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December 18, 2008

Foundry

The Foundry Floorplan – December 2008: Not Such a Happy New Year

Conclusion: As we close in upon year-end, the sounds of the holidays are dulled while the specter of demand flits through the cold foundry halls. Things continue to get worse, and in this month's Foundry Floorplan, we once again revise our foundry assumptions for 4Q08 and 2009, taking into account foundry guidance cuts and continued macro deterioration.

Inventory days could trend up: In this month's inventory analysis, we note that the incorporation of the last 3Q08 results means inventory is now up slightly from 67.5 days in 2Q08 to 67.6 days 3Q08. Based on current estimates for semiconductor companies and foundries, our analysis shows that inventory days are likely to continue to reach highs of 70.3 days in 4Q08.

Our new estimates: In conjunction with our U.S. semi team, we are lowering our foundry estimates on a more muted outlook for 2009 semiconductor industry growth, higher inventory levels entering 2009, and supply chain checks indicating more downside to 1Q09 utilizations. We are now expecting foundry companies in aggregate to see 35% revenue decline in 2009, versus consensus for 18.5% decline.

Losses adding up in 1Q09: Further customer order cutting and demand deterioration means that TSMC's 1Q09 utilization will likely approach or dip below 2001 trough utilizations of 41%. Despite cost-cutting efforts, we think that the company could face an operating loss in 1Q09. This marks TSMC's first quarterly loss since 3Q01.

Stock implications: In our opinion, fundamentals will not improve until 2Q next year at best. Our view is that in a demand driven cycle, stock does not trough until fundamentals trough, and thus we would sell into any year-end rally.

Industry Views

Industry	Industry View
China Foundry	Cautious
Singapore Foundry	Cautious
Taiwan Foundry	Cautious

Foundry Price Target Changes

Company	Rating	PT Change	% to PT
Chartered (CSMF.SI)	UW	From S\$0.22 To S\$0.15	-21%
SMIC (0981.HK)	EW	NA	NA
TSMC (2330.TW)	EW	From NT\$43.0 To NT\$38.0	-15%
UMC (2303.TW)	EW	From NT\$10.5 To NT\$7.50	3%

Foundry EPS Changes

Company	2009 EPS change
Chartered	From US\$-0.14 To US\$-0.24
SMIC	From US\$-0.01 To US\$-0.02
TSMC	From NT\$2.48 To NT\$1.24
UMC	From NT\$0.02 To NT\$-0.84

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Investment Case

Summary & Conclusions

In this update, we revise our 2009 foundry estimates once again and take a look at the demand and inventory situation. We maintain our Cautious view on the sector, with our conclusions summarized below:

- 1) **We are cutting estimates for the foundries for both 4Q08 and 2009.** Given the recent round of foundry and semi guidance cuts, we are fine-tuning our 4Q08 estimates and reducing our estimates for 2009. Our new numbers are 23% below consensus for 1Q09 and 16% below consensus for 2009. Our estimate cuts are based on: 1) Inventory remains elevated in 3Q08 and is unlikely to get worked down by the end of the year, 2) Demand checks indicate that the worse is not yet over and another dramatic 1Q09 decline is likely, 3) Our US semi team now expects 2009 semiconductor decline of 15-30%.
- 2) **Inventory days could trend up in 4Q08:** In this month's inventory analysis, we note that the incorporation of additional results increased 3Q08 inventory slightly to 67.6 days from 65.6 days previously, which actually represents a slight increase from 2Q08 levels. Inventory levels remain high and in our view, even a significant inventory decline in the next two quarters would imply a continuous increase in inventory days.
- 3) **TSMC profitability could pose a concern:** Our analysis indicates high chance for an operating loss in 1Q09. The company is likely to incur a loss on a monthly basis beginning in January, though demand could pick up in March. At best, quarterly losses could be avoided by pulling in 2Q09 orders. But, any further deterioration in orders or lack of inventory rebuild (as our analysis implies), would mean that in the worst case losses could even be extended to 2Q09.
- 4) **TSMC trough P/B could break through previous lows.** A question that we have heard from investors recently is where TSMC might bottom this cycle. We frankly do not have a definitive answer, but in the report, we look at ROE now versus past cycles, and valuation relative to the TAIX. The analysis seems to suggest that the stock could trough somewhere in the 1.5 to 1.8x P/B range.

We have been cautious on foundries for a while, but continued demand deterioration has resulted in significant cuts to both semi and foundry guidance. Investors may be tempted to buy the news, but our analysis would warrant further caution. In this report, we lower our 2009 estimates even more and remain cautious on foundry stocks. A summary of the key points follows:

Semiconductor expectations now down significantly in 2009. Morgan Stanley's US semiconductor team is cutting estimates for the semiconductors for both 4Q08 and also 2009. We now expect the semiconductor industry to decline 15-30% Y/Y in 2009, compared to flat previously, and versus SIA's estimates for a 5.6% decline. Likewise, we have revised our foundry estimates for 2009. Relative to consensus, our estimates for the foundries are now 23% below consensus for 1Q09 and 16% below consensus for 2009.

Where do semis go from here? Our analysis of the major foundry customers shows that semi consensus revenues (-9% Y/Y) are expected to outperform foundry consensus revenues in 2009 (-17.6% Y/Y). If consensus is correct, it would imply an inventory digestion that would set foundries up for a healthy rebound. On the other hand, as we have seen in 4Q08, semi estimates eventually came down and matched the rate of deterioration for foundries. As detailed later, we expect inventory levels to trend up in 4Q08, but digestion could begin to happen in 1H09 unless demand disappoints even more.

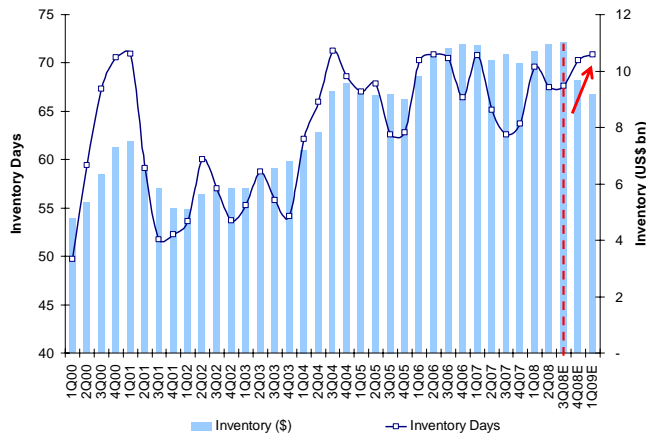
Inventory outlook continues to disappoint. While we appear to be a year-end rally as investors believe that all bad news are now priced in, our view is that a sustainable recovery is highly dependent on inventory digestion in the next few quarters. Considering a weak holiday season and seasonally low demand in the first half of the year, we do not think inventory levels will be worked down as fast as expected. As shown in Exhibit 1, current estimates would suggest that inventory levels could actually increase in the near term.

Cutting Estimates Again on Semi and Foundry Revisions

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Exhibit 1

Inventory days at risk of going up again

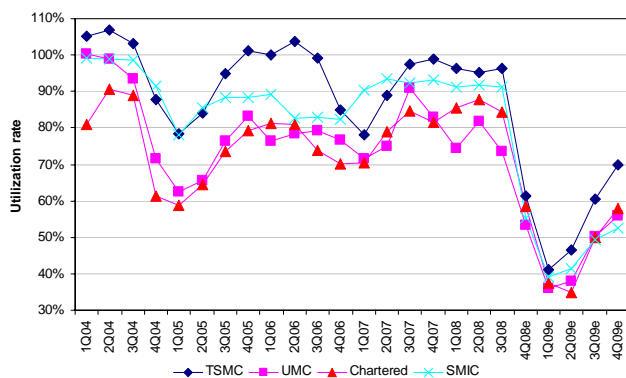


Source: Company data, Factset, Morgan Stanley Research

Expecting continued decline in 1Q09 and a moderate second-half recovery. Though The Street uniformly expects foundry stocks to bottom in 1Q09, our view is that the bottom will be deeper than expected. Consensus expects a 10.8% Q/Q decline versus our expectation of 34% decline. We are currently modeling a recovery in 2H09, based on continuing outsourcing by the IDMs, and also contributions from the initial 40/45nm products, which should carry higher ASPs. Our numbers could be at additional risk if these factors do not materialize or if demand takes another leg down. Our utilization estimates can be seen in Exhibit 2.

Exhibit 2

Foundry utilization estimates



Source: Company data, Morgan Stanley Research

Our revised estimates. Exhibit 9 on page 5 summarizes our revenue revisions for the four foundry stocks under our

coverage. We tune our 4Q08 foundry estimates inline with guidance revisions, and reduce our 1Q09 estimates from an 18% decline to 34% decline. Going into 2009, our coverage universe now sums to a decline of 35% compared to 20% previously, and versus semiconductor decline of 15-30%. We believe foundries will underperform semis as inventory is digested and also possible continued IDM in-sourcing. We also expect TSMC to outgrow its peers, as it should benefit from the continual ramp of 65nm business and the initial 40nm/45nm customer orders in 2H09.

Further consensus risk underscores our cautious view.

Exhibit 3 compares the magnitude of earnings revisions for the current downturn versus previous cycles. We note that the revisions for Chartered, SMIC, and UMC are all larger than the 2000-2001 cycle, likely as a result of lower levels of profitability currently, while for TSMC, 2009 revision now stands at 55% compared to an 87% revision in 2001. Our TSMC 2009 EPS estimate is currently 43% below consensus.

