Daiwa Capital Markets

Global Technology Sector

Negative | Neutral | Positive

Positive (unchanged)

Mid-cycle correction offers re-entry opportunities

- Tech stocks have witnessed volatility so far this year on concerns of short-lived restocking, muted demand and inventory overbuild
- But we see these concerns as overdone as the sector's fundamentals look to be playing out well, in line with our expectations
- Amid this mid-cycle correction, we would buy stocks likely to gain share in 2H16, including TSMC, Sony, Largan, Hiwin, LandMark Opto

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What's new: Despite the spate of recent rebounds, the tech stocks in general have corrected since their March-April 2016 peaks on market concerns of short-lived restocking, muted demand and inventory overbuild. However, we consider this a mid-cycle correction offering a re-entry opportunity. We believe our call for a cyclical upturn is playing out well and see sustainable restocking with limited inventory risk. However, we stick with our view that the sector will see only a modest business recovery in 2016 due to smartphone demand slowing and global macro uncertainties. Thus, we suggest being selective and would focus only on companies able to gain market share by capitalising on the right component-spec upgrades.

What's the impact: Sustainable yet modest upturn. We dismiss concerns in the market that the restocking will be short-lived, as we see limited inventory risk on the back of the supply chain's cautious end-demand approach. Restocking has been playing out well post the inventory's normalisation at the end of 2015, with 1H16 driven by Android-smartphone inventory rebuild followed by iPhone rebuild in 2H16. Regardless of the rebuild being sell-in ahead of seasonal demand, we expect the sell-through to match the sell-in despite just a modest upturn in both, suggesting little risk of the inventory overbuild we saw in 2015.

Apple plays back in focus. Suffering from iPhone demand weakness in 1H16, the Apple supply-chain players in Asia saw stock corrections earlier than their tech peers. But we expect the market to resume its focus on the Apple plays, as we believe their business growth momentum will pick up in 2H16 – we forecast a 36% HoH recovery in iPhone build (production base). Our top picks are: **Sony**, **Largan** and **TSMC** (upgrade to Buy [1]).

Optical communications (OC) theme remains intact. Since our initiation on the OC sector, we've witnessed the fundamentals of this sector unfolding in line with our expectations, regardless of the 2Q16 fibre-to-the-x (FTTX) order slowdowns in China caused by the ZTE issue; we consider the ZTE issue to be short-lived volatility. We think our 2 long-term growth engines ideas remain intact: 1) global FTTX build, and 2) bandwidth upgrades at datacentres. We are also seeing Silicon-Photonics demand rising strongly in 2Q16, boosting business resilience in the epiwafer segment. Our top picks are: **LandMark Opto** and **WinSemi**.

What we recommend: Being selective remains our investment guideline. The table on the right summarises our revised stock picks.

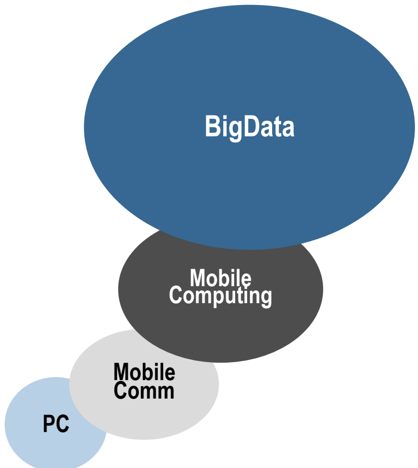
How we differ: We believe we are more bullish than the street on the names we think will be able to capitalise on market-share gains in 2H16.

Daiwa's latest PanAsia tech picks

Stock	Ticker	Rating	TP*
Sony	6758 JP	Buy	4,000
Disco	6146 JP	Buy	13,000
SEC	005930 KS	Buy	1,510,000
SEMCO	009150 KS	Buy	76,000
TSMC	2330 TT	Buy	185.00
UMC	2303 TT	Buy	15.80
LandMark Opto	3081 TT	Buy	655.00
MediaTek	2454 TT	Buy	288.00
Largan	3008 TT	Buy	3,200.00
AAC	2018 HK	Buy	68.00
Ennoconn	6414 TT	Buy	496.00
Hiwin	2049 TT	Buy	170.00
Airtac	1590 TT	Buy	270.00
WinSemi	3105 TT	Outperform	72.00
Murata	6981 JP	Outperform	18,500

Source: Daiwa forecasts
** Target prices in local currency*
*** We are adding SEMCO, LandMark Opto, Ennoconn, Hiwin and Airtac; dropping ASE, SPIL, Catcher, Hon Hai, Pegatron and Delta.*

Global IT industry: evolving trends



Source: Daiwa

Sector

Daiwa's Global Tech Team

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Pioneer (6773 JP)
Alpine Electronics (6816 JP)
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Olympus (7733 JP)
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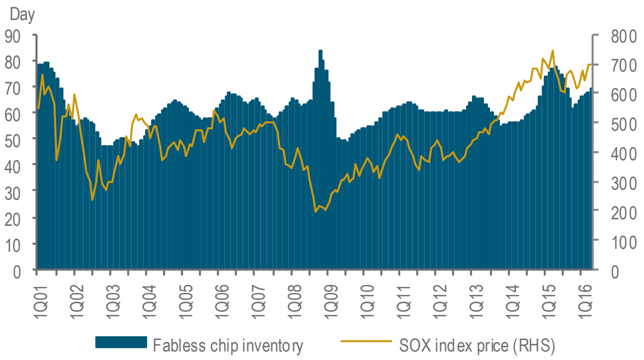
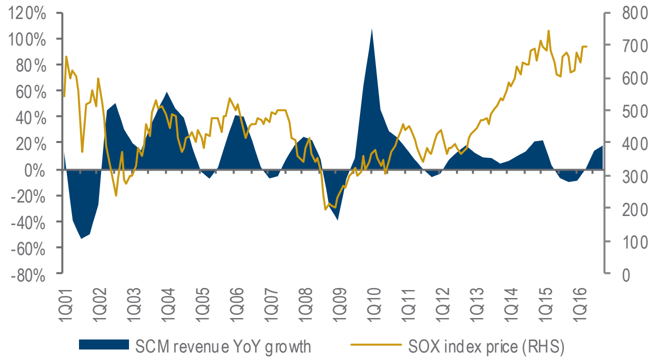
Fujifilm Holdings (4901 JP)
Konica Minolta (4902 JP)
Disco (6146 JP)
Brother Industries (6448 JP)
Seiko Epson (6724 JP)
Hitachi Kokusai Electric (6756 JP)
Advantest (6857 JP)
Ushio (6925 JP)
Nikon (7731 JP)
Screen Holdings (7735 JP)
Hoya (7741 JP)
Canon (7751 JP)
Ricoh (7752 JP)
Tokyo Electron (8035 JP)
Hitachi High-Technologies (8036 JP)

The chip inventory cycle vs. SOX*



Source: Companies, Bloomberg, Daiwa estimates
*Note: *a total of 18 fabless chipmakers in the world under Daiwa's monitor*

The SCM revenue cycle vs. SOX*



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

SCM PBR valuation*

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

OSAT PBR valuation*

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

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Mid-cycle correction offers re-entry opportunities

In early December 2015, we turned positive on the global semiconductor contract manufacturing (SCM) sector, calling for a cyclical upturn post inventory normalisation and upgrading chip majors like TSMC (see ***2016 Global Technology Outlook: Heading for the light***). Since then, our view appears to be playing out well, as evidenced by the 2Q16 business guidance from the chipmakers we monitor globally.

Fundamentals so far intact, but not share prices

Inventory normalised at the end of 2015 and restocking started in 1Q16, slightly earlier than we had expected due to the earthquake that hit Taiwan on 6 February 2016, causing some order pull-ins (ie, order shifts from 2Q16 to 1Q16). However, the share-price performances of the tech stocks have been a mixed bag, with the SOX index, industry barometer TSMC, Apple-play Largan, and some niche players like WinSemi more resilient than others that were up in 1Q16 but were back to square one by mid-May, on concerns about short-lived restocking, muted end-demand, risk of inventory overbuild and iPhone demand weakness.

So take advantage of the mid-cycle correction to buy shares

We, however, see the recent share-price weaknesses as just a mid-cycle correction that should not harm our positive stance on the sector's fundamentals for 3 reasons: 1) we expect only modest restocking from the supply chain this year due to a demand slowdown for big-ticket smartphones and lingering global macro uncertainties, 2) this modest restocking should mean little risk of inventory overbuild, as was the case last year, and 3) we have been seeing restocking demand from Android smartphones, especially for the mid-/low-end segments thanks to subsidies from the China telcos for 2G-to-4G mobile phone replacement, driving a business recovery in 1H16, and expect to see the new iPhone build result in continued restocking momentum into 3Q16. Therefore, we suggest investors take advantage of this mid-cycle correction to buy tech stocks, regardless of the recent rebounds in general.

We upgrade TSMC and fine-tune our investment picks, summarised in a table next page

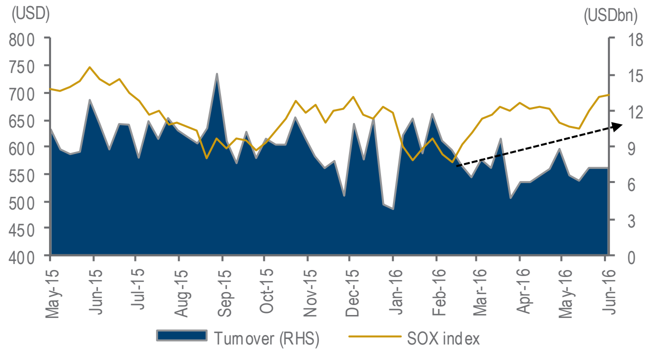
That said, being selective remains our guideline for investors looking for tech stocks as we still envision only a modest cyclical upturn in terms of SCM/global chip revenue growth for 2016. Again, we stick with the 3 themes we flagged 6 months ago: 1) the cyclical upturn, 2) Apple plays, and 3) continued 4G migration, and focus on companies able to gain market share by capitalising on these themes, on the back of continuing component-spec upgrades. We cherry-pick 15 stocks as Daiwa's 2016 Pan-Asia top buys, summarised on the next page.

In this report, as opposed to the previous picks, we are **dropping ASE, SPIL, Catcher, Hon Hai, Pegatron** and **Delta**, and **adding SEMCO, LandMark Opto, Ennoconn, Hiwin** and **Airtac.** We upgrade TSMC one notch to Buy (1) on valuation grounds, and expect its 3Q16 earnings to beat the street consensus, catalysing the share price to the upside. On the flip side, we would avoid names like HTC, Adlink, Wistron, Realtek and SPIL.

LandMark Opto and WinSemi remain our 2 stock ideas for differentiation

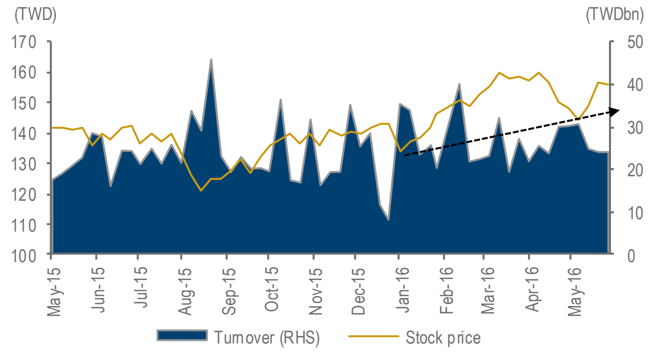
Diverting away from mainstream tech, we have flagged 3 other revenue growth themes fibre optics (FO), sensors and storage, which we believe will come to the fore and drive stock-level outperformance. Recall that in our initiation on the OC sector on 17 February 2016 (see ***Regional Optical Communications Sector Report: Head for the leading lights***), we identified **LandMark Opto** and **WinSemi** as our 2 OC picks in Asia. Spurred by FTTX and datacentre bandwidth upgrades, the OC market looks positioned to grow robustly in the next 3-5 years, regardless of the recent ZTE issue, which we see as just a temporary pause in China's FTTX ordering. The upstream and selected IDMs should capture most of the value proposition in the FO transceiver food chain, in our view.

