

TSMC

(2330 TT/TSM US)

Share Price: TWD121.00/USD20.72

MCap (USD): 104.5B

Taiwan

Target Price: TWD120.00/USD20.00

ADTV (USD): 543M

Technology

SELL

 (Unchanged)

Clear and present danger

- We analyse the potential impact of QCOM and Apple diversifying their 14nm production from FY15 and beyond.
- TSMC stands to lose USD2b of business or worst case USD5b, resulting in weaker sales outlook (or down 2-3% YoY bear case) and higher capex intensity of 50% in FY15.
- TSMC's market share in 14nm in FY15 may be minimal as rivals capture lion share. The race for 7nm/10nm node in the next five years will be as dynamic if not more unpredictable. The uncertainty will adversely impact TSMC's valuations.

QCOM & Apple could generate USD10b of sales

We estimate QCOM and Apple's foundry orders could be worth USD6b and USD4b or 37% of TSMC's FY15F sales. However, with QCOM diversifying its 14nm production to Samsung (and potentially Apple) in FY15, TSMC stands to lose USD2b in revenue, which could result in sales growth slowing down to mid-single digit YoY. Under the worst case, should both QCOM/Apple outsource half of their production to Samsung, TSMC could lose up to USD5b of business and its sales may decline by 2-3% YoY in FY15 - the first fall since 2009! The slower sales may lead to higher capex intensity of 50% from FY14 of 40%, thus adversely impacting cash flow.

What happened?

QCOM's desire to accelerate 14nm node stems from peer competition such as MediaTek and Intel. The inherent larger die size of its proprietary Krait core is another consideration. The late-arrival (3Q15) of TSMC's 16nm+ (or 14nm eqvl) production may not best suit QCOM's intention. Samsung may offer QCOM a package deal with QCOM powering Samsung's smart devices while the two agree on a cost-effective foundry solution. Apple may also consider a similar move although it is pre-mature to predict the outcome. However, we believe both Samsung and Apple have signed an agreement on 14nm production for FY15.

A significant change in industry dynamics

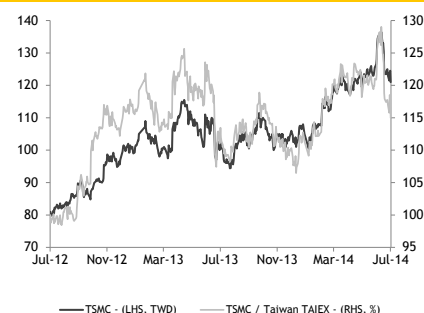
We have already stated the "true" race among the tri-foundries - Intel, Samsung & TSMC start from FY15 with 14nm node. We now have the first glance on 14nm and believe the industry dynamics will be more challenging with 7/10nm nodes. Such uncertainty and competition will adversely and inevitably impact stock valuations.

FYE Dec (TWD m)	FY11A	FY12A	FY13E	FY14E	FY15E
Revenue	427,079.4	506,254.2	597,040.5	740,765.4	817,429.5
EBITDA	240,397.4	300,716.2	351,537.5	453,937.3	491,858.9
Core net profit	134,186.4	166,052.5	188,040.3	244,726.5	247,671.9
Core EPS (TWD)	5.18	6.41	7.25	9.44	9.55
Core EPS growth (%)	(16.1)	23.7	13.2	30.1	1.2
Net DPS (TWD)	3.00	3.00	3.00	3.00	3.00
Core P/E (x)	23.4	18.9	16.7	12.8	12.7
P/BV (x)	4.9	4.2	3.7	3.0	2.7
Net dividend yield (%)	2.5	2.5	2.5	2.5	2.5
ROAE (%)	22.2	24.0	23.4	25.8	22.7
ROAA (%)	18.0	19.1	16.8	18.2	16.5
EV/EBITDA (x)	49.9	51.1	54.2	42.0	38.7
Net debt/equity (%)	net cash	net cash	net cash	net cash	net cash

Key Data

52w high/low (TWD)	136.50/94.40
3m avg turnover (USDm)	146.4
Free float (%)	92.5
Issued shares (m)	51,857
Market capitalization	TWD19,091.5B
Major shareholders:	
-National Development Fund (Taiwan)	6.4%
-Capital Research & Management	3.2%
-Saudi Arabian Monetary Agency	3.1%

Share Price Performance



	1 Mth	3 Mth	12 Mth
Absolute(%)	(7.1)	(0.7)	15.2
Relative to index (%)	(6.3)	(6.4)	(0.1)

Maybank vs Market

	Positive	Neutral	Negative
Market Recs	22	10	3
	Maybank Consensus		% +/-
Target Price (TWD)	120.00	147.00	(18.4)
'14 PATMI (TWDm)	244,726	253,011	(3.3)
'15 PATMI (TWDm)	247,672	269,469	(8.1)

Source: FactSet; Maybank

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The importance of QCOM & Apple

The importance of QCOM to TSMC cannot be understated as the former accounted for 22% of TSMC's sales at USD4.5b in FY13. In fact, QCOM contributed half, if not more, of TSMC's sales at the 300mm capacity/sales (mostly on 28nm node) should one strip out the mainstream 200mm capacity. We estimate QCOM's foundry sales to grow 15-20% YoY in FY14 to USD5.3b but its importance to TSMC may dip slightly due to the new business from Apple. We estimate Apple may account for slightly over 9% of TSMC's FY14 sales by assuming Apple is preparing 120m new iPhones and iPads in 2H14. However, as most of Apple's wafer shipments will only occur in 2H14, we guess Apple could account for nearly 20% of TSMC's revenue on an annualized basis.