Exhibit 3

Foundry 2008/2009 EPS consensus revisions compared to previous cycle revisions

			Inventory Correction		Macro/Liquidity	
	2009E	2008E	2006	2004	2000-01	1998
Chartered	-382%	-126%	-60%	-133%	-210%	NA
SMIC	-381%	-446%	-113%	-24%	NA	NA
UMC	-131%	-99%	-45%	-12%	-105%	-84%
TSMC	-55%	-27%	-30%	-6%	-87%	-51%
Median	-256%	-113%	-53%	-18%	-105%	-67%
Average	-237%	-175%	-62%	-44%	-134%	-67%

Source: Company data, Morgan Stanley Research

All Eyes on the Foundry Leader

TSMC has never seen a loss on the bottom line, though it did suffer a pre-tax loss in 2Q01 and 3Q01 with utilization of 44% and 41% respectively. Going into 1H09 it appears likely that TSMC will again come close to the trough levels in terms of fundamentals, and investors are asking us where the stock could potentially end up. We note that our price target has always been based on the long-term value of the firms, but here we take a look at where trough valuation could be.

Expecting another large 1Q09 drop. We are currently modeling another 35% revenue decline in 1Q09 following the 4Q08 32% decline. We model operating expenses down slightly due to Chinese New Year and recent employee 20% pay cuts. We assume non-operating income will still remain positive. Overall, this implies an operating loss in 1Q09, but a positive bottom line. The company is likely to incur a loss on a

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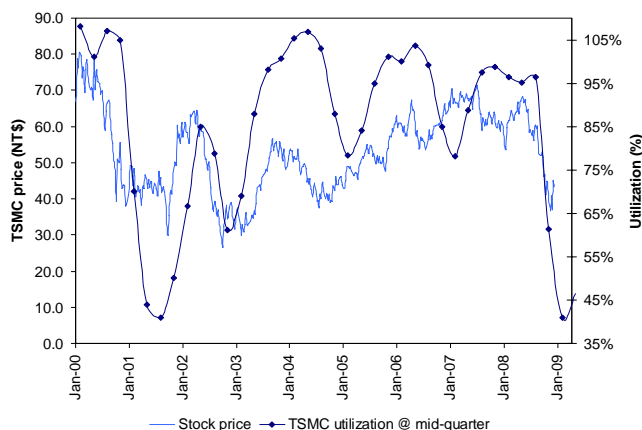
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monthly basis beginning in January, though demand could pick up in March. We think the company is under significant pressure; at best, quarterly losses could be avoided by pulling in 2Q09 orders. However, any further deterioration in orders or lack of inventory rebuild, as our analysis implies, would mean that in the worst case losses could even be extended to 2Q09.

Utilization rates closing in on 2001 levels. We model 1Q09 utilization rate at 41%, which is the trough utilization for the 2001 downturn. However, as the global downturn is much more broad-based than the tech bubble, we think the risk is still to the downside. As we can see in Exhibit 4 and Exhibit 5, the stock seems to be anticipating a 1Q09 trough, but a plot of TSMC's share prices versus utilization rate and monthly revenues show that in a demand driven downturn, stock prices have never led fundamentals, and in fact sometimes trails fundamentals by a quarter.

Exhibit 4

TSMC Mid-Quarter Utilization versus Stock Price



Source: Company data, Morgan Stanley Research

Exhibit 5

TSMC Monthly Sales versus Stock Price



Source: Company data, Morgan Stanley Research

Where is the bottom? While our price targets are based on long-term value and residual income valuation, here we attempt to estimate where the stock could trough near-term.

If we look at the previous cycles, as shown in Exhibit 6, we note that TSMC P/B has declined to levels near 2.0x during the downturns. However, our analysis implies that TSMC share price is likely to trough at values below historical P/B levels in the 1.6x to 1.8x range. We use the 2004 cycles as a reference as TSMC was in a different stage of development previously with higher growth rates, but in 2004 it was already a fairly mature business, just as today.

1. **P/B vs. ROE correlation.** In Exhibit 7 we compare TSMC's price to book relative to its price-to-book ratio. TSMC traded at 2.2x at the end of 2004 while the ROE in 2005 was 17%. In 2009, we are currently estimating ROE of 7%. Over the next cycle, we would assume average ROE to fall somewhere in the 10-15% range versus 15-20% in 2004. Given such, we believe TSMC's trough valuation has downside to the 1.5x range. We note that TSMC has troughed at 2.0x or high in earlier down cycles prior to 2004, even when ROE dipped below 5%, but that was when growth assumptions were higher.
2. **TSMC P/B vs. TAIEX P/B:** In the 2004 downturn, TSMC's P/B had a 67% premium to Taiex P/B at the low point, while TSMC's P/B has a 130% premium to the TAIEX P/B. If we apply the 67% premium to the current TAIEX P/B of 1.1x, we get TSMC's trough P/B at roughly 1.8x (Exhibit 8).

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Exhibit 6

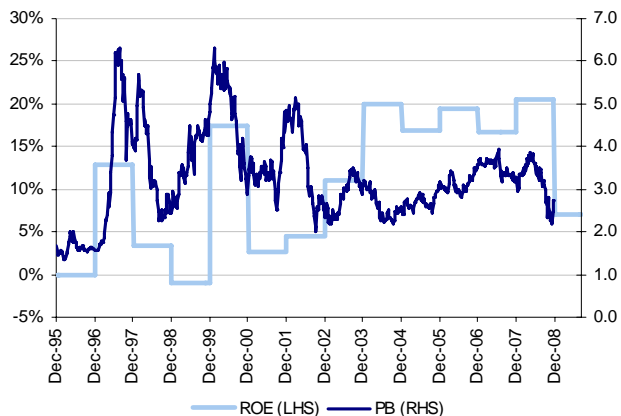
TSMC Peak/Trough Valuation and Utilization

Cycles	12 mth fwd P/BV			Trough Utilization
	Mid	Peak	Trough	
97-98 cycle ()	5.0x	9.2x	2.2x	58%
99-01 cycle ()	4.0x	6.3x	2.5x	41%
02-03 cycle ()	3.2x	5.1x	2.0x	61%
03-05 cycle ()	2.6x	3.2x	2.2x	78%
05-07 cycle ()	3.3x	3.8x	2.8x	78%
07-09 cycle expect ()	3.0x	3.4x		41% (e)

Source: Company data, Morgan Stanley Research

Exhibit 7

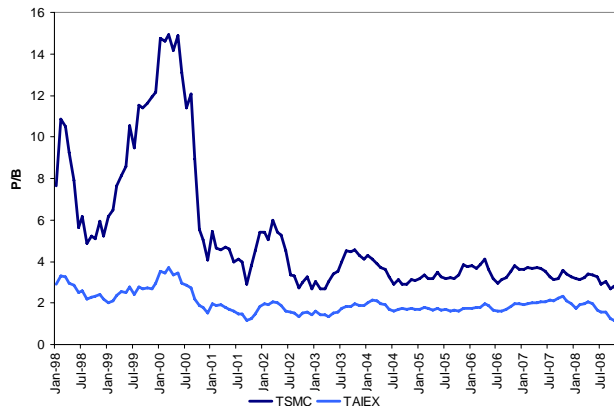
TSMC Forward P/B versus ROE



Source: Company data, Morgan Stanley Research

Exhibit 8

TSMC P/B Compared to TAIEX (Non-Adjusted)



Source: TEJ, Morgan Stanley Research

Exhibit 9

Foundry 4Q08 and 2009 Revision Summary (US\$)

New							Old										
	3Q08	4Q08	1Q09	2007	2008	2009		3Q08	4Q08	1Q09	2007	2008	2009				
TSMC	2,890	1,944	1,259	9,947	10,160	6,690	TSMC	2,890	1,944	1,552	9,947	10,160	8,085				
UMC	769	561	363	3,292	2,824	1,826	UMC	769	576	513	3,292	2,840	2,430				
CHRT	464	331	224	1,355	1,641	1,064	CHRT	464	362	287	1,355	1,671	1,218				
SMIC	376	261	198	1,543	1,343	885	SMIC	376	275	248	1,543	1,356	1,149				
Total	4,499	3,097	2,043	16,136	15,967	10,466	Total	4,499	3,156	2,601	16,136	16,027	12,882				
New							Old										
	3Q08 growth	4Q08 growth	1Q09 growth	08 growth	09 growth		3Q08 growth	4Q08 growth	1Q09 growth	08 growth	09 growth		3Q08 growth	4Q08 growth	1Q09 growth	08 growth	09 growth
TSMC	-0.5%	-32.7%	-35.3%	2.1%	-34.1%	TSMC	-0.5%	-32.7%	-20.1%	2.1%	-20.4%	TSMC	-0.5%	-32.7%	-20.1%	2.1%	-20.4%
UMC	-7.5%	-27.1%	-35.3%	-14.2%	-35.3%	UMC	-7.5%	-25.1%	-11.0%	-13.7%	-14.4%	UMC	-7.5%	-25.1%	-11.0%	-13.7%	-14.4%
CHRT	1.4%	-28.6%	-32.5%	21.1%	-35.1%	CHRT	1.4%	-22.0%	-20.5%	23.3%	-27.1%	CHRT	1.4%	-22.0%	-20.5%	23.3%	-27.1%
SMIC	9.6%	-30.5%	-24.1%	-13.0%	-34.1%	SMIC	9.6%	-26.9%	-9.6%	-12.1%	-15.2%	SMIC	9.6%	-26.9%	-9.6%	-12.1%	-15.2%
Total	-0.8%	-31.2%	-34.0%	-1.0%	-34.5%	Total	-0.8%	-29.8%	-17.6%	-0.7%	-19.6%	Total	-0.8%	-29.8%	-17.6%	-0.7%	-19.6%

Source: Company data, Morgan Stanley Research

Demand

The demand section starts off our standard monthly updates for the foundry sector. Please refer to Exhibit 11 through Exhibit 13 for our analysis of current consensus for the major semiconductor companies worldwide, plotted against foundry growth.

