

TSMC

Chances of Altera coming back at 16nm; Hiccup-free 20nm ramp and strong 28nm recovery

We advise investors to buy TSMC given: 1) three strong upcoming quarters of sequential sales growth led by 20nm ramp, 2) signs of 28nm demand coming back and 3) good progress in 16nm designs (esp. for 16nm FinFET Plus,) coupled with indications of 14nm delays at Intel, increasing the likelihood of Altera re-engaging with TSMC. We keep our above-consensus EPS estimates unchanged.

- 16nm FinFET Plus on-track for 1H15 production:** We are seeing high interest from customers in the newly announced 16nm FinFET Plus process (15% die shrink compared to 16nm Fin FET). While early adopters like Xilinx may stay on 16nm FinFET, many mobile Fabless customers may directly adopt 16nm FinFET, since it gives some additional die shrink, while migrating from 20nm. Contrary to bear-camp expectations of a long delay, we believe 16nm FinFET Plus should follow 1-2 quarters after 16nm FinFET, in 1H15.
- Further Intel 14nm delay, could Altera come back for 16nm?** *Digitimes* reported that Intel could push out its 14nm PC CPUs (Broadwell) in 4Q14; our conversations with PC vendors in Taiwan also indicate potential delay for 14nm notebook and mobile chips. With these delays, we believe there is a reasonable likelihood that TSMC could win Altera back as a customer at 16nm Fin FET – our research does indicate Altera is in early discussions regarding 16nm products.
- 20nm yields already hitting 50%, expect three strong quarters ahead:** Our research indicates that 20nm wafer yields at TSMC are already hitting 50% for Apple SoC, tracking well ahead of 28nm yields (only ~25%) at a similar phase of ramp-up in 2012. With Samsung building little capacity and indications that Global Foundries could now skip 20nm, TSMC would be sole source for 20nm.
- 28nm demand coming back strong in 1H14:** After weak demand in 2H13, 28nm demand is seeing a strong comeback in the past few weeks – from Mediatek and Hisilicon, QCOM's Samsung GS5 ramp and conversion of RF chips to 28nm (from 65nm), and ongoing game console strength from AMD. TSMC is adding 28nm HKMG capacity in 1H14 since its HPC offering (same price as PolySiON but 15-20% better performance) is gaining traction among customers such as Mediatek and should stem share loss to Global Foundries.

Overweight

2330.TW, 2330 TT

Price: NT\$108.0

Price Target: NT\$130.0

Taiwan

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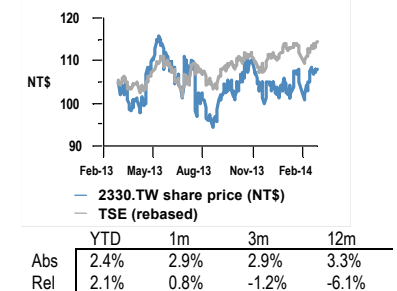
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Price Performance



Intel is covered by J.P.Morgan US Semiconductor Analyst, Chris Danely

Share Price: NT\$108.0, Date of Price: (27 Feb 14), Bloomberg 2330 TT, Reuters 2330.TW

(Year-end Dec, NT\$ B)	FY12	FY13E	FY14E	FY15E		FY12	FY13E	FY14E	FY15E		
Revenue	506.2	597.0	696.6	784.7	P/E (x)	16.8	14.9	12.9	11.4	52-Week range	NT\$ 116.5-92.9
Operating profit	181.1	209.4	248.7	280.7	P/B (x)	3.9	3.3	2.8	2.4	Share out'g	25,928M
EBITDA	312.4	367.2	456.5	515.7	EV/EBITDA (x)	8.8	7.5	6.0	4.9	Avg daily volume	33.2M
Pre-tax profit	181.6	215.5	252.6	286.4	FCF/Mkt cap (%)	1.3	2.5	3.7	9.6	Avg daily val (US\$)	114.5M
Adjusted net profit	166.2	188.1	217.7	244.7	Price target	Local				Free float	86.5%
Profit growth (%)	23.8	13.2	15.7	12.4	PT (30-Jun-14)	NT\$ 130.0				Market cap (US\$)	92.4B
EPS (NT\$)*	6.41	7.26	8.40	9.44	Diff from consensus	4.8%				Exchange rate	NT\$ 30.31/US\$1
BVPS (NT\$, yr-end)	27.90	32.69	38.83	45.27						Index (TWSE)	8639.58
Cash dividend yield (%)	2.8	2.8	2.8	2.8	Quarterly EPS (NT\$)	1Q	2Q	3Q	4Q		
ROE (%)	22.9	22.2	21.6	20.8	FY12	1.29	1.61	1.90	1.60		
Net debt/equity (%)	-4.5	-2.2	-5.7	-20.5	FY13E	1.53	2.00	2.00	1.73		
					FY14E	1.58	1.60	2.58	2.64		

Source: Company data, Bloomberg, J.P. Morgan estimates.

See page 11 for analyst certification and important disclosures, including non-US analyst disclosures.

