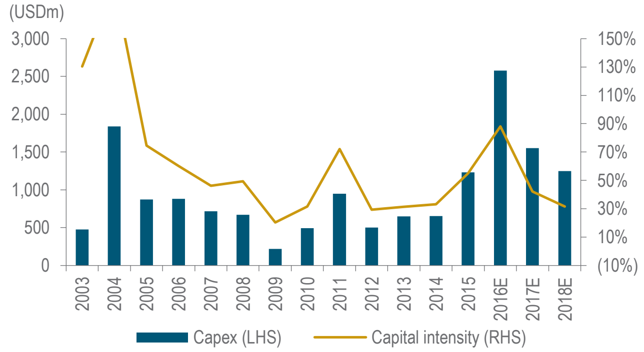
Source: Company, Daiwa forecasts

SMIC: 4Q16 preview and 1Q17 outlook

	4Q16E			1Q17E		
USDm	**Daiwa**	**Consensus**	**Variance**	**Daiwa**	**Consensus**	**Variance**
Revenue	826.37	821.27	1%	833.90	841.64	-1%
Gross profit	243.06			244.70		
Operating profit	128.18			90.43		
EBITDA	348.79			312.43		
Pretax profit	131.10			91.93		
Net profit	131.10	118.46	11%	91.93	103.04	-11%
FD EPS (US¢)	2.61	2.36	11%	1.83	2.05	-11%
Margin						
Gross	29.4%			29.3%		
Operating	15.5%			10.8%		
Net	15.9%			11.0%		
Operation						
Shipment ('000, 8" equ.wafers)	1,119			1,134		
Utilisation*	93%			93%		
<=45nm sales contribution	25%			26%		

Source: Bloomberg, Daiwa forecasts
*Note: * Calculated as wafer shipment / capacity*

SMIC: annual capex and capital intensity*



Source: Company, Daiwa forecasts
*Note: * Capital intensity = capex / revenue*

SMIC: PBR trend

Source: Company, Bloomberg, Daiwa forecasts

Daiwa Capital Markets

Samsung Electronics (005930 KS)

Target price: **KRW2,200,000** (from KRW2,200,000)

Share price (4 Jan): **KRW1,808,000** | Up/downside: **+21.6%**

5 4 3 2 **1**

Buy
(unchanged)

Component business to drive earnings

- Component (memory/display) business to drive earnings in 2017E
- Automotive business looks poised to be a new growth engine
- Buy (1) reiterated; enhanced shareholder returns a potential catalyst

SK Kim
(82) 2 787 9173
sk.kim@kr.daiwacm.com

Henny Jung
(82) 2 787 9182
henny.jung@kr.daiwacm.com

What's new: With Samsung Electronics' (SEC) strong leadership in 3D-NAND and OLED, we expect the component (memory/display) business to drive the company's earnings in 2017. Reaffirming Buy (1) rating.

What's the impact: **Component business the key driver.** With strong demand for enterprise SSDs and limited migration within planar and 3D NAND conversion, we believe NAND supply will remain tight in 1H17. SEC plans to expand its 48/64 layer 3D NAND-based SSD production along with capacity on line 17 at its Pyeongtaek facility. In display, we expect the transition to OLED from LCD to accelerate in the mobile arena, with Apple likely to adopt plastic OLED in its 2017 iPhones. SEC sees sizeable demand for plastic OLED from external customers going forward, and has been increasing capacity since 2H16 on its A3 line to meet demand. Considering its technology leadership (2-3 years ahead of its peers), we expect it to maintain its market share with key customers until 2018.

Automotive business the new growth engine. SEC announced in November 2016 plans to acquire Harman International Industries (not rated) for USD112/share in cash, for a total of USD8bn. Taking into account Harman's wide customer base/leadership in connected-car solutions together with SEC's competitiveness in semiconductors/displays, we believe SEC can achieve vertical integration in the automotive business within the next 2-3 years. We expect the electric vehicle (EV) and autonomous vehicle markets to provide real opportunities for SEC in the long term, potentially easing concerns about muted smartphone demand and the Note 7 issue in its mobile business.

Enhanced shareholder return policy is positive. On 29 November 2016, management announced that it would: 1) return 50% of FCF in 2016 and 2017, 2) increase the dividend for 2016 by 30% to KRW4tn (DPS: KRW28,500, up 36% YoY) and continue to increase it gradually, 3) use the remaining 2016 FCF after the dividend and unexecuted KRW0.8tn from the 2015 FCF to repurchase and cancel shares from 1Q17, 4) initiate a quarterly dividend payment from 1Q17, and 5) seek to enhance its shareholder-return policy thereafter. In addition, SEC plans to keep KRW65-70tn in cash and return excess cash to shareholders.

What we recommend: We reiterate our Buy (1) rating and 12-month TP of KRW2,200,000, based on an unchanged target PBR of 1.73x applied to our 2017E BVPS. We highlight new business opportunities and the enhanced shareholder-return policy as potential catalysts for the share price. The key risk to our call: a sharp decline in smartphone demand.

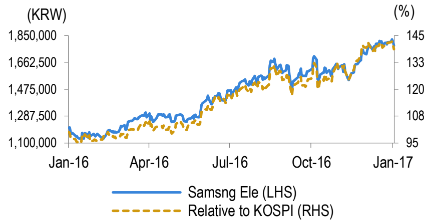
How we differ: We believe we are more positive than the market on SEC's 3D NAND and OLED earnings for 2017-18E.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	1,126,000-1,824,000
Market cap (USDbn)	210.84
3m avg daily turnover (USDm)	354.35
Shares outstanding (m)	141
Major shareholder	National Pension Service (8.0%)

Financial summary (KRW)

Year to 31 Dec	16E	17E	18E
Revenue (bn)	201,539	213,718	226,636
Operating profit (bn)	28,485	37,160	39,504
Net profit (bn)	21,988	28,102	30,057
Core EPS (fully-diluted)	152,706	201,254	218,380
EPS change (%)	20.3	31.8	8.5
Daiwa vs Cons. EPS (%)	5.9	15.5	15.3
PER (x)	11.8	9.0	8.3
Dividend yield (%)	1.6	1.8	2.1
DPS	28,500	33,000	38,000
PBR (x)	1.6	1.4	1.3
EV/EBITDA (x)	3.9	3.1	2.7
ROE (%)	12.5	15.1	14.7

Source: FactSet, Daiwa forecasts

Company

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
DRAM bit growth (%)	n.a.	n.a.	23.1	57.1	30.9	35.6	19.6	15.5
DRAM ASP (%)	n.a.	n.a.	(5.7)	(8.1)	(15.3)	(27.6)	(5.2)	(13.3)
NAND bit growth (%)	n.a.	n.a.	55.5	45.1	57.7	67.7	41.0	32.2
NAND ASP (%)	n.a.	n.a.	(24.8)	(26.9)	(29.3)	(26.2)	(2.4)	(17.7)
LCD Area (%)	n.a.	n.a.	(6.2)	17.1	(3.6)	(3.1)	(3.2)	(2.7)
LCD Area ASP (%)	n.a.	n.a.	(22.2)	(18.2)	(7.8)	(29.5)	1.5	(12.6)
OLED Unit (%)	n.a.	n.a.	40.1	(10.7)	24.4	41.1	37.4	34.0
OLED ASP (%)	n.a.	n.a.	(3.1)	(13.1)	(1.0)	(12.0)	3.5	(0.5)

Profit and loss (KRWbn)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Semiconductor	36,990	34,890	37,437	39,730	47,587	50,707	60,815	63,704
IT & Mobile Communication	67,440	105,840	138,817	111,764	103,557	99,907	95,085	100,762
Other Revenue	60,572	60,374	52,439	54,712	49,510	50,925	57,818	62,169
Total Revenue	**165,002**	**201,104**	**228,693**	**206,206**	**200,653**	**201,539**	**213,718**	**226,636**
Other income	13,592	15,622	16,445	18,053	20,931	20,782	22,068	23,476
COGS	(112,145)	(126,652)	(137,696)	(128,279)	(123,482)	(120,510)	(122,031)	(130,784)
SG&A	(27,233)	(33,870)	(39,892)	(38,517)	(37,052)	(38,308)	(40,081)	(42,498)
Other op.expenses	(23,572)	(27,155)	(30,765)	(32,439)	(34,637)	(35,019)	(36,514)	(37,325)
Operating profit	**15,644**	**29,049**	**36,785**	**25,025**	**26,413**	**28,485**	**37,160**	**39,504**
Net-interest inc./(exp.)	62	246	842	1,240	985	953	1,296	1,695
Assoc/forex/extraord./others	1,486	619	737	1,610	(1,437)	706	166	103
Pre-tax profit	**17,192**	**29,915**	**38,364**	**27,875**	**25,961**	**30,145**	**38,623**	**41,303**
Tax	(3,425)	(6,070)	(7,890)	(4,481)	(6,901)	(7,987)	(10,309)	(11,030)
Min. int./pref. div./others	(367)	(660)	(654)	(312)	(366)	(170)	(211)	(216)
Net profit (reported)	**13,400**	**23,185**	**29,821**	**23,083**	**18,695**	**21,988**	**28,102**	**30,057**
Net profit (adjusted)	**13,400**	**23,185**	**29,821**	**23,083**	**18,695**	**21,988**	**28,102**	**30,057**
EPS (reported)(KRW)	**90,971**	**157,403**	**202,453**	**156,705**	**126,916**	**152,706**	**201,254**	**218,380**
EPS (adjusted)(KRW)	**90,971**	**157,403**	**202,453**	**156,705**	**126,916**	**152,706**	**201,254**	**218,380**
EPS (adjusted fully-diluted)(KRW)	**90,971**	**157,403**	**202,453**	**156,705**	**126,916**	**152,706**	**201,254**	**218,380**
DPS (KRW)	**5,500**	**8,000**	**14,300**	**20,000**	**21,000**	**28,500**	**33,000**	**38,000**
EBIT	**15,644**	**29,049**	**36,785**	**25,025**	**26,413**	**28,485**	**37,160**	**39,504**
EBITDA	**29,236**	**44,671**	**53,230**	**43,078**	**47,344**	**49,268**	**59,228**	**62,980**

Cash flow (KRWbn)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	17,192	29,915	38,364	27,875	25,961	30,145	38,623	41,303
Depreciation and amortisation	13,592	15,622	16,445	18,053	20,931	20,782	22,068	23,476
Tax paid	(3,425)	(6,070)	(7,890)	(4,481)	(6,901)	(7,987)	(10,309)	(11,030)
Change in working capital	(1,458)	(2,341)	(1,483)	2,690	(3,073)	2,377	(2,239)	(4,044)
Other operational CF items	(2,983)	847	1,270	(7,163)	3,144	690	2,429	1,778
Cash flow from operations	**22,918**	**37,973**	**46,707**	**36,975**	**40,062**	**46,007**	**50,570**	**51,482**
Capex	(21,966)	(22,965)	(23,158)	(22,043)	(25,880)	(26,544)	(26,000)	(24,500)
Net (acquisitions)/disposals	380	644	377	386	357	258	388	388
Other investing CF items	473	(9,000)	(21,967)	(11,149)	(1,645)	(11,324)	(10,000)	(6,774)
Cash flow from investing	**(21,113)**	**(31,322)**	**(44,747)**	**(32,806)**	**(27,168)**	**(37,610)**	**(35,612)**	**(30,887)**
Change in debt	3,871	249	(3,735)	105	1,608	(565)	(2,283)	(1,860)
Net share issues/(repurchases)	0	0	0	(1,125)	(5,015)	(9,208)	(2,856)	(3,512)
Dividends paid	(875)	(1,265)	(1,250)	(2,234)	(3,130)	(3,224)	(4,063)	(4,535)
Other financing CF items	113	(848)	847	197	(37)	3,266	1,954	(1,322)
Cash flow from financing	**3,110**	**(1,865)**	**(4,137)**	**(3,057)**	**(6,574)**	**(9,730)**	**(7,248)**	**(11,229)**
Forex effect/others	0	144	330	250	510	55	251	369
Change in cash	**4,915**	**4,931**	**(1,846)**	**1,362**	**6,830**	**(1,278)**	**7,961**	**9,736**
Free cash flow	952	15,008	23,550	14,932	14,182	19,464	14,570	20,208

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (KRWbn)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	26,878	37,448	54,496	61,817	71,493	76,292	84,406	96,124
Inventory	15,717	17,747	19,135	17,318	18,812	17,713	17,937	19,223
Accounts receivable	21,989	23,861	25,256	24,695	25,168	23,234	24,885	26,368
Other current assets	6,919	8,212	11,873	11,317	9,342	9,546	9,596	11,359
Total current assets	**71,502**	**87,269**	**110,760**	**115,146**	**124,815**	**126,785**	**136,823**	**153,075**
Fixed assets	62,044	68,485	75,496	80,873	86,477	93,593	98,450	100,364
Goodwill & intangibles	3,355	3,730	3,981	4,785	5,396	5,037	4,905	4,759
Other non-current assets	18,730	21,588	23,838	29,619	25,491	23,087	23,061	27,039
Total assets	**155,631**	**181,072**	**214,075**	**230,423**	**242,180**	**248,502**	**263,239**	**285,237**
Short-term debt	9,684	9,443	8,864	9,808	11,377	11,486	9,356	7,620
Accounts payable	10,277	9,489	8,437	7,915	6,187	7,676	7,773	8,330
Other current liabilities	24,358	28,001	34,014	34,291	32,939	30,999	30,586	30,518
Total current liabilities	**44,319**	**46,933**	**51,315**	**52,014**	**50,503**	**50,162**	**47,715**	**46,469**
Long-term debt	4,963	5,452	2,296	1,458	1,497	823	670	546
Other non-current liabilities	4,504	7,206	10,447	8,863	11,120	12,632	12,986	13,054
Total liabilities	**53,786**	**59,591**	**64,059**	**62,335**	**63,120**	**63,617**	**61,371**	**60,069**
Share capital	898	898	898	898	898	898	898	898
Reserves/R.E./others	96,702	116,197	143,545	161,284	171,979	177,212	192,752	214,273
Shareholders' equity	**97,600**	**117,094**	**144,443**	**162,182**	**172,877**	**178,110**	**193,649**	**215,171**
Minority interests	4,246	4,386	5,573	5,906	6,183	6,776	8,218	9,997
Total equity & liabilities	**155,631**	**181,072**	**214,075**	**230,423**	**242,180**	**248,502**	**263,239**	**285,237**
EV	237,159	227,396	210,164	204,470	196,636	193,417	184,497	169,728
Net debt/(cash)	**(12,231)**	**(22,553)**	**(43,335)**	**(50,552)**	**(58,619)**	**(63,982)**	**(74,380)**	**(87,958)**
BVPS (KRW)	**598,623**	**714,032**	**881,758**	**987,982**	**1,061,204**	**1,143,685**	**1,271,288**	**1,435,359**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	6.7	21.9	13.7	(9.8)	(2.7)	0.4	6.0	6.0
EBITDA (YoY)	4.4	52.8	19.2	(19.1)	9.9	4.1	20.2	6.3
Operating profit (YoY)	(5.9)	85.7	26.6	(32.0)	5.5	7.8	30.5	6.3
Net profit (YoY)	(18.6)	73.0	28.6	(22.6)	(19.0)	17.6	27.8	7.0
Core EPS (fully-diluted) (YoY)	(18.6)	73.0	28.6	(22.6)	(19.0)	20.3	31.8	8.5
Gross-profit margin	32.0	37.0	39.8	37.8	38.5	40.2	42.9	42.3
EBITDA margin	17.7	22.2	23.3	20.9	23.6	24.4	27.7	27.8
Operating-profit margin	9.5	14.4	16.1	12.1	13.2	14.1	17.4	17.4
Net profit margin	8.1	11.5	13.0	11.2	9.3	10.9	13.1	13.3
ROAE	14.6	21.6	22.8	15.1	11.2	12.5	15.1	14.7
ROAA	9.2	13.8	15.1	10.4	7.9	9.0	11.0	11.0
ROCE	14.4	23.0	24.7	14.7	14.2	14.6	18.2	17.7
ROIC	15.0	24.6	28.4	18.7	16.3	17.4	21.9	21.9
Net debt to equity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Effective tax rate	19.9	20.3	20.6	16.1	26.6	26.5	26.7	26.7
Accounts receivable (days)	45.6	41.6	39.2	44.2	45.4	43.8	41.1	41.3
Current ratio (x)	1.6	1.9	2.2	2.2	2.5	2.5	2.9	3.3
Net interest cover (x)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net dividend payout	6.0	5.1	7.1	12.8	16.5	18.7	16.4	17.4
Free cash flow yield	0.4	5.9	9.3	5.9	5.6	7.7	5.7	7.9

Source: FactSet, Daiwa forecasts

Company profile

Samsung Electronics Co., Ltd. manufactures a range of consumer and industrial electronic equipment and products, such as semiconductors, display panels, handsets, personal computers, and peripherals. The company had global market shares of 45% in DRAM (2015), 21% in large-size display panels (2015), and 21% in TV (2015).

SEC: earnings outlook

(KRWbn)	1Q16	2Q16	3Q16	4Q16E	2016E	2017E	2018E
Revenue	**49,780**	**50,940**	**47,815**	**53,004**	**201,539**	**213,718**	**226,636**
Semiconductor	11,150	12,000	13,150	14,407	50,707	60,815	63,704
DRAM	4,704	4,966	5,781	6,296	21,746	25,333	24,940
NAND	3,151	3,377	3,933	4,791	15,253	21,419	22,914
System LSI	3,210	3,570	3,290	3,171	13,241	13,559	15,346
Display	6,040	6,420	7,060	7,386	26,906	34,141	39,627
LCD	2,484	2,515	3,018	3,340	11,357	11,426	9,539
OLED	3,544	3,866	4,067	4,045	15,522	22,715	29,599
IT & Mobile Communications	27,600	26,560	22,540	23,207	99,907	95,085	100,762
Handset	23,295	23,847	20,658	20,461	88,262	86,469	93,691
Consumer Electronics	10,620	11,550	11,240	13,806	47,216	47,247	46,123
Operating profit	**6,676**	**8,144**	**5,200**	**8,465**	**28,485**	**37,160**	**39,504**
Semiconductor	2,630	2,640	3,370	4,423	13,063	19,852	20,199
DRAM	1,906	1,766	2,105	2,613	8,389	10,956	10,662
NAND	547	662	998	1,626	3,833	7,808	8,367
System LSI	177	236	251	184	847	1,088	1,171
Display	-270	140	1,020	1,011	1,901	5,798	7,302
LCD	-750	-478	146	307	-775	936	1,058
OLED	474	619	858	704	2,654	4,862	6,244
IT & Mobile Communications	3,890	4,320	100	2,340	10,650	9,402	9,996
Handset	3,420	4,098	-27	2,250	9,740	9,370	10,165
Consumer Electronics	510	1,030	770	722	3,032	2,228	2,127
OP margin	**13.4%**	**16.0%**	**10.9%**	**16.0%**	**14.1%**	**17.4%**	**17.4%**
Semiconductor	23.6%	22.0%	25.6%	30.7%	25.8%	32.6%	31.7%
DRAM	40.5%	35.6%	36.4%	41.5%	38.6%	43.2%	42.7%
NAND	17.4%	19.6%	25.4%	33.9%	25.1%	36.5%	36.5%
System LSI	5.5%	6.6%	7.6%	5.8%	6.4%	8.0%	7.6%
Display	-4.5%	2.2%	14.4%	13.7%	7.1%	17.0%	18.4%
LCD	-30.2%	-19.0%	4.8%	9.2%	-6.8%	8.2%	11.1%
OLED	13.4%	16.0%	21.1%	17.4%	17.1%	21.4%	21.1%
IT & Mobile Communications	14.1%	16.3%	0.4%	10.1%	10.7%	9.9%	9.9%
Handset	14.7%	17.2%	-0.1%	11.0%	11.0%	10.8%	10.8%
Consumer Electronics	4.8%	8.9%	6.9%	5.2%	6.4%	4.7%	4.6%

Source: Company, Daiwa forecasts

Samsung/Harman: complementary capabilities

Samsung		Harman	
Leading Connected Devices	- No.1 in smartphones - No.1 in consumer Electronics - Leader in UX, 5G and IOT	Leading Auto OEM relationships	- 36+ global auto brands - USD24bn backlog - 30m cars with Harman Technology
Leading Core Technology	- No.1 in display - No.1 in memory - No.2 in semiconductors	Leading Auto and Audio Technology	- #1 connected car technology (infotainment, telematics, cyber security, sound management, OTA) - #1 in branded car audio
Innovation Powerhouse	- USD23bn in capex and USD13bn on R&D - Top 3 in global corporate venture capital - No.2 in patents in US and Europe	Leading Consumer Brands	AKG, Harman/Kardon, Lexicon, Bowers&Wilkins, Infinity, Bang&Olufsen, JBL, Studer, Revel, AMX, Martin, Crown, Mark Levinson

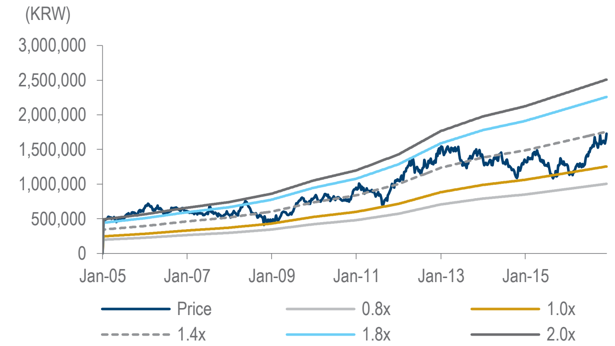
Source: Company, Daiwa

SEC: guidance on shareholder return policy

1	Allocate 50% of 2016 and 2017 FCF for shareholder returns
2	**Increase dividends** - Increase 2016 total dividends by 30% to KRW4.0tn - 2016 dividends per share is expected to increase by 36% to KRW28,500
3	**Repurchase shares** - Utilise remaining 50% of 2016 FCF after dividend payouts + unexecuted KRW0.8trillion from 2015 FCF - Cancel repurchased shares
4	Initiate quarterly dividend payments starting 1Q 2017
5	Seek to further enhance capital allocation policy beyond 2017

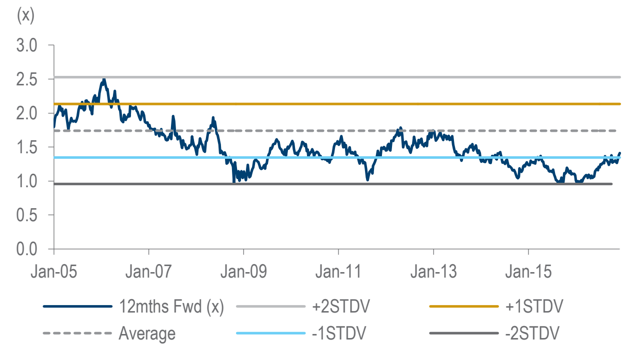
Source: Company, Daiwa

SEC: 12-month forward PBR



Source: Company, Bloomberg, Daiwa forecasts

SEC: 12-month forward PBR



Source: Company, Bloomberg, Daiwa forecasts

Korea | Information Technology | 6 January 2017

Daiwa Capital Markets

LG Display (034220 KS)

Target price: **KRW36,000** (from KRW36,000)

Share price (4 Jan): **KRW31,450** | Up/downside: **+14.4%**

5 4 3 2 1

Buy
(unchanged)

Beneficiary of LCD recovery and OLED transition

- We expect LCD prices to remain stable going into 2017
- The market's transition to OLED should be positive for the company
- Reiterating Buy (1) rating and 12-month TP of KRW36,000

SK Kim
(82) 2 787 9173
sk.kim@kr.daiwacm.com

Henny Jung
(82) 2 787 9182
henny.jung@kr.daiwacm.com

What's new: We expect the OLED market to show a meaningful expansion in 2017. With LG Display's (LGD) strength in OLED TV panels and a potential rise in demand from the mobile segment, we see OLED as the next earnings growth driver for the company.

What's the impact: Key beneficiary of an improved LCD market. LCD prices have rebounded since 2Q16 on a rise in average panel sizes and reduced supply, and we expect prices to be firm in 2017. Although overall TV and PC demand remains sluggish, we expect solid demand in the premium segment. With its market share and strength at the high end, LGD stands to benefit from a market recovery. While China panel makers' plans to invest heavily in large-sized panels are a threat to the market and LGD, we think it will take them time to secure competiveness and stable yields on large-sized LCD panels. At the same time, we see rising OLED investments by major LCD players, including Samsung Display (not listed) and the China panel makers, as positive for the LCD market. Compared with the DRAM industry, a structural change in the LCD market from consolidation looks unlikely any time soon, but we expect a similar differentiation in profitability where the makers with big proportions of premium products in their product mixes do best. In sum, we see the LCD business being LGD's cash cow over our forecast horizon.

Transition to OLED is positive for LGD. We forecast the revenue generated by OLED as a proportion of premium TV market revenue to rise to 6.6% for 2018 (2016: 3.3%). LGD is the sole supplier globally of OLED TV panels, having started mass production in 2013, and as such it has a distinct edge in technology and capacity. Indeed, we expect its technology lead to widen when LGD starts production at its P10 line in 2H18. On the other hand, we expect the transition to OLED from LCD to accelerate in the mobile arena, with Apple likely to adopt plastic OLED for its 2017 iPhones. In the small-sized OLED business, though LGD trails Samsung Display, we expect it to benefit from new business opportunities as the No.2 player in OLED globally.

What we recommend: We reaffirm our Buy (1) call and 12-month TP of KRW36,000, based on a PBR of 0.97x for 2017E. To calculate our target PBR, we compared LGD's historical yearly average forward-12-month PBR with its ROE to identify a period when it had a similar ROE to our 2017E forecast (8.5%). Then we added a 10% premium to the 2014 average PBR (0.88x) given the company's new business opportunities in OLED panels.

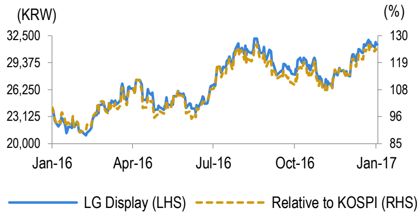
How we differ: We are more positive on LCD prices in 2017 than the market.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	20,950-32,150
Market cap (USDbn)	9.32
3m avg daily turnover (USDm)	28.73
Shares outstanding (m)	358
Major shareholder	LG Electronics (37.9%)

Financial summary (KRW)

Year to 31 Dec	16E	17E	18E
Revenue (bn)	25,536	26,424	27,360
Operating profit (bn)	953	1,578	1,665
Net profit (bn)	513	1,063	1,085
Core EPS (fully-diluted)	1,435	2,972	3,032
EPS change (%)	(46.9)	107.1	2.0
Daiwa vs Cons. EPS (%)	6.0	5.6	5.9
PER (x)	21.9	10.6	10.4
Dividend yield (%)	1.6	1.6	1.6
DPS	500	500	500
PBR (x)	0.9	0.8	0.8
EV/EBITDA (x)	3.0	2.3	2.1
ROE (%)	4.2	8.5	8.1

Source: FactSet, Daiwa forecasts

Company

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Large-size panel area growth (YoY%)	47.2	34.7	11.6	16.6	(3.8)	4.5	6.6	3.6
Large-size ASP growth (YoY%)	(13.9)	0.4	(3.2)	(10.0)	(16.6)	(14.9)	(1.4)	(6.5)
TV panel shipment area mix (% to total)	63.9	65.5	66.9	70.3	73.3	75.7	77.9	79.3

Profit and loss (KRWbn)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
TV	11,552	13,620	11,791	10,555	10,902	9,854	12,439	13,791
Monitor	5,010	5,087	5,328	4,654	4,537	3,857	3,843	3,627
Other Revenue	7,729	10,722	9,914	11,247	12,945	11,826	10,142	9,942
Total Revenue	**24,291**	**29,430**	**27,033**	**26,456**	**28,384**	**25,536**	**26,424**	**27,360**
Other income	0	0	0	0	0	0	0	0
COGS	(23,081)	(26,425)	(23,525)	(22,667)	(24,070)	(22,172)	(22,391)	(23,126)
SG&A	(1,974)	(2,093)	(2,345)	(2,431)	(2,689)	(2,412)	(2,456)	(2,570)
Other op.expenses	0	0	0	0	0	0	0	0
Operating profit	**(764)**	**912**	**1,163**	**1,357**	**1,626**	**953**	**1,578**	**1,665**
Net-interest inc./(exp.)	(86)	(159)	(119)	(61)	(71)	(67)	(57)	(69)
Assoc/forex/extraord./others	(231)	(295)	(214)	(55)	(121)	(115)	(155)	(201)
Pre-tax profit	**(1,081)**	**459**	**830**	**1,242**	**1,434**	**770**	**1,367**	**1,396**
Tax	293	(222)	(411)	(325)	(411)	(258)	(301)	(307)
Min. int./pref. div./others	17	(3)	7	(13)	(57)	2	(3)	(4)
Net profit (reported)	**(771)**	**233**	**426**	**904**	**967**	**513**	**1,063**	**1,085**
Net profit (adjusted)	**(771)**	**233**	**426**	**904**	**967**	**513**	**1,063**	**1,085**
EPS (reported)(KRW)	**(2,155)**	**652**	**1,191**	**2,527**	**2,701**	**1,435**	**2,972**	**3,032**
EPS (adjusted)(KRW)	**(2,155)**	**652**	**1,191**	**2,527**	**2,701**	**1,435**	**2,972**	**3,032**
EPS (adjusted fully-diluted)(KRW)	**(2,155)**	**652**	**1,191**	**2,527**	**2,701**	**1,435**	**2,972**	**3,032**
DPS (KRW)	**500**	**0**	**0**	**0**	**500**	**500**	**500**	**500**
EBIT	**(764)**	**912**	**1,163**	**1,357**	**1,626**	**953**	**1,578**	**1,665**
EBITDA	**2,888**	**5,382**	**4,998**	**4,850**	**5,001**	**4,187**	**5,656**	**6,106**

Cash flow (KRWbn)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	(1,081)	459	830	1,242	1,434	770	1,367	1,396
Depreciation and amortisation	3,651	4,469	3,835	3,492	3,376	3,235	4,078	4,441
Tax paid	293	(222)	(411)	(325)	(411)	(258)	(301)	(307)
Change in working capital	3,198	(1,156)	(2,444)	(940)	(1,820)	2,398	(161)	12
Other operational CF items	(2,396)	1,020	1,775	(605)	147	(547)	82	125
Cash flow from operations	**3,666**	**4,570**	**3,585**	**2,865**	**2,727**	**5,598**	**5,065**	**5,667**
Capex	(4,063)	(3,972)	(3,473)	(2,983)	(2,365)	(4,250)	(5,050)	(5,250)
Net (acquisitions)/disposals	1	59	40	40	447	118	72	72
Other investing CF items	568	225	(1,071)	(508)	(814)	109	0	0
Cash flow from investing	**(3,494)**	**(3,688)**	**(4,504)**	**(3,451)**	**(2,732)**	**(4,023)**	**(4,978)**	**(5,178)**
Change in debt	(36)	(67)	(553)	345	(23)	1,168	218	52
Net share issues/(repurchases)	0	0	0	0	0	0	0	0
Dividends paid	(179)	0	0	0	(179)	(179)	(179)	(179)
Other financing CF items	(64)	19	162	60	28	(41)	(41)	31
Cash flow from financing	**(278)**	**(48)**	**(391)**	**405**	**(174)**	**948**	**(2)**	**(96)**
Forex effect/others	(6)	(13)	(6)	50	42	0	0	0
Change in cash	**(113)**	**821**	**(1,317)**	**(132)**	**(138)**	**2,523**	**85**	**393**
Free cash flow	(397)	597	112	(118)	362	1,348	15	417

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (KRWbn)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	2,333	2,654	2,323	2,416	2,524	4,078	3,939	4,246
Inventory	2,317	2,390	1,933	2,754	2,352	2,320	2,342	2,419
Accounts receivable	2,953	3,533	3,218	3,564	4,204	3,575	3,435	3,557
Other current assets	1,070	653	1,559	2,033	2,225	2,218	2,221	2,223
Total current assets	**8,673**	**9,230**	**9,033**	**10,767**	**11,304**	**12,190**	**11,937**	**12,445**
Fixed assets	14,697	13,108	11,808	11,403	10,546	11,780	12,938	13,797
Goodwill & intangibles	535	498	468	577	839	628	420	351
Other non-current assets	2,073	1,211	1,707	1,747	1,661	948	1,312	1,444
Total assets	**25,163**	**24,456**	**21,715**	**22,967**	**22,577**	**25,547**	**26,608**	**28,036**
Short-term debt	801	1,015	908	968	1,416	1,777	1,886	2,053
Accounts payable	3,783	4,147	3,000	3,392	2,765	3,043	2,962	3,087
Other current liabilities	5,328	4,044	2,881	3,190	2,426	3,879	3,684	3,771
Total current liabilities	**9,911**	**9,206**	**6,789**	**7,550**	**6,607**	**8,698**	**8,532**	**8,912**
Long-term debt	3,722	3,441	2,995	3,279	2,808	3,615	3,724	3,608
Other non-current liabilities	1,398	1,569	1,134	355	457	750	900	1,250
Total liabilities	**15,032**	**14,215**	**10,918**	**11,184**	**9,872**	**13,063**	**13,156**	**13,770**
Share capital	1,789	1,789	1,789	1,789	1,789	1,789	1,789	1,789
Reserves/R.E./others	8,327	8,421	8,822	9,642	10,404	10,207	11,192	11,946
Shareholders' equity	**10,116**	**10,210**	**10,611**	**11,431**	**12,193**	**11,996**	**12,982**	**13,735**
Minority interests	15	30	186	352	512	487	470	531
Total equity & liabilities	**25,163**	**24,456**	**21,715**	**22,967**	**22,577**	**25,547**	**26,608**	**28,036**
EV	13,074	12,684	12,612	13,029	13,081	12,656	12,975	12,761
Net debt/(cash)	**2,190**	**1,802**	**1,579**	**1,831**	**1,700**	**1,314**	**1,671**	**1,416**
BVPS (KRW)	**28,314**	**28,619**	**30,176**	**32,932**	**35,507**	**34,887**	**37,593**	**39,870**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	(4.8)	21.2	(8.1)	(2.1)	7.3	(10.0)	3.5	3.5
EBITDA (YoY)	(37.4)	86.4	(7.1)	(3.0)	3.1	(16.3)	35.1	8.0
Operating profit (YoY)	n.a.	n.a.	27.5	16.7	19.8	(41.4)	65.6	5.5
Net profit (YoY)	n.a.	n.a.	82.7	112.2	6.9	(46.9)	107.1	2.0
Core EPS (fully-diluted) (YoY)	n.a.	n.a.	82.7	112.2	6.9	(46.9)	107.1	2.0
Gross-profit margin	5.0	10.2	13.0	14.3	15.2	13.2	15.3	15.5
EBITDA margin	11.9	18.3	18.5	18.3	17.6	16.4	21.4	22.3
Operating-profit margin	n.a.	3.1	4.3	5.1	5.7	3.7	6.0	6.1
Net profit margin	(3.2)	0.8	1.6	3.4	3.4	2.0	4.0	4.0
ROAE	n.a.	2.3	4.1	8.2	8.2	4.2	8.5	8.1
ROAA	n.a.	0.9	1.8	4.0	4.2	2.1	4.1	4.0
ROCE	n.a.	6.2	7.9	8.8	9.9	5.5	8.5	8.5
ROIC	(4.5)	3.9	4.8	7.7	8.3	4.5	8.5	8.4
Net debt to equity	21.7	17.7	14.9	16.0	13.9	11.0	12.9	10.3
Effective tax rate	27.1	48.5	49.5	26.1	28.6	33.6	22.0	22.0
Accounts receivable (days)	46.8	40.2	45.6	46.8	49.9	55.6	48.4	46.6
Current ratio (x)	0.9	1.0	1.3	1.4	1.7	1.4	1.4	1.4
Net interest cover (x)	n.a.	5.7	9.7	22.4	23.1	14.1	27.9	24.3
Net dividend payout	n.a.	0.0	0.0	0.0	18.5	34.8	16.8	16.5
Free cash flow yield	n.a.	5.3	1.0	n.a.	3.2	12.0	0.1	3.7

Source: FactSet, Daiwa forecasts

Company profile

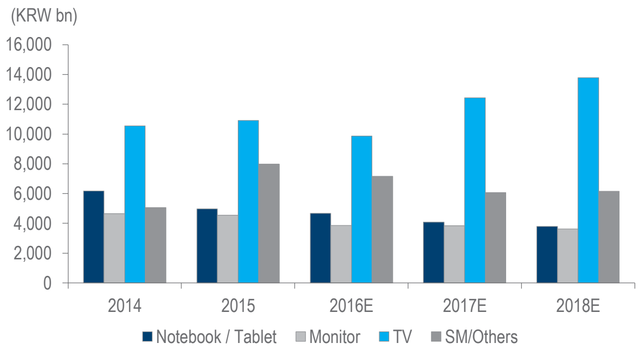
LG Display (LGD), formerly LG.Philips LCD, is the largest TFT-LCD panel maker globally, with a 33% market share (in terms of revenue) in 2015. The company provides OLED panels as well as LCD panels for TVs, monitors, notebook PCs, and mobile devices. It was established through a 50:50 joint venture with LG Electronics and Philips Electronics in September 1999, and was listed on the Korea Stock Exchange and New York Stock Exchange in July 2004.