SOX index performance in the past 12 months



Source: Bloomberg

TSMC stock performance in the past 12 months



Source: TEJ

Summary of stocks under Daiwa's coverage with rating changes since 1Q16 results

			Rating		Target Price (LC)*		EPS change	
Stock	Ticker	Date of change	Current	Previous	Current	Previous	2016E	2017E
TSMC	2330 TT	3-Jun	Buy	Outperform	185.00	180.00	1%	-1%
Pegatron	4938 TT	10-May	Outperform	Buy	74.00	94.00	-13%	-16%
FIH Mobile	2038 HK	5-May	Hold	Buy	3.00	3.60	-63%	-53%
Airtac	1590 TT	5-May	Buy	Underperform	270.00	150.00	1%	2%
Hiwin Technologies	2049 TT	5-May	Buy	Underperform	170.00	105.00	-18%	-11%
Voltronic	6409 TT	3-May	Hold	Outperform	515.00	573.00	-11%	-10%
SPIL	2325 TT	28-Apr	Hold	Buy	50.00	56.00	-30%	-30%
WinSemi	3105 TT	27-Apr	Outperform	Buy	72.00	70.00	3%	3%

Source: Daiwa forecasts
*Note: * local currency*

Daiwa's latest Pan-Asia tech stock picks for 2016

		Price		PER (x)			PBR (x)			ROE (%)			EPS growth (%)		
Stock	Ticker	(LC)*	Rating	2015E	2016E	2017E	2015E	2016E	2017E	2015E	2016E	2017E	2015E	2016E	2017E
Add (15)															
Sony**	6758 JP	3,023.00	Buy	nm	25.3	18.2	1.5	1.4	1.3	na	6.2	7.8	nm	nm	39.4
Disco**	6146 JP	10,350.00	Buy	17.8	17.6	16.9	2.4	2.3	2.2	14.7	13.4	13.1	62.4	1.1	4.3
SEC	005930 KS	1,365,000.00	Buy	10.6	10.3	8.1	1.3	1.2	1.1	11.2	10.5	12.5	-17.8	2.6	27.2
SEMCO	009150 KS	50,700.00	Buy	22.7	15.3	10.3	0.9	0.9	0.8	2.3	6.0	8.3	-72.9	48.3	48.8
TSMC	2330 TT	159.00	Buy	13.4	12.8	11.4	3.4	3.0	2.6	27.0	24.7	24.1	16.2	5.1	11.9
UMC	2303 TT	12.25	Buy	11.6	13.5	10.7	0.7	0.7	0.7	6.0	5.2	6.4	10.5	-13.7	25.7
LandMark Opto	3081 TT	463.00	Buy	32.7	22.3	15.0	9.0	7.4	5.7	38.9	36.4	42.7	49.9	46.5	49.1
MediaTek	2454 TT	215.00	Buy	13.0	14.3	11.5	1.4	1.5	1.5	10.6	10.0	12.7	-44.1	-8.8	24.1
Largan	3008 TT	2,830.00	Buy	15.7	16.5	12.9	6.0	4.9	3.8	44.1	32.5	33.3	24.3	-4.9	28.3
AAC	2018 TT	64.80	Buy	21.7	17.9	14.9	5.9	4.7	3.8	30.0	29.3	28.3	34.1	21.4	19.9
Ennoconn	6414 TT	441.50	Buy	35.6	25.1	16.6	9.7	7.7	5.5	31.0	34.3	38.4	51.7	41.6	51.4
Hiwin	2049 TT	137.50	Buy	22.5	25.8	17.7	2.7	2.8	2.5	12.4	10.7	15.0	-33.7	-12.6	45.4
Airtac	1590 TT	228.00	Buy	29.8	22.3	18.9	4.0	3.9	4.0	13.6	17.7	20.8	-26.4	34.0	17.7
WinSemi	3105 TT	65.10	Outperform	14.5	11.5	10.3	2.5	2.0	1.8	16.1	18.2	18.0	70.7	26.7	11.4
Murata**	6981 JP	12,435.00	Outperform	15.7	12.9	14.8	2.3	2.1	1.9	16.1	17.3	13.7	79.8	21.5	-12.7
Avoid (5)															
HTC	2498 TT	91	Sell	nm	nm	nm	1.2	1.3	1.5	nm	nm	nm	nm	nm	nm
Realtek	2379 TT	87.5	Underperform	18.2	14.6	14.5	2.0	1.9	1.8	11.0	13.4	12.7	-37.6	24.8	0.7
Adlink	6166 TT	64.3	Underperform	21.4	30.0	15.3	3.3	2.7	2.5	16.2	9.9	16.9	-6.2	-28.7	96.4
SPIL	2325 TT	52.9	Hold	20.3	19.8	18.3	2.3	2.5	2.5	12.3	13.2	14.7	-25.7	2.7	7.8
Wistron	3231 TT	20.4	Hold	17.0	9.4	8.2	0.8	0.8	0.7	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 2 Jun 2016, ** March year-end for Sony, Disco and Murata*

Summary of investment theses for Daiwa's Pan-Asia tech picks for 2016

Stock	Ticker	Investment thesis
Sony	6758 JP	• We see multiple themes boosting Sony's 2016 business outlook: 1) dual-camera adoption in smartphones, 2) virtual-reality headsets for gaming and networking, and 3) a likely turnaround in the music market in terms of revenue. • The CMOS image sensor (CIS) business should be the biggest growth driver, with strength driven by dual-camera upgrades followed by penetration into automotive and security applications; Sony is actively expanding capacity to facilitate the robust demand, and its recent acquisition of Toshiba's CIS plant may further add to upside.
Disco	6146 JP	• We see upside to Disco's FY15 business performance due to orders from TSMC (likely for the InFO build) happening earlier than we previously expected. • Further, against the backdrop of our view calling for restocking to begin from March 2016 post the inventory normalisation at end-4Q15, we expect Disco to continue its business recovery mode into FY16, riding on the next cyclical upturn.
SEC	005930 KS	• We see a solid earnings outlook for SEC over 2015-17, driven by its technology leaderships across DRAM, NAND and system LSI. • These should help secure it a share of profitability in the memory market, and gain share in the logic foundry market, on the back of an expanded customer base. • We expect the announced shareholder return initiatives in 4Q15, such as share buybacks and 30-50% FCF returns, to catalyse the stock to the upside.
SEMCO	009150 KS	• We expect a meaningful earnings improvement from 2H16 driven by a supply increase of high-value products, such as dual camera modules and solution MLCC. • Automotive sector backed by synergies with Samsung group affiliates to be a new earnings growth momentum for the company in the long term.
TSMC	2330 TT	• TSMC is our preferred foundry stock, owing to its dominance in advanced technologies and broad product portfolio, allowing it to secure a strong foothold in the MCD cycle and to prepare for the next IoT cycle. • We believe both processor A10 and non-Apple orders are ramping up at TSMC, keeping its 16nm FF capacity busy, ensuring resilience in its 2016 business amid the mediocre smartphone demand growth.
UMC	2303 TT	• We expect UMC to reclaim its most viable second source status in the foundry industry, in light of its material breakthrough for its 28nm process, thanks to the expansion of its customer base and a product mix shift towards the HKMG process. • We expect a round of upward earnings revisions by the street in 2H16, which should be a positive share-price catalyst.
WinSemi	3105 TT	• While WinSemi should continue to benefit from 4G/CA migration, lifting the power amplifier (PA) count/device in 2016, we are positive on the fast ramp-up of WiFi upgrades, which is adding to the second leg of earnings growth. • Longer term, we see WinSemi as being prepared to penetrate the next wave of high-value-added businesses, namely, fibre-optics and pre-5G satellite communications.
MediaTek	2454 TT	• We believe MTK is entering a new phase of its earnings growth cycle, driven by its structural gains in the 4G market that appear to be intact despite the still-intense price war. • Despite MTK's slow margin recovery due to a prolonged price war, we forecast an earnings CAGR of 22% over 2016-18, on the back of scale economies to help reduce its operating expenses. • The stock is trading currently at its downcycle valuation, which doesn't seem to justify its hefty earnings growth projection for 2016-17, in our opinion.
Hiwin	2049 TT	• Our market research indicates that demand for Hiwin's components business is improving in 2Q16, followed by rush orders in 3Q16 due to increasing demand. Besides, China's manufacturing PMI data looks to be bottoming in 2Q16, from below 50 in early-2016. • Hiwin's industrial robotics business should perform better in 2016 compared to last year, thanks to recovering demand from the electronics sector, as well as applications expanding to the healthcare sector. • We expect Hiwin's quarterly earnings to return to a positive trajectory in 4Q16 and remain positive YoY beyond that. Its 2017 PER valuation looks attractive as it sits at the low-end of its past 5-year trading range of 17-45x.
LandMark Opto	3081 TT	• As the largest OC epiwafer supplier in the world, LandMark Opto stands to benefit from the robust growth of global OC demand in the next 3-5 years. • We see 2 growth engines for LandMark Opto: 1) continued FTTX coverage expansion globally, and 2) bandwidth upgrades at datacentres with Intel's SiPhotonics adding to the growth potential. • We forecast its revenue/net profit to see 45%/43% CAGRs over 2015-18, delivering perhaps the highest ROE of nearly 40% in the OC food chain.
Largan	3008 TT	• Largan should enjoy a favourable multi-year industry trend of continuing spec upgrades (ie, higher MPs, dual cameras and OIS), on the back of its leading position in the high-end lens segments. • The stock is trading at the low end of its past-5-year trading range of 10-24x in terms of 2016E PER. We view the risk/reward as very attractive considering the solid operating profit growth that we expect for 2016.
Ennoconn	6414 TT	• As a member of the Hon Hai group, Ennoconn benefits by leveraging on the group's strong manufacturing capabilities, which substantially help improve Ennoconn's cost-competitiveness and flexibility. Also, Hon Hai's steady implementation of production automation makes it a potential client for Ennoconn. • Compared to IPC players' own-brand focus, Ennoconn's ODM focus gives it a larger addressable client base, which can include its peers in the IPC sector and better flexibility when entering new segments. This strategy should help Ennoconn achieve stronger revenue growth than its peers along with favourable operating leverage. • Ennoconn has been more aggressive than its peers on M&A, engaging in several deals of late, most recently its January 2016 announcement to acquire 49% of Kontron Canada Inc (KCI), which should boost its telecom/networking-related revenue from 2Q16.
AAC	2018 HK	• We are upbeat on the outlook for AAC, for both its acoustic and non-acoustic businesses, driven by spec upgrades, increasing adoption of both these solutions, and more project wins. • We expect AAC to deliver strong operating profit growth in 2016 and see its current valuations as undemanding.
Murata	6981 JP	• Murata is the world's leading maker of passive components, and modules that integrate these components, including MLCC, ultra-fine inductors and SAW filters, which stand to benefit from the 4G trend, as well as automotive and other IoT devices. • We see a key growth driver for Murata in the increased components count per device needed to facilitate the rise of the 4G smartphone penetration (RF inductors, SAW filters), and automobiles (MLCCs). This should drive volume gains at Murata to outgrow the industry average.
Airtac	1590 TT	• Management indicates that order inflows have been improving since the beginning of 2016, largely coming from the electronics, automotive and battery sectors. • Airtac has been gaining market share in China over the past few months due to its expanding product application and sales force expansion. JPY appreciation (vs. USD and TWD) over the past few months would ease the price competition between Airtac and its Japanese peer, helping it gain more share due to the widening pricing gap, in our opinion. • We expect Airtac's YoY revenue growth to return to a double-digit percentage for 2016 and 2017, from only 5% YoY for 2015. In addition, the company will require less additional opex this year as most of the expenses for its sales channel and capacity expansion were incurred last year. Thus, we forecast Airtac's operating margin to expand by 140bps/130bps for 2016/17, respectively.