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Key catalyst(s) for the stock price:

- 20nm yields already hitting 50%, expect 3 strong quarters ahead:
- 28nm demand coming back strong in 1H14
- 16nm FinFET Plus on-track for 1H15 production

Upside risks to our view:

- Better-than-expected yield curve demand for 20nm node
- Limited competition headwinds at 28nm
- Better-than-expected global end demand

Downside risks to our view:

- Slowdown in mobile device growth
- Intel's abandoning ATOM and stepping headlong into ARM Foundry

Key financial metrics (in NT\$ mn)	FY12A	FY13P	FY14E	FY15E
Revenues	506,249	597,024	696,602	784,695
Revenue growth (%)	19%	18%	17%	13%
OP Profit	181,057	209,429	248,686	280,736
OP margin (%)	35.8%	35.1%	35.7%	35.8%
Tax rate (%)	9%	13%	14%	15%
Net profit	166,159	188,147	217,678	244,658
EPS (NT\$)	6.41	7.26	8.40	9.44
EPS growth (%)	24%	13%	16%	12%
DPS (NT\$)	3.0	3.0	3.0	3.0
BVPS (NT\$)	27.90	32.69	38.83	45.27
Operating cash flow	294,337	401,638	336,366	481,603
Free cash flow	35,833	68,689	104,096	267,677
Interest cover (X)	177.43	79.13	80.71	122.39
Net margin (%)	32.8%	31.5%	31.2%	31.2%
Sales/assets (X)	58.5%	53.8%	53.4%	56.3%
Net debt/equity (%)	-4.5%	-2.2%	-5.7%	-20.5%
ROE (%) (single year)	22.9%	22.2%	21.6%	20.8%

Key model assumptions	FY12A	FY13P	FY14E	FY15E
Capacity ('000 wafers, 8" equ)	15,090	16,703	18,613	19,902
Shipment ('000 wafers, 8" equ)	14,045	15,666	17,188	18,958
Shipment utilization (%)	93	94	92	95
Wafer ASP (US\$)	1,204	1,284	1,360	1,389

Source: Bloomberg, Company and J.P. Morgan estimates.

Sensitivity analysis	OP Impact		EPS Impact	
	FY14E	FY15E	FY14E	FY15E
1% chg in shipment growth	3%		3%	
1% chg in ASP growth	3%		3%	
1% chg in FX	3%		3%	

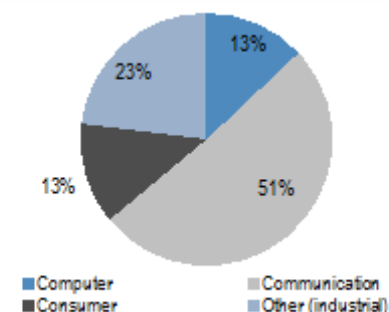
FY14 JPMe assumptions – shipment growth 10%, ASP growth 6%, USD:TWD = 30.0

Source: Bloomberg, Company and J.P. Morgan estimates.

Valuation and price target basis

Our Jun-14 PT of NT\$130 is based on a 15x 12m forward P/E, the long-run average P/E, or 3.3x FY14E P/B for a company generating 22% ROE, at the higher end of its historical price-to-book range.

Revenue by application (as of 4Q13)



Source: Bloomberg, Company and J.P. Morgan estimates.

JPMe vs consensus, change in estimates

EPS	FY14E	FY15E
JPMe old	8.40	9.44
JPMe new	8.40	9.44
% chg	0%	0%
Consensus	8.08	8.98

Source: Bloomberg, Company and J.P. Morgan estimates.

16nm designs getting good traction; more interest in 16nm FinFET Plus

TSMC's 16nm FinFET process is getting good traction, with multiple customers likely to tape out in 1H14. Our understanding is that the first silicon shuttle has already been completed successfully in Nov 2013, with good performance. We believe that Xilinx is likely to be the first customer to tape-out 16nm FF and should start wafer-in by late 4Q14, slightly ahead of schedule.

TSMC's newly announced 16nm FinFET Plus process, which delivers 15% more performance than 16nm FF, is also seeing strong demand from mobile Fabless customers, given the further reduction in die size and increase in transistor performance.

We believe that some of the mobile customers could migrate directly down to 16nm FinFET Plus from 20nm, given the additional die shrink makes it an attractive proposition. Contrary to bear-camp observations, however, we believe that there would only be a maximum of two quarter time gap between the 16nm FinFET and 16nm FinFET Plus versions.

Intel 14nm delays – signs emerging that Altera is reengaging with TSMC for 16nm

Digitimes reported that Intel could push out its 14nm PC CPUs (Broadwell) in 4Q14; our conversations with PC vendors in Taiwan also indicate potential delay for 14nm notebook and mobile chips. Based on our latest research, Broadwell notebook CPUs would indeed miss the back-to-school season and would only be available in 4Q14.

We also believe that Mobile SoC chips are likely to be available for OEMs only in 2015, suggesting ongoing delays in 14nm product lineup.