LGD: earnings outlook

	1Q16	2Q16	3Q16	4Q16E	2016E	2017E	2018E
Revenue (KRWbn)	5,989	5,855	6,724	6,968	25,536	26,424	27,360
Large Size Total	4,612	4,274	4,908	4,581	18,375	20,365	21,218
Notebook	1,437	1,054	1,210	963	4,665	4,083	3,799
Monitor	898	937	1,076	946	3,857	3,843	3,627
TV	2,276	2,284	2,622	2,672	9,854	12,439	13,791
- LCD	2,119	2,090	2,373	2,315	8,898	10,512	10,747
- OLED	157	193	249	357	956	1,927	3,044
SM/Others	1,378	1,581	1,815	2,387	7,161	6,059	6,142
Revenue growth QoQ% / YoY%	(20%)	(2%)	15%	4%	(10%)	3%	4%
Large Size Total	(10%)	(7%)	15%	(7%)	(10%)	11%	4%
Notebook	1%	(27%)	15%	(20%)	(6%)	(12%)	(7%)
Monitor	(20%)	4%	15%	(12%)	(15%)	(0%)	(6%)
TV	(11%)	0%	15%	2%	(10%)	26%	11%
- LCD	(9%)	(1%)	14%	(2%)	(14%)	18%	2%
- OLED	(26%)	23%	29%	43%	87%	102%	58%
SM/Others	(43%)	15%	15%	32%	(10%)	(15%)	1%
Shipment area growth QoQ% / YoY%	(8%)	5%	9%	(1%)	3%	12%	12%
Large Size Total	(7%)	5%	9%	(2%)	4%	13%	11%
Notebook	(22%)	(4%)	3%	(17%)	(18%)	0%	8%
Monitor	(10%)	8%	13%	(14%)	(1%)	5%	1%
LCD TV panel	(4%)	5%	8%	1%	5%	13%	10%
ASP growth QoQ% / YoY%	(17%)	(4%)	10%	2%	(15%)	(7%)	(7%)
Large Size Total	(7%)	(8%)	10%	(7%)	(15%)	(1%)	(7%)
Notebook	25%	(21%)	3%	5%	12%	(12%)	(14%)
Monitor	(15%)	(0%)	2%	3%	(16%)	(4%)	(7%)
LCD TV panel	(10%)	(2%)	0%	3%	(20%)	5%	(7%)
Operating profit	40	44	323	546	953	1,578	1,665
QoQ growth	-35%	12%	628%	69%			
YoY growth	-95%	-91%	-3%	801%	-41%	66%	5%
OP margin	0.7%	0.8%	4.8%	7.8%	3.7%	6.0%	6.1%

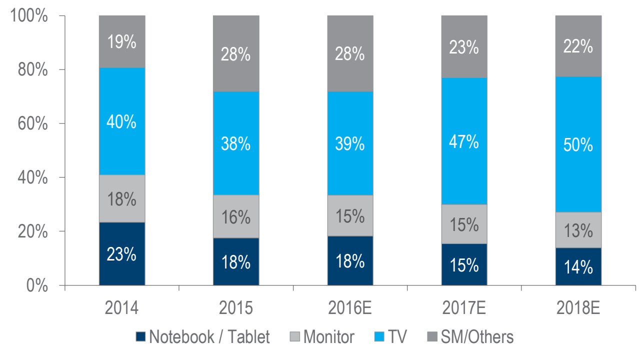
Source: Company, Daiwa forecasts

LGD: revenue mix forecasts by application



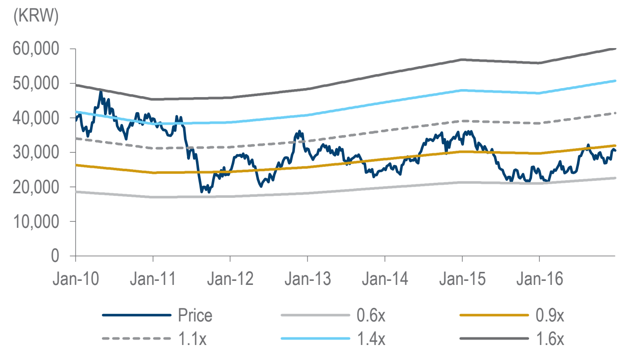
Source: Company, Daiwa forecasts

LGD: revenue mix (%)



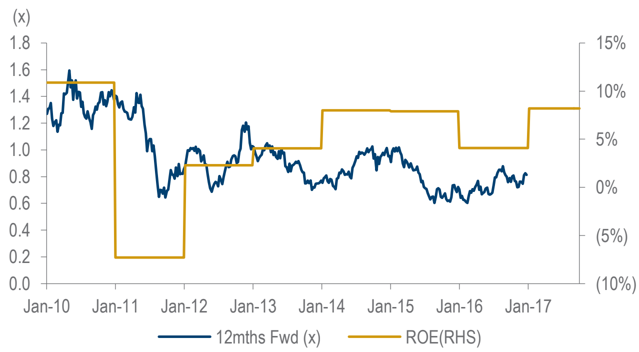
Source: Company, Daiwa forecasts

LGD: 12-month forward PBR



Source: Company, Bloomberg, Daiwa forecasts

LGD: PBR vs. ROE



Source: Company, Bloomberg, Daiwa forecasts

Daiwa Capital Markets

LandMark Optoelectronics (3081 TT)

Target price: **TWD385.00** (from TWD388.00)

Share price (4 Jan): **TWD269.50** | Up/downside: **+42.8%**

5 4 3 2 **1**

Buy (unchanged)

A strong value creator on bandwidth upgrades

- Benefiting from rising data traffic in the next Big Data/IoT cycle
- Multi-year demand drivers: SiPh, 10G PON and 5G cellular
- Reaffirming Buy (1) call; one of our top small-cap picks in AeJ

Rick Hsu
(886) 2 8758 6261
rick.hsu@daiwacm-cathay.com.tw

Martin Lee
(886) 2 8758 6262
martin.lee@daiwacm-cathay.com.tw

What's new: We believe LandMark Opto (LMO) occupies the most value-added position in the optical-communication food chain and is a facilitator of fiber optics as the most viable solution for broadband. Hence, it should be a multi-year beneficiary from bandwidth upgrades in wire-line data transmission infrastructure, to meet the needs of massive data traffic in the Big Data/IoT demand cycle. We expect key demand drivers to be silicon photonics (SiPh), 10G passive optical networks (PON) and 5G cellular, with new products adding to business upside. We reiterate our Buy (1) rating on LMO, one of our top picks in the semiconductor space. It is also one of the top-5 picks in Daiwa's regional small-cap coverage universe (see ***The balance of power lies with Asia's small caps***, 8 December 2016).

What's the impact: **Last drop before sunrise.** LMO's monthly revenue run-rate bottomed out in October in both dollar terms and YoY growth (see ***memo***). We now expect 4Q16 revenue to be TWD355m (previously TWD452m) as a result of a greater-than-expected inventory correction in China's PON supply chain. We forecast the gross margin for the quarter to reach 48.9%, the worst since the GFC, due to low capacity utilisation and likely inventory write-offs against COGS. However, we view this as an after-effect of the inventory glut and, hence, believe it is unlikely to raise market concerns. Any share volatility caused by the street cutting forecasts on this issue would be an opportunity for re-entry, in our view.

Structural demand drivers intact. Although we expect no meaningful recovery in the monthly revenue run-rate until June 2017, given the time needed for China telcos to design 10G PON solutions and ramp up demand migration from FTTB, we believe the following demand drivers are structurally intact: 1) continued FTTX build globally with 10G migration in China's PON market to kick off from 3Q17, 2) continued and strong growth of SiPh revenue thanks to Intel's market-share gains in the datacentre market, and 3) the next cellular infrastructure upgrade to 5G architecture. We expect LMO's footprint expansion into other new applications such as industrial laser cutting to add to its business upside.

What we recommend: We lower our 2016-18E EPS by 7-8% to reflect the after-effects of the inventory glut, but reiterate our Buy (1) call. On the heels of our lower earnings, we now use an ROE-adjusted PBR of 8.5x (from 9x) applied to our 2017E book value (unchanged), which leads to our new 12-month TP of TWD385 (previous: TWD388). Key risks: further delays in PON recovery and a lower-than-expected SiPh business ramp-up.

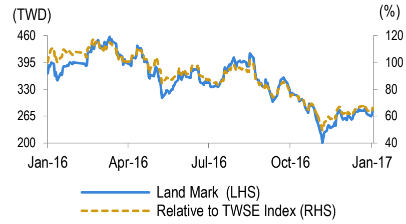
How we differ: Our 2017-18E EPS are 3-18% above consensus, which we attribute to our more bullish view on SiPh demand and the 10G ramp-up.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	(4.4)	(6.0)	(6.0)
Net profit change	(6.7)	(7.6)	(7.1)
Core EPS (FD) change	(6.7)	(7.6)	(7.1)

Source: Daiwa forecasts

Share price performance



12-month range	200.50-456.92
Market cap (USDbn)	0.76
3m avg daily turnover (USDm)	12.74
Shares outstanding (m)	91
Major shareholder	Plenticom Asia Limited (12.3%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	2,115	2,841	4,346
Operating profit (m)	1,102	1,388	2,271
Net profit (m)	905	1,136	1,853
Core EPS (fully-diluted)	9.906	12.432	20.269
EPS change (%)	(9.0)	25.5	63.0
Daiwa vs Cons. EPS (%)	(8.2)	2.9	18.1
PER (x)	27.2	21.7	13.3
Dividend yield (%)	3.3	2.8	3.0
DPS	9.0	7.5	8.0
PBR (x)	6.7	6.0	4.7
EV/EBITDA (x)	16.9	12.7	8.3
ROE (%)	24.9	29.1	39.5

Source: FactSet, Daiwa forecasts

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Wafer shipment ('000)	n.a.	n.a.	n.a.	34	41	41	58	90
Blended ASP (USD)	n.a.	n.a.	n.a.	1,263	1,545	1,594	1,552	1,534
Blended GM (%)	n.a.	n.a.	n.a.	61	66	61	58	61

Profit and loss (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
PON	n.a.	n.a.	n.a.	850	1,352	1,288	1,543	2,016
SiPhotonics	n.a.	n.a.	n.a.	363	287	459	903	1,747
Other Revenue	n.a.	n.a.	n.a.	95	389	368	395	584
Total Revenue	**470**	**601**	**715**	**1,307**	**2,028**	**2,115**	**2,841**	**4,346**
Other income	0	0	0	0	0	0	0	0
COGS	(152)	(236)	(312)	(507)	(691)	(826)	(1,182)	(1,695)
SG&A	(54)	(57)	(59)	(66)	(90)	(92)	(157)	(206)
Other op.expenses	(46)	(24)	(17)	(26)	(77)	(95)	(114)	(174)
Operating profit	**219**	**284**	**326**	**708**	**1,169**	**1,102**	**1,388**	**2,271**
Net-interest inc./(exp.)	2	3	3	4	8	10	6	10
Assoc/forex/extraord./others	(14)	(3)	3	29	16	(12)	0	0
Pre-tax profit	**206**	**283**	**332**	**741**	**1,193**	**1,100**	**1,394**	**2,281**
Tax	(39)	(53)	(62)	(127)	(204)	(194)	(258)	(429)
Min. int./pref. div./others	0	0	0	0	0	0	0	0
Net profit (reported)	**167**	**230**	**270**	**614**	**989**	**905**	**1,136**	**1,853**
Net profit (adjusted)	**167**	**230**	**270**	**614**	**989**	**905**	**1,136**	**1,853**
EPS (reported)(TWD)	**4.970**	**6.348**	**6.022**	**11.189**	**14.892**	**9.906**	**12.432**	**20.269**
EPS (adjusted)(TWD)	**4.970**	**6.348**	**6.022**	**11.189**	**14.892**	**9.906**	**12.432**	**20.269**
EPS (adjusted fully-diluted)(TWD)	**3.283**	**4.202**	**3.990**	**7.261**	**10.881**	**9.906**	**12.432**	**20.269**
DPS (TWD)	**n.a.**	**n.a.**	**0.000**	**3.000**	**7.000**	**9.000**	**7.499**	**8.000**
EBIT	**219**	**284**	**326**	**708**	**1,169**	**1,102**	**1,388**	**2,271**
EBITDA	**236**	**317**	**378**	**788**	**1,309**	**1,314**	**1,814**	**2,669**

Cash flow (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	206	283	332	741	1,193	1,100	1,394	2,281
Depreciation and amortisation	17	33	52	80	140	212	427	397
Tax paid	(39)	(53)	(62)	(127)	(204)	(194)	(258)	(429)
Change in working capital	0	(71)	(12)	(126)	(308)	275	(645)	(90)
Other operational CF items	2	31	20	74	138	(0)	0	0
Cash flow from operations	**187**	**224**	**330**	**643**	**958**	**1,392**	**918**	**2,160**
Capex	(205)	(58)	(225)	(239)	(437)	(395)	(1,056)	(560)
Net (acquisitions)/disposals	0	0	0	0	0	0	0	0
Other investing CF items	119	6	1	(2)	(29)	0	0	0
Cash flow from investing	**(86)**	**(52)**	**(224)**	**(241)**	**(466)**	**(395)**	**(1,056)**	**(560)**
Change in debt	0	0	0	0	0	0	0	0
Net share issues/(repurchases)	0	0	0	0	1,541	0	0	0
Dividends paid	(63)	(85)	(73)	(136)	(426)	(818)	(685)	(731)
Other financing CF items	0	0	0	0	0	0	0	0
Cash flow from financing	**(63)**	**(85)**	**(73)**	**(136)**	**1,115**	**(818)**	**(685)**	**(731)**
Forex effect/others	0	0	0	2	(0)	0	0	0
Change in cash	**37**	**87**	**33**	**269**	**1,607**	**180**	**(824)**	**869**
Free cash flow	(18)	166	106	404	521	998	(138)	1,600

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (TWDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	225	313	346	614	2,221	2,401	1,577	2,446
Inventory	58	80	97	117	142	167	272	362
Accounts receivable	123	167	168	326	603	323	923	973
Other current assets	8	9	49	55	12	50	50	50
Total current assets	**415**	**569**	**660**	**1,111**	**2,978**	**2,941**	**2,822**	**3,831**
Fixed assets	289	306	474	660	935	1,103	1,804	1,986
Goodwill & intangibles	0	0	0	0	0	0	0	0
Other non-current assets	19	11	9	12	80	12	12	12
Total assets	**723**	**886**	**1,143**	**1,784**	**3,993**	**4,056**	**4,638**	**5,829**
Short-term debt	0	0	0	0	0	0	0	0
Accounts payable	33	28	34	86	80	100	160	210
Other current liabilities	80	90	118	207	319	274	345	362
Total current liabilities	**114**	**118**	**152**	**293**	**399**	**374**	**505**	**572**
Long-term debt	0	0	0	0	0	0	0	0
Other non-current liabilities	3	1	1	5	5	5	6	8
Total liabilities	**117**	**120**	**153**	**298**	**404**	**379**	**511**	**580**
Share capital	341	366	452	553	699	909	909	909
Reserves/R.E./others	266	400	537	933	2,890	2,768	3,219	4,340
Shareholders' equity	**606**	**766**	**990**	**1,486**	**3,589**	**3,677**	**4,127**	**5,249**
Minority interests	0	0	0	0	0	0	0	0
Total equity & liabilities	**723**	**886**	**1,143**	**1,784**	**3,993**	**4,056**	**4,638**	**5,829**
EV	24,408	24,321	24,287	24,019	22,412	22,232	23,056	22,187
Net debt/(cash)	**(225)**	**(313)**	**(346)**	**(614)**	**(2,221)**	**(2,401)**	**(1,577)**	**(2,446)**
BVPS (TWD)	**18.014**	**21.135**	**22.085**	**27.088**	**54.045**	**40.224**	**45.156**	**57.426**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	n.a.	27.8	19.0	82.9	55.1	4.3	34.4	53.0
EBITDA (YoY)	n.a.	34.7	19.0	108.7	66.1	0.4	38.1	47.1
Operating profit (YoY)	n.a.	29.8	14.9	117.1	65.2	(5.7)	25.9	63.7
Net profit (YoY)	n.a.	37.6	17.3	127.4	61.1	(8.4)	25.5	63.0
Core EPS (fully-diluted) (YoY)	n.a.	28.0	(5.0)	82.0	49.9	(9.0)	25.5	63.0
Gross-profit margin	67.7	60.7	56.3	61.2	65.9	61.0	58.4	61.0
EBITDA margin	50.1	52.8	52.8	60.3	64.6	62.1	63.9	61.4
Operating-profit margin	46.5	47.2	45.6	54.1	57.7	52.1	48.8	52.3
Net profit margin	35.6	38.3	37.8	47.0	48.8	42.8	40.0	42.6
ROAE	55.2	33.5	30.7	49.6	39.0	24.9	29.1	39.5
ROAA	46.3	28.6	26.6	41.9	34.2	22.5	26.1	35.4
ROCE	72.1	41.4	37.1	57.2	46.1	30.3	35.6	48.4
ROIC	46.6	55.3	48.3	77.4	86.5	68.6	59.1	68.9
Net debt to equity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Effective tax rate	18.8	18.8	18.8	17.1	17.1	17.7	18.5	18.8
Accounts receivable (days)	47.8	88.1	85.4	68.9	83.6	79.9	80.0	79.6
Current ratio (x)	3.7	4.8	4.3	3.8	7.5	7.9	5.6	6.7
Net interest cover (x)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net dividend payout	n.a.	n.a.	0.0	41.3	64.3	90.8	60.3	39.5
Free cash flow yield	n.a.	0.7	0.4	1.6	2.1	4.1	n.a.	6.5

Source: FactSet, Daiwa forecasts

Company profile

Founded in June 1997, LandMark Optoelectronics Corporation (LandMark Opto) is a dedicated compound semiconductor epiwafer supplier for optical communication (OC), with end-applications focusing on passive optical network (PON), datacentre, cellular infrastructure, industrial and consumer electronics. LandMark Opto is the largest pure OC epiwafer supplier globally by revenue.

Daiwa Capital Markets

LMO: quarterly P&L forecasts

TWDm	1Q16	2Q16	3Q16	4Q16E	1Q17E	2Q17E	3Q17E	4Q17E	2015	2016E	2017E	2018E
Revenue	625	644	490	355	434	592	875	941	2,028	2,115	2,841	4,346
COGS	200	236	208	181	198	260	354	370	691	826	1,182	1,695
Gross profit	425	408	282	174	235	332	521	571	1,336	1,289	1,659	2,652
Opex	54	47	53	33	43	57	83	88	167	187	271	380
Operating profit	372	360	230	141	193	275	438	483	1,169	1,102	1,388	2,271
Pretax profit	375	356	227	142	194	276	439	485	1,193	1,100	1,394	2,281
Income taxes	64	66	39	26	36	51	81	90	204	194	258	429
Net profit	311	290	189	116	158	225	358	395	989	905	1,136	1,853
EPS (TWD, basic)	4.45	4.15	2.08	1.27	1.73	2.46	3.92	4.32	14.89	9.91	12.43	20.27
EPS (TWD, fully diluted)	3.42	3.19	2.06	1.27	1.73	2.46	3.92	4.32	10.88	9.91	12.43	20.27
Margin												
Gross	68%	63%	58%	49%	54%	56%	60%	61%	66%	61%	58%	61%
Operating	59%	56%	47%	40%	44%	46%	50%	51%	58%	52%	49%	52%
Net	50%	45%	39%	33%	36%	38%	41%	42%	49%	43%	40%	43%
Growth (QoQ)												
Revenue	1%	3%	-24%	-28%	22%	36%	48%	8%				
Gross profit	2%	-4%	-31%	-39%	36%	41%	57%	10%				
Operating profit	1%	-3%	-36%	-39%	37%	43%	59%	10%				
Net profit	0%	-7%	-35%	-39%	37%	42%	59%	10%				
EPS (basic)	-5%	-7%	-50%	-39%	37%	42%	59%	10%				
EPS (FD)	0%	-7%	-35%	-39%	37%	42%	59%	10%				
Growth (YoY)												
Revenue	61%	38%	-11%	-43%	-31%	-8%	78%	165%	55%	4%	34%	53%
Gross profit	70%	36%	-23%	-58%	-45%	-19%	84%	229%	67%	-4%	29%	60%
Operating profit	69%	38%	-28%	-62%	-48%	-24%	91%	244%	65%	-6%	26%	64%
Net profit	70%	34%	-32%	-63%	-49%	-22%	90%	241%	61%	-8%	25%	63%
EPS (basic)	35%	6%	-51%	-73%	-61%	-41%	89%	241%	33%	-33%	25%	63%
EPS (FD)	58%	24%	-33%	-63%	-49%	-23%	90%	241%	50%	-9%	25%	63%

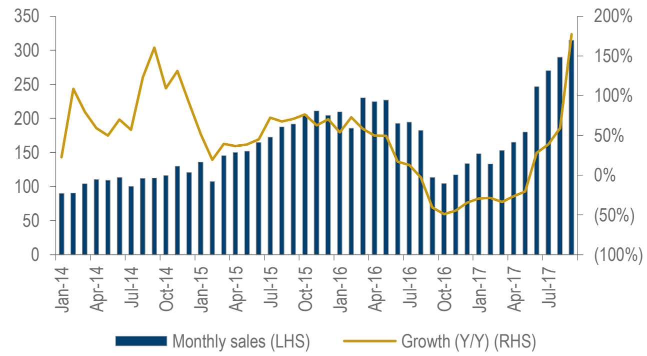
Source: Company, Daiwa forecasts

LMO: 4Q16 preview and 1Q17 outlook

	4Q16E			1Q17E		
TWDm	Daiwa	Consensus	Variance	Daiwa	Consensus	Variance
Revenue	355	469	-24%	434	515	-16%
Gross profit	174			235		
Operating profit	141			193		
Pretax profit	142			194		
Net profit	116	192	-40%	158	217	-27%
Adjusted EPS (TWD)	1.27	2.10	-40%	1.73	2.38	-27%
Margin						
Gross	48.9%			54.3%		
Operating	39.6%			44.4%		
Net	32.6%			36.5%		
Revenue mix						
PON	48%			55%		
SiPhotonics	27%			28%		
Infrastructure & others	25%			17%		

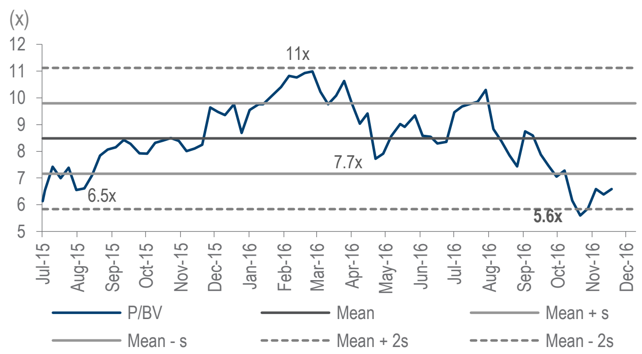
Source: Bloomberg, Daiwa forecasts

LMO: monthly sales run-rate



Source: Company, Daiwa forecasts for December 2016 to September 2017

LMO: PBR trend



Source: TEJ, Company, Daiwa forecasts

Malaysia | Information Technology | 6 January 2017

Daiwa Capital Markets

Inari Amertron (INRI MK)

Target price: **MYR3.54** (from MRY3.54)
Share price (4 Jan): **MYR3.40** | Up/downside: **+4.1%**

Buy
(unchanged)

Gaining traction in the optical communication space

- Inari's new data server chip business has commenced operations
- Well positioned to benefit from OC bandwidth upgrade cycle
- Reiterating Buy call and TP of MYR3.54

Kevin Low
(603) 2146 7479
kevin.low@affinhwang.com

What's new: We view Inari, the largest radio frequency (RF) backend test house in the region's data communication food chain, as a major beneficiary of optical communication (OC) bandwidth upgrades for fast data transmission, both wireless and wire-line. We reiterate our Buy call and 12-month TP of MYR3.54, based on 18x CY17E EPS.

What's the impact: Data server business progressing well. Inari's expansion into the long-haul data-server chip mixed-signal testing business is progressing well, in our view. At last count, installed equipment for this segment has risen to 13 units and is on track for a progressive ramp-up to c.58 units by mid-2017. The total investment outlay for this production line is estimated at MYR160m according to Inari, and is to be partly funded by a 1-1 matching grant from the government. This limited incentive has only been awarded to companies bringing new technology into the country.

Strategic ties with a major customer. Although the data-server chip segment is new to the company, it is a downstream process of the chip fab/wafer cert business that was previously outsourced from Broadcom to Inari. The continued outsourcing further reinforces our view of Inari's strength as a leading packaging and testing house, and as a critical partner that is ingrained within the supply chain. We believe Inari will be well positioned to benefit from the strong growth of the global OC segment, driven by data transmission bandwidth upgrades.

Solid track record of execution. Set up by a group of ex-Intel engineers, phase 1 of the company's data-server chip operations is planned to occupy 60,000 sq ft of the 200,000 sq ft floor capacity at its newly built Plant P21. Although the company's data-server chip business only started operations in mid-2016, we believe there is a case for further growth opportunities, depending on Inari's execution. We have limited concerns on this front, judging by Inari's impressive track record as a major backend contractor for Broadcom's wireless division. The data-server chip business will likely remain small in the near term, accounting for c. 5% of group revenue. Combined with the chip fab/wafer cert business, contributions from OC will account for c.12% of total revenue in FY17E, on our estimates.

What we recommend: We view Inari as a compelling RF play as mobile device complexity increases and global LTE coverage widens, and believe the push into data server chip business makes Inari an interesting IoT proposition. Its CY17E PER of 17x looks appealing vs. our FY16-19E earnings CAGR of 16.6%. The key risk to our call: high single-customer concentration.

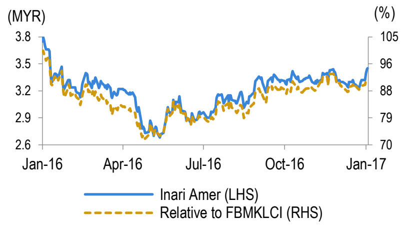
How we differ: We believe that Inari has moved beyond the RF segment and is well placed to benefit from the IoT up-cycle.