Source: Daiwa forecasts

Limited inventory risk

Inventory risk has been removed – a situation that should prevail throughout 2016

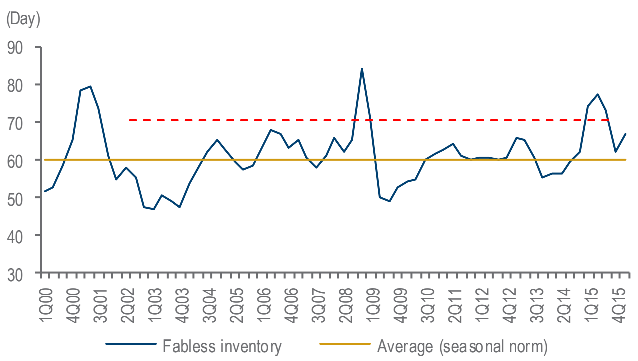
Tight foundry capacity and currency volatility resulted in inventory overbuild in 2015 and caused a prolonged contraction in chip revenue, spurring our downgrade of the SCM sector (see ***This ain't a V-shaped recovery***). These inventory gluts, however, appeared to have bottomed out in 4Q15, spurring our upgrade of the sector in December 2015.

As we expected, the fabless chip inventory that we monitor reached 62 days as at end-4Q15, and grew modestly to around 66-67 days as at end-1Q16, driven by a new round of restocking primarily by the Android smartphone food chain. This inventory rebuild happened slightly earlier than we had expected, and was due to the impact of the earthquake that hit southern Taiwan on 6 February 2016, adding to rush orders and causing the business dynamics to rebalance (ie, an above-seasonal 1Q16 but below-seasonal 2Q16). Nevertheless, we expect only modest inventory rebuild for the rest of 2016, due to the slowdown in global smartphone demand, as we discussed in our sector upgrade note (see ***2016 Global Technology Outlook***), which is likely to limit the inventory risk we saw last year. Inventory as at end-1Q16 was up around 6% QoQ in dollar terms, on our estimates.

We expect fabless inventory to rise to 69 days by end-2Q16

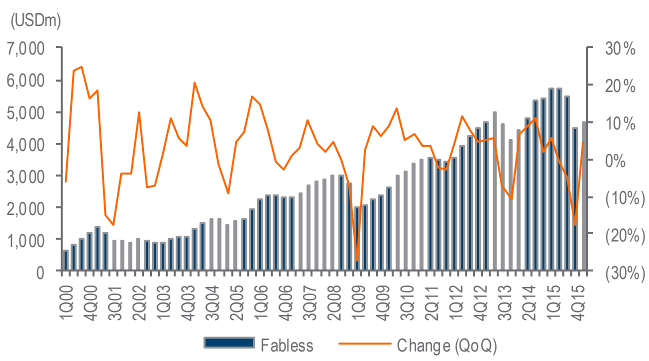
We use the growth differentials among the frontend foundry companies, backend outsourced semiconductor assembly and test (OSAT) companies and fabless chip-majors as a barometer to gauge inventory volatility. Incorporating company guidance from the 1Q16 earnings releases, we expect the combined revenue for both the foundries and OSAT majors to grow by a low-teens percentage QoQ for 2Q16, and that for the fabless chipmakers to rise by a high single-digit percentage QoQ. Excluding factors like the impact of the earthquake and rising manufacturing cycle times, this barometer that we monitor suggests that chip inventory will rise by around 5% QoQ, to a level similar to that seen during past seasonal peaks (ie, around 69 days).

Major fabless inventory trend*



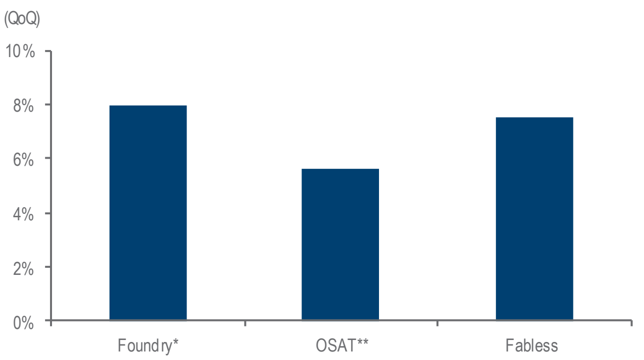
Source: Company, Daiwa estimates
*Note: * A total of 15 fabless chipmakers monitored by Daiwa*

Global fabless inventory in dollar terms*



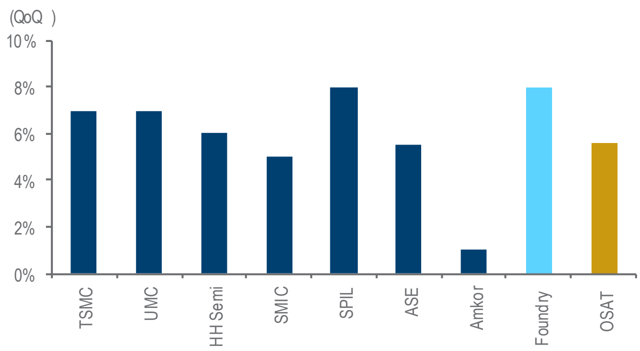
Source: Company, Daiwa estimates
*Note: * A total of 15 fabless chipmakers monitored by Daiwa*

Foundry/OSAT/fabless revenue growth differentials (2Q16)



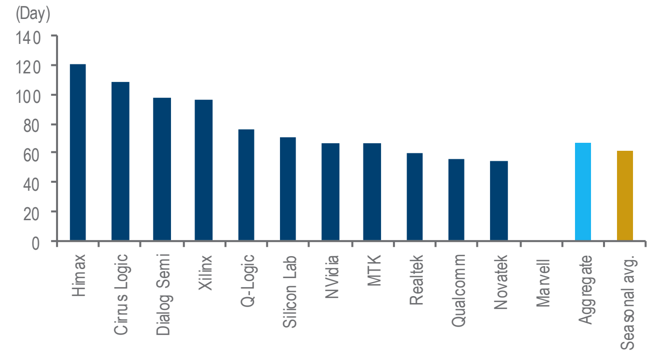
Source: Company, Daiwa estimates
*Note: * Top 4 foundries of TSMC, UMC, GF and SMIC; * Top 4 OSATs of ASE, Amkor, SPIL and JCET*

Major SCM revenue growth guidance for June-quarter*



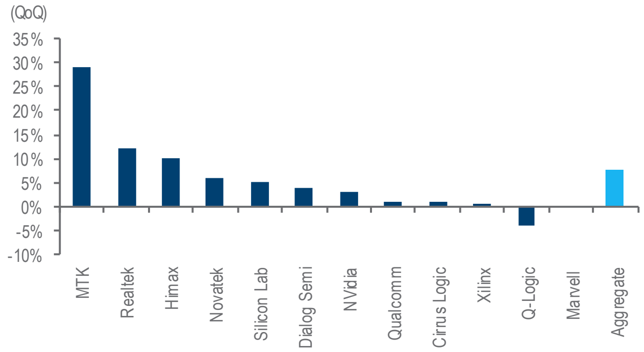
Source: Company, Daiwa estimates
*Note: * Mid-point of guidance range; ASE on OSAT business only*

Major fabless inventory status at March-quarter end*



Source: Company, Daiwa estimates
*Note: *MRVL has not reported yet*

Major fabless revenue growth guidance for June-quarter*



Source: Company, Daiwa estimates
*Note: *Mid-point of guidance range; MRVL not reported yet*

Incremental strength in 2Q16 appears to be being led by MTK and Realtek

The individual fabless chipmakers were a mixed bag in terms of inventory status as at the March-quarter end. Some of them, such as Qualcomm, Dialog Semi, NVidia and Novatek, saw an increase in inventory levels due to company-specific demand weakness, while others seemed to continuously work down their inventory due to market-share gains, such as MediaTek (MTK), Xilinx and Realtek. Those with leaner inventory tended to give stronger 2Q16 business guidance, which tallies with our market research of mixed order strength at their SCM partners. According to their guidance, the aggregate revenue of the fabless majors that we monitor is likely to grow by a high-single-digit percentage QoQ for the June quarter (up 2-12% QoQ, with a mid-point of up 7% QoQ), with incremental strength led by MTK and Realtek, on our observations. Restocking from the Android smartphone, especially in the mid-/low-end, appears to be a key 1H16 demand driver for chips, benefiting suppliers such as MTK and Realtek.

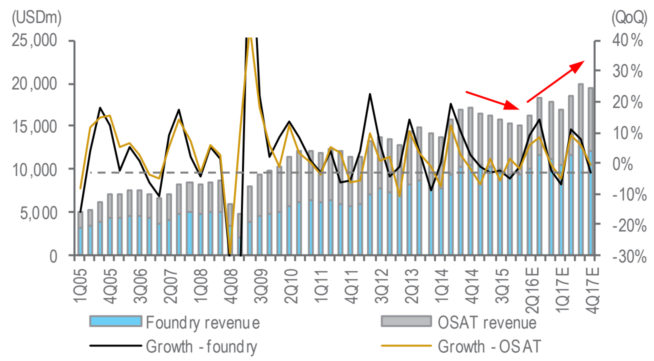
Sustainable but modest upturn

We look for SCM revenue to grow by 12% QoQ for 3Q16

The modest ongoing inventory rebuild, based on our inventory assessments, lead us to believe that any inventory risk for this year will be just a mid-cycle correction, not a downturn, as was the case last year. The sub-seasonal SCM revenue build in 2Q16 further offer evidence to support our view, and we attribute such sub-seasonal build to the focus of customer demand on mid-/low-end smartphones as well as the supply chain's cautious restocking, given the slowdown in the smartphone demand cycle and global macro uncertainties.

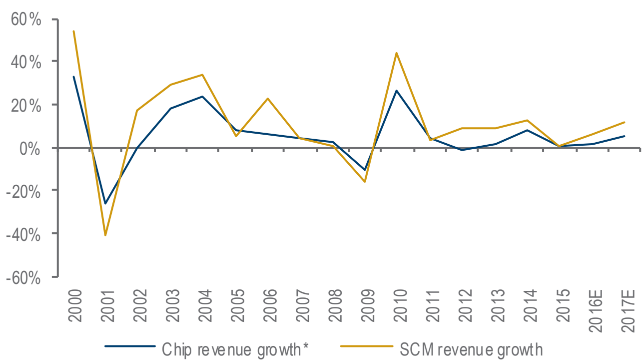
Our revised forecasts call for global SCM revenue (having contracted by 1-4% QoQ over 1Q15-1Q16 due to the prolonged inventory issue) to start recovering from 2Q16, with 8% QoQ growth, followed by 12% QoQ growth for 3Q16, with demand for mid-/low-end Android smartphones being the key demand driver for 1H16, followed by iPhone restocking for 2H16. We expect the SCM sector to consistently outgrow the global chip-makers in terms of revenue growth due to our view of structural market-share gains.