Semiconductor growth versus foundry growth. In this section we analyze semiconductor companies' recent results/consensus and compare that with foundry growth, which can be seen in Exhibit 11.

- The last few weeks have seen 4Q08 guidance cuts across the board, with many IC design companies cutting guidance following Intel's guidance warning. This has resulted in global semi expectations coming down significantly for 4Q08, from -10.3% to -16.8%, with current consensus for another decline of 6.4% in 1Q09. The recent adjustments have resulted in a general closing of the gap between semi and foundry performance in 4Q08, though there is still a disparity between our foundry expectations and semi consensus in 1Q09.
- Foundry consensus has also come down slightly as a result of deteriorating demand and hence foundry guidance cuts. 4Q08 consensus for Q/Q decline is down from -20.7% to -27%, while 1Q09 is now down from -7.1% to -9.7%. Exhibit 14 gives a visual indication of how consensus has come down over the last four months, as a result of the recent downward pressure due to foundry pre-guidance warnings. Our 4Q08 estimates have also come down slightly in this foundry revision (see Exhibit 15).
- For 2009, consensus expects a 9% Y/Y decline for semi revenues, versus consensus for a 17.6% foundry revenue decline and our current estimate of 34.5% foundry decline. Since our US semi team expects a 15-30% semi decline in 2009, we believe that there is still downside for consensus semis and inventories, which will likely result in further negative news flow for foundries.

Company specific customer growth. Taking our analysis a step further, we break down each foundry's expected growth against that of its specific customers, according to the weighting in Exhibit 17.

For UMC, we now expect 4Q08 to decline 26%, compared to 24% previously. In comparison, revenue guidance was revised to 24%-26% decline from previous guidance of 21% Q/Q decline in 4Q08. In 2009, we expect a 33% Y/Y decline, which includes another 35% Q/Q drop in 1Q09. UMC's 1Q09 consensus estimates and UMC-weighted semis still expect to outperform our estimates, which to us implies further downside risk. See Exhibit 13.

For TSMC, likewise, we now expect a 34.2% decline in 1Q09 compared to 20% in our recent note, resulting in a total of 32% Y/Y decline in 2009. Compared to our estimates, 1Q09 foundry consensus and TSMC-weighted semi revenues likely have further downside risk. See Exhibit 12.

Inventory

Our inventory analysis takes a look at semiconductor inventory levels and inventory days as well as the end market inventories. Additional results have come in since 3Q08 earnings, and our conclusion remains that overall inventory levels are generally flat or up compared to 2Q08 levels.

Semiconductor inventory: 3Q08 semiconductor inventory results are basically complete, and unfortunately it does not look good. Semiconductor inventory (excluding foundry inventory) is now up by 1% in dollar terms, and up to 67.6 from 67.5 days. This is higher than our previous check of 65.6 days, mainly due to results from Trident, Omnivision, Marvell, and ADI. Stubborn inventories are negative for foundries, and imply a prolonged decline and more moderate recovery. (Please see Exhibit 18).

End market inventory: In addition to semiconductor inventory, we provide an update on the end market inventories, including the communications sector, computer, storage, contract manufacturers, distributors, and resellers, which can be found in Exhibit 19. Since our previous foundry monthly, computing inventory has gone up slightly, and channel inventories (up 17% Y/Y) pose a serious concern. See Exhibit 10 for a summary.

Exhibit 10

3Q08E Inventory Days and Inventory Dollars

3Q08E	Days Q/Q Change	Days Y/Y Change	\$Inventory Q/Q	\$Inventory Y/Y
Semiconductors (%)	0	8	1	8
Communications (%)	4	-2	-2	-1
Computing (%)	-2	-2	-4	1
Channels (%)	2	7	2	17

Source: Company data, Morgan Stanley Research

Supply

As shown in Exhibit 20 and Exhibit 21, global semi capacity has continued to increase in 3Q08. Utilization rates continue to decline, and are likely to show significant downside in 4Q08, along with foundry utilization declines. If global semis decline on a similar rate as foundries, we expect utilization has risk of declining to at least 2001 levels.

Market share

Here we track the foundry market shares, both in total and by advanced/mature nodes. See Exhibit 22 to Exhibit 24. See also Exhibit 27 for our blended ASP analysis for the foundries, as it relates to market share shifts. This has not changed since our last report. ASP is still a concern for foundries, as chip suppliers are highly likely to ask for further price cuts from foundries in an environment of deteriorating margins and slow market demand.

Stock performance

Foundry stock performance relative to customers' (fabless and IDMs) and other affiliated segments (semi equipment, back end, memory), can be found in Exhibit 29 through Exhibit 32. Recently, foundry share prices have bounced along with its customers (fabless and IDMs) during the recent rally. Foundries also continue to outperform other affiliated segments (Backend, Memory, Equipment), though these sectors have also come along for the recent ride.

Looking within the foundry segment in Exhibit 28, foundry share prices have seen a healthy rally over the past week(s),

though all are still in negative territory year-to-date. All foundries have shown positive gains in the last week, while TSMC has rallied 7% in the last month, and SMIC is up 38% in the past month. We view the recent share gains as a good opportunity to sell into strength, as fundamentals are not likely to improve anytime soon.

ADR

Chartered's ADR price target of US\$1.09 is based on a conversion ratio of 10 and an end-2008E exchange rate of US\$1/SG\$1.38

TSMC's ADR price target of US\$5.9 is based on a conversion ratio of 5 and an end-2008E exchange rate of US\$1/NT\$32.

UMC's ADR price target of US\$1.17 is based on a conversion ratio of 5 and an end-2008E exchange rate of US\$1/NT\$32.

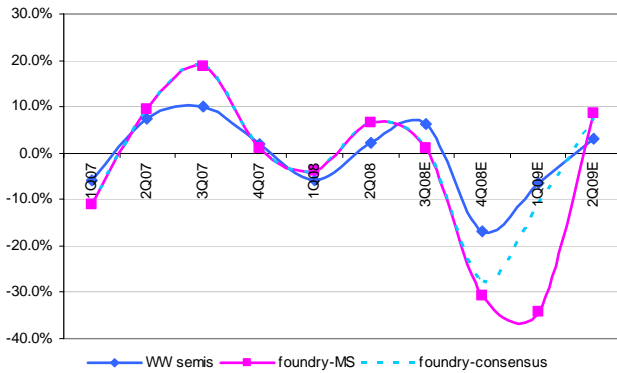
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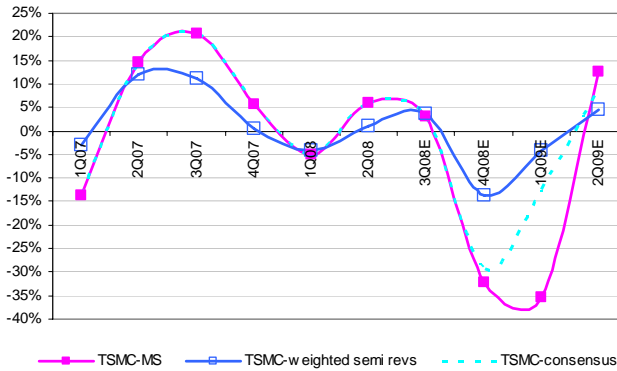
Exhibits

Exhibit 11
WW Semi Growth versus Foundry Growth



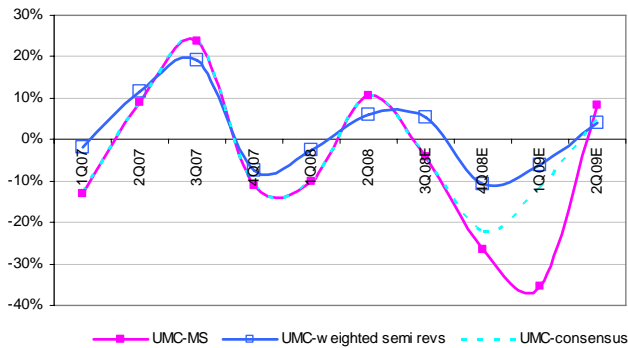
Source: Company data, Morgan Stanley Research

Exhibit 12
TSMC Growth vs. TSMC-Weighted Semi Growth



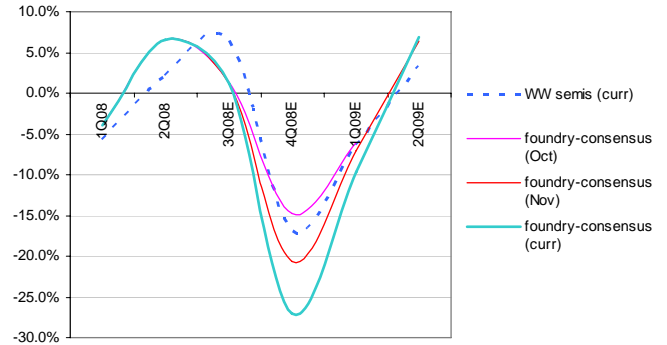
Source: Company data, Morgan Stanley Research