Forecast revisions (%)

Year to 30 Jun	17E	18E	19E
Revenue change	-	-	-
Net-profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Affin Hwang forecasts

Share price performance



12-month range	2.57-3.95
Market cap (USDm)	734.3
3m average daily turnover (USDm)	2.6197
Shares outstanding (m)	970.675
Major shareholder	Insas Bhd 20.7%

Source: Bloomberg

Financial summary (MYR)

Year to 30 Jun	17E	18E	19E
Revenue (m)	1,193.9	1,341.4	1,443.4
Operating profit (m)	238.2	283.0	307.9
Net profit (m)	186.6	221.0	242.9
Core EPS (fully-diluted)	0.182	0.216	0.237
EPS change (%)	0.3	18.5	9.9
Daiwa vs Cons. EPS (%)	-5.8	-3.4	-2.6
PER (x)	18.7	15.8	14.3
Dividend yield (%)	2.9	2.7	3.0
DPS	9.8	9.3	10.2
PBR (x)	4.2	3.6	3.1
EV/EBITDA (x)	12.3	10.0	8.8
ROE (%)	24.8	26.2	24.6

Source: Company, Affin Hwang forecasts

Financial summary

Profit & Loss Statement (MYRm)

FYE June	2015	2016	2017E	2018E	2019E
Total revenue	933.1	1040.9	1193.9	1341.4	1443.4
Operating expenses	-766.7	-834.9	-955.6	-1058.4	-1135.5
EBITDA	166.4	206.0	238.2	283.0	307.9
Depreciation	-32.0	-48.5	-47.8	-47.4	-47.1
Amortisation	0.0	0.0	0.0	0.0	0.0
EBIT	134.4	157.5	190.4	235.6	260.8
Net interest income/(expense)	-2.3	0.5	2.1	2.7	4.6
Associates' contribution	0.0	0.0	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0
Pretax profit	132.1	158.0	192.5	238.3	265.5
Tax	-1.7	-6.0	-11.5	-14.3	-15.9
Minority interest	2.3	1.2	-0.5	-2.9	-6.6
Net profit	152.5	148.3	186.6	221.0	242.9
Core net profit	132.7	153.2	180.5	221.0	242.9

Quarterly Profit & Loss (MYRm)

FYE June	1Q16	2Q16	3Q16	4Q16	1Q17
Revenue	275	294	217	255	282
Operating expenses	-221	-237	-179	-198	-225
EBITDA	54	56	39	57	57
Depreciation	-12	-12	-11	-14	-14
EBIT	42	45	28	43	43
Net int income/(expense)	-1	0	1	-1	1
Associates' contribution					
Exceptional Items	3	0	-6	-1	6
Pretax profit	44	45	23	41	50
Tax	-1	-2	0	-2	-2
Minority interest	3	-1	-1	1	0
Net profit	46	41	21	40	48
Core net profit	42	41	28	41	42
Margins (%)					
EBITDA	19.5	19.2	17.9	22.5	20.3
PBT	16.0	15.3	10.6	16.2	17.7
Net profit	16.6	14.1	9.8	15.7	17.0

Cash flow (MYRm)

FYE June	2015	2016	2017E	2018E	2019E
EBIT	134.4	157.5	190.4	235.6	260.8
Depreciation & amortisation	32.0	48.5	47.8	47.4	47.1
Working capital changes	-1.6	-44.2	-11.7	-26.3	-22.1
Cash tax paid	-1.7	-6.0	-11.5	-14.3	-15.9
Others	10.4	9.3	8.2	2.7	4.6
Cashflow from operations	173.5	165.1	223.2	245.1	274.5
Capex	-53.9	-128.8	-45.0	-45.0	-45.0
Disposal/(purchases)	-25.3	-44.6	0.0	0.0	0.0
Others	0.0	0.0	0.0	0.0	0.0
Cash flow from investing	-79.2	-173.4	-45.0	-45.0	-45.0
Debt raised/(repaid)	153.6	-26.2	0.0	0.0	0.0
Equity raised/(repaid)	21.1	22.9	0.0	0.0	0.0
Net inct income/(expense)	-2.3	0.5	2.1	2.7	4.6
Dividends paid	-51.8	-78.8	-93.3	-88.4	-97.2
Others	2.3	-0.5	-2.1	-2.7	-4.6
Cash flow from financing	123.0	-82.1	-93.3	-88.4	-97.2
Net change in CF	217.3	-90.5	84.9	111.7	132.3
Free Cash Flow	94.3	-8.4	178.2	200.1	229.5

Source: Company, Affin Hwang forecasts

Financial summary continued …

Balance sheet (MYRm)

FYE June	2015	2016	2017E	2018E	2019E
Fixed assets	193.8	273.9	271.1	268.7	266.6
Other long term assets	15.4	50.7	50.7	50.7	50.7
Total non-current assets	209.2	324.6	321.8	319.4	317.3
Cash and equivalents	137.5	104.3	225.9	337.7	470.0
Stocks	145.3	164.7	196.3	220.5	241.2
Debtors	182.8	171.8	196.3	220.5	241.2
Other current assets	161.8	107.1	107.1	107.1	107.1
Total current assets	627.4	547.9	725.6	885.8	1059.5
Creditors	171.5	135.7	179.9	202.1	221.5
Short term borrowings	41.5	16.0	16.0	16.0	16.0
Other current liabilities	15.3	11.1	11.1	11.1	11.1
Total current liabilities	228.3	162.9	207.1	229.3	248.6
Long term borrowings	70.2	62.3	62.3	62.3	62.3
Other long term liabilities	3.1	3.3	3.3	3.3	3.3
Total long term liabilities	73.3	65.5	65.5	65.5	65.5
Shareholders' Funds	535.1	681.0	774.8	910.3	1062.7

Key ratios (%)

FYE June	2015	2016	2017E	2018E	2019E
Growth					
Revenue (%)	17.6	11.6	14.7	12.4	7.6
EBITDA (%)	29.0	23.8	15.6	18.8	8.8
Core net profit (%)	41.1	15.4	17.9	22.4	9.9
Profitability					
EBITDA margin (%)	17.8	19.8	20.0	21.1	21.3
PBT margin (%)	16.3	14.7	16.6	17.8	18.4
Net profit margin (%)	16.3	14.2	15.6	16.5	16.8
Effective tax rate (%)	1.1	3.9	5.8	6.0	6.0
ROA (%)	18.2	17.0	17.8	18.3	17.6
Core ROE (%)	33.4	25.2	24.8	26.2	24.6
ROCE (%)	29.4	23.9	25.0	26.9	25.6
Dividend payout ratio (%)	55.6	54.0	50.0	40.0	40.0
Liquidity					
Current ratio (x)	2.7	3.4	3.5	3.9	4.3
Op. cash flow (RMm)	173.5	165.1	223.2	245.1	274.5
Free cashflow (RMm)	119.6	36.3	178.2	200.1	229.5
FCF/share (sen)	12.6	3.8	18.7	21.0	24.1
Asset management					
Debtors turnover (days)	71.5	60.2	60.0	60.0	61.0
Stock turnover (days)	56.8	57.8	60.0	60.0	61.0
Creditors turnover (days)	67.1	47.6	55.0	55.0	56.0
Capital structure					
Net Gearing (%)	-43.2	-25.9	-38.5	-45.0	-51.0
Interest Cover (x)	29.6	43.4	108.5	119.6	130.1

Source: Company, Affin Hwang forecasts

Company profile

Inari Amertron Berhad is an investment holding company with wholly-owned subsidiaries involved in the OSAT & electronics manufacturing services (EMS) industries. It currently has seven wholly-owned direct subsidiaries: Inari Technology Sdn Bhd, Inari Semiconductor Labs Sdn Bhd, Inari Integrated Systems Sdn Bhd, Inari South Keytech Sdn Bhd, Inari Global Limited, Simfoni Bistari Sdn Bhd, Inari International Limited. Inari Amertron Berhad also has a 51% subsidiary, Ceedtec Sdn Bhd.

Daiwa
Capital Markets

Daiwa Capital Markets

Win Semiconductors (3105 TT)

Target price: **TWD102.00** (from TWD100.00)

Share price (4 Jan): **TWD89.40** | Up/downside: **+14.0%**

5 4 3 2 1

Outperform
(unchanged)

A structural data traffic builder

- Constantly benefiting from data transmission bandwidth upgrade
- Penetrating into FO to bridge the transitional gap from 4G to 5G
- 1H17 to offer re-entry point; reaffirming Outperform (2)

Rick Hsu
(886) 2 8758 6261
rick.hsu@daiwacm-cathay.com.tw

Martin Lee
(886) 2 8758 6262
martin.lee@daiwacm-cathay.com.tw

What's new: WinSemi fits in our cloud-computing infrastructure theme of the BigData/IoT cycle as a beneficiary of constant bandwidth upgrades from wireless and wire-line data transmissions. We look for top-line growth to slow in 2017E on the 4G-to-5G transition in cellular communications, which is taking time to complete. However, we remain positive on its long-term business outlook as it has started to tap into fibre optics (FO) to bridge any gap in business growth during the transition. We see robust top-line growth resuming in 2018E and beyond once the FO revenue ramps up and 5G migration takes off. Reaffirm Outperform (2) call and lift TP to TWD102.

What's the impact: **Transition to 5G.** Being the foundry leader in the global compound semiconductors focusing on radio frequency (RF) power amplifiers (PA) for microwave communications, WinSemi has enjoyed robust earnings growth in the 4G cellular migration cycle. Although its revenue growth should slow down in 2017 as the 4G penetrations are high, the 5G migration should help resume revenue growth, since the 5G cellular architecture will: 1) in the wireless domain, open new frequencies for data transmission through radio waves with higher bandwidths than the 4G, spurring new demand for RF PAs which are a function of frequency-band count, and 2) in the wire-line domain, build more base stations than 4G ones to spur demand for more FO transceivers with higher bandwidth to complete remote infrastructure communications.

FO bridging the gap. We expect the 5G migration to take off in 2019-20, given the time-consuming protocol standardisation among different layers of players in the global cellular ecosystem. Yet WinSemi is expanding its footprint into the FO market by leveraging its compound-semi epi-wafer growing and chip-processing know-how to produce FO transceiver components for customers. We expect its FO foundry works to start revenue contribution from 2H17, ramping up in 2018 to help bridge any gap between the 4G and 5G transition. Its FO solutions focus not only on telecom and datacom, but also on laser sensors for consumer applications, such as smartphone VR/AR 3D sensing (see ***our Memo from Corp Day***).

What we recommend: Despite a likely slowdown in earnings growth in 2H16-1H17, we reaffirm our Outperform (2) call and lift our 12-month TP to TWD102 (from TWD100), applying the same ROE-adjusted PBR of 2.1x to our 2017E BVPS (from average 2016-17E). We see 1H17 as good timing for re-entry ahead of a better 2018. WinSemi is also a Daiwa top small-cap pick for 2017 (see ***Small/Mid-cap sector outlook***, 8 December 2016). Risks: smartphone inventory glut in 1H17 and slower-than-expected FO ramp-up.

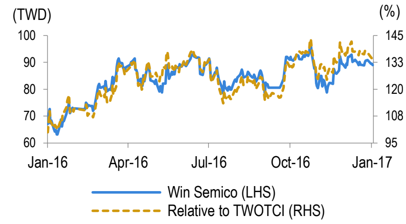
How we differ: Our 2017-18E EPS are 1-4% below the market, likely due to lower margin assumptions due to higher depreciation and overhead.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	63.11-96.90
Market cap (USDbn)	1.13
3m avg daily turnover (USDm)	6.69
Shares outstanding (m)	408
Major shareholder	Nan Shan Life Insurance (6.4%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	13,592	15,034	17,285
Operating profit (m)	3,690	4,015	4,944
Net profit (m)	3,189	3,219	3,930
Core EPS (fully-diluted)	7.823	7.895	9.639
EPS change (%)	74.7	0.9	22.1
Daiwa vs Cons. EPS (%)	0.1	(3.6)	(1.1)
PER (x)	11.4	11.3	9.3
Dividend yield (%)	0.6	3.4	3.4
DPS	0.5	3.0	3.0
PBR (x)	2.0	1.8	1.6
EV/EBITDA (x)	5.7	5.1	4.1
ROE (%)	18.1	16.9	18.4

Source: FactSet, Daiwa forecasts

Company

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Wafer shipment (6" equ)	n.a.	211,659	206,078	207,166	248,904	286,938	356,415	422,100
Utilisation rate (%)	n.a.	82	73	72	86	87	85	90
Wafer ASP (USD)	n.a.	1,797	1,705	1,578	1,519	1,470	1,339	1,300

Profit and loss (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cellular	n.a.	6,005	5,669	4,962	5,553	6,426	6,226	6,792
Infrastructure	n.a.	1,528	1,610	2,108	2,063	2,165	2,950	3,796
Other Revenue	n.a.	3,705	3,202	2,840	4,400	5,001	5,859	6,697
Total Revenue	**8,901**	**11,238**	**10,481**	**9,910**	**12,016**	**13,592**	**15,034**	**17,285**
Other income	0	0	0	0	0	0	0	0
COGS	(6,097)	(7,598)	(7,249)	(6,400)	(7,255)	(8,449)	(9,440)	(10,520)
SG&A	(577)	(652)	(627)	(633)	(678)	(847)	(827)	(957)
Other op.expenses	(450)	(530)	(495)	(562)	(572)	(606)	(752)	(864)
Operating profit	**1,777**	**2,457**	**2,110**	**2,315**	**3,510**	**3,690**	**4,015**	**4,944**
Net-interest inc./(exp.)	(58)	(98)	(64)	(31)	6	(3)	4	19
Assoc/forex/extraord./others	(550)	(431)	167	145	(83)	343	60	60
Pre-tax profit	**1,170**	**1,928**	**2,212**	**2,429**	**3,434**	**4,030**	**4,079**	**5,023**
Tax	109	(281)	(401)	(465)	(762)	(846)	(861)	(1,093)
Min. int./pref. div./others	0	0	0	0	0	(5)	0	0
Net profit (reported)	**1,279**	**1,648**	**1,812**	**1,963**	**2,672**	**3,189**	**3,219**	**3,930**
Net profit (adjusted)	**1,279**	**1,648**	**1,812**	**1,963**	**2,672**	**3,189**	**3,219**	**3,930**
EPS (reported)(TWD)	**2.045**	**2.448**	**2.402**	**2.649**	**3.970**	**7.823**	**7.895**	**9.639**
EPS (adjusted)(TWD)	**2.045**	**2.448**	**2.402**	**2.649**	**3.970**	**7.823**	**7.895**	**9.639**
EPS (adjusted fully-diluted)(TWD)	**1.971**	**2.404**	**2.369**	**2.623**	**4.478**	**7.823**	**7.895**	**9.639**
DPS (TWD)	**0.821**	**0.771**	**1.507**	**1.498**	**0.221**	**0.500**	**3.000**	**3.000**
EBIT	**1,777**	**2,457**	**2,110**	**2,315**	**3,510**	**3,690**	**4,015**	**4,944**
EBITDA	**2,811**	**3,764**	**3,932**	**4,196**	**5,433**	**6,007**	**6,601**	**7,589**

Cash flow (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	1,170	1,928	2,212	2,429	3,434	4,030	4,079	5,023
Depreciation and amortisation	1,034	1,307	1,822	1,882	1,923	2,317	2,586	2,645
Tax paid	109	(281)	(401)	(465)	(762)	(846)	(861)	(1,093)
Change in working capital	(478)	(572)	887	(118)	(601)	300	(450)	90
Other operational CF items	31	508	478	103	899	(0)	0	(0)
Cash flow from operations	**1,865**	**2,890**	**4,998**	**3,830**	**4,893**	**5,801**	**5,354**	**6,665**
Capex	(3,336)	(3,317)	(2,815)	(738)	(3,493)	(3,350)	(3,500)	(2,500)
Net (acquisitions)/disposals	0	0	0	0	0	0	0	0
Other investing CF items	(172)	(639)	1,233	(535)	(126)	0	0	0
Cash flow from investing	**(3,508)**	**(3,956)**	**(1,583)**	**(1,272)**	**(3,619)**	**(3,350)**	**(3,500)**	**(2,500)**
Change in debt	2,076	718	(2,942)	(783)	(543)	(525)	(394)	(295)
Net share issues/(repurchases)	304	3,029	(515)	0	(1,487)	(1,760)	0	0
Dividends paid	(513)	(519)	(1,136)	(1,110)	(149)	(204)	(1,223)	(1,345)
Other financing CF items	164	51	112	25	87	100	100	100
Cash flow from financing	**2,030**	**3,279**	**(4,481)**	**(1,867)**	**(2,092)**	**(2,389)**	**(1,517)**	**(1,540)**
Forex effect/others	0	0	0	0	0	0	0	0
Change in cash	**388**	**2,213**	**(1,065)**	**690**	**(818)**	**63**	**338**	**2,624**
Free cash flow	(1,470)	(427)	2,183	3,092	1,400	2,451	1,854	4,165

Source: FactSet, Daiwa forecasts

Daiwa Capital Markets

Financial summary continued …

Balance sheet (TWDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	2,399	5,039	3,714	4,676	3,514	3,581	3,919	6,544
Inventory	1,894	2,101	1,127	1,500	2,471	1,921	2,821	2,371
Accounts receivable	653	1,049	650	690	700	900	850	1,110
Other current assets	620	675	198	259	299	300	300	300
Total current assets	**5,566**	**8,865**	**5,689**	**7,125**	**6,984**	**6,703**	**7,891**	**10,325**
Fixed assets	11,267	13,228	12,636	11,653	11,623	12,015	12,859	12,646
Goodwill & intangibles	250	128	624	345	2,332	1,560	1,357	1,255
Other non-current assets	1,516	1,370	2,162	2,694	3,172	3,172	3,172	3,172
Total assets	**18,599**	**23,591**	**21,112**	**21,816**	**24,111**	**23,450**	**25,278**	**27,398**
Short-term debt	0	0	0	0	0	0	0	0
Accounts payable	1,090	1,122	635	930	1,310	1,260	1,660	1,560
Other current liabilities	1,976	2,464	1,692	1,819	3,296	2,355	2,174	2,095
Total current liabilities	**3,066**	**3,586**	**2,327**	**2,749**	**4,606**	**3,615**	**3,834**	**3,655**
Long-term debt	5,484	5,559	3,721	2,938	2,099	1,574	1,181	885
Other non-current liabilities	4	21	171	189	198	208	215	225
Total liabilities	**8,554**	**9,166**	**6,220**	**5,876**	**6,902**	**5,397**	**5,230**	**4,765**
Share capital	6,486	7,542	7,393	7,422	5,966	4,076	4,076	4,076
Reserves/R.E./others	3,559	6,883	7,499	8,517	11,243	13,977	15,973	18,557
Shareholders' equity	**10,045**	**14,425**	**14,892**	**15,940**	**17,209**	**18,053**	**20,049**	**22,633**
Minority interests	0	0	0	0	0	0	0	0
Total equity & liabilities	**18,599**	**23,591**	**21,112**	**21,816**	**24,111**	**23,450**	**25,278**	**27,398**
EV	39,530	36,965	36,453	34,708	35,030	34,438	33,707	30,787
Net debt/(cash)	**3,084**	**520**	**8**	**(1,737)**	**(1,415)**	**(2,007)**	**(2,739)**	**(5,658)**
BVPS (TWD)	**16.063**	**21.434**	**19.746**	**21.508**	**25.572**	**44.284**	**49.179**	**55.517**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	27.5	26.3	(6.7)	(5.5)	21.2	13.1	10.6	15.0
EBITDA (YoY)	29.2	33.9	4.4	6.7	29.5	10.6	9.9	15.0
Operating profit (YoY)	48.5	38.3	(14.1)	9.7	51.7	5.1	8.8	23.1
Net profit (YoY)	(25.2)	28.9	10.0	8.4	36.1	19.4	0.9	22.1
Core EPS (fully-diluted) (YoY)	(28.8)	21.9	(1.4)	10.7	70.7	74.7	0.9	22.1
Gross-profit margin	31.5	32.4	30.8	35.4	39.6	37.8	37.2	39.1
EBITDA margin	31.6	33.5	37.5	42.3	45.2	44.2	43.9	43.9
Operating-profit margin	20.0	21.9	20.1	23.4	29.2	27.2	26.7	28.6
Net profit margin	14.4	14.7	17.3	19.8	22.2	23.5	21.4	22.7
ROAE	13.5	13.5	12.4	12.7	16.1	18.1	16.9	18.4
ROAA	7.6	7.8	8.1	9.1	11.6	13.4	13.2	14.9
ROCE	13.0	13.8	10.9	12.3	18.4	19.0	19.7	22.1
ROIC	15.4	15.0	11.6	12.9	18.2	18.3	19.0	22.6
Net debt to equity	30.7	3.6	0.1	n.a.	n.a.	n.a.	n.a.	n.a.
Effective tax rate	n.a.	14.6	18.1	19.2	22.2	21.0	21.1	21.8
Accounts receivable (days)	23.2	27.6	29.6	24.7	21.1	21.5	21.2	20.7
Current ratio (x)	1.8	2.5	2.4	2.6	1.5	1.9	2.1	2.8
Net interest cover (x)	30.9	25.0	33.0	74.3	n.a.	1,230.1	n.a.	n.a.
Net dividend payout	40.1	31.5	62.7	56.5	5.6	6.4	38.0	31.1
Free cash flow yield	n.a.	n.a.	6.0	8.5	3.8	6.7	5.1	11.4

Source: FactSet, Daiwa forecasts

Company profile

Founded in 1999, Win Semiconductors Corp (WinSemi) is the world's largest compound semiconductor foundry, focusing on gallium-arsenide (GaAs) foundry services for customers in both wireless and fixed-line communication markets and infrastructure applications. It has a diverse technology portfolio of processes that supports microwave frequency requirements from 50MHz to 100GHz. End-market applications for its products encompass smartphones, tablet PCs, infrastructure base-stations, very small aperture terminal (VSAT) hubs, fibre optics, cable televisions (CATV) and the automotive industry.

WinSemi: quarterly P&L forecasts

TWDm	1Q16	2Q16	3Q16	4Q16E	1Q17E	2Q17E	3Q17E	4Q17E	2015	2016E	2017E	2018E
Cellular	*1,515*	*1,822*	*1,670*	*1,419*	*1,348*	*1,551*	*1,706*	*1,621*	*5,553*	*6,426*	*6,226*	*6,792*
Infrastructure	*560*	*464*	*568*	*573*	*573*	*623*	*835*	*918*	*2,062*	*2,165*	*2,950*	*3,796*
WiFi	*1,218*	*1,286*	*1,315*	*1,183*	*1,160*	*1,449*	*1,667*	*1,583*	*4,399*	*5,002*	*5,859*	*6,697*
Total revenue	**3,292**	**3,572**	**3,553**	**3,175**	**3,081**	**3,623**	**4,208**	**4,122**	**12,016**	**13,592**	**15,034**	**17,285**
COGS	-1,918	-2,172	-2,299	-2,059	-2,002	-2,283	-2,600	-2,555	-7,255	-8,449	-9,440	-10,520
Gross profit	1,374	1,400	1,254	1,116	1,078	1,340	1,608	1,567	4,761	5,144	5,594	6,765
Opex	-367	-360	-390	-337	-336	-380	-433	-429	-1,251	-1,453	-1,578	-1,822
Operating profit	1,006	1,040	864	780	743	960	1,175	1,139	3,510	3,690	4,015	4,944
EBITDA	1,517	1,608	1,502	1,380	1,345	1,587	1,854	1,815	5,433	6,007	6,601	7,589
Pretax profit	1,005	1,090	1,148	788	758	976	1,191	1,156	3,434	4,030	4,079	5,023
Income taxes	-165	-384	-146	-150	-121	-341	-179	-220	-762	-846	-861	-1,093
Net profit	839	706	1,006	638	636	634	1,012	936	2,672	3,189	3,219	3,930
FD O/S (m)	597	597	408	408	408	408	408	408	597	408	408	408
FD EPS (TWD)	**1.41**	**1.18**	**2.47**	**1.57**	**1.56**	**1.56**	**2.48**	**2.30**	**4.48**	**7.82**	**7.90**	**9.64**
Margin												
Gross	42%	39%	35%	35%	35%	37%	38%	38%	40%	38%	37%	39%
Operating	31%	29%	24%	25%	24%	26%	28%	28%	29%	27%	27%	29%
EBITDA	46%	45%	42%	43%	44%	44%	44%	44%	45%	44%	44%	44%
Net	26%	20%	28%	20%	21%	18%	24%	23%	22%	23%	21%	23%
Growth (QoQ)												
Total revenue	3%	8%	-1%	-11%	-3%	18%	16%	-2%				
Gross profit	4%	2%	-10%	-11%	-3%	24%	20%	-3%				
Operating profit	0%	3%	-17%	-10%	-5%	29%	22%	-3%				
EBITDA	1%	6%	-7%	-8%	-3%	18%	17%	-2%				
Net profit	18%	-16%	43%	-37%	0%	0%	60%	-8%				
FD EPS	18%	-16%	109%	-37%	0%	0%	60%	-8%				
Growth (YoY)												
Total revenue	17%	15%	22%	-1%	-6%	1%	18%	30%	21%	13%	11%	15%
Gross profit	29%	17%	6%	-15%	-21%	-4%	28%	40%	36%	8%	9%	21%
Operating profit	30%	15%	4%	-23%	-26%	-8%	36%	46%	52%	5%	9%	23%
EBITDA	22%	17%	15%	-8%	-11%	-1%	23%	31%	29%	11%	10%	15%
Net profit	36%	31%	25%	-10%	-24%	-10%	1%	47%	36%	19%	1%	22%
FD EPS	69%	64%	83%	31%	11%	32%	1%	47%	71%	75%	1%	22%

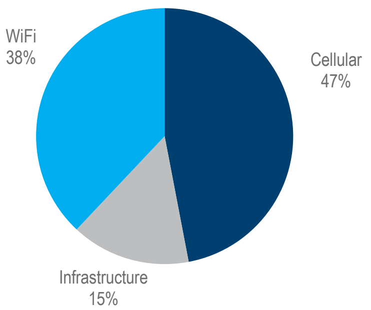
Source: Company, Daiwa forecasts

WinSemi: 4Q16 preview and 1Q17 outlook

	4Q16E			1Q17E		
TWDm	**Daiwa**	**Consensus**	**Variance**	**Daiwa**	**Consensus**	**Variance**
Revenue	3,175	3,187	0%	3,081	3,251	-5%
Gross profit	1,116			1,078		
Operating profit	780			743		
Pretax profit	788			758		
Net profit	638	646	-1%	636	672	-5%
Adjusted EPS (TWD)	1.57	1.58	-1%	1.56	1.65	-5%
Margin						
Gross	35.2%			35.0%		
Operating	24.6%			24.1%		
Net	20.1%			20.7%		
Operation						
Utilization*	80%			75%		
Cellular contribution	45%			44%		
Infrastructure contribution	18%			19%		
WiFi contribution	37%			38%		

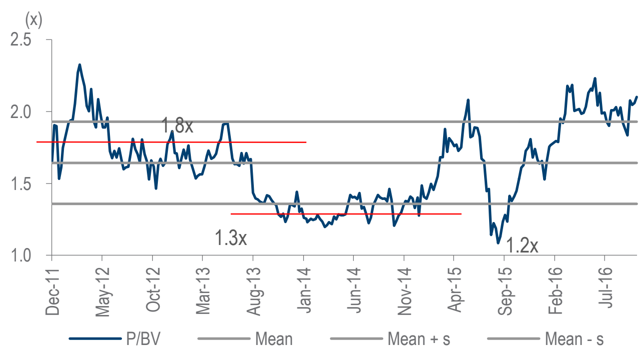
Source: Bloomberg, Daiwa forecasts
*Note: * Calculated as wafer shipment / capacity*

WinSemi: revenue mix (2016E)



Source: Company, Daiwa estimates

WinSemi: PBR trend



Source: TEJ, Company, Daiwa forecasts

Nidec (6594 JP)

Target price: Y12,000 (as of 26 Oct)

Share price (4 Jan): Y10,500 | Up/downside: +14.3%

5 4 3 2 1

Buy
(not reviewed)

Growth in ADAS/IoT areas forecast

- Business expanding at world's top brushless DC motor producer
- New growth areas: next-generation brake motors, sensor units
- Eyes also on effects of utilising IoT in its own factories

Takumi Sado
81-3-5555-7085
takumi.sado@daiwa.co.jp

What's new: Nidec is the world's leading producer of brushless DC motors. HDD spindle motors were previously its mainstay products (estimated 85% market share), but the firm is dramatically changing its business portfolio by expanding the product lineup for automobiles, home appliances, and commercial/industrial applications. Through aggressive M&A, both its business scale and range have been growing rapidly. Of the 6 themes we focus on in this report, we believe Nidec warrants attention in terms of ADAS and industrial IoT.

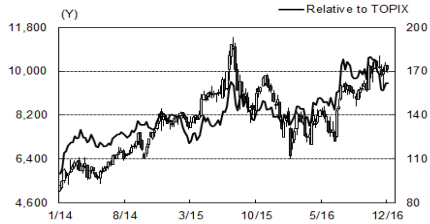
Outlook: Operations that are already generating sales in the ADAS area are the sensor module and electronic control unit (ECU) businesses of Nidec Elesys (former Honda Elesys, acquired by Nidec in March 2014). The subsidiary's operating profit margin was apparently only around 5% before the acquisition, but has since improved to 10-15% thanks to the expanding market and group synergies. We expect a significant contribution from automotive brushless motors from 2018. We estimate sales of such motors produced by the parent totalled just under Y70bn in FY15, centering on motors for electric power steering systems.

From 2018, next-generation motors for electro-mechanical brakes will probably take off sharply, in our view. Brake motors currently in use are for anti-lock braking systems and mostly low-cost brush motors are employed, partly because they are only used in emergencies. In contrast, for next-generation electro-mechanical brakes which could also be used in autonomous cars, brushless motors, where Nidec's forte lies, are seen as promising – in fact, the company has already received long-term orders from a few tier-1 auto-parts suppliers.

In the industrial IoT area, the firm is engaged in producing industrial motors and robots. The automatic transfer robots used in distribution warehouses of the world's top online retailer employ Nidec's control system. Also, Nidec is keen to use IoT in its own factories – through this it aims to significantly raise productivity, and effects are already visible in some areas, in our view.

What we recommend: Earnings have been brisk. Despite a stronger yen, operating profit climbed 16% YoY for 1H FY16. On a constant currency basis, operating profit was up 34%. Going forward, we not only expect double-digit organic growth on the operating profit, but also contributions from business acquisitions. We recommend a long-term buy and hold strategy for Nidec. A risk to our call would be a greater-than-expected contraction of the HDD market.

Share price chart



Source: Compiled by Daiwa.

Market data

12-month range (Y)	6,407-10,640
Market cap (Y mn; 4 Jan)	3,114,289
Shares outstanding (000; 12/16)	296,599
Foreign ownership (%; 9/16)	35.3

Investment Indicators

	3/16	3/17 E	3/18 E
P/E (X)	34.6	29.9	26.2
EV/EBITDA (X)	17.0	15.7	13.7
P/B (X)	4.08	4.06	3.63
Dividend yield (%)	0.76	0.81	0.95
ROE (%)	11.9	13.6	14.6
Net debt/equity (X)	-0.0	0.1	-0.0

Income Summary

(IFRS; Y mn)	3/16	3/17 E	3/18 E
Sales	1,178,290	1,164,000	1,320,000
Op profit	117,662	140,000	157,000
Pretax income	117,164	137,500	157,200
Net income	89,945	104,000	119,000
EPS (Y)	303.0	350.6	401.2
DPS (Y)	80.00	85.00	100.00

Source: Company, Daiwa forecasts
See end of report for notes concerning indicators.

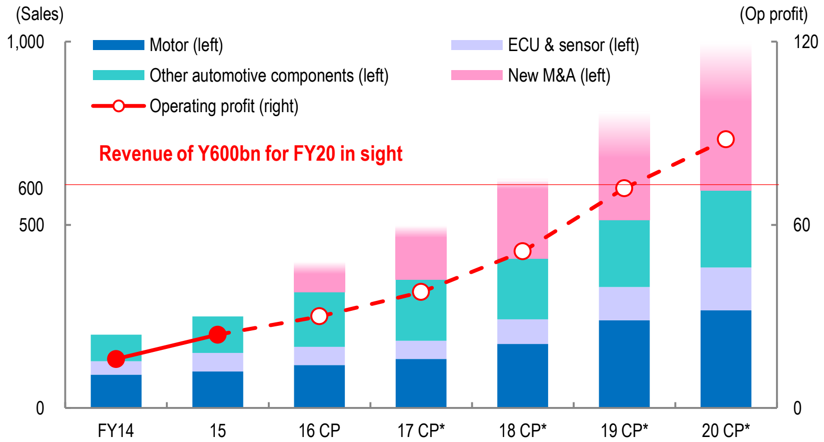
Nidec: income summary (IFRS; Y mn; y/y %)

Year to	Revenue		Op profit		Pretax income		Net income		EPS (Y)	DPS (Y)
3/14	875,109	(23)	84,864	(382)	84,460	(530)	56,272	(605)	206.8	50.00
3/15	1,028,385	(18)	110,939	(31)	107,092	(27)	76,015	(35)	271.6	70.00
3/16	1,178,290	(-)	117,662	(-)	117,164	(-)	89,945	(-)	303.0	80.00
3/17 E	1,164,000	(-1)	140,000	(19)	137,500	(17)	104,000	(16)	350.6	85.00
3/18 E	1,320,000	(13)	157,000	(12)	157,200	(14)	119,000	(14)	401.2	100.00
3/17 CP	1,200,000	(2)	135,000	(15)	133,000	(14)	100,000	(11)	337.2	85.00

E: Daiwa estimates. CP: Company projections

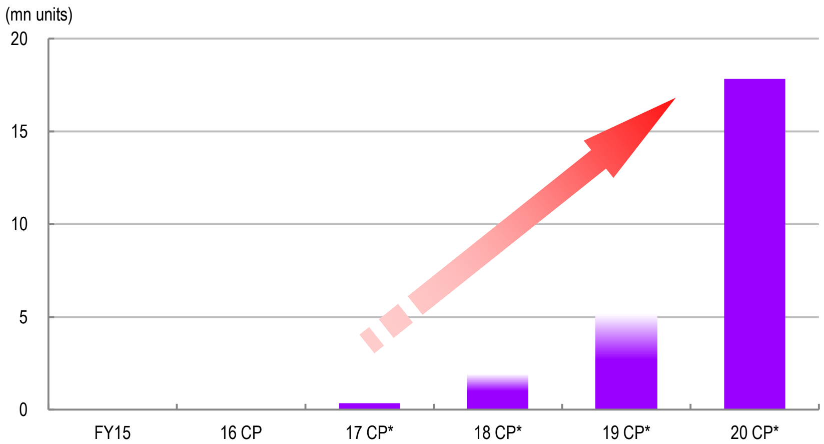
Notes: 1) Firm adopted IFRS from FY16. FY15 figures retroactively adjusted. Figures through FY14 on SEC basis.
2) Per-share figures retroactively adjusted to reflect 2-for-1 common stock split on 1 Apr 2014.
3) In 2Q FY16, company completed fair value assessment of assets acquired and liabilities assumed upon acquisition of KB Electronics in FY15. FY15 figures retroactively adjusted.