Global SCM revenue forecast (quarterly)*



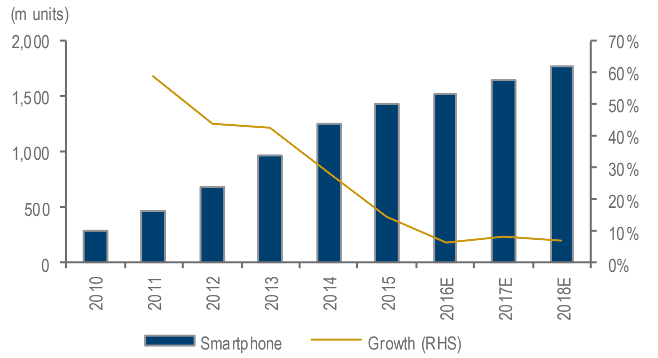
Source: Company, Daiwa forecasts
*Note: *Dedicated foundries and OSAT makers only, ex-IDMs*

Annual revenue growth forecasts: SCM vs. chip average*



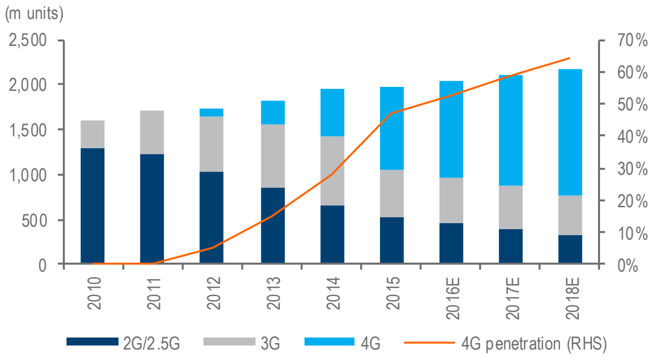
Source: WSTS, Daiwa forecasts
*Note: *ex-memory*

Global smartphone demand forecasts



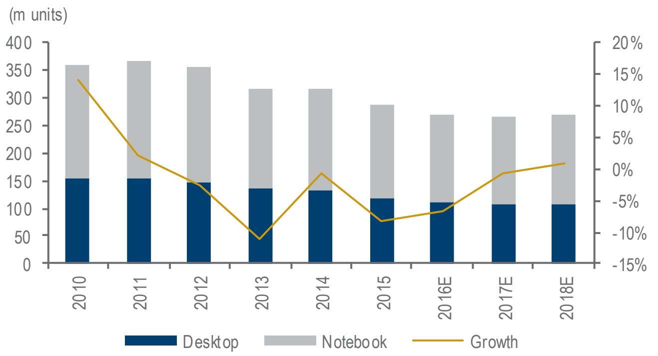
Source: IDC, Daiwa forecasts

4G penetration in the global mobile handset market



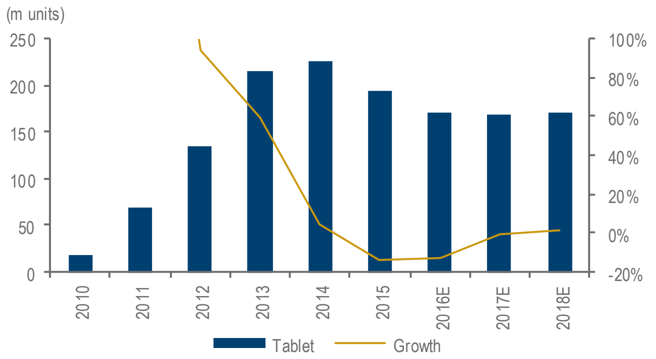
Source: IDC, Daiwa forecasts

Global PC demand forecasts*



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

Global tablet PC forecasts



Source: IDC, Daiwa forecasts

Big-ticket item demand growth is tapering off …

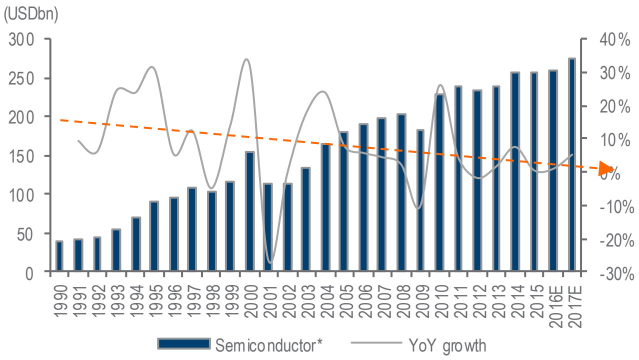
From an end-demand point of view, the big-ticket smartphone items (c. 1/3 of chip demand, on our estimates) are tapering off in terms of the growth cycle, which, together with muted PC and digital consumer demand (growth likely to be down by a mid- to high-single-digit percentage YoY for 2016), appears to have prompted cautious inventory rebuild in the supply chain ahead of the upcoming seasonal demand.

We forecast global smartphone shipments to increase by 7% YoY for 2016 and hover around high-single-digit percentage growth for 2017 and 2018, with incremental growth being driven by continued 4G migration. We look for 4G penetration to rise from 47% for 2015 to 65% for 2018. As the next demand cycle for Big Data/IoT may not take off until 2018, taking over smartphones' position, we expect only mediocre growth in global SCM/chip sales during the 2015-18 mobile computing devices (MCD)-to-Big Data transition (see ***This ain't a V-shaped recovery***).

… resulting in only mediocre revenue growth for the chip cycle

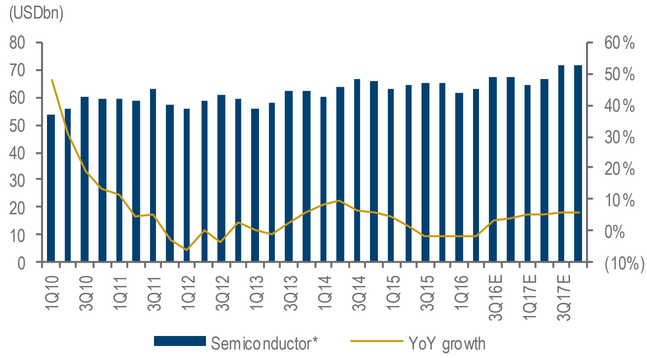
Our mediocre revenue growth forecast for the SCM sector as a result of the smartphone demand slowdown implies subsequent mediocre growth in global chip revenue. Although the long-term "de-growth" of the chip sector appears to have stabilised post the GFC since 2010, revenue growth has been consolidating within a narrow range of -5% to +10% YoY, averaging at just 2% YoY. We forecast global chip revenue (ex-memory chips) to increase by 1% YoY for 2016 and 5% for 2017, rising at a 3% CAGR over 2015-18E. On a quarterly basis, we forecast revenue to rise by 3% QoQ for 2Q16, 7% for 3Q16 (-5% in 1Q16), and hover within a range of -2% to +6% until 4Q17 in YoY terms.

Global chip revenue growth forecasts (annual)



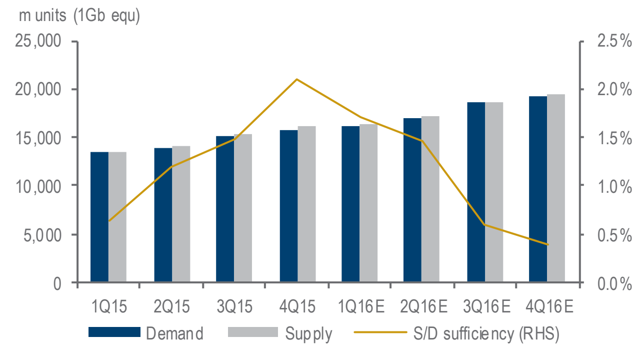
Source: Company, Daiwa forecasts
*Note: *excluding memory devices like DRAM and NAND*

Global chip revenue growth forecasts (quarterly)*



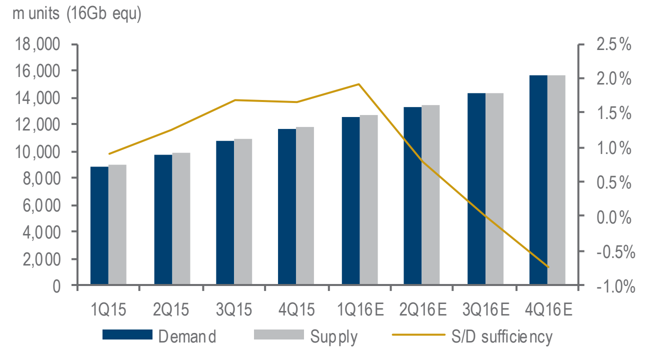
Source: WSTS, Daiwa forecasts
*Note: * excluding memory devices like DRAM and NAND*

Global DRAM supply/demand forecasts



Source: Daiwa forecasts

Global NAND supply/demand forecasts



Source: Daiwa forecasts

Memory market should improve into 2H16

While we expect the SCM majors, like TSMC, UMC, ASE and SPIL, and semiconductor-production equipment (SPE) players, like Disco, Tokyo Electron and Hitachi Hi-Tech, to benefit from a cyclical upturn and market-share gains in the logic space this year, memory makers such as Samsung Electronics (SEC) and SK Hynix should benefit from an improved supply/demand imbalance in 2016. Our Korean tech team forecasts the global DRAM and NAND supply/demand sufficiency to reach equilibrium or even reverse to a shortage in 2H16, driven by technological constraints rather than any strong recovery in demand, as the industry migrates to the 1xnm process for DRAM and the 1znm 3D V-NAND process for NAND.

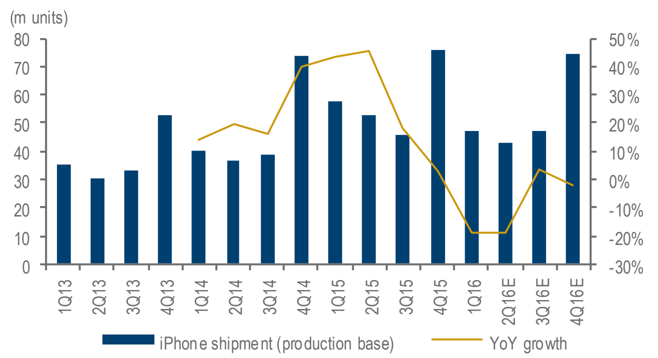
Apple plays likely to return to focus

We forecast a strong 36% HoH recovery in iPhone build

Given the slowdown in iPhone demand in 1H16 (-19% YoY on our forecasts, on a production shipment base), the Apple supply-chain stocks have weakened since 4Q15. But we expect the shipment growth rate to improve in 2H16 when new iPhones are launched, thus stimulating replacement demand driven by spec upgrades (ie, dual cameras and faster AP) and upgrades from older-generation models. Hence, we believe the Apple plays in Asia have passed their troughs in terms of valuations and should return to investors' radar screens (see ***Greater China smartphone sector: Marketing feedback – it is time to cherry-pick***). We forecast a strong 36% HoH recovery in iPhone build (production base, not shipment base) for 2H16 to 122m, bringing total build for 2016 to 212m units.

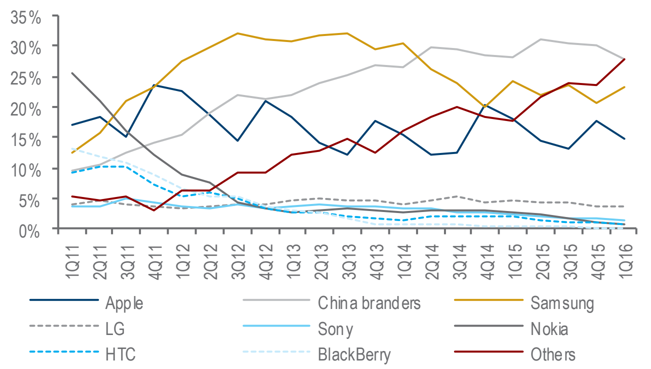
Among the smartphone brands, the winners since the beginning of 2011 have been the China brands and others from the emerging markets (EM), on our observations. Apple's market share has been seasonally volatile, hovering around the 15% level since 2013, down 3pp QoQ for 1Q16 to 15% due to iPhone 6S/S+ demand tapering off. SEC's share has hovered around the 20% level for the past 6 quarters, rising by 2pp QoQ for 1Q16, to 23%. In our view, the smartphone market is consolidating into 2 segments: low-cost and premium. While Apple and SEC should retain their dominance in the premium segment, brands from China and the EM look likely to continue to lead the low-cost segment. We see potential market-share gains for MTK, Sony, TSMC, Novatek, Largan and AAC going forward.