Exhibit 13
UMC Growth vs. UMC-Weighted Semi Growth



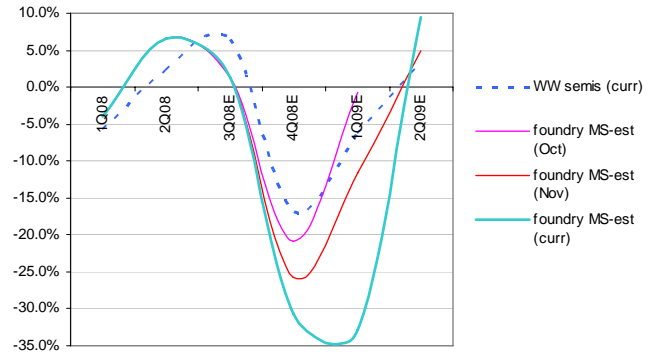
Source: Company data, Morgan Stanley Research

Exhibit 14
Foundry Consensus Growth Trend – Last 4 Months



Source: Company data, Morgan Stanley Research

Exhibit 15
MS Foundry Estimate Trend – Last 4 Months



Source: Company data, Morgan Stanley Research

Exhibit 16
IDM Outsourcing Estimates

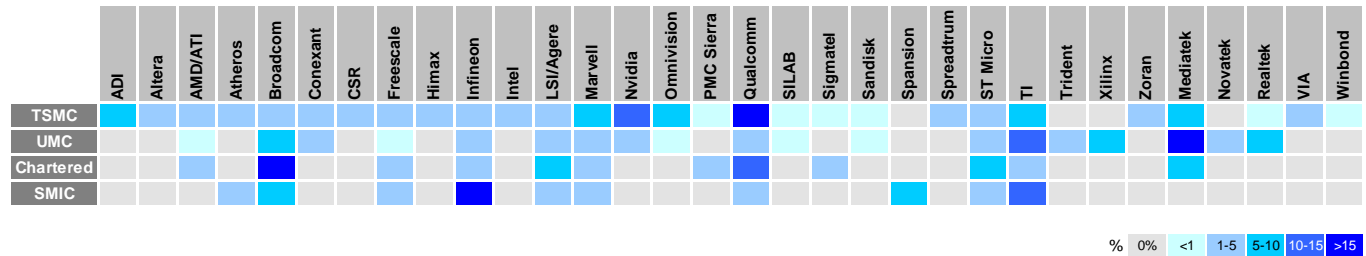
	2007		2008-2010		
	% O/S	Foundry Rev (\$m)	Expected % O/S by 2011	Change in % o/s	Incr Foundry Rev. in next 3 yrs (\$m)
ADI	44%	278	50%	6%	38
AMD/ATI	14%	326	25%	12%	278
Atmel	10%	60	20%	11%	67
Cypress	23%	148	25%	2%	15
Fairchild	8%	54	10%	2%	14
IDTI	11%	30	12%	1%	3
Intel's Wireless biz - acquired by Marvel	0%	0	50%	50%	53
Intersil	52%	105	53%	1%	2
Linear Technology	5%	7	5%	0%	0
LSI Logic (merging Agere)	85%	842	100%	15%	149
Micrel	10%	7	10%	0%	0
Microchip	6%	15	10%	4%	10
Microsemi	99%	146	100%	1%	1
Freescale	18%	418	30%	12%	269
Maxim	6%	26	8%	2%	7
National Semi	14%	59	18%	4%	17
ONNN	20%	117	25%	5%	29
RF Micro Device	10%	41	5%	-5%	-20
Semtech	95%	74	98%	3%	2
Spansion	16%	192	25%	10%	118
Texas Instruments	26%	995	35%	10%	371
US Co.		3,941			1,421
ST Micro	12%	465	20%	8%	310
Infineon	15%	599	20%	5%	200
NXP	31%	778	50%	19%	465
European Co.		1,843			975

Source: Company data, Morgan Stanley Research

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Exhibit 17

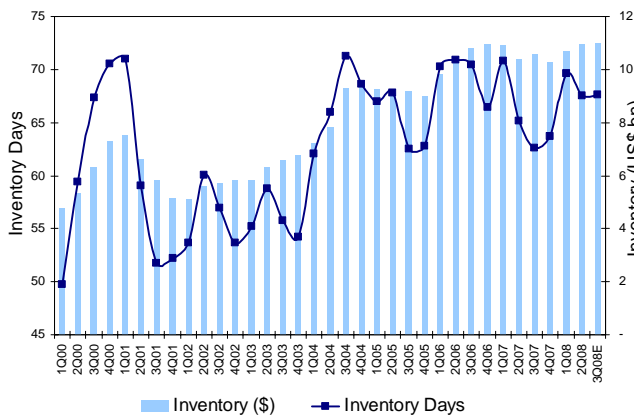
Current Foundry Customer Revenue Contribution



Source: Company data, Morgan Stanley Research

Exhibit 18

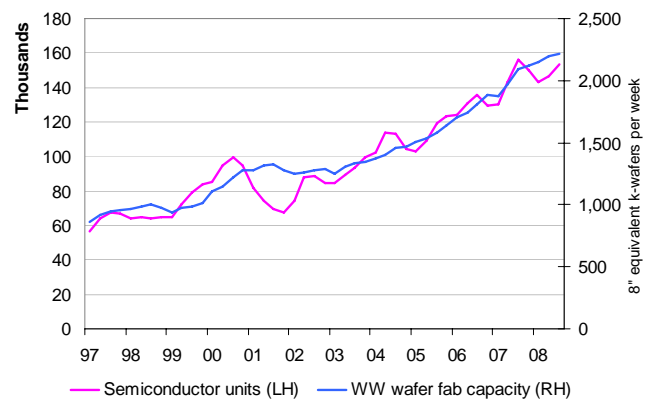
Global Semi Inventory and Inventory Days



Source: Company data, Morgan Stanley Research

Exhibit 20

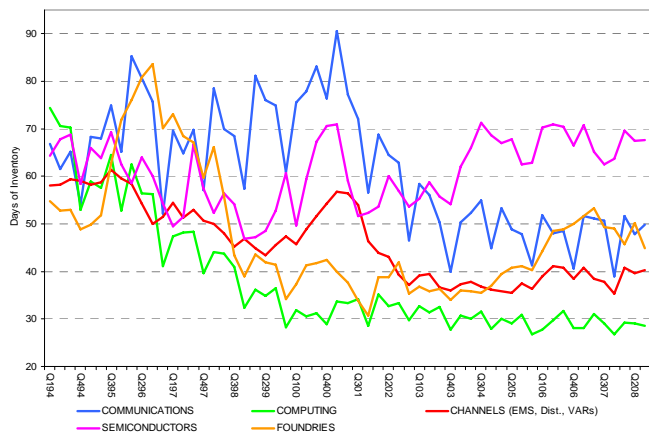
WW Wafer Capacity versus Semi Units



Source: SIA, SEMI, Morgan Stanley Research

Exhibit 19

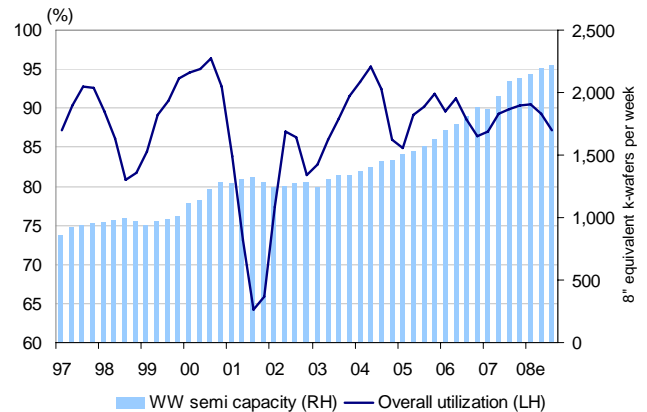
End Market and Channel Inventory



Source: Company data, Morgan Stanley Research

Exhibit 21

WW Capacity and Utilization Rates

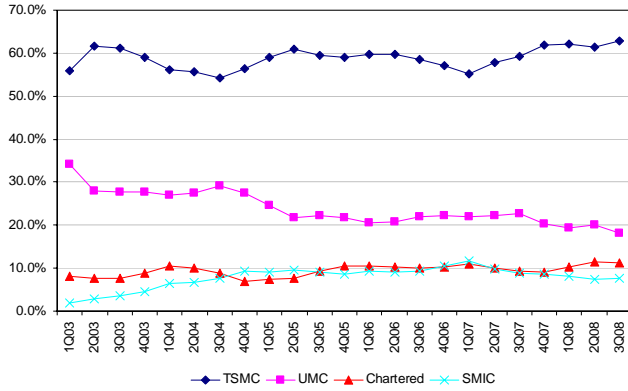


Source: SEMI, Morgan Stanley Research

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Exhibit 22

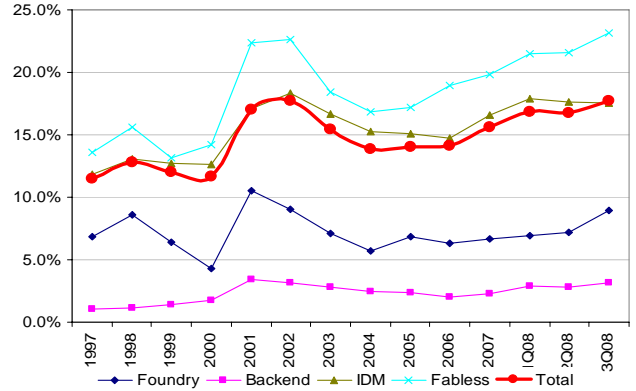
Overall Foundry Market Share (Top-4)