With these delays, we believe that Intel's Foundry partners such as Altera are looking to reengage with TSMC at 16nm FinFET. Our research does indicate Altera is in early discussions regarding 16nm FinFET products. We do not expect this to be a complete shift away from Intel, but more likely to be a back-up solution.

However, this is likely to affect Intel's traction with other Foundry customers at 14nm, since Altera was supposed to be a marquee customer win for Intel against TSMC.

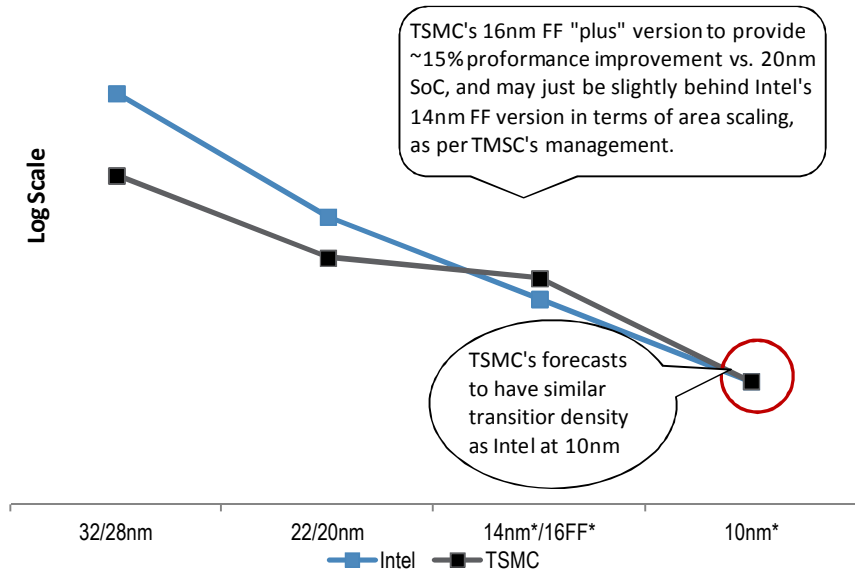
Intel should have another chance at 10nm, but TSMC is pulling in schedule as well

Intel would have another chance to win Foundry customers at 10nm node, but we believe that the likelihood for meaningful market share gain at 14nm is diminishing. At 10nm, however, we believe TSMC will also catch up on area scaling (see TSMC's version of area scaling progression at Intel and TSMC).

TSMC's scheduled roadmap for 10nm risk production is still the end-of-2015, which would imply that TSMC's 10nm node will be in production 2-4 quarters behind Intel's 10nm. However, our recent conversations with equipment vendors indicate that TSMC's 10nm risk production schedule could be pulled in by 2 quarters to 2Q15, especially now that TSMC has ruled out EUV for its initial 10nm plans.

Figure 1: Density Comparison – TSMC vs Intel (as per TSMC)

Area Scaling



Source: TSMC's 4Q13 earnings release presentation.

Intel unlikely to be a threat for TSMC in next 2-3 years

We continue to believe that Intel is unlikely to be a price disruptor or key competitor for TSMC in the next 2-3 years, given the high GM threshold, lower wafer costs at TSMC and the challenges of adapting to a service-driven business model required by Foundries.

We estimate that TSMC's cost structure at 28nm/20nm is 30% lower than Intel. While Intel may narrow this somewhat at 14nm, we expect the cost gap to widen again at 10nm.

With this cost difference, Intel needs to be multiple years earlier than TSMC for new process development to command premium Gross Margins –however, this lead is also shrinking, with TSMC pulling in 10nm product risk production.

In addition, we believe that TSMC leads by a large margin in IP strength, process libraries and time to market – which are also key determinants in Foundry selection.

Recent news flow and checks from our US Semiconductor team (led by Chris Danely) also indicate that Intel has been facing some issues in its Foundry model related to process inflexibility and adaptability to a Foundry model.

For a more detailed analysis of Intel vs TSMC, please refer to our detailed note, [*"Asian Foundries: Analyzing the competitive threat from Intel", from Nov 28, 2013.*](#)

Hiccup-free 20nm ramp so far – much better than 28nm ramp

Our research indicates that 20nm wafer yields at TSMC are already hitting 50% for Apple SoC products, and tracking well ahead of 28nm yields (only ~25%) at similar phase of ramp up in 2012. This is indeed quite impressive, in our view, since SoCs are typically more difficult to ramp up on new process nodes (as compared to the traditional process ramp up products like FPGA).

We believe the next step for TSMC would be to ramp up the volume (from currently 6-7k wfpw) to 30+k wfpw by 2H14 (full capacity of Fab 14, phase 5). In addition, current cycle times for 20nm are still in the region of 4 months, which necessitate the early fabrication of wafers well ahead of demand. We believe that the cycle time would come down to 3 months in 2H13, helping to improve throughput as well.

20nm market share likely to stay near 100% for the duration of the node

Samsung is building very little 20nm capacity and is not offering Foundry products at 20nm for external customers. Global Foundries did have a plan to build 20nm products for AMD (primarily for graphics), which would have represented a share loss for TSMC (since AMD is currently using TSMC 28nm HKMG process for graphics). But our research indicates that AMD may choose to stick with TSMC for most of its graphics parts in the future.