Nidec: organic growth outlook (automotive; Y bn)



Source: Company materials; compiled by Daiwa
** Medium-term target (Vision 2020)*
CP: Company projection

Nidec: shipment targets for next-generation braking system motors



Source: Company materials; compiled by Daiwa
** Medium-term target (Vision 2020)*
CP: Company projections

Nidec: earnings by segment (IFRS; Ym)

	FY15			16 CP			16 E				17 E			
	1H	2H		2H		(y/y %)	1H	2H E		(y/y %)	1H	2H		(y/y %)
Revenue	**587,352**	**590,938**	**1,178,290**	**635,970**	**1,200,000**	**(1.8)**	**564,030**	**599,970**	**1,164,000**	**(-1.2)**	**645,000**	**675,000**	**1,320,000**	**(13.4)**
Small precision motors (fans, small vibration motors, motors for HDDs, CDs, DVDs, etc.)	222,513	225,475	447,988				211,716	211,784	423,500	(-5.5)	200,800	202,500	403,300	(-4.8)
% of revenue	37.9	38.2	38.0				37.5	35.3	36.4		31.1	30.0	30.6	
Automotive, appliance, commercial & industrial products (appliance, commercial & industrial motors, automotive motors, automotive components)	276,185	278,528	554,713				265,645	302,855	568,500	(2.5)	355,700	383,000	738,700	(29.9)
% of revenue	47.0	47.1	47.1				47.1	50.5	48.8		55.1	56.7	56.0	
Machinery (variable decelerators, FA equipment)	54,359	53,452	107,811				53,884	52,816	106,700	(-1.0)	56,000	57,000	113,000	(5.9)
% of sales	9.3	9.0	9.1				9.6	8.8	9.2		8.7	8.4	8.6	
Electronic & optical components (electronic components, optical components)	32,528	31,584	64,112				31,032	30,968	62,000	(-3.3)	31,000	31,000	62,000	(0.0)
% of revenue	5.5	5.3	5.4				5.5	5.2	5.3		4.8	4.6	4.7	
Other (pivot assemblies, etc.)	1,767	1,899	3,666				1,753	1,547	3,300	(-10.0)	1,500	1,500	3,000	(-9.1)
% of revenue	0.3	0.3	0.3				0.3	0.3	0.3		0.2	0.2	0.2	
Operating profit	**59,603**	**58,059**	**117,662**	**65,996**	**135,000**	**(14.7)**	**69,004**	**70,996**	**140,000**	**(19.0)**	**75,400**	**81,600**	**157,000**	**(12.1)**
Operating profit margin (%)	10.1	9.8	10.0				12.2	11.8	12.0		11.7	12.1	11.9	
Small precision motors	34,598	30,108	64,706				32,967	32,333	65,300	(0.9)	29,800	31,000	60,800	(-6.9)
Operating profit margin (%)	15.5	13.4	14.4				15.6	15.3	15.4		14.8	15.3	15.1	
Automotive, household, commercial & industrial products	20,819	24,978	45,797				27,988	31,712	59,700	(30.4)	37,700	42,800	80,500	(34.8)
Operating profit margin (%)	7.5	9.0	8.3				10.5	10.5	10.5		10.6	11.2	10.9	
Machinery	8,212	6,823	15,035				10,200	10,300	20,500	(36.3)	11,000	10,800	21,800	(6.3)
Operating profit margin (%)	15.1	12.8	13.9				18.9	19.5	19.2		19.6	18.9	19.3	
Electronic & optical components	3,050	2,360	5,410				4,878	4,522	9,400	(73.8)	4,700	4,800	9,500	(1.1)
Operating profit margin (%)	9.4	7.5	8.4				15.7	14.6	15.2		15.2	15.5	15.3	
Other	244	294	538				287	213	500	(-7.1)	250	250	500	(0.0)
Operating profit margin (%)	13.8	15.5	14.7				16.4	13.8	15.2		16.7	16.7	16.7	
Eliminations and unallocated	-7,320	-6,504	-13,824			(-)	-7,316	-8,084	-15,400	(-)	-8,050	-8,050	-16,100	(-)
Pretax income	**62,147**	**55,017**	**117,164**	**66,707**	**133,000**	**(13.5)**	**66,293**	**71,207**	**137,500**	**(17.4)**	**75,500**	**81,700**	**157,200**	**(14.3)**
Net income	**46,857**	**43,088**	**89,945**	**49,890**	**100,000**	**(11.2)**	**50,110**	**53,890**	**104,000**	**(15.6)**	**57,100**	**61,900**	**119,000**	**(14.4)**
EPS (Y)			303.04		337.15				350.64				401.21	
Capex	47,814	34,084	81,898	79,517	110,000	(34.3)	30,483	59,517	90,000	(9.9)	40,000	60,000	100,000	(11.1)
Depreciation	30,491	34,456	64,947	33,144	62,000	(-4.5)	28,856	33,144	62,000	(-4.5)	32,000	38,000	70,000	(12.9)
R&D expenses	25,421	26,557	51,978	29,398	55,000	(5.8)	25,602	29,398	55,000	(5.8)	28,000	30,000	58,000	(5.5)
Cash flow (depreciation + net income)	77,348	77,544	154,892	83,034	162,000	(4.6)	78,966	87,034	166,000	(7.2)	89,100	99,900	189,000	(13.9)
EBITDA (depreciation + operating profit)	90,094	92,515	182,609	99,140	197,000	(7.9)	97,860	104,140	202,000	(10.6)	107,400	119,600	227,000	(12.4)

Source: Company materials; compiled by Daiwa

Notes: 1) Firm adopted IFRS from FY16. Net income is that attributable to shareholders of parent. FY15 figures retroactively adjusted.

2) In 2Q FY16, company completed fair value assessment of assets acquired and liabilities assumed upon acquisition of KB Electronics in FY15. FY15 figures retroactively adjusted.

E: Daiwa estimates. CP: Company projections.

Financial Statements

(Y mn)	3/14	3/15	3/16	3/17 E	3/18 E
Income statement					
Sales / Revenue	875,109	1,028,385	1,178,290	1,164,000	1,320,000
Operating profit	84,864	110,939	117,662	140,000	157,000
EBITDA	129,277	162,384	182,609	202,000	227,000
Pretax income	84,460	107,092	117,164	137,500	157,200
Net income	56,272	76,015	89,945	104,000	119,000
Balance sheet					
Liquidity on hand	247,740	269,902	305,942	253,325	306,610
Fixed assets / Non-current assets	550,522	628,325	621,545	649,545	679,545
Total assets	1,166,938	1,357,340	1,376,636	1,378,808	1,494,388
Interest-bearing debt	351,256	282,498	300,667	300,667	300,667
Total liabilities	626,145	604,241	605,267	602,999	627,756
Total net assets / Total equity	540,793	753,099	771,369	775,809	866,632
Shareholders' equity	517,971	744,972	763,023	767,463	858,286
Cash flow statement					
Cash flows from operating activities	87,219	91,875	147,659	214,911	181,462
Net income	56,272	76,015	89,945	104,000	119,000
Depreciation and amortization	44,413	51,445	64,947	62,000	70,000
Cash flows from investing activities	-63,178	-81,230	-95,377	-210,000	-100,000
Free cash flow	24,041	10,645	52,282	4,911	81,462
Cash flows from financing activities	13,471	-19,508	7,775	-23,728	-28,177
Increase (decrease) in cash and cash equivalents	54,320	22,162	36,040	-52,617	53,285
Accounting standards	SEC	SEC	IFRS	IFRS	IFRS
Financial indicators					
Growth					
Sales / Revenue (y/y %)	23.4	17.5	-	-1.2	13.4
Operating profit (y/y %)	382.2	30.7	-	19.0	12.1
Profitability					
Operating profit margin (%)	9.7	10.8	10.0	12.0	11.9
EBITDA margin (%)	14.8	15.8	15.5	17.4	17.2
ROE (%)	12.1	12.0	11.9	13.6	14.6
ROA (%)	5.2	6.0	-	7.5	8.3
Financial leverage/dividend policy					
Net debt-to-equity ratio (X)	0.2	0.0	-0.0	0.1	-0.0
Equity-to-assets ratio (%)	44.4	54.9	55.4	55.7	57.4
Total dividends / shareholders' equity (%)	2.7	2.8	3.1	3.3	3.5
Dividend payout ratio (%)	24.2	25.8	26.4	24.2	24.9
Per-share data					
EPS (Y)	206.8	271.6	303.0	350.6	401.2
DPS (Y)	50.00	70.00	80.00	85.00	100.00
Book value per share (Y)	1,878.0	2,533.1	2,570.8	2,587.5	2,893.8
Valuations Share price: Y10,500; market cap: Y3,114,289mn (4 Jan 2017)					
P/E (X)	50.8	38.7	34.6	29.9	26.2
EV/EBITDA (X)	24.9	19.3	17.0	15.7	13.7
P/B (X)	5.59	4.15	4.08	4.06	3.63
Dividend yield (%)	0.48	0.67	0.76	0.81	0.95

Source: Company materials; compiled by Daiwa.
Notes: 1) Firm adopted IFRS from 1Q FY16. FY15 figures retroactively adjusted.
2) To extent possible, figures retroactively adjusted to reflect discontinued operations and fair value assessments of assets acquired and liabilities assumed in acquisitions.
3) Per-share figures retroactively adjusted to reflect 2-for-1 common stock split on 1 Apr 2014.
E: Daiwa estimates.

Company outline

Nidec is the world's leading producer of brushless DC motors (high-performance, high-efficiency motors that use ICs for motor control). While HDD motors were previously its main product line, falling demand for PCs, i.e., a slowdown in HDD motors, has led the firm to significantly shift its business portfolio to new growth areas: (1) automotive products and (2) home appliance, commercial and industrial products. The company has particularly focused on expanding in the automotive field via M&As and other measures in response to increasing use of electronics in cars. The company's aggressive M&A strategy, driven by CEO Shigenobu Nagamori's proactive management, have gained wide recognition in the market.

Daiwa Capital Markets

Sunny Optical Technology (2382 HK)

Target price: **HKD44.30** (from HKD44.30)

Share price (4 Jan): **HKD36.60** | Up/downside: **+21.0%**

5 4 3 2 1

Buy
(unchanged)

Bright earnings outlook on positive industry trends

- A major beneficiary of ADAS and multi-cam adoption trend
- We expect earnings to grow by 32-35% YoY in 2017-18
- Reiterating Buy (1) and TP of HKD44.3

Kylie Huang
(886) 2 8758 6248
kylie.huang@daiwacm-cathay.com.tw

Anthony Liao
(886) 2 8758 6251
anthony.liao@daiwacm-cathay.com.tw

What's new: We expect Sunny Optical to be a major beneficiary of the rising adoption of advanced driver assistance systems (ADAS), as highlighted in the accompanying sector report, due to its dominance in the auto lens segment. In addition to ADAS, we expect Sunny to benefit from rising multi-cam trends in smartphones. Driven by multiple favourable trends, we expect Sunny to deliver 35% EPS growth in 2017. Hence, we reaffirm our Buy (1) rating and 12-month TP of HKD44.3. Sunny remains one of our top picks in the Greater China smartphone space.

What's the impact: Strong long-term growth driver – vehicle lenses on rising ADAS adoption. Sunny is the world's largest provider of vehicle lenses, with a c.30% market share globally. Due to the rise of smart cars equipped with several cameras for use in ADAS arising from auto safety and regulatory requirements, we forecast a 40% YoY rise in Sunny's vehicle lens shipments in 2017 and 18 on the back of its dominant position in the industry.

Bearing the fruit of multi-cam adoption in smartphones. We view multi-cams as a mega trend in smartphones – not only the rising adoption of dual-cams, but also trio-cams, which could arrive in 2018 if not earlier to make the smartphone an augmented reality device (see The more the merrier: multi-cameras are the next mega trend in smartphones, published 2 August 2016). As a major supplier of handset camera modules (HCM) and handset lens sets (HLS) for Android smartphones, Sunny is well-positioned to benefit from the rising adoption of multi-cams, particularly in the China smartphone market, in our view.

Rosy earnings outlook in 2017-18E; muted near-term sentiment provides a good entry point. Due to the multiple favourable industry trends and its improving product mix, we forecast Sunny's earnings to grow 32-35% YoY in 2017-18, with ROE rising to 30.7% for 2018, from 27.3% in 2016. We believe the recent pullback was a result of the stock's robust performance YTD and muted near-term sentiment on the Hong Kong stock market due to global economic and currency uncertainty. Hence, we see now as an opportune time for long-term investors to build their positions.

What we recommend: We reiterate our Buy (1) rating and 12-month target price of HKD44.30, based on a 25x target PER applied to our 2017E EPS (unchanged), which is at the high end of the stock's past-3-year trading range of 9-26x. Key risk: worse-than-expected pricing competition in HCM.

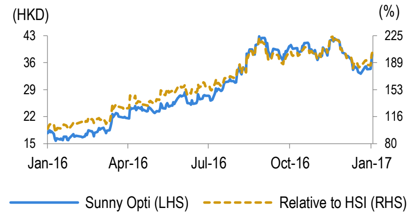
How we differ: Our 2017-18E EPS are 5-10% above consensus due to our more upbeat revenue assumptions on multi-cam trends.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	15.72-42.35
Market cap (USDbn)	5.08
3m avg daily turnover (USDm)	34.43
Shares outstanding (m)	1,077
Major shareholder	Sun Xu Ltd (38.4%)

Financial summary (CNY)

Year to 31 Dec	16E	17E	18E
Revenue (m)	14,010	17,165	20,930
Operating profit (m)	1,317	1,799	2,386
Net profit (m)	1,182	1,596	2,104
Core EPS (fully-diluted)	1.097	1.482	1.953
EPS change (%)	54.8	35.1	31.8
Daiwa vs Cons. EPS (%)	1.6	5.1	10.4
PER (x)	29.9	22.1	16.8
Dividend yield (%)	0.6	1.0	1.4
DPS	0.207	0.329	0.445
PBR (x)	7.4	5.8	4.6
EV/EBITDA (x)	20.8	15.0	11.2
ROE (%)	27.3	29.4	30.7

Source: FactSet, Daiwa forecasts

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Handset CCM shipment (m units)	70	97	133	187	228	260	291	322
Blended ASP of handset CCM (USD)	2.38	3.78	4.98	5.68	5.51	6.52	7.14	7.87
Vehicle lens shipment (m units)	0	0	8	11	17	23	32	45
Handset lens shipment (m units)	32	36	26	75	302	370	446	535

Profit and loss (CNYm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Handset CCM Revenues	1,069	2,307	4,157	6,576	7,785	10,493	12,885	15,694
Vehicle Lens Revenues	100	167	291	421	651	901	1,309	1,898
Other Revenue	1,329	1,510	1,365	1,429	2,260	2,617	2,971	3,338
Total Revenue	**2,499**	**3,984**	**5,813**	**8,426**	**10,696**	**14,010**	**17,165**	**20,930**
Other income	0	0	0	0	0	0	0	0
COGS	(1,976)	(3,243)	(4,846)	(7,137)	(8,933)	(11,572)	(14,075)	(17,016)
SG&A	(182)	(214)	(254)	(320)	(352)	(448)	(491)	(565)
Other op.expenses	(131)	(163)	(251)	(392)	(502)	(672)	(800)	(963)
Operating profit	**210**	**363**	**462**	**577**	**909**	**1,317**	**1,799**	**2,386**
Net-interest inc./(exp.)	(3)	(3)	(7)	(14)	(16)	(21)	(22)	(22)
Assoc/forex/extraord./others	33	37	49	71	(31)	85	85	90
Pre-tax profit	**240**	**397**	**504**	**634**	**862**	**1,381**	**1,862**	**2,454**
Tax	(38)	(58)	(64)	(73)	(99)	(197)	(264)	(349)
Min. int./pref. div./others	14	7	(0)	5	(2)	(2)	(2)	(2)
Net profit (reported)	**215**	**346**	**440**	**566**	**762**	**1,182**	**1,596**	**2,104**
Net profit (adjusted)	**215**	**346**	**440**	**566**	**762**	**1,182**	**1,596**	**2,104**
EPS (reported)(CNY)	**0.223**	**0.360**	**0.443**	**0.529**	**0.709**	**1.097**	**1.482**	**1.953**
EPS (adjusted)(CNY)	**0.223**	**0.360**	**0.443**	**0.529**	**0.709**	**1.097**	**1.482**	**1.953**
EPS (adjusted fully-diluted)(CNY)	**0.223**	**0.360**	**0.443**	**0.529**	**0.709**	**1.097**	**1.482**	**1.953**
DPS (CNY)	**0.044**	**0.071**	**0.102**	**0.112**	**0.154**	**0.207**	**0.329**	**0.445**
EBIT	**210**	**363**	**462**	**577**	**909**	**1,317**	**1,799**	**2,386**
EBITDA	**298**	**472**	**609**	**792**	**1,155**	**1,629**	**2,226**	**2,907**

Cash flow (CNYm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	240	397	504	634	862	1,381	1,862	2,454
Depreciation and amortisation	88	109	147	215	246	312	427	521
Tax paid	(38)	(58)	(64)	(73)	(99)	(197)	(264)	(349)
Change in working capital	(264)	(169)	55	(898)	609	(299)	(559)	(545)
Other operational CF items	14	7	(0)	5	(2)	(2)	(2)	(2)
Cash flow from operations	**40**	**286**	**643**	**(117)**	**1,616**	**1,194**	**1,464**	**2,080**
Capex	(112)	(265)	(286)	(465)	(351)	(850)	(700)	(700)
Net (acquisitions)/disposals	1	13	1	(62)	(64)	0	0	0
Other investing CF items	0	(38)	(26)	(178)	(60)	60	0	0
Cash flow from investing	**(111)**	**(291)**	**(311)**	**(705)**	**(475)**	**(790)**	**(700)**	**(700)**
Change in debt	(35)	34	392	56	167	(5)	0	0
Net share issues/(repurchases)	0	0	0	0	0	0	0	0
Dividends paid	(43)	(69)	(101)	(120)	(166)	(223)	(354)	(479)
Other financing CF items	(20)	(27)	589	(55)	(2)	0	0	0
Cash flow from financing	**(97)**	**(61)**	**879**	**(120)**	**(0)**	**(229)**	**(354)**	**(479)**
Forex effect/others	0	0	0	0	0	0	0	0
Change in cash	**(169)**	**(66)**	**1,211**	**(942)**	**1,141**	**176**	**409**	**901**
Free cash flow	(73)	20	357	(582)	1,265	344	764	1,380

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (CNYm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	681	614	1,826	884	2,025	2,200	2,610	3,511
Inventory	472	748	768	896	897	1,361	1,717	2,182
Accounts receivable	627	901	1,172	2,388	3,003	3,455	4,232	5,161
Other current assets	42	4	1	36	93	122	156	209
Total current assets	**1,822**	**2,267**	**3,766**	**4,204**	**6,017**	**7,138**	**8,715**	**11,062**
Fixed assets	489	646	785	1,035	1,141	1,679	1,952	2,131
Goodwill & intangibles	0	0	0	0	0	0	0	0
Other non-current assets	64	89	114	354	478	418	418	418
Total assets	**2,375**	**3,002**	**4,665**	**5,594**	**7,636**	**9,235**	**11,085**	**13,611**
Short-term debt	62	103	489	522	683	684	684	684
Accounts payable	599	939	1,257	1,744	2,914	3,646	4,242	5,128
Other current liabilities	9	11	36	31	142	56	69	84
Total current liabilities	**671**	**1,052**	**1,782**	**2,297**	**3,739**	**4,386**	**4,995**	**5,896**
Long-term debt	17	0	18	36	33	36	36	36
Other non-current liabilities	7	18	6	11	19	10	10	10
Total liabilities	**694**	**1,070**	**1,805**	**2,343**	**3,791**	**4,432**	**5,041**	**5,942**
Share capital	98	98	105	105	105	105	105	105
Reserves/R.E./others	1,584	1,834	2,755	3,145	3,740	4,698	5,939	7,564
Shareholders' equity	**1,681**	**1,932**	**2,860**	**3,251**	**3,845**	**4,803**	**6,044**	**7,670**
Minority interests	0	0	0	0	0	0	0	0
Total equity & liabilities	**2,375**	**3,002**	**4,665**	**5,594**	**7,636**	**9,235**	**11,085**	**13,611**
EV	34,717	34,807	34,000	34,992	34,010	33,838	33,429	32,528
Net debt/(cash)	**(601)**	**(512)**	**(1,319)**	**(327)**	**(1,309)**	**(1,480)**	**(1,890)**	**(2,791)**
BVPS (CNY)	**1.741**	**2.007**	**2.876**	**3.038**	**3.579**	**4.460**	**5.612**	**7.121**

Key ratios (%)

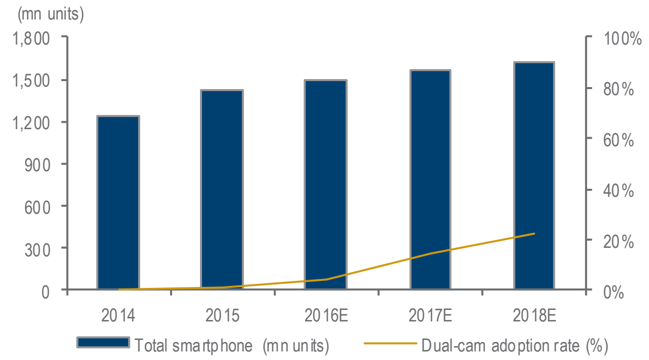
Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	37.4	59.5	45.9	45.0	26.9	31.0	22.5	21.9
EBITDA (YoY)	30.3	58.1	29.1	30.0	45.9	41.0	36.6	30.6
Operating profit (YoY)	48.0	73.0	27.1	24.9	57.6	44.8	36.6	32.6
Net profit (YoY)	49.7	60.8	27.2	28.5	34.5	55.1	35.1	31.8
Core EPS (fully-diluted) (YoY)	51.7	61.3	23.1	19.4	34.0	54.8	35.1	31.8
Gross-profit margin	20.9	18.6	16.6	15.3	16.5	17.4	18.0	18.7
EBITDA margin	11.9	11.8	10.5	9.4	10.8	11.6	13.0	13.9
Operating-profit margin	8.4	9.1	7.9	6.8	8.5	9.4	10.5	11.4
Net profit margin	8.6	8.7	7.6	6.7	7.1	8.4	9.3	10.1
ROAE	13.4	19.2	18.4	18.5	21.5	27.3	29.4	30.7
ROAA	9.7	12.9	11.5	11.0	11.5	14.0	15.7	17.0
ROCE	12.3	19.1	17.1	16.1	21.7	26.1	29.3	31.5
ROIC	18.9	24.8	27.3	22.9	29.5	38.5	41.3	45.3
Net debt to equity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Effective tax rate	15.8	14.7	12.6	11.5	11.5	14.3	14.2	14.2
Accounts receivable (days)	79.0	70.0	65.1	77.1	92.0	84.1	81.7	81.9
Current ratio (x)	2.7	2.2	2.1	1.8	1.6	1.6	1.7	1.9
Net interest cover (x)	70.4	115.7	70.0	41.3	56.8	63.2	83.3	110.5
Net dividend payout	19.8	19.8	22.9	21.3	21.8	18.9	22.2	22.8
Free cash flow yield	n.a.	0.1	1.0	n.a.	3.6	1.0	2.2	3.9

Source: FactSet, Daiwa forecasts

Company profile

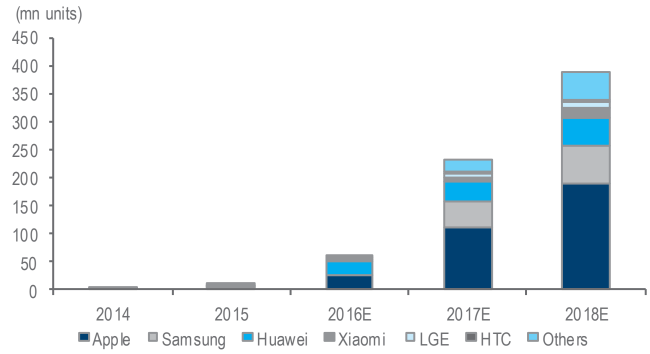
Founded in 1984, Sunny Optical is the leading optical component manufacturer in the China technology supply chain. It develops and provides optical-related products with various applications, including instruments, components and opto-electronic modules. The company's major customers include leading China smartphone brand name makers Huawei, Lenovo and OPPO.

Dual-cam penetration in smartphones (2014-18E)



Source: Daiwa forecasts

Dual-cam adoption in smartphones by brand (2014-18E)



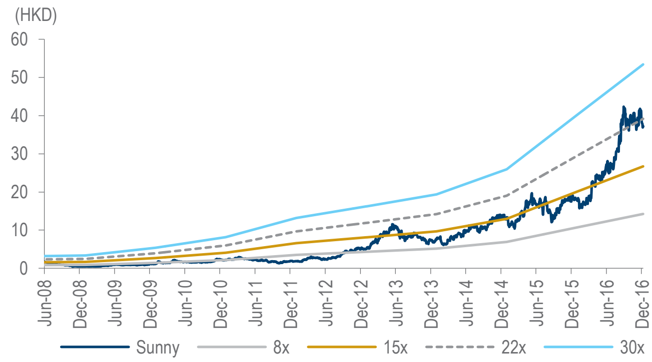
Source: Daiwa forecasts

Sunny Optical: semi-annual and annual P&L statement

	2016E		2017E		2016E	2017E	2018E
(CNYm)	1H	2HE	1HE	2HE			
Net sales	**5,910**	**8,100**	**7,462**	**9,703**	**14,010**	**17,165**	**20,930**
COGS	4,922	6,651	6,149	7,926	11,572	14,075	17,016
Gross profit	**988**	**1,450**	**1,313**	**1,776**	**2,438**	**3,090**	**3,914**
Operating costs	485	636	574	716	1,121	1,291	1,528
Operating profit	**503**	**814**	**739**	**1,060**	**1,317**	**1,799**	**2,386**
Pre-tax income	552	827	749	1111	1,379	1,860	2,452
Net income	**465**	**716**	**640**	**956**	**1,182**	**1,596**	**2,104**
Net EPS (CNY)	**0.43**	**0.67**	**0.59**	**0.89**	**1.10**	**1.48**	**1.95**
Operating ratios							
Gross margin	16.7%	17.9%	17.6%	18.3%	17.4%	18.0%	18.7%
Operating margin	8.5%	10.0%	9.9%	10.9%	9.4%	10.5%	11.4%
Pre-tax margin	9.3%	10.2%	10.0%	11.5%	9.8%	10.8%	11.7%
Net margin	7.9%	8.8%	8.6%	9.8%	8.4%	9.3%	10.1%
YoY (%)							
Net revenue	27%	34%	26%	20%	31%	23%	22%
Gross profit	37%	39%	33%	23%	38%	27%	27%
Operating income	56%	39%	47%	30%	45%	37%	33%
Pre-tax income	58%	61%	36%	34%	60%	35%	32%
Net income	51%	58%	38%	33%	55%	35%	32%
HoH (%)							
Net revenue	-2%	37%	-8%	30%			
Gross profit	-5%	47%	-9%	35%			
Operating income	-14%	62%	-9%	43%			
Pre-tax income	8%	50%	-9%	48%			
Net income	2%	54%	-11%	49%			

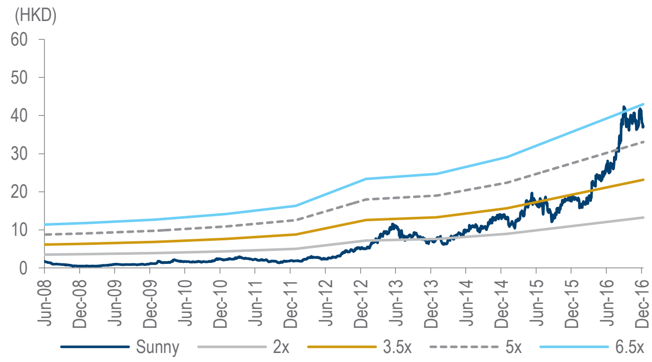
Source: Company, Daiwa forecasts

Sunny Optical: 1-year-forward PER



Source: Bloomberg, Daiwa forecasts

Sunny Optical: 1-year-forward PBR



Source: Bloomberg, Daiwa forecasts

Daiwa Capital Markets

Ennoconn (6414 TT)

Target price: **TWD550.00** (from TWD550.00)

Share price (4 Jan): **TWD420.00** | Up/downside: **+30.9%**

5 4 3 2 1

Buy
(from Outperform)

Upgrading: charging ahead

- Targeted 30%-plus revenue growth looks sustainable to us
- Alliance with S&T/Kontron should bring upside from 2018 onwards
- Upgrading to Buy (1) on attractive upside potential

Steven Tseng
(886) 2 8758 6252
steven.tseng@daiwacm-cathay.com.tw

Jack Lin
(886) 2 8758 6253
jack.lin@daiwacm-cathay.com.tw

What's new: Ennoconn is our top pick in the Taiwan industrial PC sector. We expect it to be a major beneficiary of the shift to Industrial IoT, and are positive on its sustained earnings growth driven by the organic growth of its core businesses and promising synergies from its M&A activity.

What's the impact: Beneficiary of Industrial IoT. With EMS support from its parent Hon Hai group, Ennoconn is focused on the ODM business, which has been riding on growth opportunities of industrial upgrades in various segments, including telecom, network security, automation and retail. With the rising trend of Industrial IoT, Ennoconn is confident of maintaining 30%-plus YoY revenue growth in the coming years, with profit margins likely to further expand on its growing operating scale.

Promising synergies from M&A. M&A has been an important growth catalyst for Ennoconn, and we expect its investment in Kontron Canada (for telecom-related industrial PC products), AIS (for human-machine interface related solutions), and Dexatek (for IoT and smart home related products) in 2016 to bring promising synergies in 2017. We also expect Ennoconn's recent investment in S&T to result in a strong alliance among Ennoconn, S&T, and Kontron. In our view, the integration may take 6-12 months but should yield significant synergies from 2018 onward.

Near-term concerns look priced in. We expect Ennoconn's 4Q16 revenue growth to be lower (20% YoY vs. 35% YoY in 9M16) as some US clients are reviewing capex at the year-end. However, we believe this slowdown to be temporary as most client projects for 2017 are intact. Also, Ennoconn's plan to issue a USD200m Euro convertible bond (for working capital financing) raised investor concerns on share dilution (likely up to 14%). With the share-price correction of recent months, we believe most of these concerns are now priced in, and we remain positive on Ennoconn's strong EPS growth outlook for 2017/18 (56% and 55% YoY, respectively).

What we recommend: Our 12-month TP is unchanged at TWD550, based on a target PER of 28x (near the peak of its past-3-year range of 14-29x) applied to our 1-year-forward EPS (ie, 4Q16-3Q17). We upgrade our rating to Buy (1) from Outperform (2) given potential upside of 31%, driven by the company's sustained revenue growth strength, M&A synergies, and potential catalysts from likely acquisitions down the road. Key risks to our call: worse-than-expected macro uncertainty and higher-than-expected opex impact from M&A.