Source: Company data, Morgan Stanley Research

Exhibit 25

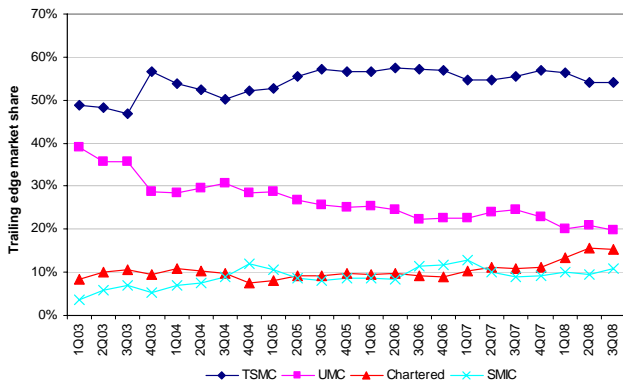
R&D as % of Revenues



Source: Company data, Morgan Stanley Research

Exhibit 23

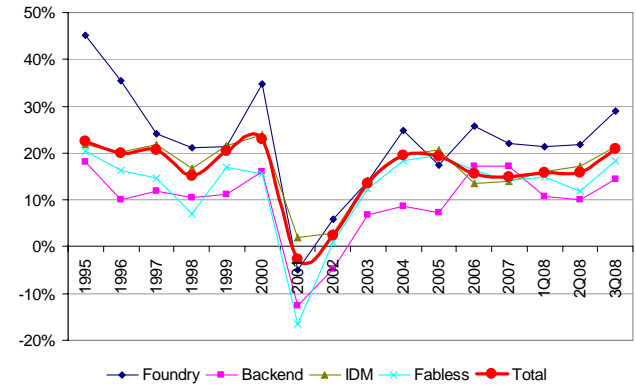
Mature Node Market Share (Top-4)



Source: Company data, Morgan Stanley Research

Exhibit 26

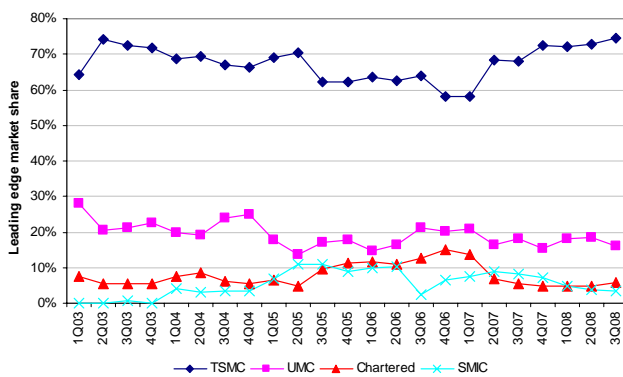
Operating Margin Analysis



Source: Company data, Morgan Stanley Research

Exhibit 24

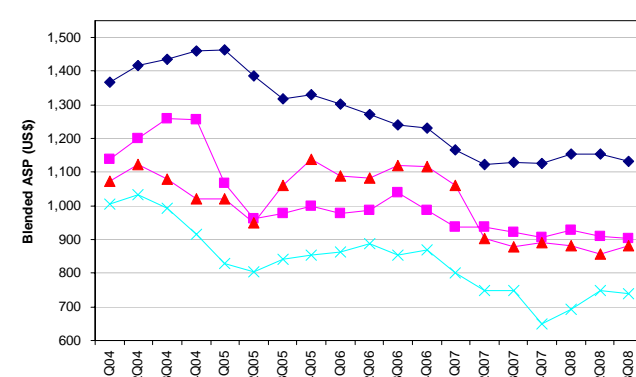
Advanced Node Market Share (Top-4)



Source: Company data, Morgan Stanley Research

Exhibit 27

Foundry Blended Wafer ASP (Top-4)



Source: Company data, Morgan Stanley Research

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Exhibit 28

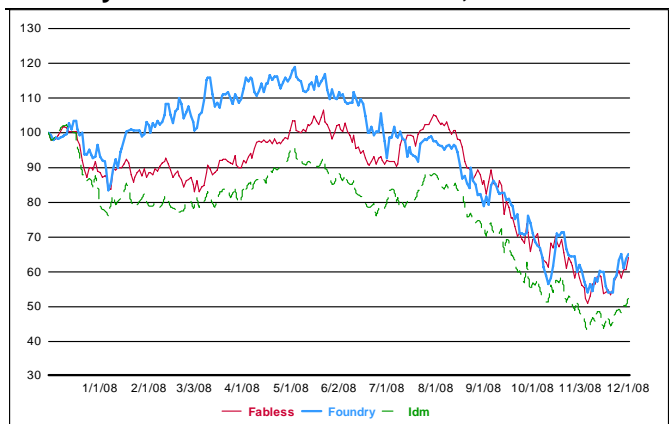
Foundry Stock Performance

Company	Price	5d	1m	3m	6m	1y	YTD
Chartered	0.19	3%	-14%	-54%	-76%	-81%	-80%
Vanguard	7.58	11%	0%	-26%	-66%	-69%	-69%
TSMC	44.80	3%	7%	-12%	-32%	-25%	-27%
UMC	7.69	4%	-8%	-24%	-53%	-58%	-60%
SMIC	0.23	11%	38%	-26%	-53%	-68%	-72%

Source: Company data, Morgan Stanley Research

Exhibit 29

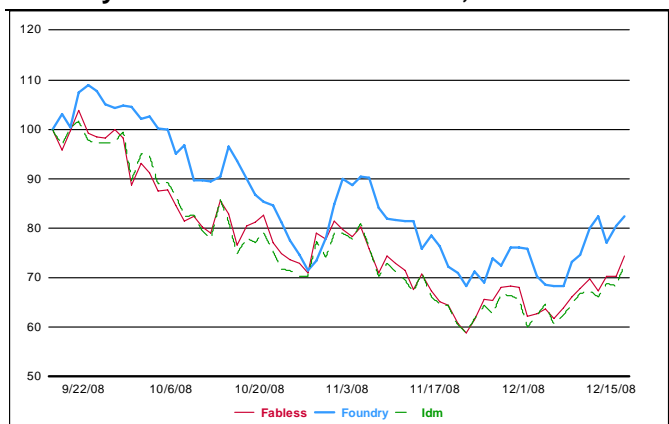
Foundry Share Price vs. Customers, 1 Year



Source: Company data, Morgan Stanley Research

Exhibit 30

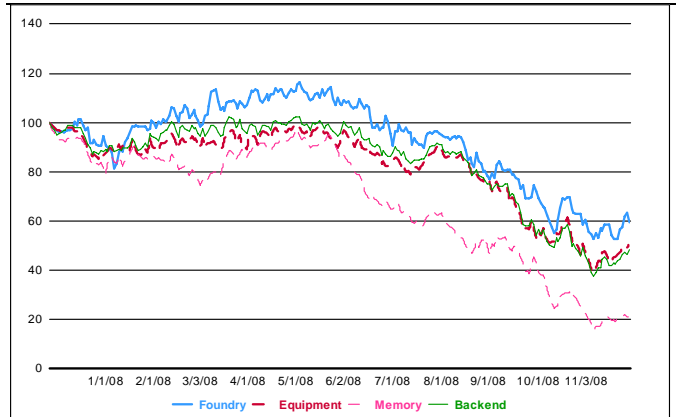
Foundry Share Price vs. Customers, Last 3 Months



Source: Company data, Morgan Stanley Research

Exhibit 31

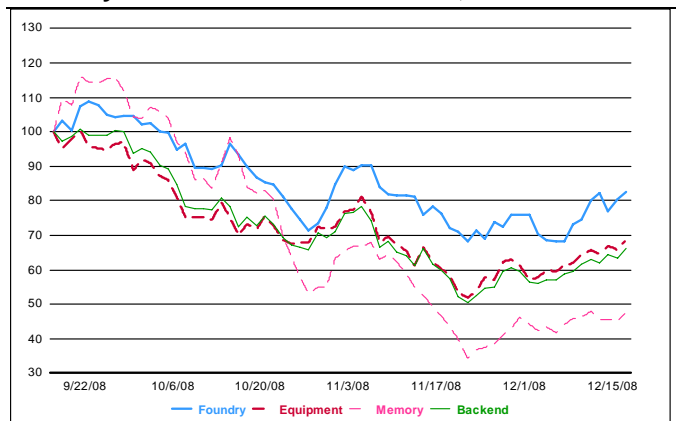
Foundry Share Price vs. Foodchain, 1 Year