With this, TSMC could retain a near-100% market share for 20nm through the duration of this node – putting it in a good position for the eventual migration to 16nm FinFET.

28nm demand makes a surprising comeback

In the last few weeks, we have seen a surprisingly strong recovery of 28nm demand, especially for HKMG wafers. Demand recovery is pretty broad based and is coming from low-end mobile device customers (Mediatek, Hisilicon), high-end Smartphone vendors (QCOM for upcoming Samsung ramp as well as moving RF chips to 28nm) and ongoing strong demand from game consoles for AMD.

We expect 28nm demand to remain strong until 3Q14, after which 20nm is likely to take over the growth momentum.

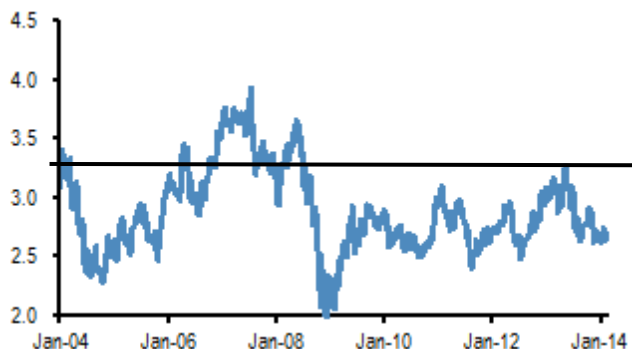
28 HKC Product is a hit – helping to defend market share loss to Global Foundries

TSMC's newly introduced 28nm HPC product is gaining traction among mobile customers, since it is positioned at the same price as 28nm PolySiON but delivers 15% better performance. If more customers migrate to 28nm HPC, then TSMC could defend market share against Global Foundries even at 28nm node, given its ongoing struggles at stabilizing yield for HKMG process.

TSMC is also expanding some capacity in 1H14 for 28nm HKMG, indicating that the company is well on track to deliver 20+% revenue growth at the 28nm node as well.

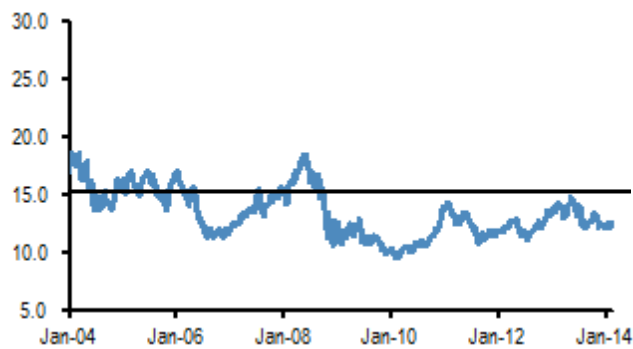
P/E and P/B band charts

Figure 2: TSMC – 12-month forward P/B trend



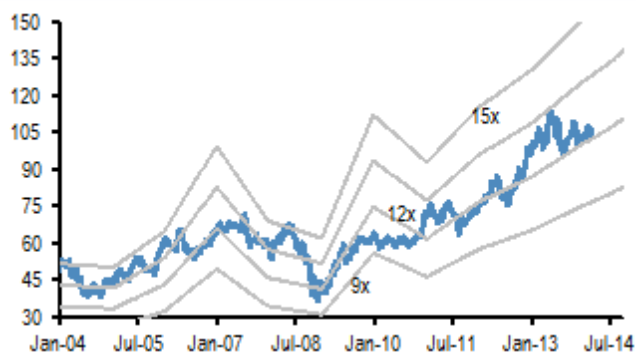
Source: Company data, Bloomberg and J.P. Morgan estimates.

Figure 3: TSMC – 12-month forward P/E trend



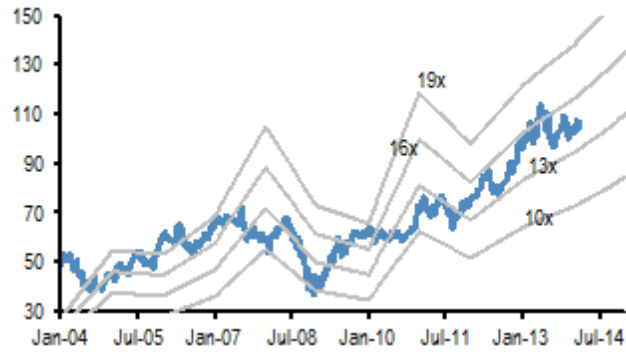
Source: Company data, Bloomberg and J.P. Morgan estimates.