Top two customers could account for as much as 40%-plus in sales in 2H14.

This underpins TSMC's high customer concentration (just two clients alone, i.e. QCOM and Apple, account for as much as 40%-plus of its sales). TSMC's other key clients include MediaTek, Broadcom, Marvell, AMD, Xilinx, Altera and nVidia, but none of them are nearly as important as QCOM and Apple in terms of business and technology migration!

Figure 1: Impact of QCOM & Apple on TSMC's FY15 revenue outlook

USD\$b	FY13	FY14E	FY15E (1)	FY15E (2)	FY15E (3)
Total TSMC sales	20.11	24.66	26.99	25.98	24.06
- QCOM sales	4.51	5.32	4.08	3.06	3.06
- Apple sales	-	2.32	3.85*	3.85*	1.93
YoY chg	17.9%	24.1%	9.5%	5.3%	-2.5%
QCOM as % of sales	22.4%	21.6%	15.2%	11.8%	12.7%
Apple as % of sales	0%	9.4%	14.3%	14.8%	8.0%
Top-two as % of sales	22.4%	30.7%**	29.5%	26.6%	20.7%

Note: * based on 285m units of i-devices and 75% on high-end segment on 14nm or 20nm node.
** annualizing 40%+ for FY14 in 2H14

Source: Company data, Maybank KE

We estimate QCOM and Apple's wafer foundry business could fetch USD6b and USD4b in FY15. However, with QCOM diversifying its 14nm production to Samsung, we estimate TSMC could lose one-third of QCOM's orders which are worth USD2b of sales in FY15. This is likely to result in TSMC's YoY sales growth to slow down to 10% in FY15 (case 1) from FY14 of 24%. Should QCOM speed up its product migration, we estimate up to half of its devices may be switched to 14nm node (see next section for details). Therefore, TSMC could stand to lose USD3b of business. Should such scenario prevail (case 2), we estimate TSMC's FY15 sales growth would slow down to 5% - the slowest in recent years.

Under the worst case, TSMC stands to lose up to USD5b of business, resulting in sales dipping 2-3% in FY15F.

In addition, should Apple decide to migrate to 14nm with its A9 chipset in FY15, TSMC could lose another potential USD2b of revenue (case 3), which could result in a 2-3% YoY decline in FY15 revenue - the first since 2009! We believe such scenario could spell the worst-case (loss of USD5b of sales) for TSMC's outlook.

So, what happened?

This section explains the technology and device roadmaps of the trip-foundries, as well as their customers and competition. We attempt to explain the technology in simple terms by avoiding too much jargon and technical details.

Why TSMC is playing catch up

TSMC has stated clearly its customers prefer to migrate to 16nm+ earlier than it can provide the services and technology. We believe key clients such as QCOM and Apple have designed their next-generation chipsets based on the 14/16nm+ node and to have their devices qualified as early as 4Q14. However, based on our industry checks, TSMC will not bring up the 16nm+ pilot line until 3Q15, which is 6-9 months behind customers' roadmap. Such delay was caused by TSMC's decision to introduce an enhanced version of the 16nm node (namely 16nm+) in late 2013 to improve the device performance and cost reduction in order to match Intel's and Samsung's 14nm baselines.

When the original 16nm baseline was introduced in FY13, TSMC claimed it was the most cost-effective technology migration with minimum design changes required enabling customers and TSMC to quickly switch from 20nm to 16nm node with lower development costs and capex. TSMC even claimed several times that its capex and capex intensity in FY15 could fall materially as a result! This was so because customers were only required to make changes to the first three layers of the circuitry designs (Front-End-Of-Line or FEOL) when advancing from the 20nm (planar transistor) to 16nm (3D transistor) node while keeping the rest of the 30-40 metal levels (back-end-of-line or BEOL) intact. Such tricks helped customers to lower design costs, which could be well over USD100m at 14/16nm, and allowed for speedy migration while enabling TSMC to re-use the majority of the 20nm tools (80+%) when it switched to the 16nm node.