Source: Company data, Morgan Stanley Research

Exhibit 32

Foundry Share Price vs. Foodchain, Last 3 Months



Source: Company data, Morgan Stanley Research

Calendar of Events

Exhibit 33

Foundry-related Events

	Foundry related	Customer Related	Other Tech Companies	Tech Conferences
Dec-08				
3-Dec-08		Infineon Earnings call		
3-Dec-08		Marvell Earnings call		SEMICON Japan @ Tokyo Nanotech International Forum @ Moscow
9-Dec-08	UMC Nov Sales			
10-Dec-08	TSMC Nov sales			
11-Dec-08				IEEE SISC 2008 @ San Diego
14-Dec-08				IEDM 2008 @ San Francisco
Jan-09				
11-Jan-09				Industry Strategy Symposium ISS @ Half Moon Bay
15-Jan-09		Intel Earnings Call		
20-Jan-09				SEMICON Korea @ Seoul
22-Jan-09	TSMC 4Q08 Results			
24-Jan-09				SPIE Photonics West 2009 @ San Jose
25-Jan-09				MEMS 2009 @ Sorrento, Italy
Feb-09				
28-Feb-09				LED China 2009 @ Guangzhou
Mar-09				
8-Mar-09				Euro-MBE @ Zakopane, Poland
10-Mar-09				Smart Systems Integration @ Brussels, Belgium
11-Mar-09				Materials for Advanced Metallization @ Grenoble, France
				FPD China @ Shanghai
17-Mar-09				SEMICON China @ Shanghai

Source: Company data, Morgan Stanley Research

Risk-Reward Snapshot: Chartered (CSMF.SI, S\$0.19, UW, PT S\$0.15)

Risk/Reward View Is Not Favorable In Our View



Source: Company data, Morgan Stanley Research

Price Target	Residual Income	Based on residual income model.
Bull Case S\$0.41	Residual Income	Disciplined capex and higher 65nm market share: 1) Global semi declines only 15% in 2009; 2) Chartered slows down its capex next year by about 50% and thus limits depreciation expenses. 3) Chartered's progress at 65nm is better than expected.
Base Case S\$0.15	Residual Income	Slow growth momentum: Our base-case estimates are anchored on: 1) 20-25% semi decline in 2009; 2) IDM o/s revenue of US\$2.5bn in 2008-10, with Chartered's share at 14%; and 3) market share at 65nm geometry increasing in 2008-10.
Bear Case S\$0.04	Residual Income	Painful industry downturn: 1) Overall semiconductor industry sees 30% decline in 2009. 2) Fabless/IDM shrinks the bargaining power of foundry, which means even faster pricing erosion. Chartered's 65nm share gains do not materialize as fast as expected.

Why Underweight?

- Given Chartered's historically high breakeven points, the industry downturn will likely have a bigger impact on its valuation and profitability relative to its peers. We remain UW on Chartered despite its low valuation as the minimal downside is triggered by recent market turmoil.
- As is the case with SMIC, we point out that a weak balance sheet is a considerable drawback in a downturn; Chartered's strategic options are limited by its necessity to preserve cash.

Key Value Drivers

- Global semiconductor growth
- Technology know-how positions Chartered as a viable second source to TSMC
- Gross margin improvement
- Market share gain at 65nm

Potential Catalysts

- Project losses, especially at leading edge
- Worse-than-expected utilization rate and ASP trends
- Operational efficiency deteriorates, as the company's scale shrinks

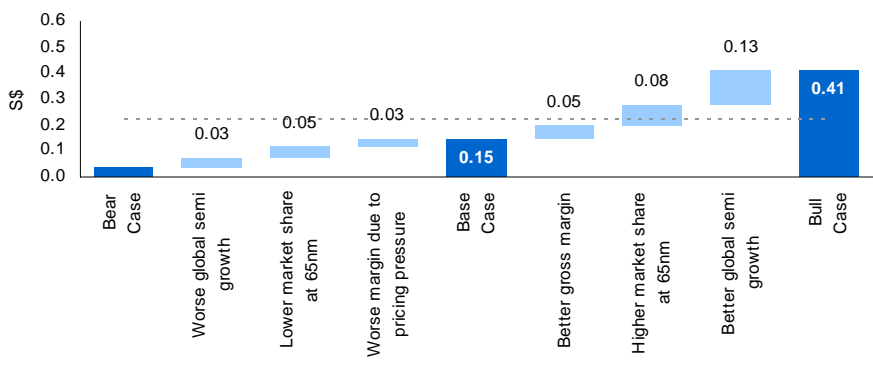
Downside Risks

- Slower-than-expected global economy and semiconductor growth in 2009
- Project/customer losses
- Higher customer concentration than many of its peers

Upside Risks

- Recovery of global economy and semi demand
- Project/customer wins
- Better-than-expected cost-cutting efforts

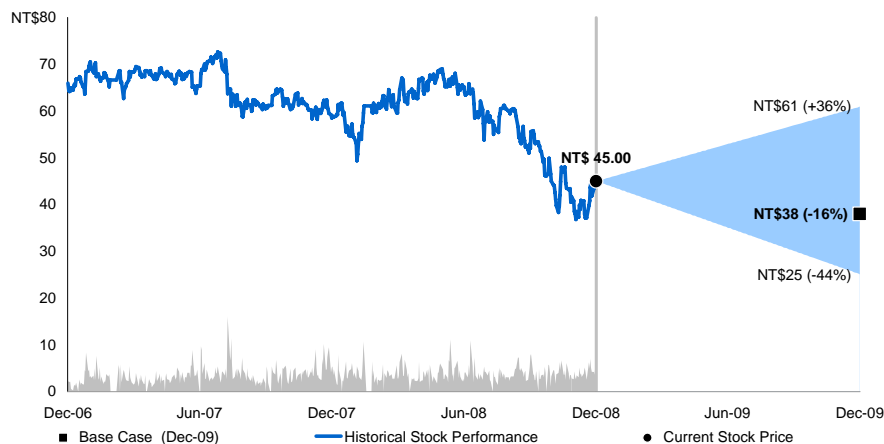
From Bear to Bull: Gross Margin and 65nm Market Share Are Key



Source: Company data, Morgan Stanley Research

Risk-Reward Snapshot: TSMC (2330.TW, NT\$45, EW, PT NT\$38)

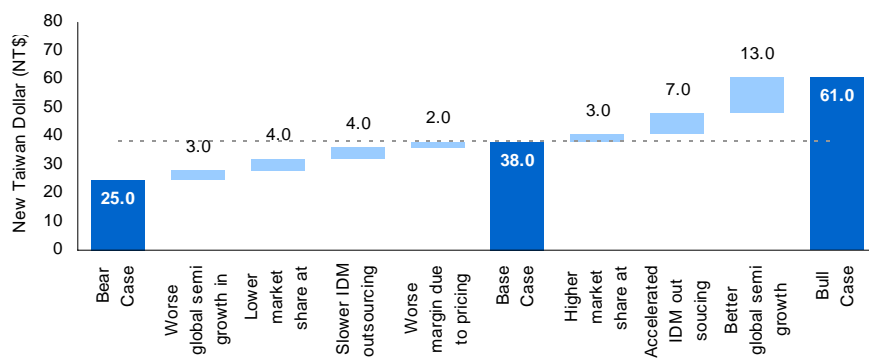
Stock Reasonably Valued with Equal Up/Downside Risks



Source: Company data, Morgan Stanley Research

Price Target	NT\$38	Derived from residual income model
Bull Case NT\$61	RI valuation	Upside from incremental IDM outsourcing: 1) Global semi declines only 15% in 2009; 2) IDM outsourcing increases faster than expected due to customers' desire for profitability and free cash flow, with more o/s opportunities. 3) We assume TSMC's leadership at leading edge helps it dominate at 65nm market share
Base Case NT\$38	RI valuation	Sustainable market share and profitability: Our base-case estimates are anchored on: 1) Global semi decline of 20-25% in 2009; 2) IDM o/s revenue totals US\$2.5bn in 2008-10, with TSMC's share at 55%; 3) TSMC leads in 65nm geometry with an average 64% market share assumed in 2008-10.
Bear Case NT\$25	RI valuation	Tougher macro environment in 2009; severe pricing pressure: 1) The global economy turns down worse than expected in 2009, resulting in a 30% decline in semi revenue. 2) Lower 65nm market share causes a revenue shortfall.

From Bear to Bull: Global Semiconductor Growth Is the Key Variable



Source: Morgan Stanley Research

Why Equal-weight?

- Our view remains that TSMC is the best-run company long-term, but given its size and exposure to the semiconductor companies worldwide, it simply cannot be immune to what we see as macroeconomic risks and also inventory risks with its customers.

Key Value Drivers

- Leadership at leading edges with high market share at 65nm geometry.
- Incremental IDM outsourcing and contribution from new businesses.
- Capacity discipline, hence, high utilization rates and sustainable margins.

Potential Catalysts

- New project wins, especially at leading edges.
- Better-than-expected utilization rate and ASP trends.
- 40/45nm node will represent a more significant outsourcing opportunity for the foundries versus 65nm and that could be a driver into 2009
- Improvements in semiconductor demand and inventory levels;
- Valuation

Downside Risks

- Slower-than-expected global economy and semiconductor growth in 2009.
- Margin decline due to price competition.
- Any project/customer losses.

Upside Risks

- Liquidity and fund flow into Taiwan could continue to benefit large-cap names such as TSMC and outweigh fundamentals
- Even though we believe TSMC is losing share at the trailing edge, share gains at the leading edge could be significantly better than expected.

Risk-Reward Snapshot: UMC (2303.TW, NT\$7.72, EW, PT NT\$7.50)

Risk-Reward Balanced in Context of Weak Industry Outlook



Why Equal-weight?

- In the context of a slowing industry, we see the big (TSMC) getting bigger and UMC being more able to weather the storm than Chartered.
- The economic downturn will only serve to put further pressure on utilization rates and hence margins, which can only be slightly offset by a favorable mix-shift in future as customers move towards 65nm.
- We forecast YoY revenue decline in 2009 due to macro and customer specific weakness, and lower earnings as a result of lower margins.
- We foresee further pressure for UMC's investments, due to current market turmoil. This will drag negatively on UMC's net profit in our view.