Figure 4: TSMC – 12-month forward P/E bands



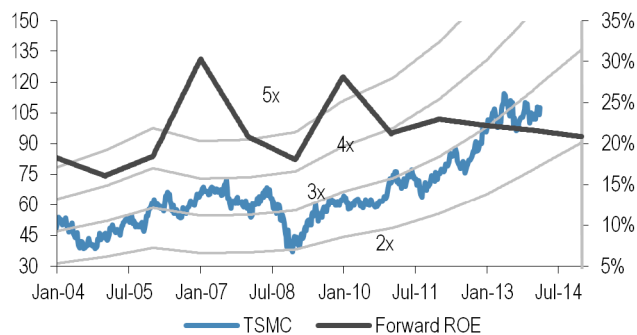
Source: Company data, Bloomberg and J.P. Morgan estimates.

Figure 5: TSMC – Trailing P/E bands



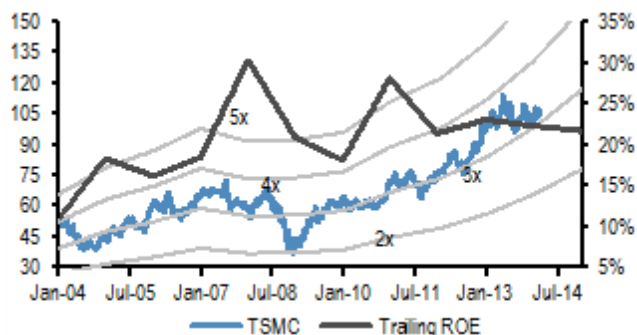
Source: Company data, Bloomberg and J.P. Morgan estimates.

Figure 6: TSMC – 12-month forward P/B bands



Source: Company data, Bloomberg and J.P. Morgan estimates.

Figure 7: TSMC – Trailing P/B bands



Source: Company data, Bloomberg and J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

TSMC (*Overweight; Price Target: NT\$130.0*)

Investment Thesis

We expect TSMC sales to grow 17%, with strong growth in 20nm (20%+ of revenues exiting 2014) and 28nm (from the rapid conversion of customers from Poly SiON to High-K Metal gate). TSMC expects strong growth from the mobile market even in 2014, with 35% growth in its mobile revenues, and increased market share in mobile silicon (non-memory) to 47%, up 200 bps from 2013.

Even with a 30%+ hike in depreciation in 2014, TSMC expects structural gross margins to remain intact (~50%) due to a strong blended ASP increase and rigid cost control. With capital intensity coming down meaningfully from 2015, we believe that TSMC could increase cash dividend payout, as well.

In past cycles, the stock has troughed two quarters ahead of sales (we expect sales to trough in 1Q14). Given our expectations of a muted revenue decline in 1Q14, followed by a strong rebound in 2Q/3Q14, current levels appear quite attractive, in our view.

Valuation

Our Jun-14 PT of NT\$130 is based on a 15x 12m forward P/E, the long-run average P/E, or 3.3x FY14E P/B for a company generating 22% ROE, at the higher end of its historical price-to-book range.

Risks to Rating and Price Target

Key downside risks to our PT include: (1) a slowdown in mobile device growth; and (2) Intel's abandoning ATOM and stepping headlong into ARM Foundry.