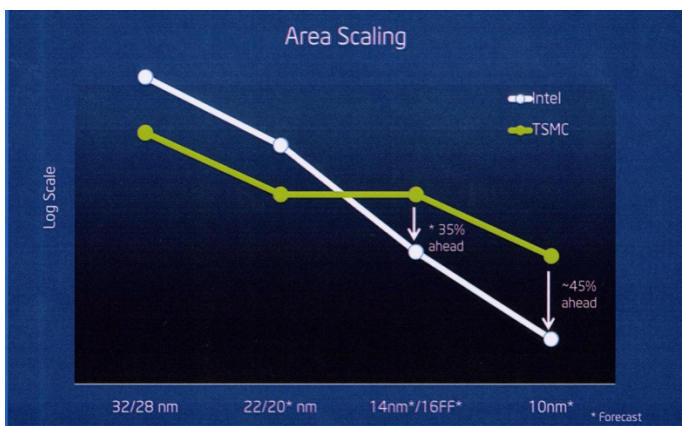
However, such approach comes with its own downside and risks. When comparing to a full-node migration, ie, 20nm to 14nm at Samsung and Intel, TSMC's half-node approach 16nm underperformed in cost reduction (by as much as 25% if not higher), power consumption and performance. In a very rare case, Intel famously highlighted the potential risks of TSMC's 16nm undertaking during its Nov-13 investors' day. After the initial round of evaluation, many customers "strongly encouraged" TSMC to enhance its 16nm technology offering. This led to (partly responding to Intel's claims) the offering of the enhanced version of 16nm+ in late-2013 (but was official announced in Jan-14 during the analyst briefing).

We believe from the design rule standpoint, TSMC's 16nm+ is essentially identical to Intel's and Samsung's 14nm, although some industry experts think the latter two still offer 10% smaller die size than TSMC's 16nm+. Nevertheless, TSMC has claimed its 16nm+ was just as competitive as its rivals' 14nm node, which we think is fair. Figure 5 illustrates the urgency to adopt 14nm or 16nm+ node rather than 16nm for advanced devices due to larger die size penalty and therefore higher cost structure. Device performance is another consideration. *As such, from here onwards in this report, we classify TSMC's 16nm+ as 14nm (as an industry standard) as they are essentially identical in terms of technology.*

TSMC's 16nm+ or 14nm is 6-9 months behind customers' needs and rivals.

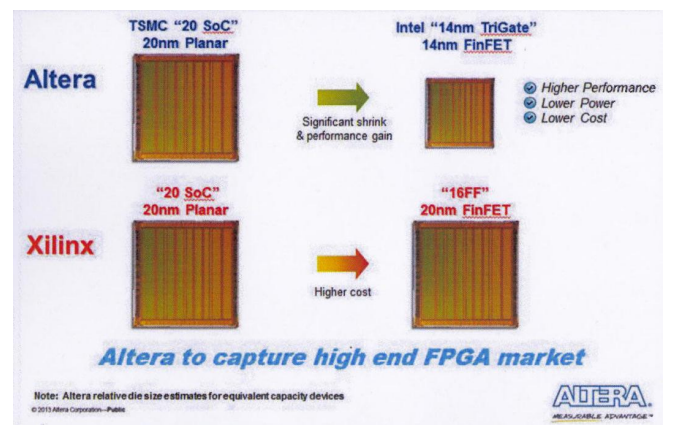
TSMC introduced an enhanced 16nm node - named 16nm+ but...

Figure 2: Intel vs TSMC's node migration and scaling



Source: Company data, Maybank KE

Figure 3: Altera vs Xilinx & Intel vs TSMC



Source: Company data, Maybank KE

Importantly, to enhance the performance of the 16nm+ or 14nm node over the original 16nm node, TSMC was forced to make significant changes, including to the majority of the metal layers as well as the transistor loop or the Front-End-Of-Line (FEOL). The Back-End-Of-Line (BEOL) requires significant engineering work and development as it is critical to achieve die shrink and to enhance device performance. The same is true for FEOL to achieve finer pitch for 3D transistors.

...required more time, R&D and capex because of new design rules and...

In fact, our discussions with customers and industry experts highlighted TSMC's 14nm (or 16nm+) baseline is so different from its original 16/20nm node, the revised 14nm (or 16nm+) should be classified as a "brand new design rule" vs its original 16/20nm program. Such dramatic shift in technology implies TSMC and its clients will need to spend more time, effort and investment to adopt the new baseline!

The figure below illustrates (we have highlighted this table since 2013 in our global marketing) that because of the additional R&D and developments required, TSMC will not roll out the 14nm or 16nm+ until 3Q15, 6-9 months behind its original 16nm (still scheduled to be released in 4Q14) as well as its rivals at 14nm node. Therefore, the timeline of TSMC's 14nm will not be able to match both QCOM and Apple's 2015 product roadmap. We note Intel will commercially ship its first 14nm AP - Cherry Trail in 4Q14 while Samsung will start pilot production in the same period. TSMC will still commence its 16nm pilot production in 4Q14 but we believe demand from customers for this node is rather muted as most are planning to adopt 16nm+/14nm in late-2015.

...importantly, the 16nm+/14nm schedule misses customers' roadmap!

Figure 4: Technology roadmap of Tri-foundries

	4Q12	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14	4Q14	1Q15	2Q15	3Q15	4Q15
TSMC	28nm					20nm			16nm*			16nm+* (14nm)	
Intel	32nm			22nm				14nm^					
Samsung	32nm	28nm					20nm-		14nm*				

Note: ^ second generation of 3D transistor (FinFET). * First generation of 3D transistor. - pilot production only (15,000-20,000 capacity)

Source: Company data, Maybank KE

This is despite the fact TSMC has put in place a 24-hour R&D team (three shifts) to accelerate its 14nm baseline to play catch up. However, its late start to the game is exacerbated by the long design cycle time, and challenging FinFET (3D transistor) design and process (among others key considerations) that typically requires a 2-year design window!