Key Value Drivers

- Global semiconductor growth.
- Incremental IDM outsourcing and contribution from new businesses.
- Capacity discipline, hence, high utilization rate and sustainable margin.

Potential Catalysts

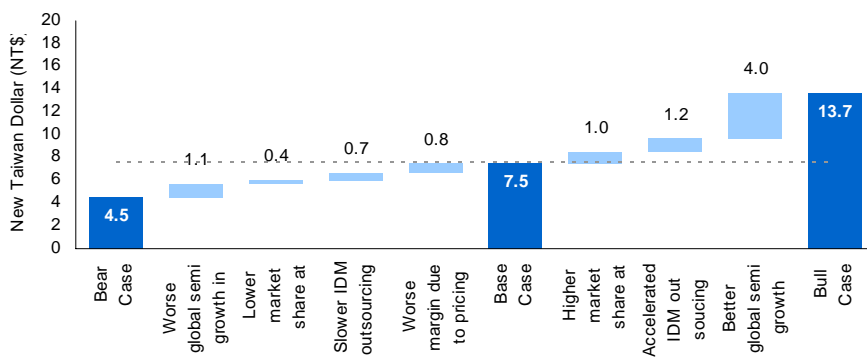
- New project wins, especially at leading edges.
- Better-than-expected utilization rate and ASP trends.
- Share buybacks or capital reductions.

Risks

- Slower-than-expected global economy and semiconductor growth in 2009.
- Margin declines due to price competition.
- Any project customer losses.
- Market risk means stock could show high volatility

Price Target	NT\$7.50	Derived from Residual Income model.
Bull Case NT\$13.7	0.9x 2008 Bull Case P/B	Upside from incremental IDM outsourcing (o/s) and share gains at leading edges: 1) Global semi declines only 15% in 2009; 2) IDM outsourcing increases faster than expected due to customers' desire for profitability and free cash flow, with more o/s opportunities. 3) UMC's progress at 65nm is better than expected, with 17% market share at 65nm in '08-10.
Base Case NT\$7.5	0.7x 2008 Base Case P/B	Slow growth momentum: Our base case estimates are anchored on: 1) Global semi decline of 20-25% in 2009; 2) IDM o/s revenue of US\$2.5 bn in '08-10, with UMC's share at 14%; 3) market share at 65nm geometry reaching an average 14% in '08-'10.
Bear Case NT\$4.5	0.5x 2008 Bear Case P/B	Hurt by industry downturn: 1) Overall semiconductor industry sees 30% decline in 2009. 2) Consolidation of Fabless/IDM shrinking the bargaining power of foundry, coupled with severe competition from peers, results in margin erosion, while lower 65nm market share causes a revenue shortfall.

Bear to Bull Key Drivers: Global Semi Growth and 65nm Market Share



Source: Company data, Morgan Stanley Research

December 18, 2008
Foundry

Exhibit 34

Chartered: P&L Statement

YE Dec 31, US\$ in million	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08E	1Q09E	2Q09E	3Q09E	4Q09E	2007	2008E	2009E	2010E
Total Revenues	323.8	323.7	354.8	352.6	388.2	457.6	463.7	331.0	223.5	211.1	290.3	339.5	1,354.9	1,640.6	1,064.5	1,492.2
Sequential Change	-4.5%	0.0%	9.6%	-0.6%	10.1%	17.9%	1.4%	-28.6%	-32.5%	-5.5%	37.5%	16.9%				
Change vs Year Ago	-8.8%	-11.3%	-0.1%	4.0%	19.9%	41.4%	30.7%	-6.1%	-42.4%	-53.9%	-37.4%	2.6%	-4.2%	21.1%	-35.1%	40.2%
Cost of Sales	(252.2)	(264.3)	(287.6)	(292.1)	(323.6)	(387.7)	(398.2)	(319.4)	(260.8)	(253.9)	(299.5)	(323.7)	(1,095.3)	(1,428.9)	(1,137.9)	(1,346.4)
Percent of Revenues	77.9%	81.6%	81.0%	82.9%	83.4%	84.7%	85.9%	96.5%	116.7%	120.3%	103.1%	95.4%	80.8%	87.1%	106.9%	90.2%
Variable costs as a % of revenue	(149.6)	(158.0)	(180.0)	(185.5)	(218.4)	(261.5)	(267.6)	(187.8)	(129.7)	(122.8)	(168.3)	(192.6)	(673.1)	(935.2)	(613.4)	(828.0)
Depreciation & amort as a % of COGS	40.7%	40.2%	37.4%	36.5%	32.5%	32.6%	32.8%	41.2%	50.3%	51.6%	43.8%	40.5%	38.6%	34.6%	46.1%	38.5%
as a % of revenue	31.7%	32.8%	30.3%	30.2%	27.1%	27.6%	28.2%	39.8%	58.7%	62.1%	45.2%	38.6%	31.2%	30.1%	49.3%	34.7%
Gross Profit before dep	174.2	165.7	174.8	167.1	169.9	196.1	196.2	143.3	93.8	88.3	122.0	146.9	681.8	705.4	451.1	664.2
Percent of Revenues	53.8%	51.2%	49.3%	47.4%	43.8%	42.9%	42.3%	43.3%	42.0%	41.8%	42.0%	43.3%	50.3%	43.0%	42.4%	44.5%
Gross Margin	71.8	60.2	67.2	60.5	64.6	69.9	65.6	11.6	(37.3)	(42.8)	(9.1)	15.8	259.7	211.7	(73.4)	145.8
Percent of Revenues	22.2%	18.6%	19.0%	17.1%	16.6%	15.3%	14.1%	3.5%	-16.7%	-20.3%	-3.1%	4.6%	19.2%	12.9%	-6.9%	9.8%
Total Opex	(60.9)	(58.4)	(60.7)	(67.5)	(70.7)	(67.5)	(73.3)	(75.3)	(67.8)	(67.8)	(69.4)	(73.3)	(247.5)	(286.8)	(284.1)	(310.1)
Percent of Revenues	18.8%	18.0%	17.1%	19.2%	18.2%	14.8%	15.8%	22.7%	30.3%	32.1%	23.9%	21.6%	18.3%	17.5%	26.7%	20.6%
R&D	(37.6)	(38.5)	(38.9)	(44.8)	(45.4)	(42.8)	(44.1)	(50.3)	(49.8)	(48.7)	(46.3)	(47.4)	(159.8)	(182.6)	(192.3)	(175.9)
Variable R&D as % of Rev	7.2%	7.3%	6.7%	6.8%	6.6%	5.5%	5.2%	5.5%	8.0%	8.0%	5.0%	4.6%	7.0%	5.7%	6.1%	5.9%
Percent of Revenues	11.6%	11.9%	11.0%	12.7%	11.7%	9.4%	9.5%	15.2%	22.3%	23.1%	16.0%	14.0%	11.8%	11.1%	18.1%	11.8%
Sales and Marketing	(14.2)	(13.4)	(14.6)	(15.8)	(17.6)	(17.8)	(19.5)	(15.2)	(11.6)	(12.7)	(16.3)	(19.0)	(58.0)	(70.1)	(59.6)	(87.2)
Percent of Revenues	4.4%	4.1%	4.1%	4.5%	4.5%	3.9%	4.2%	4.6%	5.2%	6.0%	5.0%	5.6%	4.3%	4.3%	5.6%	5.8%
General and Admin	(9.9)	(9.7)	(9.3)	(10.7)	(10.8)	(11.2)	(11.2)	(10.7)	(10.7)	(10.7)	(11.2)	(11.2)	(39.6)	(44.4)	(43.8)	(58.4)
Percent of Revenues	3.1%	3.0%	2.6%	3.0%	2.8%	2.4%	2.4%	3.4%	4.8%	5.1%	3.9%	3.3%	2.2%	1.5%	2.2%	2.2%
Fab start up costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stock based compen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other (rental income and other op exp)	0.8	3.2	2.2	3.7	3.1	4.3	1.4	1.4	4.4	4.3	4.3	4.3	9.9	10.3	11.5	11.4
Operating Income	10.9	1.8	6.5	(7.1)	(6.1)	2.3	(7.8)	(63.6)	(105.1)	(110.6)	(78.6)	(57.5)	12.1	(75.2)	(357.5)	(164.3)
Percent of Revenues	3.4%	0.6%	1.8%	-2.0%	-1.6%	0.5%	-1.7%	-19.2%	-47.0%	-52.4%	-27.1%	-16.9%	0.9%	-4.6%	-33.6%	-11.0%
Total Non-operating Income(Loss)	(3.0)	2.2	0.6	(1.6)	9.7	(8.5)	(5.8)	(14.7)	(6.9)	(7.0)	(7.2)	(4.7)	(1.9)	(19.2)	(25.7)	9.5
Forex gain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest expense	(15.9)	(14.8)	(15.0)	(14.7)	(15.6)	(17.8)	(13.6)	(10.7)	(10.7)	(10.7)	(10.9)	(10.9)	(60.3)	(57.7)	(43.1)	(47.4)
Convertible Bond Issue Exp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest income	7.9	6.1	6.5	6.6	5.1	3.6	2.5	2.5	2.5	2.5	2.5	2.5	27.0	13.6	10.0	10.0
Other income (expense)	(1.1)	0.8	0.2	(2.4)	10.5	(3.7)	(3.7)	(8.0)	0.0	0.0	0.0	0.0	(2.4)	(4.8)	0.0	0.0
Associates Fab 5 SMP(49%)	6.1	10.1	8.8	8.8	9.8	9.5	8.9	1.5	1.3	1.2	1.2	3.7	33.8	29.7	7.3	46.9
Associates Fab 6 CSP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Profit Before Taxes	7.9	3.8	7.1	(8.7)	3.6	(6.1)	(13.6)	(78.3)	(112.0)	(117.5)	(85.8)	(62.2)	10.3	(94.4)	(383.2)	(154.8)
Percent of Revenues	2.4%	1.2%	2.0%	-2.5%	0.9%	-1.3%	-2.9%	-23.7%	-50.1%	-55.7%	-29.5%	-18.3%	0.8%	-5.8%	-36.0%	-10.4%
Taxes	(1.5)	(29.3)	107.7	14.6	(1.2)	49.5	(10.8)	(3.9)	(5.6)	(5.9)	(4.3)	(3.1)	91.4	33.6	(18.9)	(1.5)
Tax Rate	18.0%	18.0%	-1523.2%	167.3%	34.0%	808.8%	-79.7%	12.5%	12.5%	12.5%	12.5%	12.5%	-890.9%	35.6%	12.5%	12.5%
Net Income (Loss), Cont Ops	6.3	(25.5)	114.8	5.87	2.4	43.4	(24.4)	(82.2)	(117.6)	(123.4)	(90.1)	(65.3)	101.7	(60.8)	(402.1)	(156.4)
Percent of Revenues	2.0%	-7.9%	32.3%	1.7%	0.6%	9.5%	-5.3%	-24.8%	-52.6%	-58.4%	-31.0%	-19.2%	7.5%	-3.7%	-37.8%	-10.5%
Minority Interests (CSP 49%) Fab6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accretion to Redemption Value of CRPS	(2.4)	(2.4)	(2.4)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(2.5)	(9.66)	(10.0)	(10.0)	(6.8)
Total Net Income (Loss)	3.9	(27.9)	112.3	3.4	(0.1)	40.9	(26.9)	(84.7)	(120.1)	(125.9)	(92.6)	(67.8)	92.0	(70.8)	(412.1)	(163.2)
Percent of Revenues	1.2%	-8.6%	31.7%	1.0%	0.0%	8.9%	-5.8%	-25.6%	-53.7%	-59.6%	-31.9%	-20.0%	6.8%	-4.3%	-36.7%	-10.9%
Change vs Year Ago	-82.7%	-380.1%	408.4%	-72.6%	-102.1%	-246.6%	-123.9%	-2578.2%	#####	-407.7%	244.2%	-20.0%	36.6%	-176.9%	482.2%	-60.4%
EPS (US cents)	0.16	(1.10)	4.43	0.13	(0.00)	1.61	(1.06)	(3.33)	(4.72)	(4.94)	(3.63)	(2.66)	3.62	(2.78)	(16.18)	(5.99)
EPS (\$S cents)	0.24	(1.71)	6.87	0.21	(0.00)	2.38	(1.57)	(4.94)	(6.99)	(7.33)	(5.39)	(3.95)	5.22	(4.12)	(23.98)	(8.88)