TSMC – Earnings model

	FY13E				FY14E				FY15E				FY11	FY12	FY13P	FY14E	FY15E
NT\$ in billions, Year-end Dec	1Q	2Q	3Q	4QP	1QE	2QE	3QE	4QE	1QE	2QE	3QE	4QE					
Sales	132.8	155.9	162.6	145.8	136.9	163.3	196.6	199.8	181.0	203.2	208.5	192.0	427.1	506.2	597.0	696.6	784.7
COGS	-72.0	-79.5	-83.7	-80.9	-75.8	-89.5	-98.9	-100.0	-96.2	-102.0	-108.1	-105.0	-233.0	-262.7	-316.1	-364.2	-411.2
Depreciation	-36.5	-38.1	-40.4	-42.8	-45.5	-52.8	-54.0	-55.6	-57.9	-57.5	-59.3	-60.3	-107.7	-131.3	-157.8	-207.8	-235.0
Gross profit	60.8	76.4	78.9	64.9	61.2	73.8	97.6	99.8	84.9	101.2	100.4	87.0	194.1	243.6	280.9	332.4	373.5
Operating expense	-16.3	-18.8	-19.3	-17.1	-16.7	-19.6	-23.4	-24.0	-21.4	-24.1	-24.6	-22.6	-52.5	-62.5	-71.5	-83.7	-92.7
SG&A	-5.7	-6.9	-5.9	-4.9	-5.8	-6.5	-7.7	-8.0	-7.3	-8.1	-8.3	-7.7	-18.7	-22.1	-23.4	-27.9	-31.3
R&D	-10.7	-11.9	-13.4	-12.2	-11.0	-13.1	-15.7	-16.0	-14.1	-16.1	-16.3	-15.0	-33.8	-40.4	-48.1	-55.7	-61.4
Operating (EBIT)	44.4	57.6	59.6	47.8	44.5	54.2	74.2	75.8	63.5	77.1	75.8	64.3	141.6	181.1	209.4	248.7	280.7
Net interest income (expense)	-0.1	-0.1	-0.3	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	0.2	0.4	0.4	0.9	0.6	-0.9	-0.6	0.9
Net other income (expense)	1.5	2.5	0.0	2.9	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	2.7	-0.1	6.9	4.5	4.8
Pre-tax profit	45.7	60.0	59.3	50.4	45.4	55.2	75.3	76.9	64.6	78.5	77.4	65.9	145.1	181.6	215.5	252.6	286.4
Tax credit (expense)	-6.2	-8.3	-7.4	-5.6	-4.5	-13.8	-8.3	-8.5	-6.5	-19.6	-8.5	-7.3	-10.7	-15.6	-27.5	-35.1	-41.8
Net profit	39.6	51.8	52.0	44.8	40.8	41.4	67.0	68.4	58.1	58.9	68.9	58.7	134.2	166.2	188.1	217.7	244.7
Adjusted O/S (B)	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9
New Taiwan GAAP EPS (NT\$)	1.53	2.00	2.00	1.73	1.58	1.60	2.58	2.64	2.24	2.27	2.66	2.26	5.18	6.41	7.26	8.40	9.44
Key assumption																	
Capacity ('000 wafers, 8" equ.)	3,944	4,067	4,320	4,372	4,367	4,569	4,765	4,912	4,894	4,947	4,994	5,067	13,221	15,090	16,703	18,613	19,902
Shipment ('000 wafers, 8" equ.)	3,570	4,034	4,194	3,868	3,592	4,180	4,768	4,648	4,334	4,921	5,063	4,640	12,549	14,045	15,666	17,188	18,958
Shipment utilization (%)	91	99	97	88	82	91	100	95	89	99	101	92	95	93	94	92	95
Wafer ASP (US\$)	1,253	1,289	1,305	1,285	1,279	1,311	1,384	1,443	1,402	1,386	1,382	1,389	1,135	1,204	1,284	1,360	1,389
Margins (%)																	
Gross	45.8	49.0	48.5	44.5	44.7	45.2	49.7	49.9	46.9	49.8	48.2	45.3	45.4	48.1	47.1	47.7	47.6
Operating	33.5	37.0	36.7	32.8	32.5	33.2	37.8	37.9	35.1	37.9	36.4	33.5	33.1	35.8	35.1	35.7	35.8
EBITDA	61.0	61.4	61.5	62.1	65.7	65.5	65.2	65.7	67.0	66.2	64.8	64.9	58.4	61.7	61.5	65.5	65.7
Net	29.8	33.2	32.0	30.7	29.8	25.3	34.1	34.3	32.1	29.0	33.1	30.6	31.4	32.8	31.5	31.2	31.2
Growth (% Q/Q)																	
Shipment	0	13	4	-8	-7	16	14	-3	-7	14	3	-8					
ASP	1	3	1	-2	0	2	6	4	-3	-1	0	0					
Sales	1	17	4	-10	-6	19	20	2	-9	12	3	-8					
Gross profit	-2	26	3	-18	-6	21	32	2	-15	19	-1	-13					
EBIT	-4	30	3	-20	-7	22	37	2	-16	21	-2	-15					
Net profit	-5	31	0	-14	-9	1	62	2	-15	1	17	-15					
EPS	-5	31	0	-14	-9	1	62	2	-15	1	17	-15					
Growth (% Y/Y)																	
Shipment	22	9	9	9	1	4	14	20	21	18	6	0	6	12	12	10	10
ASP	4	12	7	3	2	2	6	12	10	6	0	-4	4	6	7	6	2
Sales	26	22	15	11	3	5	21	37	32	24	6	-4	2	19	18	17	13
Gross profit	21	23	14	5	1	-3	24	54	39	37	3	-13	-6	26	15	18	12
EBIT	25	23	13	3	0	-6	24	59	43	42	2	-15	-11	28	16	19	13
Net profit	18	24	5	8	3	-20	29	53	42	42	3	-14	-17	24	13	16	12
EPS	18	24	5	8	3	-20	29	53	42	42	3	-14	-17	24	13	16	12

Source: Company data and J.P. Morgan estimates.