iPhone production forecasts



Source: Daiwa forecasts

Global smartphone market share trend



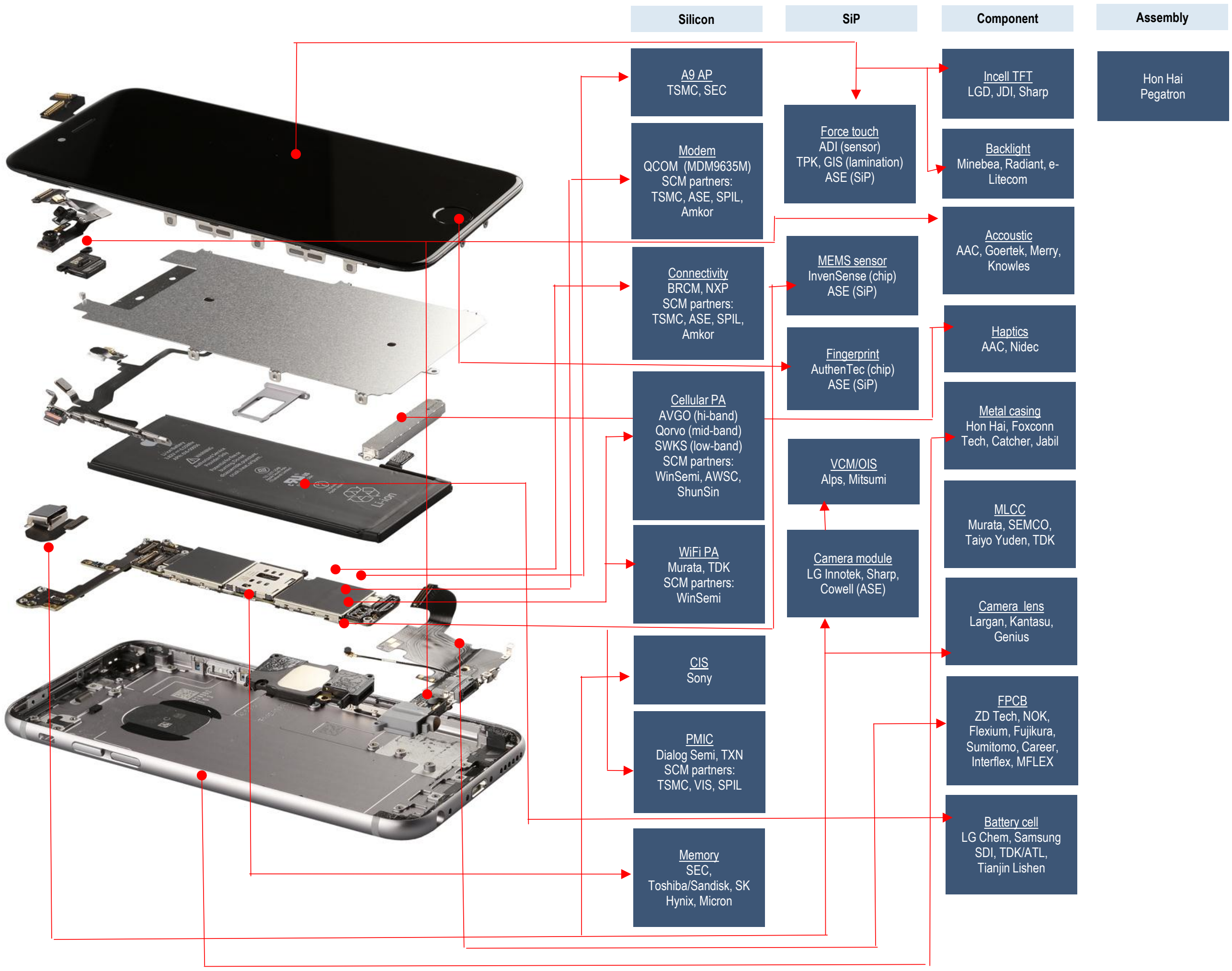
Source: Gartner "Market Share: Devices, All Countries, 4Q15 Update", authors include Mikako Kitagawa, Anshul Gupta, Roberta Cozza, Ranjit Atwal, David Glenn, Isabelle Durand, Kanae Maita, Meike Escherich, Annette Jump, Lillian Tay, Tuong Huy Nguyen, Bruno Lakehal, Tracy Tsai, Eileen He, Vishal Tripathi,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

Daiwa's Apple play picks with relevant revenue exposure

			Sales contribution from Apple		
Company	**Ticker**	**Rating**	**2014E**	**2015E**	**2016E**
Largan	3008 TT	Buy	40-50%	50-55%	45-50%
AAC	2018 HK	Buy	40-45%	50-55%	45-55%
GIS	6456 TT	Buy	~90%	~90%	90%
ASE	2311 TT	Buy	20-25%	20-25%	15-20%
WinSemi	3105 TT	Outperform	30-40%	25-35%	20-30%
TSMC	2330 TT	Buy	~10%	~10%	>10%
TPK	3673 TT	Outperform	~40%	40-45%	50-60%
Catcher	2474 TT	Outperform	40-45%	50-55%	55-60%
Pegatron	4938 TT	Outperform	~45%	60-65%	65-70%
Hon Hai	2317 TT	Hold	~50%	~50%	~50%
Casetek	5264 TT	Hold	80-85%	80-85%	85-90%

Source: Daiwa estimates

iPhone teardown by key supply-chain vendor



Source: Daiwa

Growing OC theme remains intact

Our multi-year growth theme for the OC sector remains intact, despite the recent ZTE issue

Among the “5+1” demand verticals that we define for the Big Data/IoT cycle (see the Big Data/IoT matrix: application vs. functionality chart further on), we have identified 3 areas that we think could rise faster than others this year in terms of functionality: fibre optics (FO) for data transmission, sensors for data access, and data storage. In our view, the related food-chain players stand to benefit from the growth of these areas. Against the backdrop of the OC market size and the high-growth prospects we see for the sector, we initiated coverage of the sector on 17 February (see ***Regional Optical Communications Sector Report: Head for the leading lights***). In our report, we presented 2 demand drivers, FTTX and datacentre bandwidth upgrades, which we contend will spur multi-year market growth. We also flagged LandMark Opto as our preferred stock and WinSemi as a new entrant, both with potential for valuation reratings.

End-demand for FTTH/O build in China seems to be on track

In the FTTX segment (over 45% revenue share of the global OC market currently), progress has been on track with our expectations, as evidenced by the monthly run-rates of the fibre-to-the-home/office (FTTH/O) build in China (over 60% of the global FTTX market) that we monitor. According to the Ministry of Industry & Information Technology (MIIT) (工信部), China’s FTTH/O penetration rate rose to 28% in February 2016 from 16% a year ago, translating into a total of 128m households. We expect the build to reach 170m by end-2016, or a 37% penetration rate, up from a 26% as at end-2015. The number of fibre-enabled households in China increased by an average of 4m/month in January and

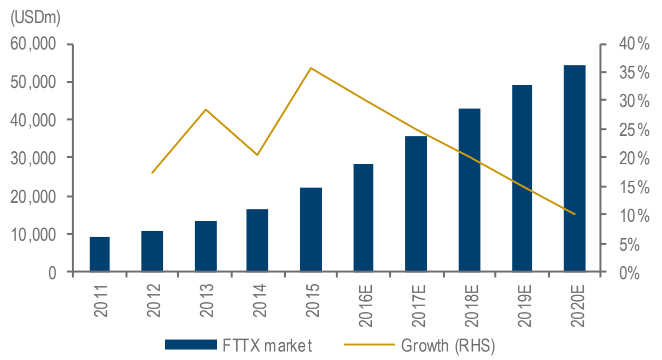
February 2016, suggesting that our target is feasible if the monthly run-rate is to keep up with the same pace.

LandMark Opto showing further resilience thanks to the SiPh ramp-up

ZTE's recent "Black swan" events involving the US authorities has led to a significant reduction in FO transceiver orders to Taiwan from the China telcos, yet we see such production volatility as a temporary issue that will not harm our sector view, as it is not a demand issue (see ***LandMark Opto: Strong gross margin should offset FTTX slowdown***). We believe demand for FTTX in China remains solid, and more importantly, we have observed robust exports from China in 1H16 thanks to increasing FTTX build in other countries, including ASEAN and Europe. We expect orders to rebound for the Taiwan players in 2H16, when the ZTE issue has eased. As for LandMark Opto, we believe it is more resilient than its downstream customers to the ZTE issue thanks to the fast ramp-up of its Silicon-Photonics (SiPh) sales which should make up for any shortfall from China's FTTX market.

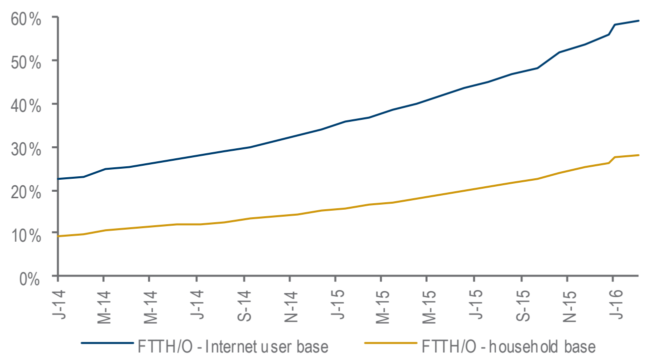
For the datacentre segment (around 20% revenue share of the OC market), the key focus is on the ramp-up of SiPh as an alternative FO solution to penetrate the global datacentre market. After 2-3 years of bumpy operations due to yield ramp-ups and customer qualifications, LandMark Opto's SiPh business revenue contribution is likely to start to pick up in 2Q16, led by order increases from Intel, in our view. This should fire the second cylinder of LandMark Opto's growth driver, sustaining its high-growth profile over 2017-20. We forecast its SiPh revenue contribution to reach 17-18% of total revenue in 2Q16, with the dollar amount up nearly 75% QoQ, and reach over 20% in 4Q16, 35% in 2017 and over 40% in 2018.