Moreover, the migration to 14nm (or 16nm+) node from the original 16/20nm node will require additional capital investment, largely due to the new tools needed for the new BEOL processes. As a result, TSMC has backed away from its previous guidance that capex and capex intensity in FY15 will dip and instead it conceded recently its capex and intensity will increase in both measurements in FY15. We estimate TSMC may need to spend USD12-13b in FY15 to expand its 20nm to 100,000 wafers per month and build a 40,000-wafer monthly capacity for 14nm, implying a capex intensity of 45-50%. This should be near its historical high.

Once again, as long as TSMC intends to engage in the technology race with its two main rivals, we believe the capital investment, R&D and development costs will continue to escalate. This trend will be even more pronounced when the industry moves to 10nm and 7 nm nodes over the next five years. As such, in terms of the priority for cash usage, we strongly believe TSMC will consider technology/capacity as the key, followed by serving its debt (USD7b and may be growing) and lastly distributing cash dividend to shareholders. As a result, we think an increase in cash dividend in the near future is highly unlikely unless TSMC is willing to take on more debt.

Update on Samsung's System LSI

There have been some major changes at Samsung's System LSI division lately. The previous president, Dr Woo, has been replaced by the memory head, Dr Kim, who is now firmly in charge of the entire semiconductor division for Samsung Electronics. We sense the "two-track" strategy (i.e. the in-house design of AP/modem and foundry under Dr Woo) is likely to be "fine-tuned" under Dr Kim, to be in favour of foundry with the in-house AP/modem taking a back-seat. Such strategy also minimizes the conflict of interest between in-house devices vs customers' chipsets. The tie-up with Globalfoundry in Apr-14 on 14nm capacity/production further signalled the shift of direction and System LSI's intension in terms of business model.

With the in-house AP/modem being sidelined and merchant vendors such as STE and BRCM exiting the market, we sense Samsung's IM division (smart division) is working closer with QCOM on the chipset solution. QCOM already powers most of Samsung's high-end smartphones. We believe a similar arrangement will be extended to the low-to-mid-end smartphone segment and tablets in FY15 and beyond. The intermit relationship between the two is further solidified by System LSI's 14nm technology roadmap, exclusivity services and attractive foundry wafer prices.

We note that System LSI is undertaking a pilot 20nm production in one of its logic fabs with a capacity of 15,000 wafers per month and this could be increased to 20,000 wafers per month. The purpose of such pilot line is to facilitate a smoother transition to the 14nm node by 4Q14. The 20nm baseline is a Gate-last (planar transistor) with multi-layer double-patterning processes. We estimate the current yield rate ranges from 30-50% and could improve to 60-80% by end of 3Q14. This compares to TSMC's current yield rate of 60-70% for Apple's A8 chipset.

Capex and capex intensity to rise again in FY15.

Use of cash for tech migration/capacity expansion likely to be TSMC's top priority.

Major reorganisation and change in business strategy at Samsung's System LSI.

Samsung's 20nm pilot line to facilitate smoother 14nm transition

Samsung indicated recently it would start 14nm wafer volume production by the end of 2014. This is consistent with our expectation that a pilot line will kick start in 4Q14. Samsung further indicated that a third of its existing logic capacity would be converted to 14nm node in FY15, which we estimate to be 40,000-50,000 wafers per month. In addition, we believe Globalfoundry has started to move in equipment to support the 14nm production recently, which could ultimately bring up 50,000 in monthly wafer capacity in FY15.

We believe System LSI's manufacturing capability is solid but the weakness of the in-house design of its own chipsets has compromised the performance of the overall division. The technical challenges such as overheating and stability encountered by the Exynos AP (in-house AP) have been wildly circulated in the industry despite the respectable manufacturing processes. We note System LSI had serviced Apple's A-series APs well in the past at 45nm, 32nm and 28nm nodes. It even implemented the HKMG process at 32nm in 2011, ahead of TSMC's 28nm HKMG in 2012. Given the track record and the "viable" designs from QCOM and/or Apple, we believe System LSI could be a solid alternative foundry supplier at the advanced technology.

That being said, we think Samsung is unlikely to adopt a full-fledge foundry business model to compete head on with TSMC. Samsung is most likely to target selective customers with high-volume and low-mixed runners such as QCOM and Apple. Together with Globalfoundry, Samsung has three logic 300mm fabs globally capable of manufacturing 14nm node with two located in the US serving the two key customers. We think others such as MediaTek, Broadcom, Marvell, AMD and nVidia are likely to stay with TSMC.

QCOM is being chased by Intel and MediaTek

TSMC has stated clearly that its customers preferred to move to 14nm node more quickly than its ability to offer the technology in a timely fashion. One such key customer is QCOM. QCOM is the leader in providing AP/modem powering smartphones and tablets with an overwhelming 98% global merchant market share. To maintain its leadership and cost structure over its peers, it is imperative for QCOM to utilize leading edge technology nodes.