TSMC: Summary of Financials

Income Statement					Ratio Analysis				
NT\$ in millions, year end Dec	FY12	FY13E	FY14E	FY15E	NT\$ in millions, year end Dec	FY12	FY13E	FY14E	FY15E
Revenues	506,249	597,024	696,602	784,695	Gross margin	48.1%	47.1%	47.7%	47.6%
Cost of goods sold	(262,654)	(316,080)	(364,246)	(411,211)	Operating Margin	35.8%	35.1%	35.7%	35.8%
Gross Profit	243,595	280,945	332,356	373,484	EBITDA margin	61.7%	61.5%	65.5%	65.7%
R&D expenses	(40,402)	(48,118)	(55,728)	(61,409)	Net margin	32.8%	31.5%	31.2%	31.2%
SG&A expenses	(22,136)	(23,398)	(27,941)	(31,338)	R&D/sales	8.0%	8.1%	8.0%	7.8%
Operating profit (EBIT)	181,057	209,429	248,686	280,736	Sales growth	18.5%	17.9%	16.7%	12.6%
EBITDA	312,406	367,242	456,496	515,698	Operating profit growth	27.9%	15.7%	18.7%	12.9%
Interest income	1,645	1,785	2,496	3,199	Net profit growth	23.8%	13.2%	15.7%	12.4%
Interest expense	(1,020)	(2,647)	(3,081)	(2,294)	EPS (adjusted) growth	23.8%	13.2%	15.7%	12.4%
Investment income (loss)	2,029	4,478	4,544	4,775	Interest coverage (x)	177.4	79.1	80.7	122.4
Non-operating Income (expense)	(2,156)	2,441	0	0	Net debt to equity	(4.5%)	(2.2%)	(5.7%)	(20.5%)
Earnings before tax	181,554	215,487	252,645	286,416	Days receivable	33.7	38.0	44.6	44.9
Income tax	(15,590)	(27,469)	(35,059)	(41,850)	Days inventory	43.5	43.5	43.6	43.0
Minority interest & extraordinary	195	128	92	92	Days payable	18.8	18.2	17.2	15.9
Net income (reported)	166,159	188,147	217,678	244,658	Cash cycle	58.4	63.2	71.0	72.0
Net income (adjusted)	166,159	188,147	217,678	244,658	Asset turnover	58.5%	53.8%	53.4%	56.3%
EPS (adjusted)	6.41	7.26	8.40	9.44	ROE (single yr)	22.9%	22.2%	21.6%	20.8%
BVPS	27.9	32.7	38.8	45.3					
DPS (cash only)	3.00	3.00	3.00	3.00					
Adjusted O/S (M)	25,921	25,927	25,929	25,929					
Balance sheet					Cash flow statement				
NT\$ in millions, year end Dec	FY12	FY13E	FY14E	FY15E	NT\$ in millions, year end Dec	FY12	FY13E	FY14E	FY15E
Cash and cash equivalents	150,918	245,342	261,410	374,223	Net income	166,159	188,147	217,678	244,658
Accounts receivable	52,279	71,942	98,466	94,583	Depr. & amortization	131,349	157,812	207,810	234,962
Inventories	37,830	37,495	49,510	47,449	Change in receivables	(11,209)	(19,663)	(26,524)	3,883
Other current assets	11,261	3,708	4,690	4,484	Change in inventory	(12,990)	335	(12,015)	2,061
Total current assets	252,289	358,487	414,077	520,739	Change in payables	3,380	1,120	1,595	27
Long term investments	65,786	89,184	93,728	98,502	Other adjustments	17,648	73,887	(52,177)	(3,989)
Gross PPE	1,498,750	1,754,321	2,054,411	2,292,921	Cash flow from operations	294,337	401,638	336,366	481,603
Accumulated depreciation	(1,000,285)	(1,158,865)	(1,366,675)	(1,601,637)	Capex	(258,504)	(332,949)	(232,270)	(213,926)
Others	19,430	22,718	22,440	22,440	Purchase (sale) of investments	(31,328)	(23,398)	(4,544)	(4,775)
Total Assets	955,035	1,263,055	1,347,370	1,437,771	Other adjustments	4,741	(3,288)	278	0
Short-term loans	35,757	15,645	14,081	9,238	Cash flow from investing	(285,091)	(359,634)	(236,535)	(218,701)
Accounts payable	15,239	16,359	17,954	17,980	Free cash flow	35,833	68,689	104,096	267,677
Accrued expenses & other CL	91,440	157,774	106,579	102,385	Equity raised/(repaid)	82	42	0	0
Total current liabilities	142,436	189,778	138,614	129,603	Debt raised/(repaid)	63,571	108,495	(22,641)	(70,077)
Long-term debt	82,161	210,768	189,691	124,456	Dividends paid	(77,944)	(77,901)	(77,878)	(77,878)
Total Liabilities	229,281	415,280	340,306	263,834	Other adjustments	5,535	21,912	16,848	(2,042)
Shareholder's equity	725,754	847,775	1,007,064	1,173,937	Cash flow from financing	(8,756)	52,548	(83,671)	(149,997)
Total Liabilities and Shareholder Equity	955,035	1,263,055	1,347,370	1,437,771	Net change in cash	491	94,552	16,160	112,905
					Beginning cash	150,622	150,918	245,342	261,410
					Ending cash	151,113	245,470	261,502	374,315

Source: Company reports and J.P. Morgan estimates.

Other Companies Discussed in This Report (all prices in this report as of market close on 28 February 2014)

Intel (INTC/\$24.76/Overweight)