Global FTTX market forecasts



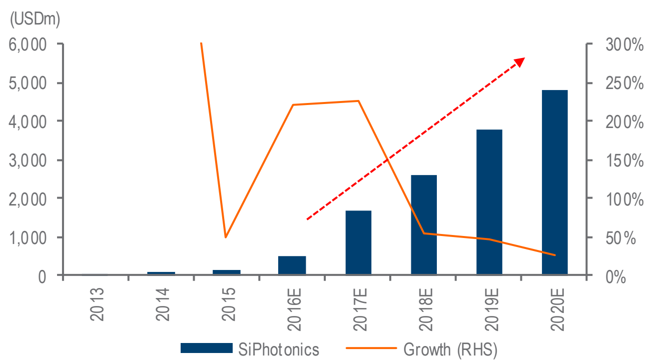
Source: PTIDA, Daiwa forecasts

China's FTTX penetration



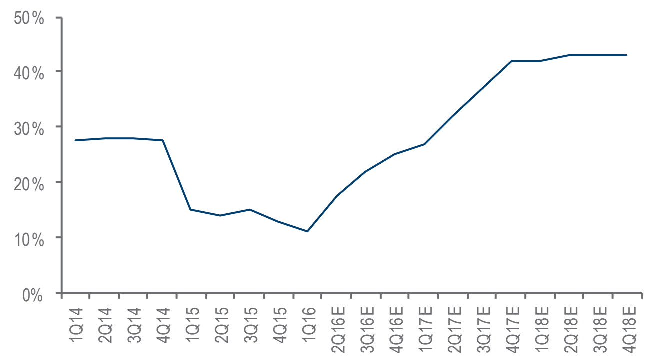
Source: MIIT

Global SiPh market forecast



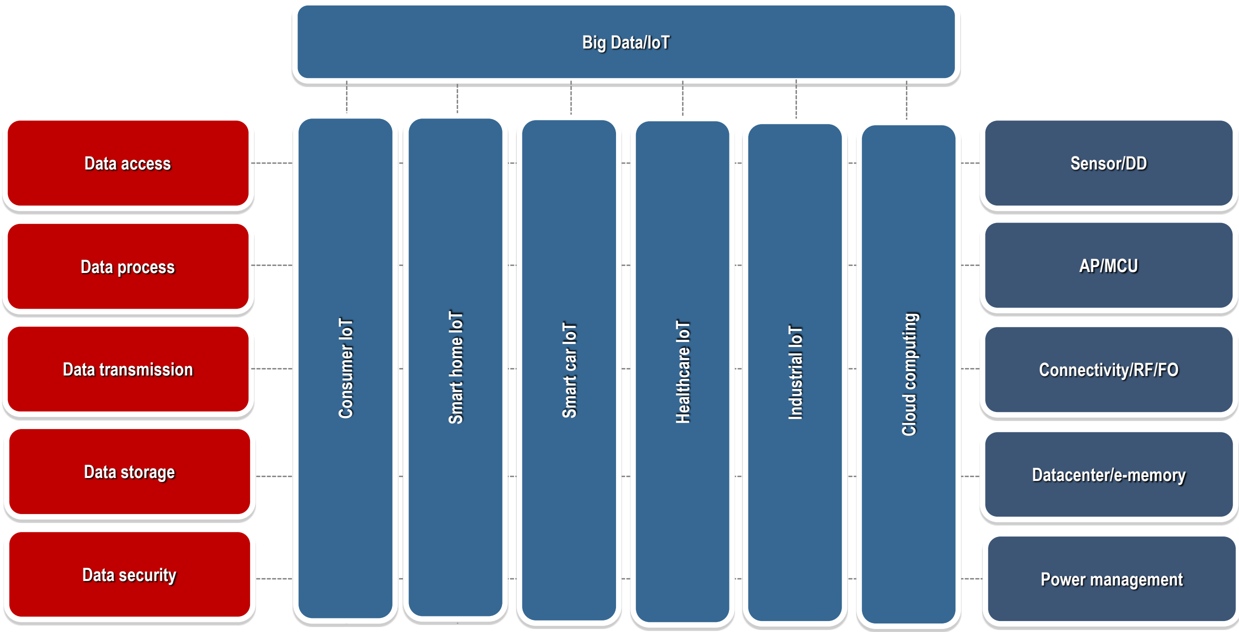
Source: Daiwa forecasts

LandMark Opto: SiPh revenue contribution



Source: Daiwa forecasts

The Big Data/IoT matrix: application vs. functionality



Source: Daiwa

"Be selective" is still the guideline

Focus on stock ideas, not the cycle

Our key message in our December 2015 upgrade report was that although we expect a cyclical upturn for the SCM sector in 2016, following inventory normalisation, we would advise investors to be selective when it comes to stock-picking, as demand growth for big-ticket smartphone items is tapering off. The SCM sector's fundamentals so far have unfolded in line with our expectations, and the supply-chain's cautious restocking leads us to believe that this restocking cycle will be sustainable into 2H16, with limited inventory risk.

But we stick with our view that investors need to be selective and focus on those stocks that are able to gain market/order share through component-spec upgrades in smartphones amid what we see as a transition period (2016-18), from MCD to IoT. We fine-tune our PanAsia investment picks by dropping ASE, SPIL, Catcher, Hon Hai, Delta and Pegatron, and adding SEMCO, LandMark Opto, Ennoconn, Hiwin and Airtac to establish a total of 15 stocks as our key buy ideas. Meanwhile, we identify 5 to avoid (refer to the table on page 7 for details).

Japan tech

We like Sony, Disco and Murata

In Japan, we stick with our Buy ideas on: 1) **Sony** (Buy [1]) for its leadership and order share gains in the CMOS image sensor (CIS) market, as a result of dual-camera and resolution upgrades, 2) **Disco** (Buy [1]) for its order share gains thanks to TSMC's ramp-up of its integrated fan-out (InFO) capacity build to facilitate its A10 business, and 3) **Murata** (Outperform [2]) for its order share gains, as a result of the WiFi multiple-input/multiple-output (MIMO) upgrade cycle within the smartphone space.

Korea tech

We like SEC and SEMCO

In Korea, our Buy ideas are: 1) **SEC** (Buy [1]) for its solid earnings outlook over 2016-17, driven by its tech leadership in the global DRAM, 3D NAND and OLED, and 2) **SEMCO** (Buy [1]) for its improved earnings profile in 2H16, driven by an increase in supply of high-value products, such as dual-camera modules and solution MLCCs, and its synergies with the Samsung group in the automotive space which we think will be a new growth driver in the long run.

Taiwan/Hong Kong tech

We like TSMC, UMC, LandMark Opto, WinSemi, MTK, Largan, AAC, Ennoconn, Hiwin and Airtac

In Taiwan/Hong Kong, we like **TSMC** (upgrading to Buy [1] from Outperform [2]) on the back of its diversified 16nm FF customer base, which should enable it to keep its capacity busy and outperform seasonality in 3Q16, surprising the market on the upside. We like **UMC** (Buy [1]) for its share gains in the 28nm foundry market, which should help its revenue outpace the market average in 3Q16, catalysing the share price to the upside. We like **LandMark Opto** (Buy [1]) for its dual-growth engines at work, including the ongoing global FTTX build-ups and the ramp-up of its SiPh business line, especially with Intel as a customer. We like **WinSemi** (Outperform [2]) for its current earnings growth, driven by the WiFi MIMO upgrade cycle in the smartphone space and potential upside from its recent penetration of the OC space. We like **MTK** (Buy [1]) for its strong share gains in the 4G smartphone market this year, which should lead to it seeing a recovery in its operating profit margin cycle. We like **Largan** (Buy [1]) for its order share gains in the smartphone camera-lens components market, as the iPhone's dual-camera spec upgrades should help enhance its ASP/margins and catalyse its 2H16 fundamentals. We like **AAC Tech** (Buy [1]) for the solid earnings outlook for both its acoustic and non-acoustic businesses, driven by spec upgrades, the rising adoption of both solutions and project wins.

In the industrial PC (IPC) and automation space, we like **Ennoconn** (Buy [1]) for its share gains in the IPC market since 2012, thanks to the business leverage of the Hon Hai group's strong manufacturing capabilities, which have helped improve Ennoconn's cost-competitiveness and flexibility. Our Taiwan analyst, Christine Wang, who covers the industrial automation sector, recently upgraded: 1) **Hiwin** (to Buy [1] from Underperform [4]) for its improved business outlook post the Lunar New Year, driven by a recovery in demand from the electronics sector and its expansion into the healthcare sector, and 2) **Airtac** (to Buy [1] from Underperform [4]) for its improved order flows due to a recovery in demand in the electronics, automotive and battery sectors, as well as share gains in the China market as a result of an increase in product offerings.

Stocks to avoid

We dislike HTC, Realtek, Adlink, SPIL and Wistron

We suggest investors avoid the following 5 stocks: 1) **HTC** (Sell [5]) for its deteriorating smartphone business, which is unlikely to be easily saved by its new virtual reality (VR) products; thus we forecast prolonged losses into 2018, 2) **Realtek** (Underperform [4]) for its seasonal share gain in the wireless communication market in 1Q16, as a result of the business transition at competitor Broadcomm (ie, some orders were reallocated to Realtek after Broadcomm was acquired by Avago at the end of 2015), 3) **Adlink** (Underperform [4]) for our concerns about its lacklustre industrial-automation-related demand globally (accounting for 35-40% of its revenue), as well as likely a spike in its operating expenses in 2016 as a result of its Prism Tech acquisition, 4) **SPIL** (Hold [3]) on our concerns about its unattractive valuations as a result of the newly established HoldCo's offer of a TWD55 per share purchase price and rising competition from JCET-STATS-ChipPAC (see memo ***Taiwan OSAT: ASE and SPIL to jointly set up HoldCo***), and 5) **Wistron** (Hold [3]) for its likely muted 2016 business outlook, as notebook demand should remain weak and its new iPhone business may not contribute profitability due to a lack of volume scale.

Appendices

Appendix 1: global chip inventory monitor (quarterly)

Day	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16
Fabless (15)												
ALTR	92	94	102	97	94	100	92	90	120	115	109	na
XLNX	99	92	99	101	118	140	129	128	129	126	105	97
BRCM	50	50	47	48	52	52	52	54	60	52	na	na
QCOM	59	51	40	41	39	44	48	63	64	62	49	56
PMC Sierra	68	77	77	74	76	75	81	84	85	83	na	na
NVDA	80	74	67	71	74	66	74	84	77	69	63	67
Cirrus Logic	139	101	64	84	96	89	53	53	64	75	70	109
MRVL	72	70	71	65	71	75	73	84	na	na	na	na
OVTi	127	116	118	106	80	93	142	146	119	111	109	na
Q-Logic	46	43	37	37	41	49	48	50	67	96	82	76
MediaTek	57	50	47	50	60	68	74	92	111	94	70	67
Realtek	76	73	66	64	60	57	72	94	103	92	64	60
Sunplus	91	78	73	95	81	81	90	110	90	94	103	106
Novatek	51	59	57	59	58	55	54	67	68	57	49	55
Himax	82	96	105	109	104	88	86	121	133	129	116	121
Siliconlab	93	74	71	70	73	68	70	77	82	82	73	71
Richtek	71	76	83	78	80	76	75	69	70	73	85	na
Dialog Semi	126	83	58	73	76	79	48	55	61	67	58	98
Fabless aggregate	**66**	**61**	**55**	**56**	**57**	**60**	**62**	**74**	**78**	**74**	**62**	**67**
IDM (15)												
Intel	76	82	75	70	72	72	75	79	85	83	87	89
AMD	86	79	80	88	88	91	82	89	96	87	97	110
Cypress	93	94	101	94	92	89	89	92	91	87	78	73
IFX	81	83	92	93	91	88	95	80	91	102	106	103
STM	88	89	89	99	98	95	95	99	95	99	103	108
Freescale	115	109	110	107	99	99	114	111	109	118	na	
TXN	106	107	114	114	112	109	117	124	126	116	119	135
ADI	111	111	119	114	129	109	125	126	127	113	128	137
Skyworks	84	79	73	75	59	54	57	61	60	55	55	71
Agilent	120	119	123	120	118	109	101	105	100	99	102	103
NXP	103	101	97	102	96	85	82	91	89	88	122	93
Fairchild	84	87	91	86	84	90	102	98	103	119	131	118
On Semi	112	112	117	123	117	113	113	118	118	115	122	127
Avago/Broadcom Ltd	69	66	70	78	41	57	57	59	53	56	66	na
RFMD	75	69	71	76	70	71	73	na	na	na	na	na
TriQuint	105	100	77	124	106	97	74	na	na	na	na	na
Qorvo	na	na	na	na	na	na	na	67	82	82	94	108
Maxim	105	106	90	101	97	112	110	105	96	96	118	98
IDM aggregate	**88**	**89**	**88**	**88**	**87**	**86**	**89**	**90**	**93**	**92**	**100**	**102**
IDM aggregate ex-Intel	**95**	**93**	**95**	**99**	**95**	**94**	**97**	**96**	**96**	**96**	**108**	**110**
Total aggregate inventory	**81**	**80**	**77**	**78**	**76**	**77**	**79**	**84**	**86**	**86**	**90**	**92**
Total aggregate inventory ex-Intel	**82**	**79**	**77**	**80**	**78**	**79**	**80**	**86**	**86**	**87**	**91**	**93**