At the high-end segment of the smart devices, while QCOM appears to continue its domination at the moment, we note Intel is accelerating its product offering by adopting its second generation 3D transistor 14nm node. Virtually all of Intel's chipsets for tablets and smartphones will be based on the 14nm node in FY15. Despite the delay of its 14nm production, Intel claims it will commercially ship its first 14nm chipset - Cherry Trail (2.7GHz) during year-end holidays, targeting high-end tablets. This is followed by another high-end chipset, Willow Trail, and new generation of 4G modem (XMM7460 - Cat7 LTE with WiFi) in 1Q15. The 14nm node will also be used for low-to-mid end products in 2H15.

System LSI has solid manufacturing track record

Targeting selective foundry customers

QCOM needs to move rapidly because...

... it is being chased by Intel at the high-end segment and at the same time...

Figure 5: Intel's 2015 mobile device roadmap (all based on 14nm node)

		4Q14	1Q15	2Q15	3Q15	4Q15	1H16
Tablets	High-end	Cherry Trail	Willow Trail				
	Mainstream			Morgan-field			
	Entry					Riverton	Bingham-ton
Smartphones	High-end		XMM7460				
	Mainstream			Morgan-field			
	Entry					Riverton	Bingham-ton

Source: Company data, Maybank KE Securities

QCOM on the other hand, has been relatively quiet releasing its next-generation products for FY15 except what has been introduced in early FY14. The majority of the existing chipsets are based on TSMC's 20nm (high-end) or 28nm node (low-to-mid-end), although it is also diversifying to other foundries at 28nm node to seek more capacity. Interestingly, QCOM has adopted ARM's standard core, ie, A57 and A53 for its first generation of 64bit AP while giving no information on its own Krait architecture, which has powered much of today's high-end smartphones.

Figure 6: QCOM's 2014/15 mobile device roadmap

		3Q14	4Q14	1Q15	2Q15	3Q15	4Q15
Smartphones	High-end	S805/ MSM9X30		S808/ 810			
	Mainstream		S610/615				
	Entry	S410					

Source: Company data, Maybank KE Securities

We believe the second generation of QCOM's 64bit AP will be designed based on its own proprietary core (better spec and lower power consumption as claimed by QCOM) - Krait on 14nm node. The inherent larger die size of the Krait architecture thus require a finer geometry to keep cost low while enhance performance, enable a high degree of SOC integration and lower battery consumption. While QCOM will let its existing product roadmap to run its course, we believe the high-end chipset using Krait core will be the first to move to 14nm node followed by the mainstream devices in 2H15.

In the mainstream segment, MediaTek is quickly catching up on the learning curve, especially in the LTE market. The differentiation in terms of cost, timing and spec between QCOM's and MTK's product roadmap is immaterial, in our opinion. Thus, migrating to TSMC's 20nm node is less than an ideal option as MTK can quickly follow up. In fact, MTK has indicated that it would move to 20nm in FY15 and then 14nm in FY16 with TSMC being the ley foundry provider. To regain the technology and cost advantages, it is logical for QCOM to adopt 14nm node in FY15 while keeping Intel at bay, as shown in the previous chart.

... MediaTek is catching up rapidly in the mainstream market!

Figure 7: Spec comparison of MTK and QCOM's product portfolio

	Entry		Mainstream		High-end			
	S410 8916	MT6732	S610/615 8936/39	MT6752	S801/805 8974/8084	S808/810 8992/94	MT6595	MT6795
Node (nm)	28 Poly	28 HKMG	28 Poly	28 HKMG	28 HKMG	20 HKMG	28 HKMG	28 HKMG
# of Core	4	4	4/8	8	4/4	6/8	8	8
CPU	A53	A53	A53	A53	Krait400/450	A57+A53	A17+A7	A53
Architecture	64bit	64bit	64bit	64bit	32bit	64bit	32bit	64bit
Frequency (GHz)	1.4	1.5	1.2-1.8	1.7-2.0	2.5/2.7	2.5-3.0	1.7/2.5	2.5
GPU	A306	Mali -T760	A405	Mali-T760	A330/A420	A418/A430	SGX6	SGX6
Video	HD, 720	HD, 720	FHD, 1080	FHD, 1080	QHD	QHD	QHD	QHD
Camera (MP)	13	13	21	16	21/55	>21	20	20
WiFi	Integrated	Integrated	Integrated	Integrated	Integrated/-	-	-	-
ASP (USD)	12-15	15-20	15-20	>20	50/>50	>50	>30	>30
Availability	3Q14	4Q14	4Q14	4Q14	1Q14/2H14	1H15	3Q14	1H15

Note: QCOM's devices start with S while MeidaTek's start with MT and highlighted in grey.

Source: Company data, Maybank KE Securities

Market share of 14nm node in FY15 and beyond

TSMC has also stated that its market share in 14nm in FY15 will be lower than its major peer due to its late start. For 16nm, we believe demand is rather muted with limited customers signing up for the program - HiSilicon is one of the few. Given the pilot line will not be established until 3Q15, we believe the 14nm revenue opportunity will be limited (TSMC claims it would be single digit in 4Q15). Should Samsung execute the 14nm well, it is likely to capture well over half of the worldwide share, followed by Intel (most of its customers are rather small) and then TSMC - perhaps 20% at best. Should Apple decide to use Samsung's 14nm in FY15 and beyond, we think TSMC is unlikely to improve its share to half in FY16 and beyond.