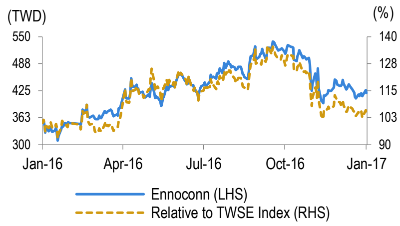
How we differ: Our 2017-18E EPS are 7-8% above consensus, likely as we are more upbeat on the alliance with S&T/Kontron.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	309.24-539.00
Market cap (USDbn)	0.98
3m avg daily turnover (USDm)	8.34
Shares outstanding (m)	76
Major shareholder	Pao Hsin Int'l Investment (35.9%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	14,432	19,182	26,178
Operating profit (m)	1,673	2,404	3,565
Net profit (m)	1,059	1,647	2,544
Core EPS (fully-diluted)	14.000	21.774	33.647
EPS change (%)	12.8	55.5	54.5
Daiwa vs Cons. EPS (%)	(7.8)	7.9	7.1
PER (x)	30.0	19.3	12.5
Dividend yield (%)	2.1	2.7	3.3
DPS	9.0	11.5	14.0
PBR (x)	8.3	6.1	4.4
EV/EBITDA (x)	18.5	12.9	8.6
ROE (%)	30.2	36.4	40.8

Source: FactSet, Daiwa forecasts

Company

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Telecom revenue YoY %	n.a.	n.a.	n.a.	n.a.	160.9	58.1	45.9	42.4
Network Securities revenue YoY %	n.a.	n.a.	n.a.	n.a.	1,069.2	1.1	16.2	38.7
ATM/POS revenue YoY %	n.a.	n.a.	n.a.	18.4	2.1	5.4	14.7	10.6

Profit and loss (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Telecom	0	0	0	1,314	3,428	5,420	7,907	11,260
Network Securities	0	0	0	303	3,544	3,583	4,163	5,775
Other Revenue	1,401	2,269	3,096	3,435	4,085	5,428	7,113	9,143
Total Revenue	**1,401**	**2,269**	**3,096**	**5,052**	**11,057**	**14,432**	**19,182**	**26,178**
Other income	0	0	0	0	0	0	0	0
COGS	(1,176)	(1,856)	(2,433)	(4,110)	(9,040)	(11,468)	(15,316)	(20,827)
SG&A	(74)	(134)	(150)	(183)	(501)	(848)	(959)	(1,122)
Other op.expenses	(65)	(87)	(102)	(137)	(329)	(444)	(503)	(664)
Operating profit	**86**	**192**	**411**	**622**	**1,187**	**1,673**	**2,404**	**3,565**
Net-interest inc./(exp.)	7	6	9	7	(1)	(24)	(21)	(22)
Assoc/forex/extraord./others	18	10	31	75	124	118	171	133
Pre-tax profit	**112**	**208**	**450**	**704**	**1,310**	**1,767**	**2,554**	**3,677**
Tax	(10)	(34)	(78)	(122)	(234)	(320)	(455)	(662)
Min. int./pref. div./others	0	0	0	(20)	(210)	(389)	(453)	(471)
Net profit (reported)	**102**	**174**	**372**	**562**	**866**	**1,059**	**1,647**	**2,544**
Net profit (adjusted)	**102**	**174**	**372**	**562**	**866**	**1,059**	**1,647**	**2,544**
EPS (reported)(TWD)	**2.152**	**3.224**	**6.151**	**8.185**	**12.415**	**14.000**	**21.774**	**33.647**
EPS (adjusted)(TWD)	**2.152**	**3.224**	**6.151**	**8.185**	**12.415**	**14.000**	**21.774**	**33.647**
EPS (adjusted fully-diluted)(TWD)	**2.152**	**3.224**	**6.151**	**8.185**	**12.415**	**14.000**	**21.774**	**33.647**
DPS (TWD)	**2.160**	**1.739**	**1.736**	**5.503**	**6.000**	**9.000**	**11.500**	**14.000**
EBIT	**86**	**192**	**411**	**622**	**1,187**	**1,673**	**2,404**	**3,565**
EBITDA	**95**	**204**	**427**	**637**	**1,288**	**1,787**	**2,542**	**3,728**

Cash flow (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	112	208	450	704	1,310	1,767	2,554	3,677
Depreciation and amortisation	8	12	16	15	101	114	138	162
Tax paid	(10)	(34)	(78)	(122)	(234)	(320)	(455)	(662)
Change in working capital	33	(157)	(94)	(1,417)	(5)	(491)	(618)	(903)
Other operational CF items	(13)	52	111	825	166	117	30	59
Cash flow from operations	**130**	**80**	**405**	**5**	**1,338**	**1,188**	**1,649**	**2,334**
Capex	(1)	(2)	(19)	(167)	(419)	(2,095)	(480)	(654)
Net (acquisitions)/disposals	0	(17)	(254)	362	(244)	(152)	(50)	(50)
Other investing CF items	(1)	(34)	2	(43)	39	105	0	0
Cash flow from investing	**(2)**	**(54)**	**(271)**	**152**	**(624)**	**(2,143)**	**(530)**	**(704)**
Change in debt	0	21	(15)	(6)	994	1,864	0	0
Net share issues/(repurchases)	0	125	0	778	0	0	0	0
Dividends paid	(100)	(82)	(94)	(333)	(412)	(628)	(870)	(1,059)
Other financing CF items	0	0	(0)	(155)	(110)	0	0	0
Cash flow from financing	**(100)**	**64**	**(109)**	**285**	**473**	**1,236**	**(870)**	**(1,059)**
Forex effect/others	0	(1)	1	3	(1)	0	0	0
Change in cash	**28**	**89**	**27**	**445**	**1,186**	**281**	**250**	**571**
Free cash flow	129	78	386	(162)	918	(908)	1,170	1,679

Source: FactSet, Daiwa forecasts

Daiwa Capital Markets

Financial summary continued …

Balance sheet (TWDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	635	724	1,033	931	2,245	2,418	2,668	3,238
Inventory	104	105	225	992	1,309	1,445	1,909	2,568
Accounts receivable	208	591	507	2,019	2,531	2,965	3,889	5,236
Other current assets	12	60	6	38	90	169	169	169
Total current assets	**960**	**1,479**	**1,771**	**3,979**	**6,175**	**6,997**	**8,635**	**11,211**
Fixed assets	7	11	26	50	592	2,574	2,915	3,407
Goodwill & intangibles	0	2	2	917	863	893	893	893
Other non-current assets	7	10	9	291	166	497	636	746
Total assets	**975**	**1,502**	**1,808**	**5,237**	**7,796**	**10,961**	**13,079**	**16,257**
Short-term debt	0	21	6	0	200	264	264	264
Accounts payable	300	549	515	1,388	2,214	2,294	3,063	4,165
Other current liabilities	11	43	99	255	439	1,158	1,158	1,158
Total current liabilities	**311**	**613**	**620**	**1,644**	**2,853**	**3,715**	**4,485**	**5,587**
Long-term debt	0	0	0	0	477	1,798	1,798	1,798
Other non-current liabilities	2	3	2	8	3	21	21	21
Total liabilities	**313**	**616**	**622**	**1,652**	**3,334**	**5,534**	**6,304**	**7,406**
Share capital	474	539	605	687	697	756	756	756
Reserves/R.E./others	188	347	581	1,728	2,470	3,090	4,438	6,514
Shareholders' equity	**662**	**886**	**1,186**	**2,415**	**3,167**	**3,846**	**5,195**	**7,270**
Minority interests	0	0	0	1,170	1,295	1,581	1,581	1,581
Total equity & liabilities	**975**	**1,502**	**1,808**	**5,237**	**7,796**	**10,961**	**13,079**	**16,257**
EV	31,124	31,056	30,732	32,000	31,487	32,984	32,734	32,164
Net debt/(cash)	**(635)**	**(703)**	**(1,027)**	**(931)**	**(1,568)**	**(356)**	**(606)**	**(1,176)**
BVPS (TWD)	**13.957**	**16.425**	**19.617**	**35.162**	**45.422**	**50.858**	**68.694**	**96.143**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	(22.6)	61.9	36.5	63.2	118.9	30.5	32.9	36.5
EBITDA (YoY)	(69.8)	115.4	109.7	49.1	102.3	38.7	42.3	46.6
Operating profit (YoY)	(71.8)	122.4	113.8	51.5	90.8	40.9	43.7	48.3
Net profit (YoY)	(64.0)	70.4	113.8	51.2	54.0	22.3	55.5	54.5
Core EPS (fully-diluted) (YoY)	(65.0)	49.8	90.8	33.1	51.7	12.8	55.5	54.5
Gross-profit margin	16.1	18.2	21.4	18.6	18.2	20.5	20.2	20.4
EBITDA margin	6.7	9.0	13.8	12.6	11.6	12.4	13.3	14.2
Operating-profit margin	6.2	8.5	13.3	12.3	10.7	11.6	12.5	13.6
Net profit margin	7.3	7.7	12.0	11.1	7.8	7.3	8.6	9.7
ROAE	15.5	22.5	35.9	31.2	31.0	30.2	36.4	40.8
ROAA	10.8	14.0	22.5	16.0	13.3	11.3	13.7	17.3
ROCE	13.1	24.5	39.1	26.0	27.2	26.5	29.4	36.1
ROIC	203.7	153.7	198.9	36.6	35.1	34.4	35.2	42.2
Net debt to equity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Effective tax rate	8.8	16.3	17.4	17.3	17.9	18.1	17.8	18.0
Accounts receivable (days)	55.9	64.3	64.7	91.2	75.1	69.5	65.2	63.6
Current ratio (x)	3.1	2.4	2.9	2.4	2.2	1.9	1.9	2.0
Net interest cover (x)	n.a.	n.a.	n.a.	n.a.	1,518.0	71.1	115.2	163.1
Net dividend payout	35.2	80.8	53.9	89.5	73.3	72.5	82.1	64.3
Free cash flow yield	0.4	0.2	1.2	n.a.	2.9	n.a.	3.7	5.3

Source: FactSet, Daiwa forecasts

Company profile

Established in 1999 and listed in 2014, Ennoconn Corp. (Ennoconn) is a leading industrial PC (IPC) manufacturer, 41%-held by Hon Hai. The company provides total hardware system solutions to various vertical market applications (POS, banking automation, kiosks, lotteries and industrial automation) on the ODM basis. With extensive professional knowledge, Ennoconn aims to deliver state-of-the-art technology of a high quality and at speed to its clients. The company also adopts an aggressive M&A strategy to facilitate its entry into different vertical application areas.

Ennoconn: revenue and earnings forecasts — Daiwa vs. the market

	2016E		2017E		2018E	
(TWDm)	Daiwa	Consensus	Daiwa	Consensus	Daiwa	Consensus
Revenue	14,432	14,504	19,182	18,586	26,178	26,072
Diff (%)		-0.5%		3.2%		0.4%
Gross Margin (%)	20.5%	20.5%	20.2%	20.5%	20.4%	21.8%
Operating profit	1,673	1,670	2,404	2,203	3,565	3,431
Op Margin (%)	11.6%	11.5%	12.5%	11.9%	13.6%	13.2%
Net profit	1,059	1,059	1,647	1,526	2,544	2,375
EPS (TWD)	14.00	15.19	21.77	20.18	33.65	31.41
Diff (%)		-7.8%		7.9%		7.1%

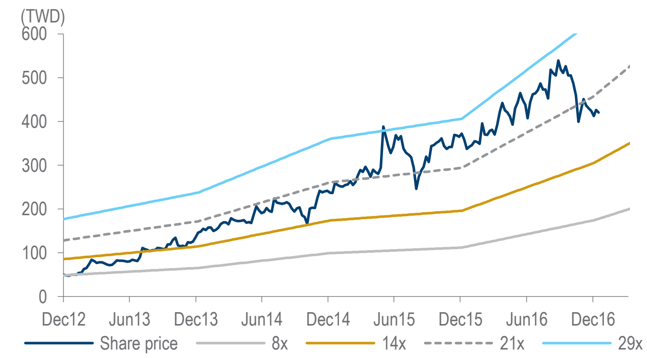
Source: Bloomberg, Daiwa forecasts

Ennoconn: quarterly and annual P&L statement

	2015				2016						
(TWDm)	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4QE	2015	2016E	2017E
Net revenue	**2,386**	**2,613**	**2,798**	**3,259**	**3,118**	**3,575**	**3,821**	**3,918**	**11,057**	**14,432**	**19,182**
Gross profit	**432**	**461**	**504**	**619**	**651**	**784**	**748**	**781**	**2,017**	**2,964**	**3,866**
Operating profit	**264**	**289**	**295**	**340**	**409**	**433**	**398**	**433**	**1,187**	**1,673**	**2,404**
Non-operating profit	(9)	11	96	25	2	44	18	30	123	95	150
Pre-tax profit	**255**	**299**	**391**	**365**	**412**	**478**	**415**	**463**	**1,310**	**1,767**	**2,554**
Tax / minority int.	(81)	(96)	(144)	(123)	(182)	(210)	(153)	(164)	(444)	(709)	(908)
Net profit	**174**	**203**	**247**	**242**	**230**	**267**	**262**	**299**	**866**	**1,059**	**1,646**
Net EPS (TWD)	**2.53**	**2.95**	**3.58**	**3.47**	**3.26**	**3.76**	**3.47**	**3.96**	**12.42**	**14.00**	**21.77**
Operating Ratios											
Gross margin	18.1%	17.6%	18.0%	19.0%	20.9%	21.9%	19.6%	19.9%	18.2%	20.5%	20.2%
Operating margin	11.0%	11.0%	10.5%	10.4%	13.1%	12.1%	10.4%	11.0%	10.7%	11.6%	12.5%
Pre-tax margin	10.7%	11.4%	14.0%	11.2%	13.2%	13.4%	10.9%	11.8%	11.8%	12.2%	13.3%
Net margin	7.3%	7.8%	8.8%	7.4%	7.4%	7.5%	6.9%	7.6%	7.8%	7.3%	8.6%
YoY (%)											
Net revenue	245%	173%	115%	55%	31%	37%	37%	20%	119%	31%	33%
Gross profit	191%	128%	118%	72%	51%	70%	48%	26%	114%	47%	30%
Operating profit	213%	95%	89%	46%	55%	50%	35%	27%	91%	41%	44%
Pre-tax profit	160%	105%	124%	28%	62%	60%	6%	27%	86%	35%	45%
Net profit	114%	67%	70%	13%	32%	32%	6%	24%	54%	22%	56%
QoQ (%)											
Net revenue	13%	10%	7%	16%	-4%	15%	7%	3%			
Gross profit	20%	7%	9%	23%	5%	20%	-5%	4%			
Operating profit	13%	10%	2%	16%	20%	6%	-8%	9%			
Pre-tax profit	-11%	17%	31%	-6%	13%	16%	-13%	11%			
Net profit	-19%	17%	22%	-2%	-5%	16%	-2%	14%			

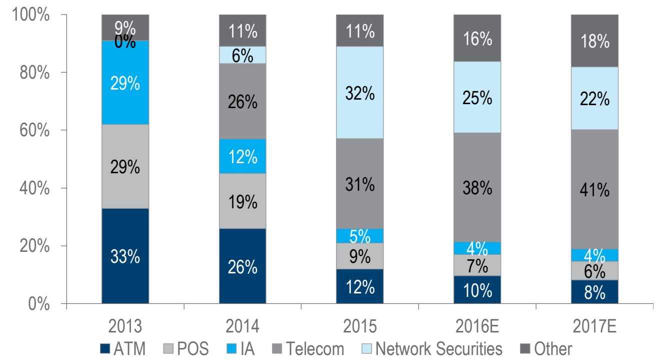
Source: Company, Daiwa forecasts

Ennoconn: 1-year-forward PER bands



Source: TEJ, Daiwa forecasts

Ennoconn: revenue breakdown by product



Source: Company, Daiwa forecasts

Taiwan | Information Technology | 6 January 2017

Delta Electronics (2308 TT)

Target price: **TWD195.00** (from TWD195.00)

Share price (4 Jan): **TWD157.50** | Up/downside: **+23.8%**

5 4 3 2 **1**

Buy
(unchanged)

Multiple catalysts ahead

- Industrial automation is a key growth driver longer term
- Passive components and advanced power products also look solid
- Reiterating Buy (1) with TP unchanged at TWD195

Steven Tseng
(886) 2 8758 6252
steven.tseng@daiwacm-cathay.com.tw

Jack Lin
(886) 2 8758 6253
jack.lin@daiwacm-cathay.com.tw

What's new: We believe Delta is favourably positioned to benefit from multiple revenue-growth catalysts in 2017, including industrial automation (related to the trend of industrial IoT), passive components (thanks to rising adoption in multiple application areas), and advanced power solutions (on sustained demand from industrial, telecom, datacentre applications, etc.).

What's the impact: Industrial automation (IA) the key driver. Delta deems IA a strategic focus and is targeting double-digit YoY revenue growth for this segment in 2017 (after 12% YoY growth for 2016E). As one of China's major suppliers of IA components (eg, inverters and servo motors/drives), Delta continues to enrich its product line (from components to industrial robots and total solutions) and expand its distribution networks in China and overseas. We expect these efforts to culminate in further market-share gains for the company going forward.

Passive components and advanced power solutions look solid too. 1) We expect Delta's passive components business to ride on the favourable adoption trend in the smartphone (thanks to its key client's product upgrade cycle in 2H17), wearable (new order wins), and auto/industrial areas, 2) after a lacklustre 2016, Delta's advanced power business looks likely to recover in 2017, driven mainly by datacentre, EV, solar, and wind energy-related power products/solutions, 3) Eltek (mainly in telecom power business; 100%-owned by Delta) should post improved earnings in 2017 on better opex control, which would augur well for Delta's earnings.

Favourable margin trends. With the revenue mix shifting towards the aforementioned lucrative business lines, including IA, passive components (40%-plus gross margins for both) and advanced power solutions (gross margin of 30%+), we expect Delta's gross margin to remain on a positive trend in 2017-18. That said, its opex may increase in 2017 as it plans to continue spending on R&D, distribution, and services. However, we consider such spending as necessary, and expect the rising revenue scale and improving opex control at Eltek to offset the impact.

What we recommend: We reiterate our Buy (1) rating and 12-month TP of TWD195, based on an unchanged target PER of 22x (the mean of the stock's past-3-year trading range of 17-28x) applied to our 1-year-forward EPS forecast. We forecast the company's earnings growth to accelerate in 2017E (by 19% YoY) and 2018E (by 14% YoY), up from just 4% YoY for 2016E. The key risks to our call are weaker-than-expected industrial demand and higher-than-expected opex.

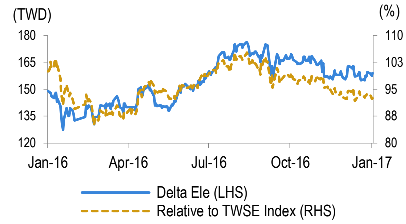
How we differ: Our 2017-18E EPS are 3-5% above the Bloomberg consensus, due mainly to our more positive view on the product mix shift.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	127.50-176.00
Market cap (USDbn)	12.69
3m avg daily turnover (USDm)	15.35
Shares outstanding (m)	2,598
Major shareholder	Hsiang Ta International (10.3%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	214,120	229,387	245,828
Operating profit (m)	21,679	25,677	29,502
Net profit (m)	19,444	23,070	26,295
Core EPS (fully-diluted)	7.486	8.881	10.123
EPS change (%)	3.9	18.6	14.0
Daiwa vs Cons. EPS (%)	(1.4)	2.6	5.4
PER (x)	21.0	17.7	15.6
Dividend yield (%)	3.2	3.5	3.8
DPS	5.0	5.5	6.0
PBR (x)	3.3	3.1	2.8
EV/EBITDA (x)	12.6	10.8	9.4
ROE (%)	15.6	17.8	18.9

Source: FactSet, Daiwa forecasts

Daiwa Capital Markets

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Industrial Automation revenue growth (YoY)	n.a.	8	6	7	4	11	16	17
Passive Components revenue growth (YoY)	n.a.	14	16	38	15	4	14	15
Advanced Power Solutions revenue growth (YoY)	n.a.	(8)	8	39	8	(11)	6	9

Profit and loss (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Power Electronics	107,086	106,525	102,933	114,480	109,889	113,213	121,041	129,084
Energy Management	35,430	35,732	32,778	35,788	52,850	58,597	63,980	70,337
Other Revenue	29,540	33,567	41,343	40,367	40,713	42,311	44,366	46,407
Total Revenue	**172,056**	**175,824**	**177,053**	**190,635**	**203,452**	**214,120**	**229,387**	**245,828**
Other income	0	0	0	0	0	0	0	0
COGS	(139,274)	(134,470)	(132,033)	(139,141)	(148,083)	(153,777)	(163,310)	(174,339)
SG&A	(12,478)	(14,170)	(14,237)	(16,235)	(20,405)	(23,370)	(24,082)	(25,012)
Other op.expenses	(9,986)	(11,233)	(11,274)	(12,441)	(14,465)	(15,295)	(16,318)	(16,975)
Operating profit	**10,318**	**15,950**	**19,508**	**22,819**	**20,499**	**21,679**	**25,677**	**29,502**
Net-interest inc./(exp.)	508	494	548	785	178	222	202	201
Assoc/forex/extraord./others	3,758	4,660	2,440	2,918	4,097	3,430	3,656	3,910
Pre-tax profit	**14,585**	**21,104**	**22,497**	**26,522**	**24,775**	**25,331**	**29,534**	**33,613**
Tax	(2,826)	(3,226)	(3,582)	(4,203)	(4,892)	(5,425)	(6,008)	(6,848)
Min. int./pref. div./others	0	(1,768)	(1,258)	(1,615)	(1,168)	(461)	(457)	(470)
Net profit (reported)	**11,759**	**16,110**	**17,657**	**20,704**	**18,715**	**19,444**	**23,070**	**26,295**
Net profit (adjusted)	**11,759**	**16,110**	**17,657**	**20,704**	**18,715**	**19,444**	**23,070**	**26,295**
EPS (reported)(TWD)	**4.893**	**6.654**	**7.244**	**8.494**	**7.205**	**7.486**	**8.881**	**10.123**
EPS (adjusted)(TWD)	**4.893**	**6.654**	**7.244**	**8.494**	**7.205**	**7.486**	**8.881**	**10.123**
EPS (adjusted fully-diluted)(TWD)	**4.893**	**6.654**	**7.244**	**8.494**	**7.205**	**7.486**	**8.881**	**10.123**
DPS (TWD)	**6.175**	**3.674**	**5.305**	**5.800**	**6.700**	**5.000**	**5.500**	**6.000**
EBIT	**10,318**	**15,950**	**19,508**	**22,819**	**20,499**	**21,679**	**25,677**	**29,502**
EBITDA	**16,829**	**23,979**	**27,850**	**30,455**	**28,894**	**30,244**	**34,718**	**39,047**

Cash flow (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	14,585	21,104	22,497	26,522	24,775	25,331	29,534	33,613
Depreciation and amortisation	6,511	8,029	8,342	7,636	8,395	8,565	9,041	9,545
Tax paid	(2,826)	(3,226)	(3,582)	(4,203)	(4,892)	(5,425)	(6,008)	(6,848)
Change in working capital	(6,683)	(353)	(3,022)	(5,044)	(4,052)	(2,769)	(3,033)	(3,224)
Other operational CF items	6,280	(1,922)	1,877	2,924	6,834	523	(1,214)	(1,265)
Cash flow from operations	**17,867**	**23,632**	**26,112**	**27,835**	**31,059**	**26,224**	**28,321**	**31,821**
Capex	(14,130)	(10,996)	(8,824)	(5,532)	(7,974)	(6,424)	(6,882)	(7,375)
Net (acquisitions)/disposals	(2,548)	(275)	1	(350)	0	0	0	0
Other investing CF items	1,371	(630)	361	(882)	(746)	(153)	(997)	(997)
Cash flow from investing	**(15,307)**	**(11,901)**	**(8,461)**	**(6,764)**	**(8,720)**	**(6,577)**	**(7,879)**	**(8,372)**
Change in debt	23,791	(21,718)	1,868	8,852	(17,163)	13,496	0	0
Net share issues/(repurchases)	1	257	0	0	0	0	0	0
Dividends paid	(14,789)	(8,831)	(12,843)	(14,138)	(16,332)	(12,988)	(14,286)	(15,585)
Other financing CF items	(1,927)	6,380	(222)	(2,172)	(21,157)	511	417	247
Cash flow from financing	**7,077**	**(23,911)**	**(11,197)**	**(7,458)**	**(54,652)**	**1,019**	**(13,869)**	**(15,338)**
Forex effect/others	2,447	(2,600)	2,770	3,469	970	(3,852)	0	0
Change in cash	**12,084**	**(14,781)**	**9,223**	**17,082**	**(31,342)**	**16,815**	**6,573**	**8,111**
Free cash flow	3,737	12,635	17,288	22,303	23,085	19,801	21,439	24,446

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (TWDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	68,424	52,470	59,806	74,188	51,811	61,038	67,611	75,722
Inventory	19,126	15,461	18,042	21,572	23,912	25,278	26,845	28,658
Accounts receivable	38,938	38,192	44,305	46,696	50,639	49,864	53,419	57,248
Other current assets	3,520	15,767	4,349	5,376	5,791	3,901	3,901	3,901
Total current assets	**130,008**	**121,890**	**126,503**	**147,832**	**132,153**	**140,081**	**151,777**	**165,529**
Fixed assets	36,918	34,908	37,195	36,815	41,891	39,650	37,490	35,320
Goodwill & intangibles	12,097	11,733	10,858	11,706	25,425	30,749	30,749	30,749
Other non-current assets	14,172	13,357	22,741	24,080	26,806	24,434	25,648	26,913
Total assets	**193,194**	**181,889**	**197,296**	**220,433**	**226,276**	**234,914**	**245,663**	**258,511**
Short-term debt	17,599	5,037	4,562	5,801	11,110	10,648	10,648	10,648
Accounts payable	41,659	38,436	32,816	33,749	35,882	33,704	35,794	38,211
Other current liabilities	9,495	15,222	21,990	25,074	29,360	27,035	27,035	27,035
Total current liabilities	**68,753**	**58,695**	**59,368**	**64,624**	**76,352**	**71,387**	**73,476**	**75,894**
Long-term debt	24,862	16,492	18,828	26,468	3,994	17,952	17,952	17,952
Other non-current liabilities	7,093	7,298	11,306	13,672	16,377	15,285	15,285	15,285
Total liabilities	**100,708**	**82,485**	**89,501**	**104,764**	**96,723**	**104,624**	**106,713**	**109,131**
Share capital	24,034	24,212	24,375	24,375	25,975	25,975	25,975	25,975
Reserves/R.E./others	53,787	59,454	69,193	78,546	98,395	99,132	107,792	118,222
Shareholders' equity	**77,821**	**83,666**	**93,568**	**102,921**	**124,370**	**125,108**	**133,767**	**144,197**
Minority interests	14,665	15,738	14,227	12,747	5,183	5,183	5,183	5,183
Total equity & liabilities	**193,194**	**181,889**	**197,296**	**220,433**	**226,276**	**234,914**	**245,663**	**258,511**
EV	397,816	393,910	386,923	379,942	377,588	381,857	375,284	367,173
Net debt/(cash)	**(25,962)**	**(30,941)**	**(36,417)**	**(41,918)**	**(36,708)**	**(32,439)**	**(39,012)**	**(47,123)**
BVPS (TWD)	**32.379**	**34.556**	**38.386**	**42.223**	**47.880**	**48.164**	**51.498**	**55.513**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	0.4	2.2	0.7	7.7	6.7	5.2	7.1	7.2
EBITDA (YoY)	(25.7)	42.5	16.1	9.4	(5.1)	4.7	14.8	12.5
Operating profit (YoY)	(40.3)	54.6	22.3	17.0	(10.2)	5.8	18.4	14.9
Net profit (YoY)	(41.2)	37.0	9.6	17.3	(9.6)	3.9	18.6	14.0
Core EPS (fully-diluted) (YoY)	(41.4)	36.0	8.9	17.3	(15.2)	3.9	18.6	14.0
Gross-profit margin	19.1	23.5	25.4	27.0	27.2	28.2	28.8	29.1
EBITDA margin	9.8	13.6	15.7	16.0	14.2	14.1	15.1	15.9
Operating-profit margin	6.0	9.1	11.0	12.0	10.1	10.1	11.2	12.0
Net profit margin	6.8	9.2	10.0	10.9	9.2	9.1	10.1	10.7
ROAE	15.3	20.0	19.9	21.1	16.5	15.6	17.8	18.9
ROAA	6.6	8.6	9.3	9.9	8.4	8.4	9.6	10.4
ROCE	8.5	12.5	15.5	16.4	14.0	14.3	15.7	17.1
ROIC	14.9	20.0	23.5	26.5	19.7	17.9	20.7	23.2
Net debt to equity	net cash	net cash	net cash	net cash	net cash	net cash	net cash	net cash
Effective tax rate	19.4	15.3	15.9	15.8	19.7	21.4	20.3	20.4
Accounts receivable (days)	78.4	80.1	85.0	87.1	87.3	85.7	82.2	82.2
Current ratio (x)	1.9	2.1	2.1	2.3	1.7	2.0	2.1	2.2
Net interest cover (x)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Net dividend payout	73.9	75.1	79.7	80.1	78.9	69.4	73.5	67.6
Free cash flow yield	0.9	3.1	4.2	5.5	5.6	4.8	5.2	6.0

Source: FactSet, Daiwa forecasts

Company profile

Founded in 1971, Delta Electronics has been the global leader in switching power supply solutions since 2002 and DC brushless fans since 2006. Its business covers 3 key areas: power electronics (eg, power supplies, thermal management products and passive components), energy management (eg, industrial automation, datacentre power solutions and electric vehicle charging systems), and smart green life (eg, smart grid, networking and display products).

Delta: revenue and earnings forecasts – Daiwa vs. the market

	2016E		2017E		2018E	
(TWDm)	Daiwa	Consensus	Daiwa	Consensus	Daiwa	Consensus
Revenue	214,120	214,717	229,387	228,195	245,828	246,701
Diff (%)		-0.3%		0.5%		-0.4%
Gross Margin (%)	28.2%	28.0%	28.8%	28.4%	29.1%	28.6%
Operating profit	21,679	21,557	25,677	24,704	29,502	28,486
Op Margin (%)	10.1%	10.0%	11.2%	10.8%	12.0%	11.5%
Net profit	19,444	19,728	23,070	22,496	26,295	24,956
EPS (TWD)	7.49	7.59	8.88	8.66	10.12	9.61
Diff (%)		-1.4%		2.6%		5.4%

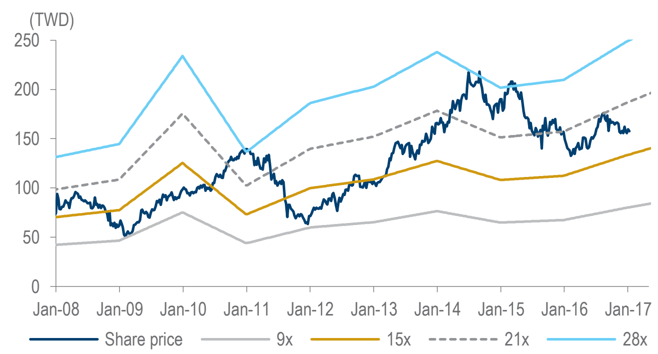
Source: Bloomberg, Daiwa forecasts

Delta: quarterly and annual P&L statement

	2016E				2017E						
(TWDm)	1Q	2Q	3Q	4QE	1QE	2QE	3QE	4QE	2015	2016E	2017E
Net revenue	**47,607**	**52,666**	**57,068**	**56,779**	**50,120**	**55,513**	**62,006**	**61,748**	**203,452**	**214,120**	**229,387**
COGS	(34,781)	(37,893)	(40,716)	(40,388)	(35,965)	(39,705)	(43,975)	(43,664)	(148,083)	(153,777)	(163,310)
Gross profit	**12,827**	**14,773**	**16,352**	**16,391**	**14,155**	**15,808**	**18,031**	**18,084**	**55,369**	**60,344**	**66,077**
Operating expenses	(8,957)	(9,570)	(9,974)	(10,163)	(9,172)	(9,881)	(10,603)	(10,744)	(34,870)	(38,665)	(40,400)
Operating profit	**3,869**	**5,203**	**6,378**	**6,228**	**4,983**	**5,926**	**7,428**	**7,340**	**20,499**	**21,679**	**25,677**
Non-operating profit	1,366	638	776	872	1,037	805	1,065	951	4,276	3,652	3,858
Pretax profit	**5,235**	**5,841**	**7,154**	**7,100**	**6,020**	**6,732**	**8,493**	**8,290**	**24,775**	**25,331**	**29,534**
Income taxes	(1,189)	(1,475)	(1,377)	(1,384)	(1,204)	(1,616)	(1,614)	(1,575)	(4,892)	(5,425)	(6,008)
Net profit	**3,887**	**4,293**	**5,666**	**5,598**	**4,698**	**5,009**	**6,764**	**6,599**	**18,715**	**19,444**	**23,070**
Net EPS (TWD)	**1.50**	**1.65**	**2.18**	**2.16**	**1.81**	**1.93**	**2.60**	**2.54**	**7.20**	**7.49**	**8.88**
Operating Ratios											
Gross margin	26.9%	28.1%	28.7%	28.9%	28.2%	28.5%	29.1%	29.3%	27.2%	28.2%	28.8%
Operating margin	8.1%	9.9%	11.2%	11.0%	9.9%	10.7%	12.0%	11.9%	10.1%	10.1%	11.2%
Pre-tax margin	11.0%	11.1%	12.5%	12.5%	12.0%	12.1%	13.7%	13.4%	12.2%	11.8%	12.9%
Net margin	8.2%	8.2%	9.9%	9.9%	9.4%	9.0%	10.9%	10.7%	9.2%	9.1%	10.1%
YoY (%)											
Net revenue	10%	8%	2%	2%	5%	5%	9%	9%	7%	5%	7%
Gross profit	9%	7%	1%	0%	3%	5%	8%	8%	8%	9%	10%
Operating profit	14%	12%	4%	8%	10%	7%	10%	10%	-10%	6%	18%
Pretax profit	3%	6%	-6%	8%	15%	15%	19%	17%	-7%	2%	17%
Net profit	1%	13%	-4%	9%	21%	17%	19%	18%	-10%	4%	19%
QoQ (%)											
Net revenue	-14%	11%	8%	-1%	-12%	11%	12%	0%			
Gross profit	-16%	15%	11%	0%	-14%	12%	14%	0%			
Operating profit	-28%	34%	23%	-2%	-20%	19%	25%	-1%			
Pretax profit	-20%	12%	22%	-1%	-15%	12%	26%	-2%			
Net profit	-25%	10%	32%	-1%	-16%	7%	35%	-2%			

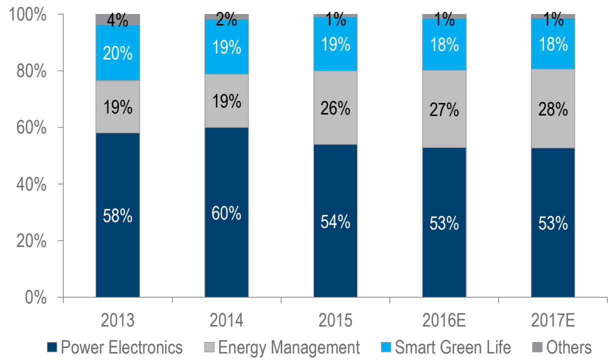
Source: Company, Daiwa forecasts

Delta: 1-year-forward PER bands



Source: TEJ, Daiwa forecasts

Delta: revenue breakdown by product



Source: Company, Daiwa forecasts

Taiwan | Information Technology | 6 January 2017

Daiwa Capital Markets

Taiwan Semiconductor Manufacturing (2330 TT)

Target price: **TWD215.00** (from TWD215.00)

Share price (4 Jan): **TWD183.00** | Up/downside: **+17.4%**

5 4 3 2 **1**

Buy
(unchanged)

Becoming the brain for all smart devices

- Dominance in high-performance computation in the next demand cycle
- 4Q16 business intact; 1Q17 likely counter-seasonal
- Dividends should compensate for transitional slowdown; Buy (1)

Rick Hsu
(886) 2 8758 6261
rick.hsu@daiwacm-cathay.com.tw

Martin Lee
(886) 2 8758 6262
martin.lee@daiwacm-cathay.com.tw

What's new: We expect TSMC to be a major beneficiary of the rising demand for high-performance computational technology across the growth themes we have flagged in the accompanying sector report, due to its dominance in advanced semiconductor technology and in pushing the envelope of "more for Moore". Although it may take time for the advanced processor segment to ramp up revenue contributions beyond its mobile segment given TSMC's scale, we expect TSMC to constantly raise its dividend to compensate for the likely growth slowdown in 2018. Hence, we reaffirm our Buy (1) rating and 12-month TP of TWD215.