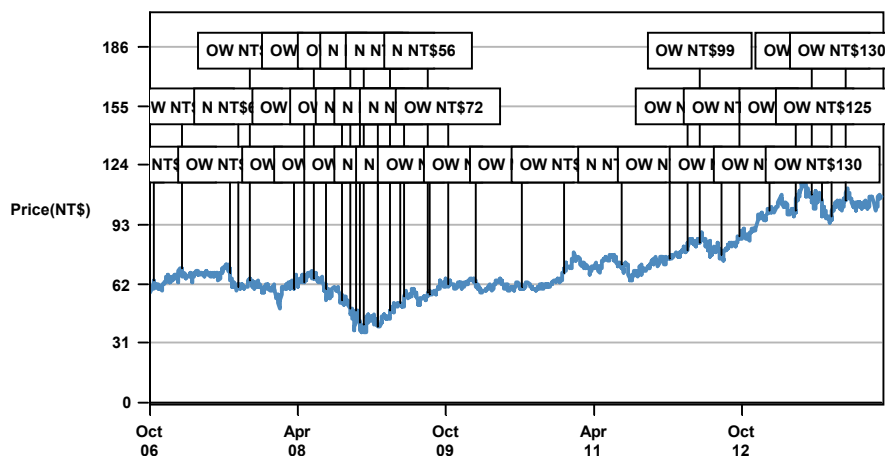
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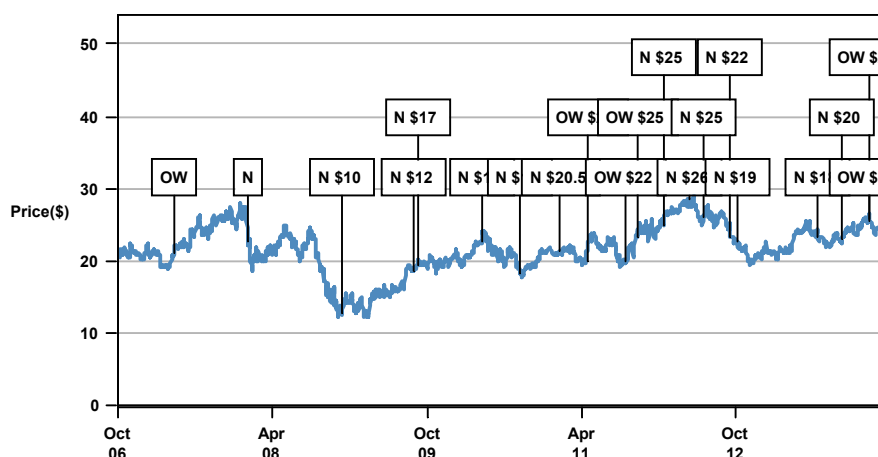
TSMC (2330.TW, 2330 TT) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Oct 16, 2006.

Date	Rating	Share Price (NT\$)	Price Target (NT\$)
16-Oct-06	OW	64.0	75.0
25-Jan-07	OW	69.9	89.0
26-Jul-07	OW	67.5	88.0
22-Aug-07	N	60.3	63.0
07-Oct-07	OW	64.0	80.0
16-Mar-08	OW	59.3	69.0
24-Apr-08	OW	63.3	73.0
27-May-08	OW	65.1	76.0
15-Jul-08	OW	60.0	72.0
11-Sep-08	OW	53.4	69.0
07-Oct-08	OW	48.8	56.0
31-Oct-08	OW	47.8	53.0
17-Nov-08	N	41.5	35.0
02-Dec-08	N	40.6	32.0
21-Jan-09	N	39.4	37.0
23-Jan-09	N	40.0	35.0
10-Mar-09	N	48.0	43.0
14-Apr-09	N	52.4	45.0
01-May-09	N	54.9	50.0
26-Jul-09	N	57.2	56.0
30-Jul-09	OW	56.0	65.0
07-Oct-09	OW	62.1	72.0
17-Jan-10	OW	62.9	75.0
05-Jul-10	OW	60.3	80.0
07-Dec-10	OW	68.5	88.0
13-Jul-11	N	72.2	77.0
04-Jan-12	OW	75.7	90.0
13-Mar-12	OW	80.0	96.0
26-Apr-12	OW	84.2	99.0
19-Jul-12	OW	77.5	96.0
18-Sep-12	OW	86.5	110.0
09-Jan-13	OW	100.0	120.0
18-Apr-13	OW	100.0	125.0
11-Jun-13	OW	108.5	135.0
19-Jul-13	OW	105.5	130.0
30-Aug-13	OW	96.8	125.0
17-Oct-13	OW	106.0	130.0

Intel (INTC, INTC US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Apr 18, 2007.

Date	Rating	Share Price (\$)	Price Target (\$)
18-Apr-07	OW	20.98	-
04-Jan-08	N	22.67	-
04-Dec-08	N	12.77	10.00
17-Aug-09	N	18.45	12.00
27-Aug-09	N	19.43	17.00
14-Apr-10	N	22.77	19.00
27-Aug-10	N	18.37	17.00
14-Jan-11	N	21.29	20.50
20-Apr-11	OW	19.86	25.00
08-Sep-11	OW	19.90	22.00
19-Oct-11	OW	23.40	25.00
17-Jan-12	N	25.04	25.00
18-Apr-12	N	28.47	26.00
06-Jun-12	N	26.07	25.00
10-Sep-12	N	23.26	22.00
08-Oct-12	N	22.68	19.00
18-Jul-13	N	23.24	18.00
11-Oct-13	N	23.10	20.00
14-Jan-14	OW	25.50	29.00
17-Jan-14	OW	25.85	30.00

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IB clients*	57%	49%	36%
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