TSMC's market share in 14nm in FY15 could be capped at 20% or below.

Figure 8: Customer portfolio of Tri-foundries at 14nm node

Intel	Samsung	TSMC-16nm	TSMC-14nm
Panasonic	Qualcomm	HiSilicon	Apple*
Altera	Apple*		MediaTek
Microsemi			Xilinx
Cisco			nVidia
Netronome			AMD
Achronix			Marvell
Tabula			Broadcom

Note: * Apple carries dual design-ins base on Samsung and TSMC's 14nm baseline.

Source: Company data, Maybank KE Securities

Figure 10: TSMC earnings model

Key opn matrix	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14E	4Q14E	1Q15E	2Q15E	3Q15E	4Q15E	2012	2013	2014E	2015E
Capacity (mn)	3.95	4.06	4.33	4.38	4.36	4.52	5.00	5.02	4.95	5.08	5.33	5.54	15.08	16.72	18.90	20.90
Chg. % QoQ	-1%	3%	7%	1%	-1%	4%	11%	0%	-1%	3%	5%	4%	-	-	-	-
Chg. % YoY	9%	11%	13%	10%	11%	11%	15%	14%	13%	12%	7%	10%	14%	11%	13%	11%
300mm cap (mn)	2.42	2.49	2.71	2.77	2.79	3.03	3.36	3.36	3.33	3.55	3.65	3.84	8.85	10.40	12.54	14.38
Chg. % QoQ	-2%	0%	2%	1%	2%	11%	14%	0%	0%	7%	3%	6%	-	-	-	-
Chg. % YoY	17%	19%	19%	15%	15%	22%	24%	21%	19%	17%	9%	14%	21%	17%	21%	15%
% of 300mm/grp	61%	61%	63%	63%	64%	67%	67%	67%	67%	70%	68%	69%	59%	62%	66%	69%
Utilisation	90%	99%	97%	85%	89%	99%	100%	97%	90%	98%	101%	90%	95%	93%	96%	94%
Shipment (mn)	3.57	4.03	4.19	3.87	3.87	4.62	5.10	4.84	4.44	4.99	5.36	4.96	14.05	15.66	18.43	19.74
Chg. % QoQ	0%	13%	4%	-8%	0%	19%	10%	-5%	-8%	12%	7%	-7%	-	-	-	-
Chg. % YoY	22%	9%	9%	9%	8%	15%	22%	25%	15%	8%	5%	2%	12%	12%	18%	7%
Blended ASP (USD)	1,209	1,238	1,258	1,230	1,218	1,272	1,328	1,347	1,315	1,335	1,355	1,376	1,182	1,235	1,295	1,346
Chg % YoY	4%	6%	6%	2%	1%	3%	6%	10%	8%	5%	2%	2%	6%	5%	5%	4%
USD/TWD	29.4	29.8	29.9	29.6	30.3	30.1	29.9	29.9	30.0	30.0	30.0	30.0	29.6	29.7	30.0	30.0
P&L (NT\$ bn)	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14E	4Q14E	1Q15E	2Q15E	3Q15E	4Q15E	2012	2013	2014E	2015E
Revenue	132.8	155.9	162.6	145.8	148.2	183.0	208.5	201.0	180.0	204.8	222.8	209.8	506.3	597.0	740.8	817.4
Depreciation	33.3	34.7	36.8	37.3	37.8	42.1	45.4	46.1	45.3	49.9	52.5	53.7	119.7	142.2	171.4	201.4
COGS	72.0	79.5	83.7	81.0	77.8	91.8	103.2	103.5	98.9	108.2	115.0	112.7	262.7	316.1	376.4	434.9
Gross profits	60.8	76.4	78.9	64.9	70.4	91.2	105.3	97.5	81.1	96.6	107.8	97.1	243.6	280.9	364.4	382.5
OP exp.	-16.4	-18.8	-19.3	-17.1	-17.9	-20.5	-22.0	-21.5	-20.5	-23.0	-24.8	-23.8	-62.5	-71.6	-81.9	-92.1
OP profit	44.4	57.6	59.6	47.7	52.5	70.7	83.3	76.0	60.6	73.6	83.0	73.3	181.1	209.4	282.5	290.5
Non-OPN income	1.3	2.4	-0.3	2.7	0.2	3.4	-0.5	-0.5	0.2	0.2	0.2	0.2	0.6	6.1	2.7	0.8
Pre-tax profit	45.7	60.0	59.3	50.4	52.7	74.1	82.8	75.6	60.8	73.8	83.2	73.5	181.7	215.5	285.2	291.3
Taxation	-6.2	-8.2	-7.4	-5.6	-5.5	-14.4	-10.8	-9.8	-7.0	-15.5	-11.0	-10.1	-15.6	-27.4	-40.4	-43.6
Net Income	39.5	51.8	51.9	44.8	47.2	59.7	72.0	65.7	53.8	58.3	72.2	63.4	166.1	188.0	244.7	247.7
EPS (NT\$)	1.52	2.00	2.00	1.73	1.82	2.30	2.78	2.54	2.07	2.25	2.78	2.45	6.41	7.25	9.44	9.55
Profitability (%)	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14E	4Q14E	1Q15E	2Q15E	3Q15E	4Q15E	2012	2013	2014E	2015E
GM	45.8%	49.0%	48.5%	44.5%	47.5%	49.8%	50.5%	48.5%	45.0%	47.2%	48.4%	46.3%	48.1%	47.1%	49.2%	46.8%
OPM	33.4%	37.0%	36.7%	32.7%	35.4%	38.6%	39.9%	37.8%	33.6%	35.9%	37.2%	34.9%	35.8%	35.1%	38.1%	35.5%
PBT Margin	34.4%	38.5%	36.5%	34.6%	35.6%	40.5%	39.7%	37.6%	33.8%	36.0%	37.3%	35.0%	35.9%	36.1%	38.5%	35.6%
Net Margin	29.8%	33.2%	31.9%	30.7%	31.9%	32.6%	34.6%	32.7%	29.9%	28.5%	32.4%	30.2%	32.8%	31.5%	33.0%	30.3%
QoQ chg. (%)	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14E	4Q14E	1Q15E	2Q15E	3Q15E	4Q15E	2012	2013	2014E	2015E
Revenue	1%	17%	4%	-10%	2%	23%	14%	-4%	-10%	14%	9%	-6%	-	-	-	-
Gross profit	-2%	26%	3%	-18%	9%	30%	15%	-7%	-17%	19%	12%	-10%	-	-	-	-
OPN profit	-4%	30%	3%	-20%	10%	35%	18%	-9%	-20%	21%	13%	-12%	-	-	-	-
Net profit	-5%	31%	0%	-14%	5%	26%	21%	-9%	-18%	8%	24%	-12%	-	-	-	-
YoY chg. (%)	1Q13	2Q13	3Q13	4Q13	1Q14	2Q14	3Q14E	4Q14E	1Q15E	2Q15E	3Q15E	4Q15E	2012	2013	2014E	2015E
Revenue	26%	22%	15%	11%	12%	17%	28%	38%	21%	12%	7%	4%	19%	18%	24%	10%
Gross profit	21%	23%	14%	5%	16%	19%	33%	50%	15%	6%	2%	0%	26%	15%	30%	5%
OPN profit	25%	23%	13%	3%	18%	23%	40%	59%	15%	4%	0%	-4%	28%	16%	35%	3%
Net profit	18%	24%	5%	8%	20%	15%	39%	47%	14%	-2%	0%	-4%	24%	13%	30%	1%