What's the impact: **"More for Moore" for multiple themes.** TSMC is one of our top picks in the multiple-theme category (*see accompanying sector report*) as we believe its market-leading position will help it gain business across multiple segments that demand high-performance processors to facilitate deep-/self-learning machines, such as datacentres, advanced driver assistance systems (ADAS) and IIoT, in addition to its advances in mobile processors. Demand has been strong for advanced nodes, despite the low season (see ***Enjoy the party first***, 2 December 2016), and we are optimistic that its 10/7nm ramp-up will push the envelope of "more for Moore", ie, more demand for the continuation of Moore's Law.

Business transformation. TSMC has capitalised on the MCD cycle to resume earnings growth, enhance structural profitability and become a global tech leader. It aims to capitalise on the next BigData/IoT cycle by leveraging its tech advantages, and to dominate the high-performance computation (HPC) segment. While earnings growth may slow in 2018 as the transition in market demand will likely take time to complete, we forecast that by 2020, MCD will contribute c.40% of its revenue (currently over 50%), while ADAS/auto and datacentre/IoT applications account for most of the rest. Management stated on its 3Q16 earnings call that mobile applications will contribute half of the incremental revenue in the next few years, followed by HPC and auto/IoT, each accounting for around half of the remaining revenue.

Near-term preview outlook. While our 4Q16 forecasts are broadly in line with the consensus, we expect 1Q17 revenue guidance to exceed normal seasonality.

What we recommend: We reiterate our Buy (1) rating and 12-month TP of TWD215 based on an ROE-adjusted PBR of 3.5x applied to 2017E BVPS. Risk: sell-through failing to match sell-in, leading to inventory overbuild.

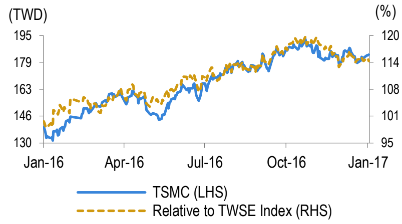
How we differ: We are more bullish than the street on 2017E EPS, given our positive assumptions on TSMC's advanced tech ramp-up.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	131.50-193.00
Market cap (USDbn)	147.21
3m avg daily turnover (USDm)	147.49
Shares outstanding (m)	25,930
Major shareholder	National Development Fund (6.4%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	943,620	1,051,629	1,111,566
Operating profit (m)	374,962	439,155	454,578
Net profit (m)	330,940	383,676	398,143
Core EPS (fully-diluted)	12.763	14.797	15.355
EPS change (%)	7.9	15.9	3.8
Daiwa vs Cons. EPS (%)	0.5	7.2	0.1
PER (x)	14.3	12.4	11.9
Dividend yield (%)	3.3	3.8	4.1
DPS	6.0	7.0	7.5
PBR (x)	3.4	3.0	2.6
EV/EBITDA (x)	7.2	6.1	5.8
ROE (%)	25.3	25.6	23.4

Source: FactSet, Daiwa forecasts

Company

Daiwa Capital Markets

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Wafer Shipment Utilization (%)	95	93	94	100	94	95	97	101
Blended ASP (USD)	1,135	1,204	1,269	1,340	1,339	1,339	1,330	1,281
Wafer Shipment (8" equ., '000)	12,549	14,045	15,666	18,591	19,717	21,652	24,412	26,785

Profit and loss (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Wafer Foundry Revenue	418,244	500,324	590,144	754,708	836,983	932,843	1,029,259	1,087,921
Sub & Other Revenue	8,836	5,924	6,880	8,099	6,514	10,777	22,370	23,645
Other Revenue	0	0	0	0	0	0	0	0
Total Revenue	**427,081**	**506,249**	**597,024**	**762,806**	**843,497**	**943,620**	**1,051,629**	**1,111,566**
Other income	0	0	0	0	0	0	0	0
COGS	(233,011)	(262,654)	(316,079)	(385,072)	(433,102)	(472,550)	(503,909)	(543,113)
SG&A	(18,682)	(22,136)	(23,398)	(25,020)	(24,803)	(25,518)	(29,693)	(30,508)
Other op.expenses	(33,830)	(40,402)	(48,118)	(56,824)	(65,545)	(70,590)	(78,872)	(83,367)
Operating profit	**141,557**	**181,057**	**209,429**	**295,890**	**320,048**	**374,962**	**439,155**	**454,578**
Net-interest inc./(exp.)	852	625	(811)	(506)	939	2,470	3,220	4,425
Assoc/forex/extraord./others	2,737	(128)	6,869	6,713	29,442	5,471	4,279	4,493
Pre-tax profit	**145,147**	**181,554**	**215,487**	**302,098**	**350,429**	**382,903**	**446,654**	**463,496**
Tax	(10,694)	(15,590)	(27,468)	(38,317)	(43,873)	(51,791)	(62,532)	(64,889)
Min. int./pref. div./others	(252)	195	128	118	18	(172)	(447)	(463)
Net profit (reported)	**134,201**	**166,159**	**188,147**	**263,899**	**306,574**	**330,940**	**383,676**	**398,143**
Net profit (adjusted)	**134,201**	**166,159**	**188,147**	**263,899**	**306,574**	**330,940**	**383,676**	**398,143**
EPS (reported)(TWD)	**5.179**	**6.410**	**7.257**	**10.178**	**11.823**	**12.763**	**14.797**	**15.355**
EPS (adjusted)(TWD)	**5.179**	**6.410**	**7.257**	**10.178**	**11.823**	**12.763**	**14.797**	**15.355**
EPS (adjusted fully-diluted)(TWD)	**5.178**	**6.409**	**7.256**	**10.177**	**11.823**	**12.763**	**14.797**	**15.355**
DPS (TWD)	**2.999**	**2.999**	**3.000**	**3.000**	**4.500**	**6.000**	**7.000**	**7.500**
EBIT	**141,557**	**181,057**	**209,429**	**295,890**	**320,048**	**374,962**	**439,155**	**454,578**
EBITDA	**249,240**	**312,407**	**365,612**	**496,143**	**542,554**	**609,378**	**695,746**	**731,324**

Cash flow (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	145,147	181,554	215,487	302,098	350,429	382,903	446,654	463,496
Depreciation and amortisation	107,682	131,349	156,182	200,252	222,506	234,416	256,591	276,747
Tax paid	(10,694)	(15,590)	(27,468)	(38,317)	(43,873)	(51,791)	(62,532)	(64,889)
Change in working capital	4,488	(20,755)	(18,393)	(64,937)	25,123	(38,000)	9,000	(30,500)
Other operational CF items	964	12,506	21,575	22,428	(24,306)	(3,636)	(4,084)	(4,283)
Cash flow from operations	**247,587**	**289,064**	**347,384**	**421,524**	**529,879**	**523,891**	**645,629**	**640,570**
Capex	(213,963)	(246,137)	(287,595)	(288,540)	(257,517)	(323,388)	(359,795)	(396,250)
Net (acquisitions)/disposals	28,244	(27,553)	5,644	4,069	49,874	(1,526)	0	0
Other investing CF items	3,196	494	897	2,050	(9,603)	0	0	0
Cash flow from investing	**(182,523)**	**(273,196)**	**(281,054)**	**(282,421)**	**(217,246)**	**(324,915)**	**(359,795)**	**(396,250)**
Change in debt	9,435	63,571	109,388	26	(810)	(23,518)	(97,999)	(86,000)
Net share issues/(repurchases)	0	0	0	0	0	0	0	0
Dividends paid	(77,730)	(77,749)	(77,773)	(77,786)	(116,683)	(155,580)	(181,510)	(194,475)
Other financing CF items	(1,183)	367	491	33,978	5,702	0	0	0
Cash flow from financing	**(69,478)**	**(13,811)**	**32,106**	**(43,782)**	**(111,791)**	**(179,098)**	**(279,509)**	**(280,475)**
Forex effect/others	0	(2,118)	850	0	0	0	0	0
Change in cash	**(4,415)**	**(62)**	**99,285**	**95,322**	**200,843**	**19,879**	**6,325**	**(36,154)**
Free cash flow	33,624	42,926	59,789	132,984	272,363	200,503	285,834	244,320

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (TWDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	150,622	150,918	245,343	437,006	586,163	607,568	613,893	577,738
Inventory	24,841	37,830	37,495	66,338	67,052	62,052	75,052	74,552
Accounts receivable	40,948	52,093	71,942	115,048	85,565	135,565	110,565	148,565
Other current assets	8,850	11,447	3,708	8,175	7,964	8,200	8,500	8,500
Total current assets	**225,260**	**252,289**	**358,487**	**626,567**	**746,744**	**813,385**	**808,010**	**809,356**
Fixed assets	490,375	617,529	792,666	818,199	853,470	948,714	1,062,237	1,195,520
Goodwill & intangibles	24,171	19,430	22,719	20,227	22,310	22,500	22,100	21,000
Other non-current assets	34,459	65,786	89,184	30,056	34,994	34,994	34,994	34,994
Total assets	**774,265**	**955,035**	**1,263,055**	**1,495,049**	**1,657,518**	**1,819,594**	**1,927,341**	**2,060,870**
Short-term debt	33,889	35,757	15,645	36,159	62,992	87,473	75,474	39,474
Accounts payable	11,859	15,239	16,359	23,370	19,725	26,725	23,725	30,725
Other current liabilities	71,259	91,440	157,774	141,485	129,512	132,080	138,333	146,122
Total current liabilities	**117,007**	**142,436**	**189,778**	**201,014**	**212,229**	**246,279**	**237,532**	**216,322**
Long-term debt	20,458	82,161	211,584	214,516	191,998	143,998	57,999	7,999
Other non-current liabilities	4,756	4,683	13,918	33,191	30,658	30,000	30,000	30,100
Total liabilities	**142,221**	**229,281**	**415,280**	**448,721**	**434,884**	**420,277**	**325,531**	**254,420**
Share capital	259,162	259,244	259,286	259,297	259,304	259,304	259,304	259,304
Reserves/R.E./others	370,431	463,953	588,222	786,904	962,368	1,138,878	1,340,925	1,545,101
Shareholders' equity	**629,594**	**723,198**	**847,508**	**1,046,201**	**1,221,672**	**1,398,182**	**1,600,229**	**1,804,404**
Minority interests	2,450	2,556	267	127	963	1,135	1,582	2,045
Total equity & liabilities	**774,265**	**955,035**	**1,263,055**	**1,495,049**	**1,657,518**	**1,819,594**	**1,927,341**	**2,060,870**
EV	4,651,365	4,714,746	4,727,343	4,558,986	4,414,979	4,370,229	4,266,351	4,216,969
Net debt/(cash)	**(96,275)**	**(33,000)**	**(18,114)**	**(186,331)**	**(331,173)**	**(376,096)**	**(480,420)**	**(530,266)**
BVPS (TWD)	**24.295**	**27.897**	**32.686**	**40.348**	**47.114**	**53.921**	**61.713**	**69.588**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	1.8	18.5	17.9	27.8	10.6	11.9	11.4	5.7
EBITDA (YoY)	0.9	25.3	17.0	35.7	9.4	12.3	14.2	5.1
Operating profit (YoY)	(11.1)	27.9	15.7	41.3	8.2	17.2	17.1	3.5
Net profit (YoY)	(17.0)	23.8	13.2	40.3	16.2	7.9	15.9	3.8
Core EPS (fully-diluted) (YoY)	(17.0)	23.8	13.2	40.3	16.2	7.9	15.9	3.8
Gross-profit margin	45.4	48.1	47.1	49.5	48.7	49.9	52.1	51.1
EBITDA margin	58.4	61.7	61.2	65.0	64.3	64.6	66.2	65.8
Operating-profit margin	33.1	35.8	35.1	38.8	37.9	39.7	41.8	40.9
Net profit margin	31.4	32.8	31.5	34.6	36.3	35.1	36.5	35.8
ROAE	22.3	24.6	24.0	27.9	27.0	25.3	25.6	23.4
ROAA	18.0	19.2	17.0	19.1	19.4	19.0	20.5	20.0
ROCE	21.6	23.7	21.8	24.9	23.1	24.1	26.1	25.3
ROIC	26.8	26.9	24.0	30.6	32.0	33.9	35.2	32.6
Net debt to equity	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Effective tax rate	7.4	8.6	12.7	12.7	12.5	13.5	14.0	14.0
Accounts receivable (days)	35.9	33.5	37.9	44.7	43.4	42.8	42.7	42.5
Current ratio (x)	1.9	1.8	1.9	3.1	3.5	3.3	3.4	3.7
Net interest cover (x)	n.a.	n.a.	258.3	585.1	n.a.	n.a.	n.a.	n.a.
Net dividend payout	57.9	46.8	41.3	29.5	38.1	47.0	47.3	48.8
Free cash flow yield	0.7	0.9	1.3	2.8	5.7	4.2	6.0	5.1

Source: FactSet, Daiwa forecasts

Company profile

Incorporated in Taiwan in 1987, Taiwan Semiconductor Manufacturing Co. (TSMC) is the world's largest semiconductor foundry in revenue terms. TSMC offers foundry services such as wafer masking, fabrication, probing and testing, to a high variety of customers including fabless chipmakers and IDMs. Its manufacturing fabs are located in Taiwan, China, the US and Singapore.

TSMC: quarterly P&L forecasts

TWDbn	1Q16	2Q16	3Q16	4Q16E	1Q17E	2Q17E	3Q17E	4Q17E	2015	2016E	2017E	2018E
Total revenue	203	222	260	258	248	268	275	261	843	944	1,052	1,112
COGS	-112	-107	-128	-125	-122	-127	-129	-127	-433	-473	-504	-543
Gross profit	91	114	132	133	126	142	146	134	410	471	548	568
Opex	-21	-23	-26	-26	-26	-28	-28	-27	-90	-96	-109	-114
Operating profit	70	91	106	107	100	114	118	107	320	375	439	455
EBITDA	126	147	163	174	164	178	182	172	543	609	696	731
Pretax profit	72	93	108	109	101	116	120	109	350	383	447	463
Income taxes	-7	-21	-11	-12	-14	-16	-17	-15	-44	-52	-63	-65
Net profit	**65**	**73**	**97**	**97**	**87**	**100**	**103**	**94**	**307**	**331**	**384**	**398**
FD O/S (m)	26	26	26	26	26	26	26	26	26	26	26	26
FD EPS (TWD)	**2.50**	**2.80**	**3.73**	**3.74**	**3.36**	**3.84**	**3.97**	**3.63**	**11.82**	**12.76**	**14.80**	**15.35**
Margin												
Gross	45%	52%	51%	52%	51%	53%	53%	51%	49%	50%	52%	51%
Operating	35%	41%	41%	41%	40%	42%	43%	41%	38%	40%	42%	41%
EBITDA	62%	66%	62%	67%	66%	66%	66%	66%	64%	65%	66%	66%
Net	32%	33%	37%	38%	35%	37%	37%	36%	36%	35%	36%	36%
Growth (QoQ)												
Total revenue	0%	9%	17%	-1%	-4%	8%	2%	-5%				
Gross profit	-8%	25%	15%	1%	-6%	13%	3%	-9%				
Operating profit	-10%	30%	16%	1%	-7%	14%	4%	-9%				
EBITDA	-6%	16%	11%	7%	-6%	9%	2%	-6%				
Net profit	-11%	12%	33%	0%	-10%	14%	4%	-9%				
FD EPS	**-11%**	**12%**	**33%**	**0%**	**-10%**	**14%**	**4%**	**-9%**				
Growth (YoY)												
Total revenue	-8%	8%	23%	27%	22%	21%	6%	1%	11%	12%	11%	6%
Gross profit	-17%	15%	29%	35%	38%	24%	11%	0%	9%	15%	16%	4%
Operating profit	-19%	18%	36%	37%	42%	25%	11%	0%	8%	17%	17%	4%
EBITDA	-11%	11%	21%	30%	30%	21%	12%	-1%	9%	12%	14%	5%
Net profit	-18%	-9%	28%	33%	34%	37%	7%	-3%	16%	8%	16%	4%
FD EPS	**-18%**	**-9%**	**28%**	**33%**	**34%**	**37%**	**7%**	**-3%**	**16%**	**8%**	**16%**	**4%**

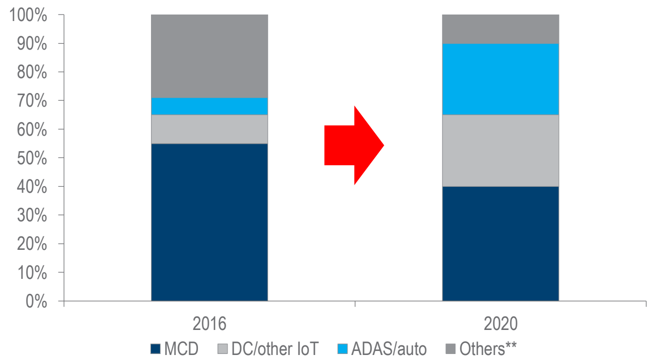
Source: Company, Daiwa forecasts

TSMC: 4Q16 preview and 1Q17 outlook

	4Q16E			1Q17E		
TWDm	**Daiwa**	**Consensus**	**Variance**	**Daiwa**	**Consensus**	**Variance**
Revenue	257,909	257,128	0%	247,677	237,946	4%
Gross profit	133,347			125,620		
Operating profit	106,911			99,862		
Pretax profit	108,991			101,345		
Net profit	96,893	95,502	1%	87,055	83,404	4%
Adjusted EPS (TWD)	3.74	3.68	1%	3.36	3.22	4%
Margin						
Gross	51.7%			50.7%		
Operating	41.5%			40.3%		
Net	37.6%			35.1%		
Operation						
Shipment ('000, 12" equ.wafers)	2,632			2,540		
Utilization*	98%			95%		
20/16nm sales contribution	30%			32%		

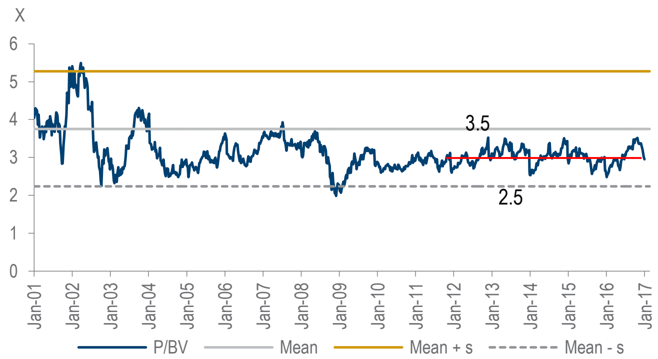
Source: Bloomberg, Daiwa forecasts
*Note: * Calculated as wafer shipment / capacity*

TSMC: long-term revenue mix*



Source: Daiwa forecasts
*Note: * MCD: mobile computing device, DC: datacentre, ADAS: advanced driver assistance systems, IoT: Internet of things; ** Others include communication, consumer and gaming*

TSMC: PBR



Source: Company, TEJ, Daiwa forecasts

Daiwa Capital Markets

Advanced Semicon Eng (2311 TT)

Target price: **TWD45.00** (from TWD45.00)

Share price (4 Jan): **TWD32.80** | Up/downside: **+37.1%**

5 4 3 2 **1**

Buy
(unchanged)

Multi-theme beneficiary with HoldCo adding to upside

- ASE should be a multi-theme beneficiary with its OSAT leadership
- We expect the HoldCo deal to go through, adding to business upside
- ASE remains our preferred OSAT pick; reiterating Buy (1) call

Rick Hsu
(886) 2 8758 6261
rick.hsu@daiwacm-cathay.com.tw

Martin Lee
(886) 2 8758 6262
martin.lee@daiwacm-cathay.com.tw

What's new: Like TSMC, we believe ASE should benefit from multiple exposures to the growth themes we highlight in the accompanying sector report, given its global leadership in the outsourced semiconductor assembly and test (OSAT) industry and in the semiconductor contract manufacture (SCM) food chain. We expect the HoldCo deal, which aims to integrate ASE and SPIL's operations, to go through and lift ASE's structural profitability and valuation on the back of its highly leveraged financial re-engineering. ASE remains our preferred OSAT pick.

What's the impact: Benefiting from its strategic position. We categorise ASE as a "multiple-theme" beneficiary as we believe it will benefit in a similar way to TSMC from the rising demand for high-performance processors and a variety of advanced sensors, in addition to fibre-optics solutions, by offering both advanced and specialty packaging and testing and EMS services to convert these products from wafer form to chip or system-in-package (SiP) form.

HoldCo adds to upside potential. Despite ASE's leadership in the global OSAT space, the HoldCo deal, if successful, would increase the new entity's market share to nearly 30% (by 2016E revenue), far above those of major peers (Amkor: c.15%, JCET: c.12%), adding to its margins and ROE, and potentially supporting a rerating. This is due to the potential cost savings and synergies from a successful integration, as the OSAT business is material-intensive where economies of scale are crucial, in our opinion.

Funding plans for HoldCo. On 9 December, ASE announced a funding plan including a 300m-share rights issue (3.8% of current shares outstanding) and up to TWD8bn in corporate bonds, with plans to raise a total of up to TWD18bn (c. USD570m) in cash. We believe this is part of its ongoing plan to finance the HoldCo deal, as we forecast a likely external funding gap of TWD45bn given the deal would be a highly leveraged buyout (LBO) potentially increasing the new ASE's net gearing to 100% (see ***HoldCo report***, 15 July 2016).

What we recommend: ASE remains our preferred OSAT pick. We reiterate our Buy (1) call with an unchanged 12-month TP of TWD45 based on a 1.9x ROE-adjusted PBR. We attribute the subdued share performance in 2016 to market concerns over the pending HoldCo deal, but we expect the deal to go through in 2017 and ease the concerns. Key risks to our call: the deal failing to materialise and/or smartphone inventory glut in 1H17.

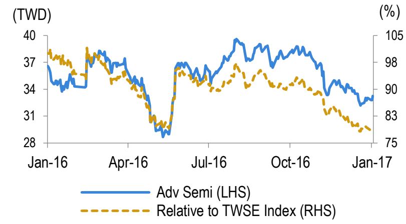
How we differ: We are above the consensus on 2017-18E EPS, likely due to our higher EMS margin assumptions.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	28.65-39.60
Market cap (USDbn)	8.36
3m avg daily turnover (USDm)	12.03
Shares outstanding (m)	8,220
Major shareholder	ASE Enterprises Ltd. (16.8%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	273,566	313,936	367,829
Operating profit (m)	26,742	30,978	36,778
Net profit (m)	21,217	25,449	30,059
Core EPS (fully-diluted)	2.581	3.096	3.657
EPS change (%)	8.9	19.9	18.1
Daiwa vs Cons. EPS (%)	4.6	8.9	14.9
PER (x)	12.7	10.6	9.0
Dividend yield (%)	6.1	4.9	6.1
DPS	2.0	1.6	2.0
PBR (x)	1.5	1.4	1.3
EV/EBITDA (x)	6.1	5.6	4.9
ROE (%)	12.6	13.7	15.1

Source: FactSet, Daiwa forecasts

Company

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Packaging uilization (%)	88.2	82.5	83.2	82.5	73.7	79.3	85.6	91.6
Testing utilization (%)	79.7	81.6	79.5	80.7	75.5	75.7	80.1	86.1
FC & bumping utilization (%)	94.3	90.4	85.3	84.8	79.1	80.2	89.7	97.3

Profit and loss (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Packaging revenue	102,719	104,392	112,604	121,337	116,607	123,943	138,557	156,736
Testing revenue	21,946	22,657	24,732	25,875	25,193	26,687	30,050	34,224
Other Revenue	60,682	66,923	82,526	109,379	141,502	122,936	145,329	176,869
Total Revenue	**185,347**	**193,972**	**219,862**	**256,591**	**283,303**	**273,566**	**313,936**	**367,829**
Other income	0	0	0	0	0	0	0	0
COGS	(150,337)	(157,348)	(177,049)	(203,052)	(233,167)	(220,835)	(254,518)	(297,831)
SG&A	(11,070)	(10,988)	(11,700)	(13,673)	(14,313)	(14,656)	(15,883)	(18,507)
Other op.expenses	(7,118)	(7,874)	(9,069)	(10,295)	(10,938)	(11,333)	(12,557)	(14,713)
Operating profit	**16,823**	**17,762**	**22,044**	**29,571**	**24,885**	**26,742**	**30,978**	**36,778**
Net-interest inc./(exp.)	(1,336)	(1,682)	(2,095)	(2,111)	(2,071)	(1,973)	(1,822)	(1,598)
Assoc/forex/extraord./others	1,512	511	(593)	1,013	2,474	2,930	3,681	3,858
Pre-tax profit	**16,999**	**16,591**	**19,356**	**28,474**	**25,288**	**27,699**	**32,837**	**39,038**
Tax	(3,018)	(3,042)	(3,202)	(4,252)	(4,839)	(5,382)	(6,403)	(7,808)
Min. int./pref. div./others	(253)	(458)	(466)	(629)	(970)	(1,100)	(985)	(1,171)
Net profit (reported)	**13,727**	**13,092**	**15,689**	**23,593**	**19,478**	**21,217**	**25,449**	**30,059**
Net profit (adjusted)	**13,727**	**13,092**	**15,689**	**23,593**	**19,478**	**21,217**	**25,449**	**30,059**
EPS (reported)(TWD)	**2.082**	**1.758**	**2.089**	**3.069**	**2.370**	**2.581**	**3.096**	**3.657**
EPS (adjusted)(TWD)	**2.082**	**1.758**	**2.089**	**3.069**	**2.370**	**2.581**	**3.096**	**3.657**
EPS (adjusted fully-diluted)(TWD)	**1.783**	**1.724**	**2.023**	**2.887**	**2.370**	**2.581**	**3.096**	**3.657**
DPS (TWD)	**0.585**	**0.570**	**1.043**	**1.296**	**1.861**	**2.000**	**1.600**	**2.000**
EBIT	**16,823**	**17,762**	**22,044**	**29,571**	**24,885**	**26,742**	**30,978**	**36,778**
EBITDA	**39,767**	**41,176**	**47,515**	**55,922**	**54,403**	**54,949**	**60,836**	**67,812**

Cash flow (TWDm)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	16,999	16,591	19,356	28,474	25,288	27,699	32,837	39,038
Depreciation and amortisation	22,945	23,414	25,471	26,350	29,519	28,207	29,859	31,034
Tax paid	(3,018)	(3,042)	(3,202)	(4,252)	(4,839)	(5,382)	(6,403)	(7,808)
Change in working capital	(7,065)	(5,705)	(4,058)	(12,542)	1,894	4,000	(19,000)	(5,500)
Other operational CF items	2,077	(2,241)	3,729	8,380	6,267	900	1,015	829
Cash flow from operations	**31,937**	**29,018**	**41,296**	**46,411**	**58,128**	**55,424**	**38,307**	**57,593**
Capex	(29,418)	(39,301)	(29,143)	(39,599)	(30,280)	(24,364)	(26,230)	(29,760)
Net (acquisitions)/disposals	(1,819)	(294)	(471)	1,610	(32,845)	(13,432)	0	0
Other investing CF items	(794)	(500)	(312)	(829)	(227)	0	0	0
Cash flow from investing	**(32,031)**	**(40,094)**	**(29,926)**	**(38,818)**	**(63,351)**	**(37,796)**	**(26,230)**	**(29,760)**
Change in debt	7,010	7,969	18,383	73	17,616	(16,743)	(13,247)	(12,397)
Net share issues/(repurchases)	0	0	3,393	0	0	0	0	0
Dividends paid	(3,858)	(4,242)	(7,835)	(9,967)	(15,297)	(16,440)	(13,152)	(16,440)
Other financing CF items	(2,034)	3,193	(551)	13,687	5,098	0	0	0
Cash flow from financing	**1,118**	**6,920**	**13,391**	**3,793**	**7,416**	**(33,183)**	**(26,399)**	**(28,837)**
Forex effect/others	0	0	0	0	0	0	0	0
Change in cash	**1,024**	**(4,156)**	**24,761**	**11,386**	**2,193**	**(15,555)**	**(14,322)**	**(1,005)**
Free cash flow	2,519	(10,283)	12,153	6,812	27,848	31,060	12,077	27,833

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (TWDm)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	25,268	24,436	50,168	58,217	59,115	52,696	38,374	37,370
Inventory	30,070	32,073	34,870	44,149	48,971	38,971	60,971	56,471
Accounts receivable	30,476	37,213	43,236	52,921	44,932	48,932	58,932	68,932
Other current assets	4,317	4,321	3,903	4,668	3,714	4,500	4,000	4,000
Total current assets	**90,132**	**98,042**	**132,176**	**159,955**	**156,733**	**145,099**	**162,278**	**166,773**
Fixed assets	111,779	126,150	131,497	151,587	149,997	154,941	154,685	156,036
Goodwill & intangibles	19,747	19,946	20,784	19,996	21,135	21,600	20,300	19,800
Other non-current assets	2,221	2,366	2,357	2,434	37,423	50,719	50,719	50,719
Total assets	**223,878**	**246,504**	**286,814**	**333,971**	**365,288**	**372,360**	**387,981**	**393,328**
Short-term debt	26,426	40,099	50,626	44,007	49,379	45,882	45,033	42,553
Accounts payable	21,192	24,227	28,989	35,411	34,139	32,139	45,139	45,139
Other current liabilities	19,144	20,378	21,220	31,781	36,985	31,359	32,820	34,491
Total current liabilities	**66,762**	**84,703**	**100,835**	**111,199**	**120,502**	**109,380**	**122,991**	**122,183**
Long-term debt	50,167	44,592	51,057	55,375	66,234	61,987	49,590	39,672
Other non-current liabilities	4,667	4,750	7,756	8,961	10,132	8,800	9,900	11,000
Total liabilities	**121,596**	**134,045**	**159,649**	**175,535**	**196,868**	**180,167**	**182,481**	**172,854**
Share capital	67,536	75,941	77,560	78,525	79,029	79,029	79,029	79,029
Reserves/R.E./others	33,634	33,573	45,461	71,692	77,887	100,559	112,882	126,685
Shareholders' equity	**101,170**	**109,515**	**123,021**	**150,217**	**156,916**	**179,589**	**191,912**	**205,714**
Minority interests	1,113	2,944	4,144	8,219	11,504	12,604	13,589	14,760
Total equity & liabilities	**223,878**	**246,504**	**286,814**	**333,971**	**365,288**	**372,360**	**387,981**	**393,328**
EV	322,054	332,815	325,276	319,000	337,617	337,393	339,453	329,231
Net debt/(cash)	**51,325**	**60,254**	**51,516**	**41,165**	**56,497**	**55,173**	**56,248**	**44,855**
BVPS (TWD)	**14.980**	**14.421**	**15.861**	**18.382**	**19.090**	**21.848**	**23.347**	**25.026**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	(1.8)	4.7	13.3	16.7	10.4	(3.4)	14.8	17.2
EBITDA (YoY)	(9.5)	3.5	15.4	17.7	(2.7)	1.0	10.7	11.5
Operating profit (YoY)	(30.2)	5.6	24.1	34.1	(15.8)	7.5	15.8	18.7
Net profit (YoY)	(25.1)	(4.6)	19.8	50.4	(17.4)	8.9	19.9	18.1
Core EPS (fully-diluted) (YoY)	(25.2)	(3.3)	17.3	42.7	(17.9)	8.9	19.9	18.1
Gross-profit margin	18.9	18.9	19.5	20.9	17.7	19.3	18.9	19.0
EBITDA margin	21.5	21.2	21.6	21.8	19.2	20.1	19.4	18.4
Operating-profit margin	9.1	9.2	10.0	11.5	8.8	9.8	9.9	10.0
Net profit margin	7.4	6.7	7.1	9.2	6.9	7.8	8.1	8.2
ROAE	14.5	12.4	13.5	17.3	12.7	12.6	13.7	15.1
ROAA	6.4	5.6	5.9	7.6	5.6	5.8	6.7	7.7
ROCE	9.9	9.4	10.3	12.2	9.2	9.2	10.3	12.2
ROIC	9.5	8.9	10.5	13.3	9.5	9.1	9.8	11.2
Net debt to equity	50.7	55.0	41.9	27.4	36.0	30.7	29.3	21.8
Effective tax rate	17.8	18.3	16.5	14.9	19.1	19.4	19.5	20.0
Accounts receivable (days)	62.9	63.7	66.8	68.4	63.0	62.6	62.7	63.4
Current ratio (x)	1.4	1.2	1.3	1.4	1.3	1.3	1.3	1.4
Net interest cover (x)	12.6	10.6	10.5	14.0	12.0	13.6	17.0	23.0
Net dividend payout	28.1	32.4	49.9	42.2	78.5	77.5	51.7	54.7
Free cash flow yield	0.9	n.a.	4.5	2.5	10.3	11.5	4.5	10.3

Source: FactSet, Daiwa forecasts

Company profile

Advanced Semiconductor Engineering (ASE) is the world's largest Outsourced Semiconductor Assembly and Test (OSAT) maker offering integrated circuit (IC) packaging and testing services with a wide range of technologies, including leadframe-based wirebonding (WB), substrate-based WB, flip-chip (FC) packaging, system in packaging (SiP) and electronics manufacturing services (EMS). Its client base overlaps to a high degree with the IC foundry companies, including the fabless chipmakers and IDMs globally.