Source: Company, Daiwa estimates

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

	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	June-quarter guidance			QoQ growth		
USDm							mid	hi	low	mid	hi	low
Fabless (15)												
ALTR	480	435	414	400	na	na	na	na	na	na	na	na
XLNX	594	567	549	528	566	571	571	571	571	0%	0%	0%
BRCM	2,143	2,058	2,096	2,187	na	na	na	na	na	na	na	na
QCOM	7,099	6,894	5,832	5,456	5,775	5,551	5,600	6,000	5,200	1%	8%	-6%
PMC Sierra	137	133	125	134	na	na	na	na	na	na	na	na
NVDA	1,251	1,151	1,153	1,305	1,401	1,305	1,350	1,377	1,323	3%	6%	1%
MRVL	857	724	711	700	na	na	na	na	na	na	na	na
OVTi	292	286	330	341	na	na	na	na	na	na	na	na
Cirrus Logic	299	255	283	307	348	232	235	250	220	1%	8%	-5%
Q-Logic	140	133	113	103	123	119	115	118	112	-4%	-1%	-6%
MediaTek	1,800	1,509	1,527	1,791	1,893	1,689	2,202	2,271	2,132	30%	34%	26%
Realtek	246	236	232	249	283	272	304	304	304	12%	12%	12%
Sunplus	71	59	75	70	63	54	57	57	57	5%	5%	5%
Novatek	491	403	404	411	387	331	358	366	351	8%	10%	6%
Himax	227	179	169	166	178	180	198	203	194	10%	13%	8%
Silicon Lab	162	164	165	156	160	162	171	173	168	5%	7%	4%
Richtek	99	101	101	104	92	na	na	na	na	na	na	na
Dialog Semi	435	311	316	330	397	241	250	260	240	4%	8%	-1%
Total fabless	**17,011**	**15,599**	**14,597**	**14,738**	**11,667**	**10,709**	**11,411**	**11,950**	**10,872**	**7%**	**12%**	**2%**
IDM (15)												
Intel	14,721	12,781	13,195	14,465	14,914	13,702	13,500	14,000	13,000	-1%	2%	-5%
AMD	1,239	1,030	942	1,061	958	832	957	982	932	15%	18%	12%
Cypress	184	209	485	464	450	419	455	470	440	9%	12%	5%
IFX	1,409	1,671	1,745	1,758	1,712	1,772	1,808	1,843	1,772	2%	4%	0%
STM	1,829	1,705	1,760	1,764	1,668	1,613	1,758	1,702	1,645	9%	6%	2%
Freescale	1,103	1,169	1,198	1,120	na	na	na	na	na	na	na	na
TXN	3,269	3,150	3,232	3,429	3,189	3,008	3,200	3,330	3,070	6%	11%	2%
Skyworks	806	762	810	881	927	775	750	750	750	-3%	-3%	-3%
ADI	772	821	863	979	769	779	820	840	800	5%	8%	3%
Agilent	1,026	963	1,014	1,035	1,028	1,019	1,040	1,050	1,030	2%	3%	1%
NXP	1,537	1,467	1,506	1,522	1,606	2,224	2,345	2,395	2,295	5%	8%	3%
Fairchild	337	356	355	342	317	327	na	na	na	na	na	na
On Semi	864	871	881	904	840	817	855	875	835	5%	7%	2%
Maxim	567	577	583	563	511	555	575	595	555	4%	7%	0%
Avago/Broadcom Ltd	1,635	1,614	1,735	1,840	1,771	na	na	na	na	na	na	na
RFMD	397	na	na	na	na	na	na	na	na	na	na	na
TriQuint	345	na	na	na	na	na	na	na	na	na	na	na
Qorvo	0	635	674	708	621	608	650	650	650	7%	7%	7%
Total IDM	**32,039**	**29,781**	**30,977**	**32,834**	**31,981**	**28,450**	**28,713**	**29,481**	**27,774**	**1%**	**4%**	**-2%**
Total sales	**49,050**	**45,380**	**45,574**	**47,572**	**43,648**	**39,159**	**40,124**	**41,432**	**38,646**	**2%**	**6%**	**-1%**
Growth (QOQ)												
Total	-2%	-7%	0%	4%	-1%	na						
Fabless	0%	-8%	-6%	1%	1%	na						
IDM	-3%	-7%	4%	6%	-1%	na						
Growth (YoY)												
Total	6%	2%	-5%	-5%	-5%	na						
Fabless	8%	3%	-10%	-12%	-19%	na						

Source: Company, Daiwa estimates

Daiwa Capital Markets

Taiwan Semiconductor Manufacturing (2330 TT)

Target price: **TWD185.00** (from TWD180.00)

Share price (2 Jun): **TWD159.00** | Up/downside: **+16.3%**

5 4 3 2 **1**

Buy
(from Outperform)

It is more than just A10

- We expect 3Q16 earnings to beat consensus thanks to …
- … the strong 16nm process ramp-up from non-Apple customers
- Upgrading to Buy (1) on valuations with higher TP of TWD185

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What's new: We are upgrading TSMC one notch to Buy (1) on valuation grounds. Although our full-year forecasts are little changed, we expect 3Q16 earnings to beat the consensus forecasts and catalyse the stock to the upside. The market seems to be overemphasising the iPhone demand weakness in 1H16 while we believe TSMC's 16nm FF capacity will be busy all the way into September due to strong ramp-up of non-Apple orders.

What's the impact: 3Q16 likely to exceed consensus forecast thanks to... In our previous note (see *report*), we expected TSMC's 3Q revenue to outgrow its seasonal pattern due to order gains for the A10 processor that will be adopted in the new iPhones, despite its sub-seasonal guidance for 2Q16 (recall: revenue up 6-7% QoQ with a gross margin of 49-51%). Based on our latest market research, we see its 3Q outlook unfolding more favourably than we had expected, thanks to strong 16nm FF ramp-up from non-Apple customers. We now forecast 3Q revenue to rise by 19% QoQ to TWD259bn (previously: up 15% QoQ or TWD251bn), 6% higher than the consensus, with a gross margin of 51.5%.

… a diverse customer base. TSMC's 16nm FF wafer build for the A10 is progressing at a slower pace than previously expected, likely due to the supply chain's conservative expectations of demand for the new iPhone. However, we believe the street is focusing too much on iPhone demand weakness. Other demand is starting to emerge, with non-Apple orders ramping up strongly, particularly from applications for graphics, mobile communication and virtual reality, which aggregately may take up 1/2 of TSMC's 16nm FF capacity this year and keep it fully loaded into September, in terms of wafer-starts.

2Q16 preview. We tweak up our 2Q EPS forecast for TSMC to TWD2.64 (from TWD2.62), on our top-line forecast of TWD218bn (up 7% QoQ). Although our revised EPS forecast is in line with the consensus, we see the possibility of it beating guidance should any non-Apple 16nm FF demand be pulled ahead, causing some rebalance between 2Q and 3Q. Our full-year forecasts are little changed as we expect revenue for 4Q16 and 1Q17 to follow typical seasonality, dropping by a single-digit % sequentially.

What we recommend: We upgrade our rating to Buy (1) as we see valuations as attractive post our downgrade on 18 February (see *report*). We raise our 12-month TP slightly to TWD185 based on a 3.4x ROE-adjusted PBR (previously: 3.3x). Key downside risk: weaker-than-expected restocking on macro.

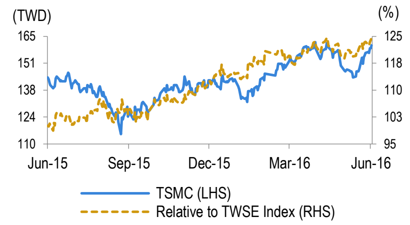
How we differ: We are 4% above consensus on 2016 EPS forecast due to our more bullish assumptions for TSMC's 16nm FF order ramp-ups.

Forecast revisions (%)

Year to 31 Dec	16E	17E	18E
Revenue change	0.4	(1.7)	n.a.
Net profit change	1.0	(1.2)	n.a.
Core EPS (FD) change	1.0	(1.2)	n.a.

Source: Daiwa forecasts

Share price performance



12-month range	115.00-162.00
Market cap (USDbn)	126.43
3m avg daily turnover (USDm)	160.71
Shares outstanding (m)	25,930
Major shareholder	National Development Fund (6.4%)

Financial summary (TWD)

Year to 31 Dec	16E	17E	18E
Revenue (m)	936,683	1,056,068	1,177,435
Operating profit (m)	368,168	417,101	466,621
Net profit (m)	322,170	360,387	404,071
Core EPS (fully-diluted)	12.425	13.898	15.583
EPS change (%)	5.1	11.9	12.1
Daiwa vs Cons. EPS (%)	3.8	5.5	4.5
PER (x)	12.8	11.4	10.2
Dividend yield (%)	3.8	3.8	4.1
DPS	6.0	6.0	6.5
PBR (x)	3.0	2.6	2.3
EV/EBITDA (x)	6.2	5.4	4.7
ROE (%)	24.7	24.1	23.6

Source: FactSet, Daiwa forecasts

Company

Financial summary

Key assumptions

Year to 31 Dec	2011	2012	2013	2014	2015	2016E	2017E	2018E
Wafer Shipment Utilization (%)	95	93	94	100	94	92	95	102
Blended ASP (USD)	1,135	1,204	1,269	1,340	1,339	1,339	1,296	1,293
Wafer Shipment (8" equ., '000)	12,549	14,045	15,666	18,591	19,717	20,954	23,907	26,706

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	915,611	1,006,959	1,122,683
Sub & Other Revenue	8,836	5,924	6,880	8,099	6,514	21,072	49,109	54,753
Other Revenue	0	0	0	0	0	0	0	0
Total Revenue	**427,081**	**506,249**	**597,024**	**762,806**	**843,497**	**936,683**	**1,056,068**	**1,177,435**
Other income	0	0	0	0	0	0	0	0
COGS	(233,011)	(262,654)	(316,079)	(385,072)	(433,102)	(471,283)	(529,453)	(588,982)
SG&A	(18,682)	(22,136)	(23,398)	(25,020)	(24,803)	(26,623)	(30,309)	(33,525)
Other op.expenses	(33,830)	(40,402)	(48,118)	(56,824)	(65,545)	(70,608)	(79,205)	(88,308)
Operating profit	**141,557**	**181,057**	**209,429**	**295,890**	**320,048**	**368,168**	**417,101**	**466,621**
Net-interest inc./(exp.)	852	625	(811)	(506)	939	1,690	2,510	4,200
Assoc/forex/extraord./others	2,737	(128)	6,869	6,713	29,442	5,107	4,873	5,117
Pre-tax profit	**145,147**	**181,554**	**215,487**	**302,098**	**350,429**	**374,965**	**424,484**	**475,938**
Tax	(10,694)	(15,590)	(27,468)	(38,317)	(43,873)	(52,481)	(63,673)	(71,391)
Min. int./pref. div./others	(252)	195	128	118	18	(314)	(424)	(476)
Net profit (reported)	**134,201**	**166,159**	**188,147**	**263,899**	**306,574**	**322,170**	**360,387**	**404,071**
Net profit (adjusted)	**134,201**	**166,159**	**188,147**	**263,899**	**306,574**	**322,170**	**360,387**	**404,071**
EPS (reported)(TWD)	**5.179**	**6.410**	**7.257**	**10.178**	**11.823**	**12.425**	**13.898**	**15.583**
EPS (adjusted)(TWD)	**5.179**	**6.410**	**7.257**	**10.178**	**11.823**	**12.425**	**13.898**	**15.583**
EPS (adjusted fully-diluted)(TWD)	**5.178**	**6.409**	**7.256**	**10.177**	**11.823**	**12.425**	**13.898**	**15.583**
DPS (TWD)	**2.999**	**2.999**	**3.000**	**3.000**	**4.500**	**6.000**	**6.000**	**6.500**
EBIT	**141,557**	**181,057**	**209,429**	**295,890**	**320,048**	**368,168**	**417,101**	**466,621**
EBITDA	**249,240**	**312,407**	**365,612**	**496,143**	**542,554**	**607,853**	**680,784**	**756,288**

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	374,965	424,484	475,938
Depreciation and amortisation	107,682	131,349	156,182	200,252	222,506	239,685	263,684	289,667
Tax paid	(10,694)	(15,590)	(27,468)	(38,317)	(43,873)	(52,481)	(63,673)	(71,391)
Change in working capital	4,488	(20,755)	(18,393)	(64,937)	25,123	(50,000)	6,500	(43,500)
Other operational CF items	964	12,506	21,575	22,428	(24,306)	(4,259)	(4,566)	(4,825)
Cash flow from operations	**247,587**	**289,064**	**347,384**	**421,524**	**529,879**	**507,910**	**626,428**	**645,889**
Capex	(213,963)	(246,137)	(287,595)	(288,540)	(257,517)	(311,620)	(401,375)	(344,500)
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)**	**(313,146)**	**(401,375)**	**(344,500)**
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)	(155,580)	(168,545)
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)**	**(253,579)**	**(254,545)**
Forex effect/others	0	(2,118)	850	0	0	0	0	0
Change in cash	**(4,415)**	**(62)**	**99,285**	**95,322**	**200,843**	**15,667**	**(28,526)**	**46,844**
Free cash flow	33,624	42,926	59,789	132,984	272,363	196,291	225,053	301,389