Source: Company data, Maybank KE

FYE 31 Dec	FY11A	FY12A	FY13E	FY14E	FY15E
Key Metrics					
P/E (reported) (x)	23.4	18.9	16.7	12.8	12.7
Core P/E (x)	23.4	18.9	16.7	12.8	12.7
P/BV (x)	4.9	4.2	3.7	3.0	2.7
P/NTA (x)	4.9	4.2	3.7	3.0	2.7
Net dividend yield (%)	2.5	2.5	2.5	2.5	2.5
FCF yield (%)	1.1	1.2	1.6	2.2	3.2
EV/EBITDA (x)	49.9	51.1	54.2	42.0	38.7
EV/EBIT (x)	nm	nm	nm	nm	nm

INCOME STATEMENT (TWD m)

Revenue	427,079.4	506,254.2	597,040.5	740,765.4	817,429.5
Gross profit	194,069.4	243,594.2	280,940.5	364,353.2	382,540.8
EBITDA	240,397.4	300,716.2	351,537.5	453,937.3	491,858.9
Depreciation	(98,840.0)	(119,660.0)	(142,160.0)	(171,438.0)	(201,368.1)
Amortisation	0.0	0.0	0.0	0.0	0.0
EBIT	141,557.4	181,056.2	209,377.5	282,499.2	290,490.8
Net interest income / (exp)	840.0	620.0	(2,653.0)	(3,497.0)	(3,200.0)
Associates & JV	2,750.0	10.0	8,738.0	6,156.0	4,000.0
Exceptionals	0.0	0.0	0.0	0.0	0.0
Other pretax income	0.0	0.0	0.0	0.0	0.0
Pretax profit	145,147.4	181,686.2	215,462.5	285,158.2	291,290.8
Income tax	(10,961.0)	(15,633.8)	(27,422.2)	(40,431.8)	(43,618.9)
Minorities	0.0	0.0	0.0	0.0	0.0
Discontinued operations	0.0	0.0	0.0	0.0	0.0
Reported net profit	134,186.4	166,052.5	188,040.3	244,726.5	247,671.9
Core net profit	134,186.4	166,052.5	188,040.3	244,726.5	247,671.9

BALANCE SHEET (TWD m)