ASE: quarterly P&L forecasts

TWDm	1Q16	2Q16	3Q16	4Q16E	1Q17E	2Q17E	3Q17E	4Q17E	2015	2016E	2017E	2018E
Packaging revenue	28,036	30,178	33,449	32,280	30,920	33,911	37,097	36,628	116,607	123,943	138,557	156,736
Testing revenue	5,995	6,503	7,231	6,958	6,679	7,414	8,027	7,931	25,193	26,687	30,050	34,224
EMS & other revenue	28,340	25,920	32,104	36,573	29,222	32,813	39,204	44,090	141,502	122,937	145,329	176,869
Total revenue	62,371	62,601	72,784	75,810	66,822	74,137	84,328	88,650	283,302	273,566	313,936	367,829
COGS	-50,922	-50,346	-58,671	-60,897	-54,597	-59,840	-67,887	-72,194	-233,167	-220,835	-254,518	-297,831
Gross profit	11,450	12,255	14,113	14,913	12,225	14,297	16,441	16,455	50,135	52,731	59,418	69,998
Opex	-6,244	-6,324	-6,675	-6,747	-6,214	-6,746	-7,589	-7,890	-25,250	-25,989	-28,440	-33,220
Operating profit	5,206	5,931	7,438	8,166	6,011	7,550	8,851	8,566	24,885	26,742	30,978	36,778
EBITDA	12,556	13,247	14,395	14,751	12,539	14,738	16,673	16,886	54,403	54,949	60,836	67,812
Pretax profit	5,656	6,474	6,875	8,695	6,269	8,006	9,427	9,134	25,288	27,699	32,837	39,038
Income taxes	-1,318	-1,523	-976	-1,565	-1,223	-1,561	-1,838	-1,781	-4,839	-5,382	-6,403	-7,808
Net profit	4,163	4,679	5,506	6,869	4,859	6,205	7,306	7,079	19,478	21,217	25,449	30,059
FD O/S (m)	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220	8,220
FD EPS (TWD)	0.51	0.57	0.67	0.84	0.59	0.75	0.89	0.86	2.37	2.58	3.10	3.66
Margin												
Gross	18%	20%	19%	20%	18%	19%	19%	19%	18%	19%	19%	19%
Operating	8%	9%	10%	11%	9%	10%	10%	10%	9%	10%	10%	10%
EBITDA	20%	21%	20%	19%	19%	20%	20%	19%	19%	20%	19%	18%
Net	7%	7%	8%	9%	7%	8%	9%	8%	7%	8%	8%	8%
Growth (QoQ)												
Packaging revenue	-4%	8%	11%	-3%	-4%	10%	9%	-1%				
Testing revenue	-6%	8%	11%	-4%	-4%	11%	8%	-1%				
EMS & other revenue	-29%	-9%	24%	14%	-20%	12%	19%	12%				
Total revenue	-17%	0%	16%	4%	-12%	11%	14%	5%				
Gross profit	-14%	7%	15%	6%	-18%	17%	15%	0%				
Operating profit	-23%	14%	25%	10%	-26%	26%	17%	-3%				
EBITDA	-11%	6%	9%	2%	-15%	18%	13%	1%				
Net profit	-17%	12%	18%	25%	-29%	28%	18%	-3%				
FD EPS	-17%	12%	18%	25%	-29%	28%	18%	-3%				
Growth (YoY)												
Packaging revenue	-4%	5%	13%	11%	10%	12%	11%	13%	-4%	6%	12%	13%
Testing revenue	-3%	4%	13%	9%	11%	14%	11%	14%	-3%	6%	13%	14%
EMS & other revenue	-3%	-27%	-13%	-9%	3%	27%	22%	21%	29%	-13%	18%	22%
Total revenue	-4%	-11%	0%	0%	7%	18%	16%	17%	10%	-3%	15%	17%
Gross profit	-7%	6%	9%	12%	7%	17%	16%	10%	-6%	5%	13%	18%
Operating profit	-17%	10%	17%	20%	15%	27%	19%	5%	-16%	7%	16%	19%
EBITDA	-8%	4%	4%	4%	0%	11%	16%	14%	-3%	1%	11%	11%
Net profit	-7%	28%	-14%	38%	17%	33%	33%	3%	-17%	9%	20%	18%
FD EPS	-7%	28%	-14%	38%	17%	33%	33%	3%	-18%	9%	20%	18%

Source: Company, Daiwa forecasts

ASE: 4Q16 preview and 1Q17 outlook

	4Q16E			1Q17E		
TWDm	Daiwa	Consensus	Variance	Daiwa	Consensus	Variance
Revenue	75,810	76,278	-1%	66,822	65,528	2%
SAT	40,022			38,351		
EMS	35,788			28,470		
Gross profit	14,913			12,225		
Operating profit	8,166			6,011		
Pretax profit	8,695			6,269		
Net profit	6,869	6,015	14%	4,859	4,484	8%
Adjusted EPS (TWD)	0.84	0.73	14%	0.59	0.55	8%
Margin						
Gross	19.7%			18.3%		
Operating	10.8%			9.0%		
Net	9.1%			7.3%		
Operation						
Wirebonder utilization	83%			80%		
Tester utilization	76%			73%		
Bumping utilization	82%			80%		

Source: Bloomberg, Daiwa forecasts

Daiwa Capital Markets

SK Hynix (000660 KS)

Target price: **KRW54,000** (from KRW54,000)

Share price (4 Jan): **KRW46,500** | Up/downside: **+16.1%**

5 4 3 2 **1**

Buy
(unchanged)

Beneficiary of memory market recovery

- We expect a further earnings improvement for 4Q16 and 2017
- The memory market looks set to remain solid in 1H17
- Reiterating our Buy (1) call and TP of KRW54,000

SK Kim
(82) 2 787 9173
sk.kim@kr.daiwacm.com

Henny Jung
(82) 2 787 9182
henny.jung@kr.daiwacm.com

What's new: On top of our view that the commodity memory market recovery will be sustained into 2017, we believe SK Hynix (Hynix) is a potential beneficiary of multiple themes of sensors, micro-controlling units (MCU), and datacentres that require a variety of memory solutions including embedded and discrete DRAM, NAND flash and other non-volatile memory (NVM) devices.

What's the impact: **3Q16 review/4Q16 preview.** We estimate SK Hynix's DRAM operating-profit margin (OPM) rose to 22.7% in 3Q16 from 18.7% in 2Q16. As for NAND, thanks to content growth for the smartphone and solid demand for SSD, NAND ASPs rose by 7% QoQ. The company's NAND bit shipments climbed by 12% QoQ and the segment turned profitable in 3Q16 (OPM: 1.8%). Hynix expects solid demand for mobile/PC devices to have continued in 4Q16, and emphasises solid smartphone content growth and system build demand for PCs/ smartphones. However, it expects supply growth to have been limited due to slower migration. Hynix estimates its DRAM inventory level declined to less than 1 week by end-2016. It started accelerating migration to 21nm DRAM and brought forward the mass production of 48-layer based 3D-NAND in 4Q16. We estimate its 4Q16 operating profit will reach KRW1.28tn (up 77%, QoQ) on a favourable price environment for DRAM/NAND and the company reducing its DRAM costs.

Mixed signals for PC demand. While Intel is conservative on PC demand in 4Q16, SK Hynix maintains a positive view. We estimate PC OEMs were more aggressive in 2H16 in terms of restocking DRAM due to concerns about supply, which could have some negative impact in 1H17. However, their lean DRAM inventory levels should help overcome weak seasonality.

Meaningful earnings recovery expected in 2017. For the full-year 2017, we forecast Hynix to record revenue of KRW20.7tn (up 23% YoY) and an operating profit of KRW5.6tn (up 84% YoY), as the positive memory pricing environment continues in 2017E. In particular, we expect the tight memory supply situation to continue and SK Hynix's earnings to show an improvement sequentially by 1H17.

What we recommend: We reiterate our Buy (1) rating and 12-month TP of KRW54,000, based on a target PBR of 1.4x applied to our 2017E BVPS (basis unchanged). The key risk to our call would be a sharp decline in PC and smartphone demand in 1H17.

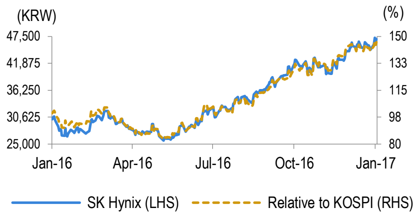
How we differ: Our 2016-17E EPS are 4-18% higher than the consensus, as we are more positive on the memory market over the period.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	-	-	-
Net profit change	-	-	-
Core EPS (FD) change	-	-	-

Source: Daiwa forecasts

Share price performance



12-month range	25,750-47,250
Market cap (USDbn)	27.63
3m avg daily turnover (USDm)	100.95
Shares outstanding (m)	717
Major shareholder	SK Telecom (20.8%)

Financial summary (KRW)

Year to 31 Dec	16E	17E	18E
Revenue (bn)	16,822	20,721	21,166
Operating profit (bn)	3,024	5,566	5,117
Net profit (bn)	2,399	4,503	4,281
Core EPS (fully-diluted)	3,345	6,378	6,064
EPS change (%)	(43.7)	90.7	(4.9)
Daiwa vs Cons. EPS (%)	3.8	17.8	5.4
PER (x)	13.9	7.3	7.7
Dividend yield (%)	1.1	1.3	1.5
DPS	500	600	700
PBR (x)	1.4	1.2	1.1
EV/EBITDA (x)	4.2	2.9	2.7
ROE (%)	10.8	17.9	14.7

Source: FactSet, Daiwa forecasts

Company

Daiwa Capital Markets

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
DRAM bit growth (%)	n.a.	n.a.	34.1	33.4	23.0	24.0	19.7	17.5
DRAM ASP (%)	n.a.	n.a.	7.5	2.2	(19.5)	(32.0)	(3.9)	(13.5)
NAND bit growth (%)	n.a.	n.a.	45.9	58.0	60.9	47.3	29.6	30.1
NAND ASP (%)	n.a.	n.a.	(7.9)	(38.0)	(22.9)	(29.2)	5.5	(17.1)

Profit and loss (KRWbn)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
DRAM	7,426	7,229	10,229	13,286	14,058	12,034	14,358	14,347
NAND	2,733	2,536	3,409	3,340	4,144	4,321	5,908	6,372
Other Revenue	236	397	526	500	596	466	455	447
Total Revenue	**10,396**	**10,162**	**14,165**	**17,126**	**18,798**	**16,822**	**20,721**	**21,166**
Other income	4,077	4,179	4,047	4,854	5,574	6,106	6,359	6,564
COGS	(8,705)	(8,551)	(8,865)	(9,462)	(10,515)	(10,710)	(11,753)	(12,477)
SG&A	(1,322)	(1,839)	(1,921)	(2,554)	(2,947)	(3,089)	(3,402)	(3,572)
Other op.expenses	(4,077)	(4,179)	(4,047)	(4,854)	(5,574)	(6,106)	(6,359)	(6,564)
Operating profit	**369**	**(227)**	**3,380**	**5,109**	**5,336**	**3,024**	**5,566**	**5,117**
Net-interest inc./(exp.)	(254)	(238)	(190)	(118)	(78)	(95)	(103)	(80)
Assoc/forex/extraord./others	(70)	266	(115)	56	11	(31)	33	174
Pre-tax profit	**45**	**(199)**	**3,075**	**5,048**	**5,269**	**2,898**	**5,496**	**5,211**
Tax	(101)	41	(202)	(853)	(946)	(493)	(988)	(924)
Min. int./pref. div./others	7	(0)	(0)	0	(1)	(6)	(5)	(5)
Net profit (reported)	**(49)**	**(159)**	**2,872**	**4,195**	**4,322**	**2,399**	**4,503**	**4,281**
Net profit (adjusted)	**(49)**	**(159)**	**2,872**	**4,195**	**4,322**	**2,399**	**4,503**	**4,281**
EPS (reported)(KRW)	**(82)**	**(233)**	**4,099**	**5,842**	**5,937**	**3,345**	**6,378**	**6,064**
EPS (adjusted)(KRW)	**(82)**	**(233)**	**4,099**	**5,842**	**5,937**	**3,345**	**6,378**	**6,064**
EPS (adjusted fully-diluted)(KRW)	**(82)**	**(233)**	**4,099**	**5,842**	**5,937**	**3,345**	**6,378**	**6,064**
DPS (KRW)	**0**	**0**	**0**	**300**	**500**	**500**	**600**	**700**
EBIT	**369**	**(227)**	**3,380**	**5,109**	**5,336**	**3,024**	**5,566**	**5,117**
EBITDA	**3,836**	**2,976**	**6,458**	**8,553**	**9,289**	**7,442**	**10,190**	**9,861**

Cash flow (KRWbn)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Profit before tax	45	(199)	3,075	5,048	5,269	2,898	5,496	5,211
Depreciation and amortisation	3,467	3,204	3,079	3,444	3,953	4,418	4,625	4,744
Tax paid	(101)	41	(202)	(853)	(946)	(493)	(988)	(924)
Change in working capital	(632)	(733)	148	(640)	1,157	(733)	(875)	(195)
Other operational CF items	77	(100)	273	(1,133)	(114)	(703)	(556)	(551)
Cash flow from operations	**2,856**	**2,212**	**6,372**	**5,867**	**9,320**	**5,387**	**7,702**	**8,285**
Capex	(3,568)	(3,773)	(3,206)	(4,801)	(6,775)	(5,678)	(5,621)	(5,683)
Net (acquisitions)/disposals	14	36	16	199	220	193	386	404
Other investing CF items	165	(961)	(1,702)	(1,486)	(571)	820	(180)	(200)
Cash flow from investing	**(3,389)**	**(4,698)**	**(4,892)**	**(6,088)**	**(7,126)**	**(4,665)**	**(5,415)**	**(5,479)**
Change in debt	722	(304)	(1,895)	(402)	(356)	289	(162)	(155)
Net share issues/(repurchases)	45	2,335	432	827	(859)	0	0	0
Dividends paid	(89)	0	0	0	(218)	(353)	(364)	(437)
Other financing CF items	(160)	(113)	(37)	(396)	(29)	(263)	590	311
Cash flow from financing	**519**	**1,917**	**(1,500)**	**28**	**(1,462)**	**(327)**	**64**	**(282)**
Forex effect/others	19	(264)	(94)	(129)	(58)	(12)	(60)	(80)
Change in cash	**5**	**(833)**	**(114)**	**(321)**	**674**	**382**	**2,291**	**2,445**
Free cash flow	(712)	(1,561)	3,166	1,066	2,545	(291)	2,081	2,602

Source: FactSet, Daiwa forecasts

Financial summary continued …

Balance sheet (KRWbn)

As at 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Cash & short-term investment	1,876	1,785	2,786	4,055	4,791	4,837	6,964	9,533
Inventory	1,184	1,509	1,178	1,498	1,923	2,038	2,236	2,374
Accounts receivable	1,541	1,720	1,942	3,733	2,628	2,393	2,948	3,012
Other current assets	336	300	747	1,078	417	409	399	396
Total current assets	**4,937**	**5,314**	**6,653**	**10,364**	**9,760**	**9,676**	**12,547**	**15,315**
Fixed assets	10,899	11,586	12,130	14,090	16,966	18,081	18,942	19,745
Goodwill & intangibles	708	984	1,110	1,337	1,705	1,830	1,953	2,078
Other non-current assets	694	765	903	1,092	1,246	1,245	1,245	1,245
Total assets	**17,238**	**18,649**	**20,796**	**26,883**	**29,677**	**30,832**	**34,688**	**38,382**
Short-term debt	2,830	2,719	870	1,755	1,013	672	645	620
Accounts payable	678	593	649	788	791	657	721	765
Other current liabilities	1,308	1,129	1,559	3,222	3,036	2,309	2,113	2,072
Total current liabilities	**4,817**	**4,441**	**3,078**	**5,765**	**4,841**	**3,637**	**3,479**	**3,457**
Long-term debt	3,946	3,753	3,706	2,420	2,805	3,435	3,300	3,170
Other non-current liabilities	600	715	946	662	644	683	693	695
Total liabilities	**9,363**	**8,909**	**7,730**	**8,847**	**8,290**	**7,756**	**7,472**	**7,322**
Share capital	2,979	3,488	3,569	3,658	3,658	3,658	3,658	3,658
Reserves/R.E./others	4,897	6,252	9,499	14,379	17,729	19,414	23,553	27,398
Shareholders' equity	**7,876**	**9,740**	**13,067**	**18,036**	**21,387**	**23,072**	**27,211**	**31,055**
Minority interests	(0)	(1)	(0)	(0)	1	4	4	4
Total equity & liabilities	**17,238**	**18,649**	**20,797**	**26,883**	**29,678**	**30,832**	**34,687**	**38,382**
EV	37,546	37,262	34,228	32,368	31,122	31,370	29,081	26,356
Net debt/(cash)	**4,901**	**4,687**	**1,790**	**120**	**(973)**	**(730)**	**(3,018)**	**(5,743)**
BVPS (KRW)	**13,299**	**14,031**	**18,399**	**24,775**	**29,379**	**32,685**	**38,548**	**43,993**

Key ratios (%)

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Sales (YoY)	(14.1)	(2.2)	39.4	20.9	9.8	(10.5)	23.2	2.1
EBITDA (YoY)	(34.2)	(22.4)	117.0	32.4	8.6	(19.9)	36.9	(3.2)
Operating profit (YoY)	(87.7)	n.a.	n.a.	51.2	4.4	(43.3)	84.1	(8.1)
Net profit (YoY)	n.a.	n.a.	n.a.	46.1	3.0	(44.5)	87.7	(4.9)
Core EPS (fully-diluted) (YoY)	n.a.	n.a.	n.a.	42.5	1.6	(43.7)	90.7	(4.9)
Gross-profit margin	16.3	15.9	37.4	44.8	44.1	36.3	43.3	41.1
EBITDA margin	36.9	29.3	45.6	49.9	49.4	44.2	49.2	46.6
Operating-profit margin	3.6	n.a.	23.9	29.8	28.4	18.0	26.9	24.2
Net profit margin	(0.5)	(1.6)	20.3	24.5	23.0	14.3	21.7	20.2
ROAE	n.a.	n.a.	25.2	27.0	21.9	10.8	17.9	14.7
ROAA	n.a.	n.a.	14.6	17.6	15.3	7.9	13.7	11.7
ROCE	2.6	n.a.	20.0	25.6	22.5	11.5	19.1	15.5
ROIC	(3.7)	(1.7)	21.6	25.7	22.7	11.7	19.6	17.0
Net debt to equity	62.2	48.1	13.7	0.7	n.a.	n.a.	n.a.	n.a.
Effective tax rate	224.0	n.a.	6.6	16.9	17.9	17.0	18.0	17.7
Accounts receivable (days)	55.2	58.6	47.2	60.5	61.8	54.5	47.0	51.4
Current ratio (x)	1.0	1.2	2.2	1.8	2.0	2.7	3.6	4.4
Net interest cover (x)	1.5	n.a.	17.8	43.2	68.6	31.7	54.0	63.6
Net dividend payout	n.a.	n.a.	0.0	5.1	8.4	14.9	9.4	11.5
Free cash flow yield	n.a.	n.a.	9.5	3.2	7.6	n.a.	6.2	7.8

Source: FactSet, Daiwa forecasts

Company profile

SK Hynix manufactures semiconductors, such as dynamic random access memory (DRAM) and NAND flash memory. Formerly known as “Hynix”, the company was acquired by SK Group in November 2011 and renamed “SK Hynix” in March 2013. Currently, SK Hynix is the world’s No.2 player in the DRAM market and has competitive technology in the NAND business as well. SK Telecom is the biggest stakeholder, currently holding 21% of SK Hynix's outstanding shares.

SK Hynix: earnings forecast breakdown

	1Q16	2Q16	3Q16	4Q16E	2016E	2017E	2018E
Sales (KRW bn)	3,656	3,941	4,244	4,982	16,823	20,721	21,166
DRAM	2,779	2,798	2,928	3,529	12,034	14,358	14,347
NAND	768	1,025	1,188	1,341	4,321	5,908	6,372
Others	110	118	127	112	467	455	447
Operating profit (KRW bn)	562	452.852	726	1,283	3,024	5,566	5,117
DRAM	669	524	665	1,175	3,034	5,117	4,710
NAND	-148	-85	22	98	-113	413	372
Others	40	13	39	10	103	36	35
OP margin (%)	15.4%	11.5%	17.1%	25.8%	18.0%	26.9%	24.2%
DRAM	24.1%	18.7%	22.7%	33.3%	25.2%	35.6%	32.8%
NAND	-19.3%	-8.3%	1.8%	7.3%	-2.6%	7.0%	5.8%
Net profit	444	286	597	1,071	2,399	4,503	4,281

Source: Company, Daiwa forecast

SK Hynix: key company guidance

	3Q16 Actual	4Q16 Estimate	FY2016 Guidance
DRAM			
Bit growth	+8% QoQ	+10% QoQ	+ mid-20% YoY
ASP growth	flat QoQ	n/a	n/a
NAND			
Bit growth	+12% QoQ	flat QoQ	+ high-40% YoY
ASP growth	+7% QoQ	n/a	n/a

Source: Company, Daiwa Research

Note: announced on 22 Dec 2016

SK Hynix: key assumptions forecast

	1Q16	2Q16	3Q16	4Q16E	2016E	2017E	2018E
DRAM							
Bit growth (q-q%)	-2.5%	17.5%	7.5%	10.0%	24.0%	19.7%	17.5%
ASP (q-q%)	-13.5%	-11.4%	0.0%	4.0%	-32.0%	-3.9%	-13.5%
NAND							
Bit growth (q-q%)	-10.5%	52.0%	11.5%	0.0%	47.3%	29.6%	30.1%
ASP (q-q%)	-11.5%	-10.7%	7.0%	10.0%	-29.2%	5.5%	-17.1%

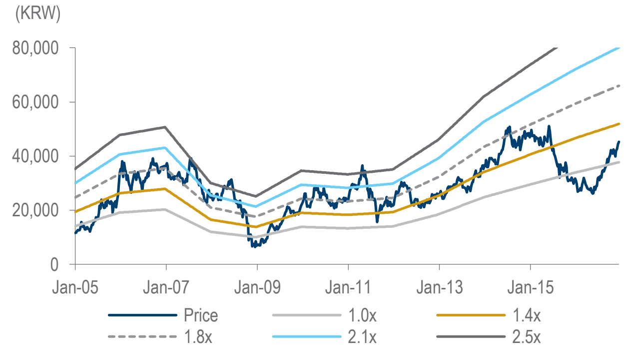
Source: Company, Daiwa forecast

Hynix: new investments announcement

Facility	Amount	Start	End	Purpose	Details
Cheongju fab (Korea)	KRW 2.2tn	Aug-17	Jun-19	Fab extension	Establishes new clean room for 3D NAND
Wuxi fab (China)	KRW0.95tn	Jul-17	Apr-19	Supplementation	Extend clean room in preparation for process migration of DRAM

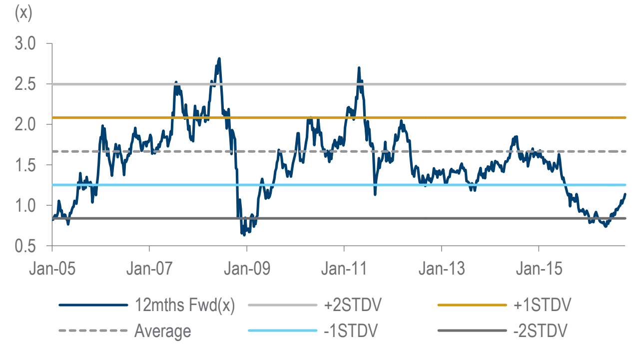
Source: Company, Dart, Daiwa

SK Hynix: 12-month forward PBR band chart



Source: Company, Bloomberg, Daiwa forecasts

SK Hynix: 12-month forward PBR



Source: Company, Bloomberg, Daiwa forecasts

Daiwa Capital Markets

Daiwa's Asia Pacific Research Directory

HONG KONG

Takashi FUJIKURA	(852) 2848 4051	takashi.fujikura@hk.daiwacm.com
Regional Research Head		
Jiro IOKIBE	(852) 2773 8702	jiro.iokibe@hk.daiwacm.com
Co-head of Asia Pacific Research		
John HETHERINGTON	(852) 2773 8787	john.hetherington@hk.daiwacm.com
Co-head of Asia Pacific Research		
Rohan DALZIELL	(852) 2848 4938	rohan.dalziell@hk.daiwacm.com
Regional Head of Asia Pacific Product Management		
Kevin LAI	(852) 2848 4926	kevin.lai@hk.daiwacm.com
Chief Economist for Asia ex-Japan; Macro Economics (Regional)		
Olivia XIA	(852) 2773 8736	olivia.xia@hk.daiwacm.com
Macro Economics (Hong Kong/China)		
Kelvin LAU	(852) 2848 4467	kelvin.lau@hk.daiwacm.com
Head of Automobiles; Transportation and Industrial (Hong Kong/China)		
Brian LAM	(852) 2532 4341	brian.lam@hk.daiwacm.com
Auto Components; Transportation – Railway; Construction and Engineering (China)		
Leon QI	(852) 2532 4381	leon.qi@hk.daiwacm.com
Banking; Diversified financials; Insurance (Hong Kong/China)		
Yan LI	(852) 2773 8822	yan.li@hk.daiwacm.com
Banking (China)		
Anson CHAN	(852) 2532 4350	anson.chan@hk.daiwacm.com
Consumer (Hong Kong/China)		
Adrian CHAN	(852) 2848 4427	adrian.chan@hk.daiwacm.com
Consumer (Hong Kong/China)		
Jamie SOO	(852) 2773 8529	jamie.soo@hk.daiwacm.com
Gaming and Leisure (Hong Kong/China)		
John CHOI	(852) 2773 8730	john.choi@hk.daiwacm.com
Head of Hong Kong and China Internet; Regional Head of Small/Mid Cap		
Carlton LAI	(852) 2532 4349	carlton.lai@hk.daiwacm.com
Small/Mid Cap (Hong Kong/China)		
Dennis IP	(852) 2848 4068	dennis.ip@hk.daiwacm.com
Power; Utilities; Renewables and Environment (Hong Kong/China)		
Jonas KAN	(852) 2848 4439	jonas.kan@hk.daiwacm.com
Head of Hong Kong and China Property		
Cynthia CHAN	(852) 2773 8243	cynthia.chan@hk.daiwacm.com
Property (China)		
Thomas HO	(852) 2773 8716	thomas.ho@hk.daiwacm.com
Custom Products Group		

PHILIPPINES

Micaela ABAQUITA	(63) 2 737 3021	micaela.abaquita@dbpdaiwacm.com.ph
Property		

SOUTH KOREA

Sung Yop CHUNG	(82) 2 787 9157	sychung@kr.daiwacm.com
Pan-Asia Co-head/Regional Head of Automobiles and Components; Automobiles; Shipbuilding; Steel		
Mike OH	(82) 2 787 9179	mike.oh@kr.daiwacm.com
Banking; Capital Goods (Construction and Machinery)		
Iris PARK	(82) 2 787 9165	iris.park@kr.daiwacm.com
Consumer/Retail		
SK KIM	(82) 2 787 9173	sk.kim@kr.daiwacm.com
IT/Electronics – Semiconductor/Display and Tech Hardware		
Thomas Y KWON	(82) 2 787 9181	yskwon@kr.daiwacm.com
Pan-Asia Head of Internet & Telecommunications; Software – Internet/On-line Games		
Kevin JIN	(82) 2 787 9168	kevin.jin@kr.daiwacm.com
Small/Mid Cap		

TAIWAN

Rick HSU	(886) 2 8758 6261	rick.hsu@daiwacm-cathay.com.tw
Head of Regional Technology; Head of Taiwan Research; Semiconductor/IC Design (Regional)		
Steven TSENG	(886) 2 8758 6252	steven.tseng@daiwacm-cathay.com.tw
IT/Technology Hardware (PC Hardware)		
Kylie HUANG	(886) 2 8758 6248	kylie.huang@daiwacm-cathay.com.tw
IT/Technology Hardware (Handsets and Components)		
Helen CHIEN	(886) 2 8758 6254	helen.chien@daiwacm-cathay.com.tw
Small/Mid Cap		

INDIA

Punit SRIVASTAVA	(91) 22 6622 1013	punit.srivastava@in.daiwacm.com
Head of India Research; Strategy; Banking/Finance		
Saurabh MEHTA	(91) 22 6622 1009	saurabh.mehta@in.daiwacm.com
Capital Goods; Utilities		

SINGAPORE

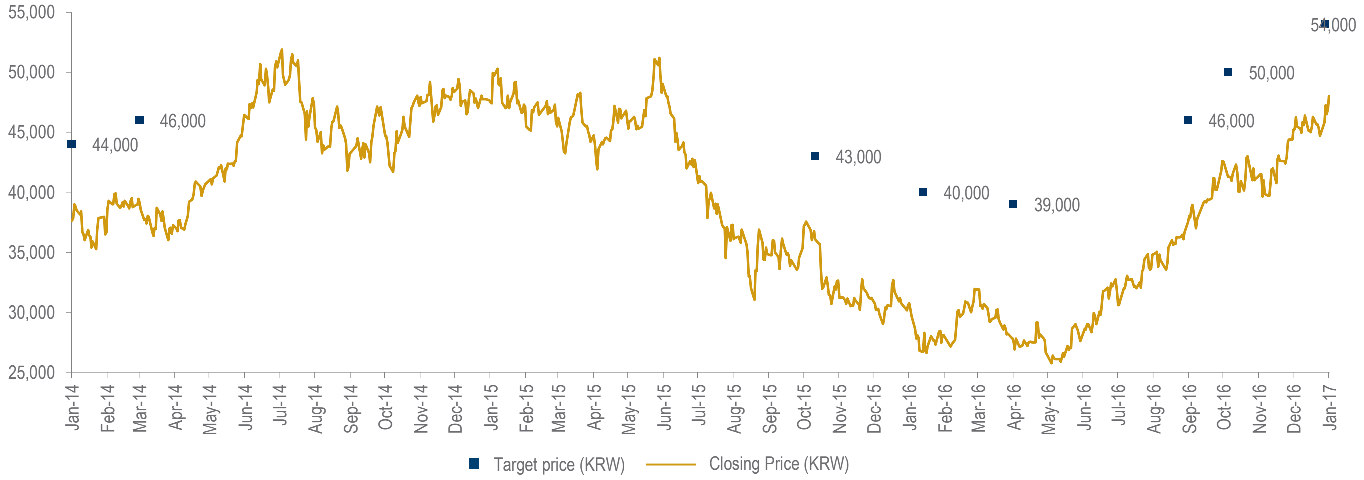
Ramakrishna MARUVADA	(65) 6499 6543	ramakrishna.maruvada@sg.daiwacm.com
Head of Singapore Research; Telecommunications (China/ASEAN/India)		
David LUM	(65) 6329 2102	david.lum@sg.daiwacm.com
Banking; Property and REITs		
Royston TAN	(65) 6321 3086	royston.tan@sg.daiwacm.com
Oil and Gas; Capital Goods		
Shane GOH	(65) 64996546	shane.goh@sg.daiwacm.com
Property and REITs; Small/Mid Cap (Singapore)		
Jame OSMAN	(65) 6321 3092	jame.osman@sg.daiwacm.com
Transportation – Road and Rail; Pharmaceuticals and Healthcare; Consumer (Singapore)		