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	603,356	574,830	621,674
Inventory	24,841	37,830	37,495	66,338	67,052	75,052	85,052	93,552
Accounts receivable	40,948	52,093	71,942	115,048	85,565	135,565	116,065	161,065
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**	**822,173**	**784,447**	**884,792**
Fixed assets	490,375	617,529	792,666	818,199	853,470	932,730	1,082,159	1,149,942
Goodwill & intangibles	24,171	19,430	22,719	20,227	22,310	22,500	22,000	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**	**1,812,398**	**1,923,599**	**2,090,727**
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	27,725	24,725	34,725
Other current liabilities	71,259	91,440	157,774	141,485	129,512	132,149	138,516	146,656
Total current liabilities	**117,007**	**142,436**	**189,778**	**201,014**	**212,229**	**247,348**	**238,715**	**220,855**
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	30,000
Total liabilities	**142,221**	**229,281**	**415,280**	**448,721**	**434,884**	**421,346**	**326,714**	**258,853**
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	1,130,471	1,335,881	1,570,393
Shareholders' equity	**629,594**	**723,198**	**847,508**	**1,046,201**	**1,221,672**	**1,389,775**	**1,595,184**	**1,829,697**
Minority interests	2,450	2,556	267	127	963	1,277	1,701	2,177
Total equity & liabilities	**774,265**	**955,035**	**1,263,055**	**1,495,049**	**1,657,518**	**1,812,398**	**1,923,599**	**2,090,727**
EV	4,029,045	4,092,426	4,105,023	3,936,666	3,792,659	3,752,262	3,683,214	3,550,846
Net debt/(cash)	**(96,275)**	**(33,000)**	**(18,114)**	**(186,331)**	**(331,173)**	**(371,884)**	**(441,357)**	**(574,201)**
BVPS (TWD)	**24.295**	**27.897**	**32.686**	**40.348**	**47.114**	**53.597**	**61.519**	**70.563**

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	11.0	12.7	11.5
EBITDA (YoY)	0.9	25.3	17.0	35.7	9.4	12.0	12.0	11.1
Operating profit (YoY)	(11.1)	27.9	15.7	41.3	8.2	15.0	13.3	11.9
Net profit (YoY)	(17.0)	23.8	13.2	40.3	16.2	5.1	11.9	12.1
Core EPS (fully-diluted) (YoY)	(17.0)	23.8	13.2	40.3	16.2	5.1	11.9	12.1
Gross-profit margin	45.4	48.1	47.1	49.5	48.7	49.7	49.9	50.0
EBITDA margin	58.4	61.7	61.2	65.0	64.3	64.9	64.5	64.2
Operating-profit margin	33.1	35.8	35.1	38.8	37.9	39.3	39.5	39.6
Net profit margin	31.4	32.8	31.5	34.6	36.3	34.4	34.1	34.3
ROAE	22.3	24.6	24.0	27.9	27.0	24.7	24.1	23.6
ROAA	18.0	19.2	17.0	19.1	19.4	18.6	19.3	20.1
ROCE	21.6	23.7	21.8	24.9	23.1	23.8	24.9	25.9
ROIC	26.8	26.9	24.0	30.6	32.0	33.1	32.6	32.9
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	14.0	15.0	15.0
Accounts receivable (days)	35.9	33.5	37.9	44.7	43.4	43.1	43.5	43.0
Current ratio (x)	1.9	1.8	1.9	3.1	3.5	3.3	3.3	4.0
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	48.3	43.2	41.7
Free cash flow yield	0.8	1.0	1.5	3.2	6.6	4.8	5.5	7.3

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	1Q15	2Q15	3Q15	4Q15	1Q16	2Q16E	3Q16E	4Q16E	2015	2016E	2017E	2018E
Foundry revenue	221	205	210	201	202	216	253	244	837	916	1,007	1,123
Sub & other revenue	1	1	2	3	2	2	6	12	7	21	49	55
Total revenue	**222**	**205**	**213**	**204**	**203**	**218**	**259**	**256**	**843**	**937**	**1,056**	**1,177**
COGS	-113	-106	-110	-105	-112	-107	-125	-127	-433	-471	-529	-589
Gross profit	109	100	102	99	91	111	133	130	410	465	527	588
Opex	-23	-23	-24	-21	-21	-23	-27	-27	-90	-97	-110	-122
Operating profit	87	77	78	78	70	88	106	103	320	368	417	467
EBITDA	142	132	135	134	126	144	171	166	543	608	681	756
Pretax profit	88	98	83	81	72	90	108	105	350	375	424	476
Income taxes	-9	-19	-8	-8	-7	-22	-12	-12	-44	-52	-64	-71
Net profit	**79**	**79**	**75**	**73**	**65**	**68**	**96**	**93**	**307**	**322**	**360**	**404**
FD O/S (m)	26	26	26	26	26	26	26	26	26	26	26	26
FD EPS (TWD)	**3.05**	**3.06**	**2.91**	**2.81**	**2.50**	**2.64**	**3.70**	**3.59**	**11.82**	**12.42**	**13.90**	**15.58**
Margin												
Gross	49%	49%	48%	49%	45%	51%	52%	51%	49%	50%	50%	50%
Operating	39%	38%	37%	38%	35%	40%	41%	40%	38%	39%	39%	40%
EBITDA	64%	64%	63%	66%	62%	66%	66%	65%	64%	65%	64%	64%
Net	36%	39%	35%	36%	32%	31%	37%	36%	36%	34%	34%	34%
Growth (QoQ)												
Total revenue	0%	-7%	3%	-4%	0%	7%	19%	-1%				
Gross profit	-1%	-9%	3%	-3%	-8%	22%	20%	-3%				
Operating profit	-2%	-11%	2%	-1%	-10%	25%	21%	-3%				
EBITDA	-2%	-7%	2%	0%	-6%	14%	18%	-3%				
Net profit	-1%	1%	-5%	-3%	-11%	6%	40%	-3%				
FD EPS	-1%	1%	-5%	-3%	-11%	6%	40%	-3%				
Growth (YoY)												
Total revenue	50%	12%	2%	-9%	-8%	6%	22%	26%	11%	11%	13%	11%
Gross profit	55%	9%	-3%	-11%	-17%	11%	30%	31%	9%	13%	13%	12%
Operating profit	65%	9%	-7%	-12%	-19%	15%	36%	32%	8%	15%	13%	12%
EBITDA	51%	13%	-4%	-7%	-11%	10%	27%	24%	9%	12%	12%	11%
Net profit	65%	33%	-1%	-9%	-18%	-14%	27%	28%	16%	5%	12%	12%
FD EPS	65%	33%	-1%	-9%	-18%	-14%	27%	28%	16%	5%	12%	12%

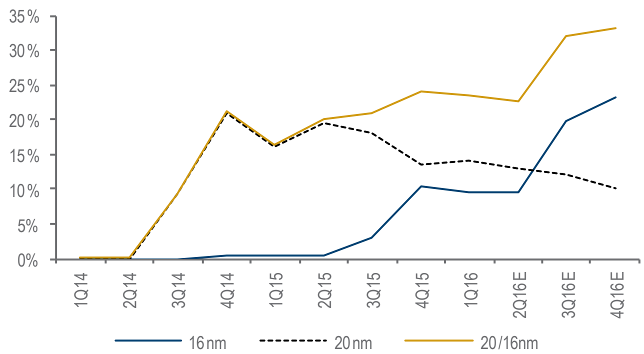
Source: Company, Daiwa forecasts

TSMC: 2Q16 preview and 3Q16 outlook

	2Q16E			3Q16E		
TWDm	Daiwa	Consensus	Variance	Daiwa	Consensus	Variance
Revenue	218,204	217,866	0%	258,749	243,938	6%
Gross profit	111,056			133,352		
Operating profit	88,254			106,442		
Pretax profit	90,150			107,867		
Net profit	68,424	68,314	0%	95,894	88,384	8%
Adjusted EPS (TWD)	2.64	2.63	0%	3.70	3.41	8%
Margin						
Gross	50.9%			51.5%		
Operating	40.4%			41.1%		
Net	31.4%			37.1%		
Operation						
Shipment ('000, 12" equ.wafers)	2,250			2,529		
Utilization*	90%			97%		
20/16nm sales contribution	23%			32%		

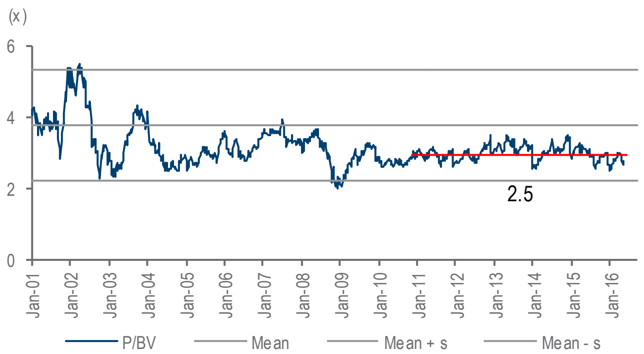
Source: Bloomberg, Daiwa forecasts
*Note: * calculated as wafer shipment / capacity*

TSMC: 20/16nm revenue contribution



Source: Company, Daiwa forecasts

TSMC: PBR trend



Source: TEJ, Company, Daiwa forecasts

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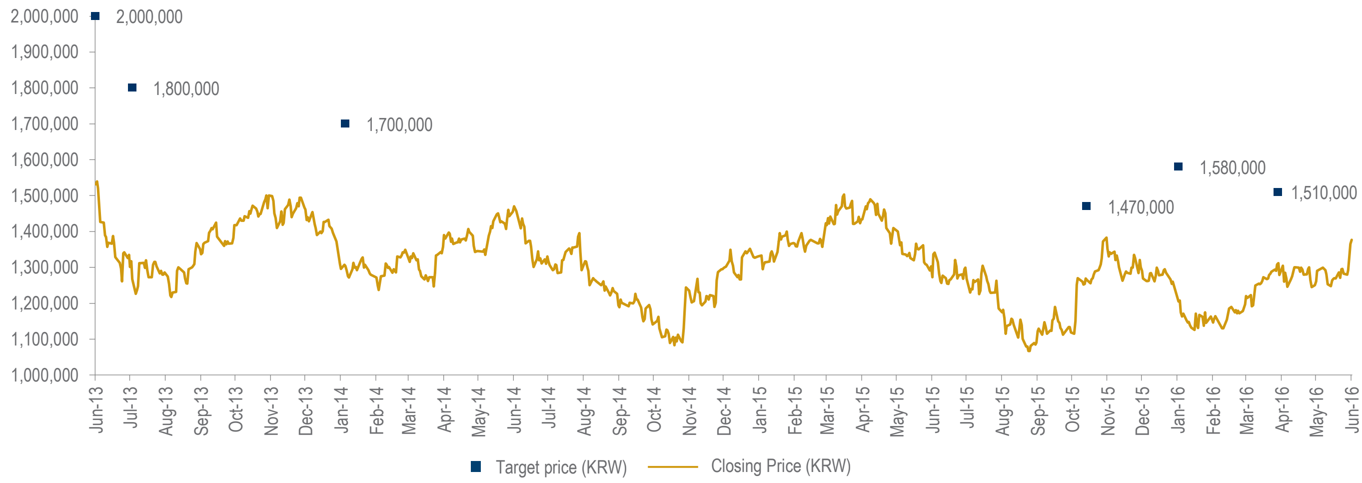
Samsung Electronics: share price and Daiwa recommendation trend

Date	Target price	Rating	Date	Target price	Rating	Date	Target price	Rating
05/07/13	1,800,000	Buy	29/07/15	0		31/12/15	1,580,000	Buy
07/01/14	1,700,000	Buy	16/10/15	1,470,000	Buy	31/03/16	1,510,000	Buy



Source: Daiwa

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

Samsung Electro-Mechanics: share price and Daiwa recommendation trend

Date	Target price	Rating	Date	Target price	Rating	Date	Target price	Rating
06/09/13	95,000	Outperform	29/01/14	70,000	Hold	14/04/16	76,000	Buy
25/10/13	90,000	Outperform	15/11/15	0				
17/12/13	78,000	Hold	04/01/16	79,000	Buy			

Source: Daiwa

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

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Source: Daiwa

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