Cash & Short Term Investments	152,166.2	161,585.6	256,404.9	246,316.8	270,367.7
Accounts receivable	44,005.1	52,093.0	71,942.0	103,436.4	116,658.9
Inventory	28,461.7	37,831.0	37,495.0	50,151.9	55,767.9
Property, Plant & Equip (net)	490,375.0	617,529.0	792,666.0	895,720.5	1,031,880.6
Intangible assets	28,533.0	28,533.0	22,718.0	22,718.0	22,718.0
Investment in Associates & JVs	0.0	0.0	0.0	0.0	0.0
Other assets	32,000.0	63,425.0	92,892.0	92,892.0	92,892.0
Total assets	775,541.0	960,996.6	1,274,117.9	1,411,235.6	1,590,285.1
ST interest bearing debt	30,896.0	30,896.0	15,645.0	15,645.0	15,645.0
Accounts payable	13,877.3	15,239.0	16,359.0	19,956.5	21,567.9
LT interest bearing debt	17,500.0	80,100.0	210,945.0	210,945.0	210,945.0
Other liabilities	78,765.0	85,765.0	172,508.0	173,243.0	233,121.0
Total Liabilities	141,038.3	212,000.0	415,457.0	419,789.5	481,278.9
Shareholders Equity	634,502.3	748,996.4	858,660.6	1,034,920.9	1,151,190.7
Minority Interest	0.0	0.0	0.0	0.0	0.0
Total shareholder equity	634,502.3	748,996.4	858,660.6	1,034,920.9	1,151,190.7

CASH FLOW (TWD m)

Pretax profit	145,147.4	181,686.2	215,462.5	285,158.2	291,290.8
Depreciation & amortisation	98,840.0	119,660.0	142,160.0	171,438.0	201,368.1
Adj net interest (income)/exp	(10,961.0)	(15,633.8)	(27,422.2)	(40,431.8)	(43,618.9)
Change in working capital	(172.6)	(16,095.4)	(18,393.0)	(40,553.9)	(17,226.9)
Other operating cash flow	0.0	0.0	0.0	0.0	0.0
Cash flow from operations	247,394.8	289,070.0	337,525.3	375,610.6	431,813.1
Capex	(213,478.4)	(251,080.3)	(287,550.8)	(307,936.7)	(330,000.0)
Free cash flow	33,916.4	37,989.8	49,974.5	67,673.9	101,813.1
Dividends paid	(77,733.2)	(77,711.4)	(77,762.1)	(77,762.1)	(77,762.1)
Equity raised / (purchased)	0.0	0.0	0.0	0.0	0.0
Change in Debt	4,907.0	71,423.0	124,206.0	0.0	0.0
Other invest/financing cash flow	34,700.0	(22,282.0)	3,907.0	0.0	0.0
Effect of exch rate changes	0.0	0.0	0.0	0.0	0.0
Net cash flow	(4,209.9)	9,419.4	100,325.4	(10,088.2)	24,051.0

FYE 31 Dec	FY11A	FY12A	FY13E	FY14E	FY15E
Key Ratios					
Growth ratios (%)					
Revenue growth	1.8	18.5	17.9	24.1	10.3
EBITDA growth	0.5	25.1	16.9	29.1	8.4
EBIT growth	(11.1)	27.9	15.6	34.9	2.8
Pretax growth	(13.5)	25.2	18.6	32.3	2.2
Reported net profit growth	(16.1)	23.7	13.2	30.1	1.2
Core net profit growth	(16.1)	23.7	13.2	30.1	1.2
Profitability ratios (%)					
EBITDA margin	56.3	59.4	58.9	61.3	60.2
EBIT margin	33.1	35.8	35.1	38.1	35.5
Pretax profit margin	34.0	35.9	36.1	38.5	35.6
Payout ratio	57.9	46.8	41.4	31.8	31.4
DuPont analysis					
Net profit margin (%)	31.4	32.8	31.5	33.0	30.3
Revenue/Assets (x)	0.6	0.5	0.5	0.5	0.5
Assets/Equity (x)	1.2	1.3	1.5	1.4	1.4
ROAE (%)	22.2	24.0	23.4	25.8	22.7
ROAA (%)	18.0	19.1	16.8	18.2	16.5
Liquidity & Efficiency					
Cash conversion cycle	59.9	59.6	62.3	67.2	75.1
Days receivable outstanding	36.7	34.2	37.4	42.6	48.5
Days inventory outstanding	43.9	45.4	42.9	41.9	43.8
Days payables outstanding	20.7	20.0	18.0	17.4	17.2
Dividend cover (x)	1.7	2.1	2.4	3.1	3.2
Current ratio (x)	1.9	2.1	1.9	2.1	2.3
Leverage & Expense Analysis					
Asset/Liability (x)	5.5	4.5	3.1	3.4	3.3
Net debt/equity (%)	net cash	net cash	net cash	net cash	net cash
Net interest cover (x)	na	na	78.9	80.8	90.8
Debt/EBITDA (x)	0.2	0.4	0.6	0.5	0.5
Capex/revenue (%)	50.0	49.6	48.2	41.6	40.4
Net debt/ (net cash)	(103,770.2)	(50,589.6)	(29,814.9)	(19,726.8)	(43,777.7)

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