Daiwa's Offices

Office / Branch / Affiliate	Address	Tel	Fax
DAIWA SECURITIES GROUP INC			
HEAD OFFICE	Gran Tokyo North Tower, 1-9-1, Marunouchi, Chiyoda-ku, Tokyo, 100-6753	(81) 3 5555 3111	(81) 3 5555 0661
Daiwa Securities Trust Company	One Evertrust Plaza, Jersey City, NJ 07302, U.S.A.	(1) 201 333 7300	(1) 201 333 7726
Daiwa Securities Trust and Banking (Europe) PLC (Head Office)	5 King William Street, London EC4N 7JB, United Kingdom	(44) 207 320 8000	(44) 207 410 0129
Daiwa Europe Trustees (Ireland) Ltd	Level 3, Block 5, Harcourt Centre, Harcourt Road, Dublin 2, Ireland	(353) 1 603 9900	(353) 1 478 3469
Daiwa Capital Markets America Inc. New York Head Office	Financial Square, 32 Old Slip, New York, NY10005, U.S.A.	(1) 212 612 7000	(1) 212 612 7100
Daiwa Capital Markets America Inc. San Francisco Branch	555 California Street, Suite 3360, San Francisco, CA 94104, U.S.A.	(1) 415 955 8100	(1) 415 956 1935
Daiwa Capital Markets Europe Limited, London Head Office	5 King William Street, London EC4N 7AX, United Kingdom	(44) 20 7597 8000	(44) 20 7597 8600
Daiwa Capital Markets Europe Limited, Frankfurt Branch	Neue Mainzer Str. 1, 60311 Frankfurt/Main, Germany	(49) 69 717 080	(49) 69 723 340
Daiwa Capital Markets Europe Limited, Paris Representative Office	17, rue de Surène 75008 Paris, France	(33) 1 56 262 200	(33) 1 47 550 808
Daiwa Capital Markets Europe Limited, Geneva Branch	50 rue du Rhône, P.O.Box 3198, 1211 Geneva 3, Switzerland	(41) 22 818 7400	(41) 22 818 7441
Daiwa Capital Markets Europe Limited, Moscow Representative Office	Midland Plaza 7th Floor, 10 Arbat Street, Moscow 119002, Russian Federation	(7) 495 641 3416	(7) 495 775 6238
Daiwa Capital Markets Europe Limited, Bahrain Branch	7th Floor, The Tower, Bahrain Commercial Complex, P.O. Box 30069, Manama, Bahrain	(973) 17 534 452	(973) 17 535 113
Daiwa Capital Markets Hong Kong Limited	Level 28, One Pacific Place, 88 Queensway, Hong Kong	(852) 2525 0121	(852) 2845 1621
Daiwa Capital Markets Singapore Limited	6 Shenton Way #26-08, OUE Downtown 2, Singapore 068809, Republic of Singapore	(65) 6220 3666	(65) 6223 6198
Daiwa Capital Markets Australia Limited	Level 34, Rialto North Tower, 525 Collins Street, Melbourne, Victoria 3000, Australia	(61) 3 9916 1300	(61) 3 9916 1330
DBP-Daiwa Capital Markets Philippines, Inc	18th Floor, Citibank Tower, 8741 Paseo de Roxas, Salcedo Village, Makati City, Republic of the Philippines	(632) 813 7344	(632) 848 0105
Daiwa-Cathay Capital Markets Co Ltd	14/F, 200, Keelung Road, Sec 1, Taipei, Taiwan, R.O.C.	(886) 2 2723 9698	(886) 2 2345 3638
Daiwa Securities Capital Markets Korea Co., Ltd.	20 Fl.& 21Fl. One IFC, 10 Gukjegeumyung-Ro, Yeongdeungpo-gu, Seoul, Korea	(82) 2 787 9100	(82) 2 787 9191
Daiwa Securities Co. Ltd., Beijing Representative Office	Room 301/302，Kerry Center，1 Guanghua Road，Chaoyang District，Beijing 100020, People's Republic of China	(86) 10 6500 6688	(86) 10 6500 3594
Daiwa (Shanghai) Corporate Strategic Advisory Co. Ltd.	44/F, Hang Seng Bank Tower, 1000 Lujiazui Ring Road, Pudong, Shanghai China 200120 , People's Republic of China	(86) 21 3858 2000	(86) 21 3858 2111
Daiwa Securities Co. Ltd., Bangkok Representative Office	18th Floor, M Thai Tower, All Seasons Place, 87 Wireless Road, Lumpini, Pathumwan, Bangkok 10330, Thailand	(66) 2 252 5650	(66) 2 252 5665
Daiwa Capital Markets India Private Ltd	10th Floor, 3 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra East, Mumbai – 400051, India	(91) 22 6622 1000	(91) 22 6622 1019
Daiwa Securities Co. Ltd., Hanoi Representative Office	Suite 405, Pacific Palace Building, 83B, Ly Thuong Kiet Street, Hoan Kiem Dist. Hanoi, Vietnam	(84) 4 3946 0460	(84) 4 3946 0461
DAIWA INSTITUTE OF RESEARCH LTD			
HEAD OFFICE	15-6, Fuyuki, Koto-ku, Tokyo, 135-8460, Japan	(81) 3 5620 5100	(81) 3 5620 5603
MARUNOUCHI OFFICE	Gran Tokyo North Tower, 1-9-1, Marunouchi, Chiyoda-ku, Tokyo, 100-6756	(81) 3 5555 7011	(81) 3 5202 2021
New York Research Center	11th Floor, Financial Square, 32 Old Slip, NY, NY 10005-3504, U.S.A.	(1) 212 612 6100	(1) 212 612 8417
London Research Centre	3/F, 5 King William Street, London, EC4N 7AX, United Kingdom	(44) 207 597 8000	(44) 207 597 8550

SK Hynix: share price and Daiwa recommendation trend

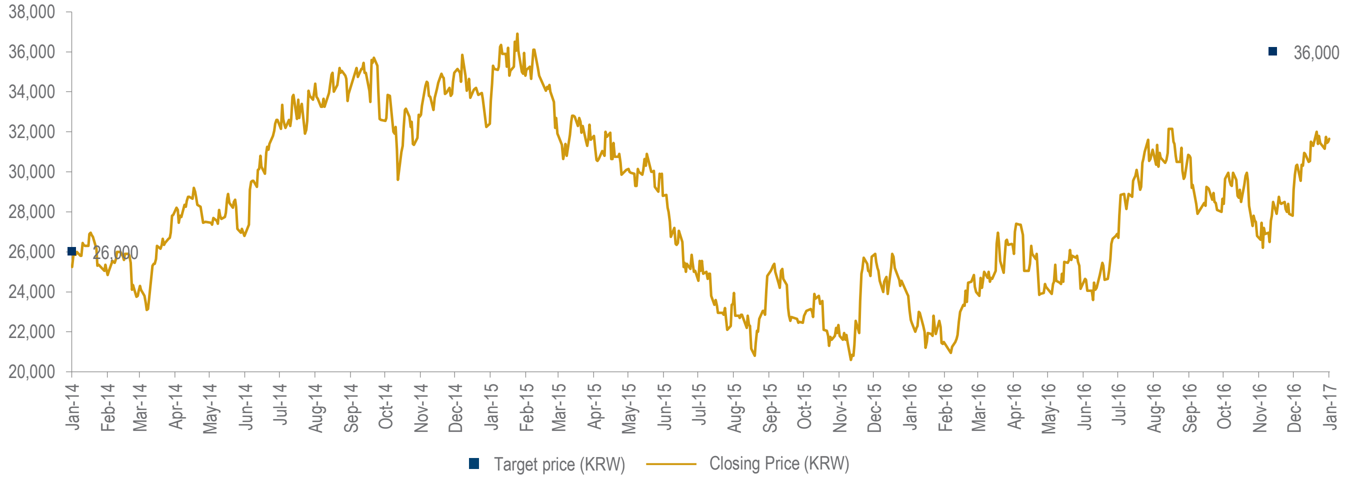
Date	Target price	Rating	Date	Target price	Rating	Date	Target price	Rating
06/03/14	46,000	Buy	18/01/16	40,000	Buy	10/10/16	50,000	Buy
22/07/15	0		06/04/16	39,000	Buy	03/01/17	54,000	Buy
16/10/15	43,000	Buy	05/09/16	46,000	Buy			



Source: Daiwa
Note: where appropriate, historical target prices have been adjusted to reflect the current share count

LG Display: share price and Daiwa recommendation trend

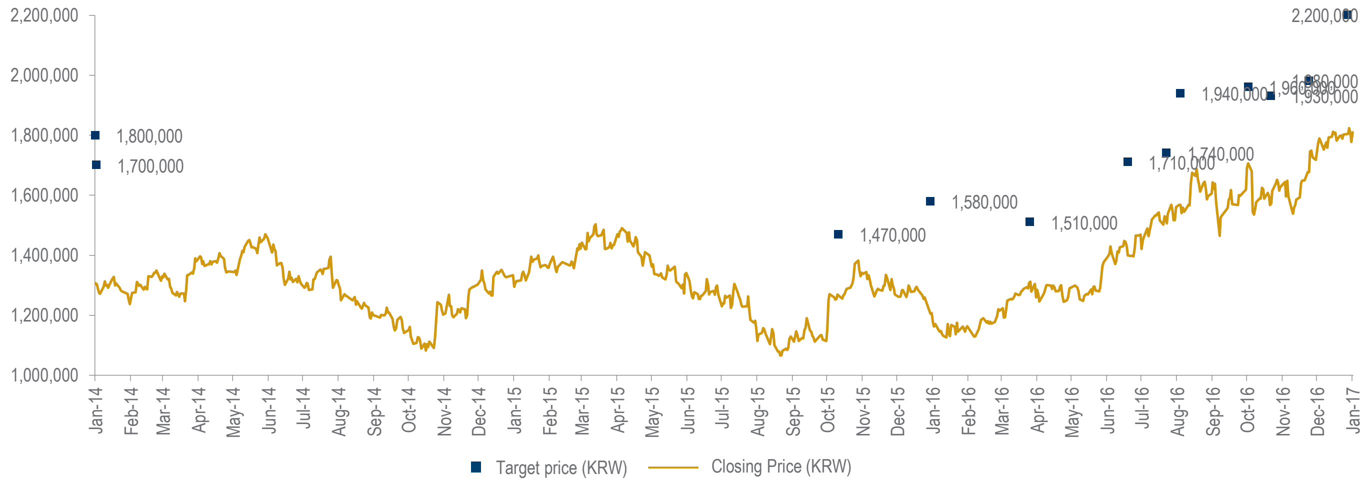
Date	Target price	Rating	Date	Target price	Rating	Date	Target price	Rating
30/08/16	0		18/11/16	36,000	Buy			



Source: Daiwa
Note: where appropriate, historical target prices have been adjusted to reflect the current share count

Samsung Electronics: share price and Daiwa recommendation trend

Date	Target price	Rating	Date	Target price	Rating	Date	Target price	Rating
29/07/15	0		24/06/16	1,710,000	Buy	27/10/16	1,930,000	Buy
16/10/15	1,470,000	Buy	28/07/16	1,740,000	Buy	29/11/16	1,980,000	Buy
31/12/15	1,580,000	Buy	09/08/16	1,940,000	Buy	30/12/16	2,200,000	Buy
31/03/16	1,510,000	Buy	07/10/16	1,960,000	Buy			



Source: Daiwa

Note: where appropriate, historical target prices have been adjusted to reflect the current share count

Important Disclosures and Disclaimer

This publication is produced by Daiwa Securities Group Inc. and/or its non-U.S. affiliates, and distributed by Daiwa Securities Group Inc. and/or its non-U.S. affiliates, except to the extent expressly provided herein. This publication and the contents hereof are intended for information purposes only, and may be subject to change without further notice. Any use, disclosure, distribution, dissemination, copying, printing or reliance on this publication for any other purpose without our prior consent or approval is strictly prohibited. Neither Daiwa Securities Group Inc. nor any of its respective parent, holding, subsidiaries or affiliates, nor any of its respective directors, officers, servants and employees, represent nor warrant the accuracy or completeness of the information contained herein or as to the existence of other facts which might be significant, and will not accept any responsibility or liability whatsoever for any use of or reliance upon this publication or any of the contents hereof. Neither this publication, nor any content hereof, constitute, or are to be construed as, an offer or solicitation of an offer to buy or sell any of the securities or investments mentioned herein in any country or jurisdiction nor, unless expressly provided, any recommendation or investment opinion or advice. Any view, recommendation, opinion or advice expressed in this publication may not necessarily reflect those of Daiwa Securities Group Inc., and/or its affiliates nor any of its respective directors, officers, servants and employees except where the publication states otherwise. This research report is not to be relied upon by any person in making any investment decision or otherwise advising with respect to, or dealing in, the securities mentioned, as it does not take into account the specific investment objectives, financial situation and particular needs of any person.

Daiwa Securities Group Inc., its subsidiaries or affiliates, or its or their respective directors, officers and employees from time to time have trades as principals, or have positions in, or have other interests in the securities of the company under research including market making activities, derivatives in respect of such securities or may have also performed investment banking and other services for the issuer of such securities. The following are additional disclosures.

Ownership of Securities

For "Ownership of Securities" information, please visit BlueMatrix disclosure link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*.

Investment Banking Relationship

For "Investment Banking Relationship", please visit BlueMatrix disclosure link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*.

Portions of this publication are prepared by **Affin Hwang Investment Bank Berhad ("Affin Hwang")** and reviewed by Daiwa Securities Group Inc. and/or its non-U.S. affiliates (collectively, "Daiwa"), and is distributed and/or originated from outside Malaysia by **Daiwa Securities Group Inc.** and/or its non-U.S. affiliates, except to the extent expressly provided herein. The role of Daiwa Securities Group Inc. and/or its non-U.S. affiliates in connection with this publication is solely limited to the review and distribution of this publication ; and Daiwa Securities Group Inc. and/or its non-U.S. affiliates are not involved in the preparation of this publication in any other way. This research is for Daiwa clients only and the publication and the contents hereof are intended for information purposes only, and may be subject to change without further notice. Other than disclosures relating to Daiwa, this research is based on current public information that Affin Hwang and Daiwa consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such.

The analysts named in this report may have from time to time discussed with clients, including Daiwa's salespersons and traders, or may discuss in this report, trading strategies that reference catalysts or events that may have a near-term impact on the market price of the equity securities discussed in this report, which impact may be directionally counter to the analysts' published price target expectations for such stocks. Any such trading strategies are distinct from and do not affect the analysts' fundamental equity rating for such stocks, which rating reflects a stock's return potential relative to its coverage group as described herein.

Any use, disclosure, distribution, dissemination, copying, printing or reliance on this publication for any other purpose without our prior consent or approval is strictly prohibited. Neither Affin Hwang ,Daiwa Securities Group Inc. nor any of its or their respective parent, holding, subsidiaries or affiliates, nor any of its or their respective directors, officers, servants and employees, represent nor warrant the accuracy or completeness of the information contained herein or as to the existence of other facts which might be significant, and will not accept any responsibility or liability whatsoever for any use of or reliance upon this publication or any of the contents hereof. Neither this publication, nor any content hereof, constitute, or are to be construed as, an offer or solicitation of an offer to buy or sell any of the securities or investments mentioned herein in any country or jurisdiction where such an offer or solicitation would be illegal nor, unless expressly provided, any recommendation or investment opinion or advice. Any view, recommendation, opinion or advice expressed in this publication constitutes the views of the analyst(s) named herein and does not necessarily reflect those of Affin Hwang, Daiwa Securities Group Inc. and/or its affiliates nor any of its respective directors, officers, servants and employees except where the publication states otherwise. This research report is not to be relied upon by any person in making any investment decision or otherwise advising with respect to, or dealing in, the securities mentioned, as it does not take into account the specific investment objectives, financial situation and particular needs of any person. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments. Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options disclosure documents in relation to such investments.

All research reports are disseminated and available to our clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Daiwa and Affin Hwang responsible for the redistribution of our research by third party aggregators.

Affin Hwang, Daiwa Securities Group Inc., its subsidiaries and affiliates, and its or their respective directors, officers and employees, from time to time may have trades as principals, or may have positions in, or have other interests in the securities of the company under research including derivatives in respect of such securities or may have also performed investment banking and other services for the issuer of such securities. The following are additional disclosures.

Japan

Daiwa Securities Co. Ltd. and Daiwa Securities Group Inc.

Daiwa Securities Co. Ltd. is a subsidiary of Daiwa Securities Group Inc.

Investment Banking Relationship

Within the preceding 12 months, the subsidiaries and/or affiliates of Daiwa Securities Group Inc. * has lead-managed public offerings and/or secondary offerings (excluding straight bonds) of the securities of the following companies: Neo Solar Power Corp (3576 TT), Acushnet Holdings Corp (GOLF US).

*Subsidiaries of Daiwa Securities Group Inc. for the purposes of this section shall mean any one or more of: Daiwa Capital Markets Hong Kong Limited (大和資本市場香港有限公司), Daiwa Capital Markets Singapore Limited, Daiwa Capital Markets Australia Limited, Daiwa Capital Markets India Private Limited, Daiwa-Cathay Capital Markets Co., Ltd., Daiwa Securities Capital Markets Korea Co., Ltd.

Disclosure of Interest of Affin Hwang Investment Bank

Investment Banking Relationship

Within the preceding 12 months, Affin Hwang Investment Bank has lead-managed public offerings and/or secondary offerings (excluding straight bonds) of the securities of the following company: Uchi Technologies Bhd (UCHI MK)

Hong Kong

This research is distributed in Hong Kong by Daiwa Capital Markets Hong Kong Limited (大和資本市場香港有限公司) ("DHK") which is regulated by the Hong Kong Securities and Futures Commission. Recipients of this research in Hong Kong may contact DHK in respect of any matter arising from or in connection with this research.

Relevant Relationship (DHK)

DHK may from time to time have an individual employed by or associated with it serves as an officer of any of the companies under its research coverage.

Korea

The developing analyst of this research and analysis material hereby states and confirms that the contents of this material correctly reflect the analyst's views and opinions and that the analyst has not been placed under inappropriate pressure or interruption by an external party.

Name of Analyst : SK Kim / Henny Jung

Disclosure of Analysts' Interests

If an analyst engaging in or a person who exercises influences on the preparation or publication of a Research Report containing recommendations for general investors to trade financial investment instruments with regard to which the analyst or the influential person has personal interests and if the recommendations contained in the Report may have impacts on the personal interests, Daiwa Securities Capital Markets Korea Co., Ltd.("Daiwa Securities Korea")shall ensure that the Analyst or the influential person notifies that he/she has personal interests with regard to:

1. The equity, the equity-linked bonds and the instruments with the subscription right to the equity issued by the legal entity covered in the Research Report (or the legal entity subject to the investment recommendations);
2. The stock option granted by the legal entity covered in the Research Report (or the legal entity subject to the investment recommendations); or
3. The equity futures, the equity options and the equity-linked warrants backed by the equity prescribed in the preceding Paragraph 1 as the underlying assets.

Legal Entities subject to Research Report Coverage Restrictions

Daiwa Securities Korea hereby states and confirms that Daiwa Securities Korea has no conflicts of interests with the legal entity covered in this Research Report:

1. In that Daiwa Securities Korea does NOT offer direct or indirect payment guarantee for the legal entity by means of, for instance, guarantee, endorsement, provision of collaterals or the acquisition of debts;
2. In that Daiwa Securities Korea does NOT own one-hundredth (or 1/100) or more of the total number of outstanding equities issued by the legal entity;
3. In that The legal entity is NOT an affiliated company of Daiwa Securities Korea pursuant to Sub-paragraph 3, Article 2 of the Monopoly Regulation and Fair Trade Act of Korea;
4. In that, although Daiwa Securities Korea offers advisory services for the legal entity with regard to an M&A deal, the size of the M&A deal does NOT exceed five-hundredths (or 5/100) of the total asset size or the total number of equities issued and outstanding of the legal entity;
5. In that, although Daiwa Securities Korea acted in the capacity of a Lead Underwriter for the initial public offering of the legal entity, more than one-year has passed since the IPO date;
6. In that Daiwa Securities Korea is NOT designated by the legal entity as the 'tender offer agent' pursuant to the Paragraph 2, Article 133 of the Financial Services and Capital Market Act or the legal entity is NOT the issuer of the equity subject to the proposed tender offer; this requirement, however applies until the maturity of the tender offer period; or
7. In that Daiwa Securities Korea does NOT have significant or material interests with regard to the legal entity.

Disclosure of Prior Distribution to Third Party
This report has not been distributed to the third party in advance prior to public release.

The following explains the rating system in the report as compared to KOSPI, based on the beliefs of the author(s) of this report.

"1": the security could outperform the KOSPI by more than 15% over the next 12 months, unless otherwise stated.
"2": the security is expected to outperform the KOSPI by 5-15% over the next 12 months, unless otherwise stated.
"3": the security is expected to perform within 5% of the KOSPI (better or worse) over the next 12 months, unless otherwise stated.
"4": the security is expected to underperform the KOSPI by 5-15% over the next 12 months, unless otherwise stated.
"5": the security could underperform the KOSPI by more than 15% over the next 12 months, unless otherwise stated.

"Positive" means that the analyst expects the sector to outperform the KOSPI over the next 12 months, unless otherwise stated.
"Neutral" means that the analyst expects the sector to be in-line with the KOSPI over the next 12 months, unless otherwise stated.
"Negative" means that the analyst expects the sector to underperform the KOSPI over the next 12 months, unless otherwise stated.

Additional information may be available upon request.

Singapore

This research is distributed in Singapore by Daiwa Capital Markets Singapore Limited and it may only be distributed in Singapore to accredited investors, expert investors and institutional investors as defined in the Financial Advisers Regulations and the Securities and Futures Act (Chapter 289), as amended from time to time. By virtue of distribution to these category of investors, Daiwa Capital Markets Singapore Limited and its representatives are not required to comply with Section 36 of the Financial Advisers Act (Chapter 110) (Section 36 relates to disclosure of Daiwa Capital Markets Singapore Limited's interest and/or its representative's interest in securities). Recipients of this research in Singapore may contact Daiwa Capital Markets Singapore Limited in respect of any matter arising from or in connection with the research.

Australia

This research is distributed in Australia by Daiwa Capital Markets Australia Limited and it may only be distributed in Australia to wholesale investors within the meaning of the Corporations Act. Recipients of this research in Australia may contact Daiwa Capital Markets Stockbroking Limited in respect of any matter arising from or in connection with the research.

India

This research is distributed in India to Institutional Clients only by Daiwa Capital Markets India Private Limited (Daiwa India) which is an intermediary registered with Securities & Exchange Board of India as a Stock Broker, Merchant Bank and Research Analyst. Daiwa India, its Research Analyst and their family members and its associates do not have any financial interest save as disclosed or other undisclosed material conflict of interest in the securities or derivatives of any companies under coverage. Daiwa India and its associates, may have received compensation for any products other than Investment Banking (as disclosed)or brokerage services from the subject company in this report or from any third party during the past 12 months. Daiwa India and its associates may have debt holdings in the subject company. For information on ownership of equity, please visit BlueMatrix disclosure Link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*.

There is no material disciplinary action against Daiwa India by any regulatory authority impacting equity research analysis activities as of the date of this report.

Associates of Daiwa India, registered with Indian regulators, include Daiwa Capital Markets Singapore Limited and Daiwa Portfolio Advisory (India) Private Limited.

Taiwan

This research is solely for reference and not intended to provide tailored investment recommendations. This research is distributed in Taiwan by Daiwa-Cathay Capital Markets Co., Ltd. and it may only be distributed in Taiwan to specific customers who have signed recommendation contracts with Daiwa-Cathay Capital Markets Co., Ltd. and non-customers including (i) professional institutional investors, (ii) TWSE or TPEx listed companies, upstream and downstream vendors, and specialists that offer or seek advice, and (iii) potential customers with an actual need for business development in accordance with the Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers. Recipients of this research including non-customer recipients of this research shall not provide it to others or engage in any activities in connection with this research which may involve conflicts of interests. Neither Daiwa-Cathay Capital Markets Co., Ltd. nor its personnel who writes or reviews the research report has any conflict of interest in this research. Since Daiwa-Cathay Capital Markets Co., Ltd. does not operate brokerage trading business in foreign markets, **this research is "without recommendation" to any foreign securities** and Daiwa-Cathay Capital Markets Co., Ltd. does not accept orders from customers to trade in such securities that are without recommendation. Recipients of this research in Taiwan may contact Daiwa-Cathay Capital Markets Co., Ltd. in respect of any matter arising from or in connection with the research.

Philippines

This research is distributed in the Philippines by DBP-Daiwa Capital Markets Philippines, Inc. which is regulated by the Philippines Securities and Exchange Commission and the Philippines Stock Exchange, Inc. Recipients of this research in the Philippines may contact DBP-Daiwa Capital Markets Philippines, Inc. in respect of any matter arising from or in connection with the research. DBP-Daiwa Capital Markets Philippines, Inc. recommends that investors independently assess, with a professional advisor, the specific financial risks as well as the legal, regulatory, tax, accounting, and other consequences of a proposed transaction. DBP-Daiwa Capital Markets Philippines, Inc. may have positions or may be materially interested in the securities in any of the markets mentioned in the publication or may have performed other services for the issuers of such securities.

For relevant securities and trading rules please visit SEC and PSE links at *http://www.sec.gov.ph* and *http://www.pse.com.ph/* respectively.

Thailand

This research is distributed to only institutional investors in Thailand primarily by Thanachart Securities Public Company Limited ("TNS").

This report is prepared by analysts who are employed by Daiwa Securities Group Inc. and/or its non-U.S. affiliates. This report is provided to you for informational purposes only and it is not, and is not to be construed as, an offer or an invitation to make an offer to sell or buy any securities. Neither Thanachart Securities Public Company Limited, Daiwa Securities Group Inc. nor any of their respective parent, holding, subsidiaries or affiliates, nor any of their respective directors, officers, servants and employees accept any liability whatsoever for any direct or consequential loss arising from any use of this research or its contents.

The information and opinions contained herein have been compiled or arrived at from sources believed to be reliable. However, Thanachart Securities Public Company Limited, Daiwa Securities Group Inc. nor any of their respective parent, holding, subsidiaries or affiliates, nor any of their respective directors, officers, servants and employees make no representation or warranty, express or implied, as to their accuracy or completeness. Expressions of opinion herein are subject to change without notice. The use of any information, forecasts and opinions contained in this report shall be at the sole discretion and risk of the user.

Daiwa Securities Group Inc. and/or its non-U.S. affiliates perform and seek to perform business with companies covered in this research. Thanachart Securities Public Company Limited, Daiwa Securities Group Inc., their respective parent, holding, subsidiaries or affiliates, their respective directors, officers, servants and employees may have positions and financial interest in securities mentioned in this research. Thanachart Securities Public Company Limited, Daiwa Securities Group Inc., their respective parent, holding, subsidiaries or affiliates may from time to time perform investment banking or other services for, or solicit investment banking or other business from, any entity mentioned in this research. Therefore, investors should be aware of conflict of interest that may affect the objectivity of this research.

United Kingdom

This research report is produced by Daiwa Securities Co. Ltd. and/or its affiliates and is distributed in the European Union, Iceland, Liechtenstein, Norway and Switzerland. Daiwa Capital Markets Europe Limited is authorised and regulated by The Financial Conduct Authority ("FCA") and is a member of the London Stock Exchange and Eurex. This publication is intended for investors who are not Retail Clients in the United Kingdom within the meaning of the Rules of the FCA and should not therefore be distributed to such Retail Clients in the United Kingdom. Should you enter into investment business with Daiwa Capital Markets Europe's affiliates outside the United Kingdom, we are obliged to advise that the protection afforded by the United Kingdom regulatory system may not apply; in particular, the benefits of the Financial Services Compensation Scheme may not be available.

Daiwa Capital Markets Europe Limited has in place organisational arrangements for the prevention and avoidance of conflicts of interest. Our conflict management policy is available at *http://www.uk.daiwacm.com/about-us/corporate-governance-regulatory*.

Germany

This document is distributed in Germany by Daiwa Capital Markets Europe Limited, Niederlassung Frankfurt which is regulated by BaFin (Bundesanstalt fuer Finanzdienstleistungsaufsicht) for the conduct of business in Germany.

Bahrain

This research material is distributed in Bahrain by Daiwa Capital Markets Europe Limited, Bahrain Branch, regulated by The Central Bank of Bahrain and holds Investment Business Firm – Category 2 license and having its official place of business at the Bahrain World Trade Centre, South Tower, 7th floor, P.O. Box 30069, Manama, Kingdom of Bahrain. Tel No. +973 17534452 Fax No. +973 535113

United States

This report is distributed in the U.S. by Daiwa Capital Markets America Inc. (DCMA). It may not be accurate or complete and should not be relied upon as such. It reflects the preparer's views at the time of its preparation, but may not reflect events occurring after its preparation; nor does it reflect DCMA's views at any time. Neither DCMA nor the preparer has any obligation to update this report or to continue to prepare research on this subject. This report is not an offer to sell or the solicitation of any offer to buy securities. Unless this report says otherwise, any recommendation it makes is risky and appropriate only for sophisticated speculative investors able to incur significant losses. Readers should consult their financial advisors to determine whether any such recommendation is consistent with their own investment objectives, financial situation and needs. This report does not recommend to U.S. recipients the use of any of DCMA's non-U.S. affiliates to effect trades in any security and is not supplied with any understanding that U.S. recipients of this report will direct commission business to such non-U.S. entities. Unless applicable law permits otherwise, non-U.S. customers wishing to effect a transaction in any securities referenced in this material should contact a Daiwa entity in their local jurisdiction. Most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to their residents, as well as a process for doing so. As a result, the securities discussed in this report may not be eligible for sales in some jurisdictions. Customers wishing to obtain further information about this report should contact DCMA: Daiwa Capital Markets America Inc., Financial Square, 32 Old Slip, New York, New York 10005 (Tel no. 212-612-7000).

Ownership of Securities

For "Ownership of Securities" information please visit BlueMatrix disclosure link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*.

Investment Banking Relationships

For "Investment Banking Relationships" please visit BlueMatrix disclosure link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*.

DCMA Market Making

For "DCMA Market Making" please visit BlueMatrix disclosure link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*.

Research Analyst Conflicts

For updates on "Research Analyst Conflicts" please visit BlueMatrix disclosure link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*. The principal research analysts who prepared this report have no financial interest in securities of the issuers covered in the report, are not (nor are any members of their household) an officer, director or advisory board member of the issuer(s) covered in the report, and are not aware of any material relevant conflict of interest involving the analyst or DCMA, and did not receive any compensation from the issuer during the past 12 months except as noted: no exceptions.

Research Analyst Certification

For updates on "Research Analyst Certification" and "Rating System" please visit BlueMatrix disclosure link at *https://daiwa3.bluematrix.com/sellside/Disclosures.action*. The views about any and all of the subject securities and issuers expressed in this Research Report accurately reflect the personal views of the research analyst(s) primarily responsible for this report (or the views of the firm producing the report if no individual analysts[s] is named on the report); and no part of the compensation of such analyst(s) (or no part of the compensation of the firm if no individual analyst[s)] is named on the report) was, is, or will be directly or indirectly related to the specific recommendations or views contained in this Research Report.

The following explains the rating system in the report as compared to relevant local indices, unless otherwise stated, based on the beliefs of the author of the report.

"1": the security could outperform the local index by more than 15% over the next 12 months.
"2": the security is expected to outperform the local index by 5-15% over the next 12 months.
"3": the security is expected to perform within 5% of the local index (better or worse) over the next 12 months.
"4": the security is expected to underperform the local index by 5-15% over the next 12 months.
"5": the security could underperform the local index by more than 15% over the next 12 months.

Disclosure of investment ratings

Rating	Percentage of total
Buy*	63.9%
Hold**	21.9%
Sell***	14.2%

Source: Daiwa

Notes: data is for single-branded Daiwa research in Asia (ex Japan) and correct as of 31 December 2016.
** comprised of Daiwa's Buy and Outperform ratings.*
*** comprised of Daiwa's Hold ratings.*
**** comprised of Daiwa's Underperform and Sell ratings.*

For stocks and sectors in Malaysia covered by Affin Hwang, the following rating system is in effect:

Stocks:

BUY: Total return is expected to exceed +10% over a 12-month period

HOLD: Total return is expected to be between -5% and +10% over a 12-month period

SELL: Total return is expected to be below -5% over a 12-month period

NOT RATED: Affin Hwang Investment Bank Berhad does not provide research coverage or rating for this company. Report is intended as information only and not as a recommendation

Sectors:

OVERWEIGHT: Industry, as defined by the analyst's coverage universe, is expected to outperform the KLCI benchmark over the next 12 months

NEUTRAL: Industry, as defined by the analyst's coverage universe, is expected to perform in line with the KLCI benchmark over the next 12 months

UNDERWEIGHT: Industry, as defined by the analyst's coverage universe is expected to underperform the KLCI benchmark over the next 12 months

Conflict of Interest Disclosure

Ownership of Securities

For "Ownership of Securities" information, please visit BlueMatrix disclosure Link at https://daiwa3.bluematrix.com/sellside/Disclosures.action.

Investment Banking Relationships

For "Investment Banking Relationship", please visit BlueMatrix disclosure Link at https://daiwa3.bluematrix.com/sellside/Disclosures.action.

Relevant Relationships

Affin Hwang may from time to time have an individual employed by or associated with it serves as an officer of any of the companies under its research coverage.

Affin Hwang market making

Affin Hwang may from time to time make a market in securities covered by this research.

Additional information may be available upon request.

Japan - additional notification items pursuant to Article 37 of the Financial Instruments and Exchange Law
(This Notification is only applicable where report is distributed by Daiwa Securities Co. Ltd.)

If you decide to enter into a business arrangement with us based on the information described in materials presented along with this document, we ask you to pay close attention to the following items.

- In addition to the purchase price of a financial instrument, we will collect a trading commission* for each transaction as agreed beforehand with you. Since commissions may be included in the purchase price or may not be charged for certain transactions, we recommend that you confirm the commission for each transaction.
- In some cases, we may also charge a maximum of ¥ 2 million (including tax) per year as a standing proxy fee for our deposit of your securities, if you are a non-resident of Japan.
- For derivative and margin transactions etc., we may require collateral or margin requirements in accordance with an agreement made beforehand with you. Ordinarily in such cases, the amount of the transaction will be in excess of the required collateral or margin requirements.

- There is a risk that you will incur losses on your transactions due to changes in the market price of financial instruments based on fluctuations in interest rates, exchange rates, stock prices, real estate prices, commodity prices, and others. In addition, depending on the content of the transaction, the loss could exceed the amount of the collateral or margin requirements.
- There may be a difference between bid price etc. and ask price etc. of OTC derivatives handled by us.
- Before engaging in any trading, please thoroughly confirm accounting and tax treatments regarding your trading in financial instruments with such experts as certified public accountants.
  *The amount of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of each transaction etc.

When making an actual transaction, please be sure to carefully read the materials presented to you prior to the execution of agreement, and to take responsibility for your own decisions regarding the signing of the agreement with us.

Corporate Name:	Daiwa Securities Co. Ltd.
	Financial instruments firm: chief of Kanto Local Finance Bureau (Kin-sho) No.108
Memberships:	Japan Securities Dealers Association, The Financial Futures Association of Japan
	Japan Securities Investment Advisers Association
	Type II Financial Instruments Firms Association