Source: Company data, Morgan Stanley Research E = Morgan Stanley Research estimates

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Exhibit 35

SMIC: P&L Statement

YE Dec 31, US\$ in million	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08E	1Q09E	2Q09E	3Q09E	4Q09E	2007	2008E	2009E	2010E
Total Revenues	388.3	367.6	391.4	395.3	362.4	342.9	375.9	261.3	198.4	193.8	234.2	258.8	1,542.5	1,342.6	885.1	1,326.1
Sequential Change	1.2%	-5.3%	6.5%	1.0%	-8.3%	-5.4%	9.6%	-30.5%	-24.1%	-2.3%	20.9%	10.5%				
Change vs Year Ago	10.6%	1.7%	6.1%	3.0%	-6.7%	-6.7%	-3.9%	-33.9%	-45.3%	-43.5%	-37.7%	-1.0%	5.3%	-13.0%	-34.1%	49.8%
Cost of Sales	(351.2)	(336.1)	(349.1)	(360.2)	(394.9)	(322.1)	(348.7)	(288.4)	(262.8)	(260.0)	(278.4)	(288.5)	(1,396.7)	(1,354.2)	(1,089.7)	(1,192.1)
Percent of Revenues																
Variable costs	(157.2)	(168.2)	(189.1)	(190.7)	(227.7)	(160.9)	(176.3)	(116.3)	(92.8)	(89.9)	(108.4)	(118.5)	(705.1)	(681.3)	(409.6)	(594.3)
as a % of revenue	40.5%	45.8%	48.3%	48.2%	62.8%	46.9%	45.0%	44.5%	46.8%	46.4%	46.3%	45.8%	45.7%	50.7%	46.3%	44.1%
Depreciation	(185.7)	(159.2)	(151.7)	(161.2)	(159.7)	(153.8)	(165.6)	(165.2)	(163.1)	(163.1)	(163.1)	(163.1)	(657.8)	(644.3)	(652.6)	(580.3)
as a % of revenue	-47.8%	-43.3%	-38.8%	-40.8%	-44.1%	-44.8%	-44.1%	-63.2%	-82.3%	-84.2%	-69.7%	-63.0%	-42.6%	-48.0%	-73.7%	-43.8%
share based compensation	(2.5)	(2.9)	(2.5)	(2.4)	(1.6)	(1.5)	(0.9)	(1.1)	(1.0)	(1.0)	(1.0)	(1.0)	(10.3)	(5.0)	(4.0)	(4.0)
deferred cost amortization	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(5.9)	(23.5)	(23.5)	(23.5)	(23.5)
Gross Profit before dep	231.1	199.4	202.3	204.6	134.6	182.0	199.6	145.0	105.6	103.8	125.8	140.4	837.4	661.3	475.5	741.8
Percent of Revenues	59.5%	54.2%	51.7%	51.8%	37.2%	53.1%	53.1%	55.5%	53.2%	53.6%	53.7%	54.2%	54.3%	49.3%	53.7%	55.9%
Gross Margin	37.1	31.4	42.2	35.0	(32.6)	20.8	27.2	(27.1)	(64.4)	(66.2)	(44.3)	(29.7)	145.8	(11.6)	(204.6)	134.0
Percent of Revenues	9.5%	8.6%	10.8%	8.9%	-9.0%	6.1%	7.2%	-10.4%	-32.5%	-34.2%	-18.9%	-11.5%	9.5%	-0.9%	-23.1%	10.1%
Total Opex	(21.7)	(46.3)	(62.4)	(57.4)	(170.1)	(60.7)	(40.5)	(40.4)	(37.7)	(35.3)	(38.2)	(40.2)	(187.9)	(311.7)	(151.4)	(176.7)
Percent of Revenues	5.6%	12.6%	16.0%	14.5%	46.9%	17.7%	10.8%	15.4%	19.0%	18.2%	16.3%	15.5%	12.2%	23.2%	17.1%	13.3%
R&D	(21.7)	(22.8)	(25.9)	(26.2)	(34.2)	(37.7)	(17.8)	(23.5)	(21.8)	(19.4)	(21.8)	(23.0)	(96.6)	(113.3)	(86.0)	(98.3)
Percent of Revenues	5.6%	6.2%	6.6%	6.6%	9.4%	11.0%	4.7%	9.0%	11.0%	10.0%	9.3%	8.9%	6.3%	8.4%	9.7%	7.4%
Sales and Marketing	(3.9)	(4.1)	(4.9)	(5.7)	(4.8)	(4.4)	(10.8)	(3.9)	(3.6)	(3.3)	(3.5)	(3.9)	(18.6)	(23.9)	(14.3)	(17.7)
Percent of Revenues	1.0%	1.1%	1.3%	1.4%	1.3%	1.3%	2.9%	1.5%	1.8%	1.7%	1.5%	1.5%	1.2%	1.8%	1.6%	1.3%
General and Admin	(17.1)	(14.4)	(23.8)	(18.8)	(18.6)	(13.3)	(5.6)	(8.0)	(7.7)	(8.0)	(8.3)	(8.6)	(74.2)	(45.5)	(32.6)	(44.2)
Variable G&A as % of Rev	3.2%	3.3%	2.8%	2.7%	3.0%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.2%	2.0%
Percent of Revenues	4.4%	3.9%	6.1%	4.8%	5.1%	3.9%	1.5%	3.1%	3.9%	4.1%	3.5%	3.3%	4.8%	3.4%	3.7%	3.3%
Amortization of Intangibles	(6.2)	(6.2)	(7.8)	(6.9)	(6.8)	(6.9)	(6.9)	(4.9)	(4.6)	(4.6)	(4.6)	(4.6)	(27.1)	(25.5)	(18.5)	(16.5)
Amort. Stock based compensation													0.0	0.0	0.0	0.0
Percent of Revenues													0.0	0.0	0.0	0.0
Other non-recurring charges	27.2	1.3	(0.0)	0.2	(105.6)	1.5	0.6	0.0	0.0	0.0	0.0	0.0	28.7	(103.5)	0.0	0.0
Operating Income	15.3	(14.9)	(20.2)	(22.3)	(202.7)	(39.9)	(13.2)	(67.5)	(102.2)	(101.5)	(82.5)	(69.8)	(42.1)	(323.3)	(356.0)	(42.7)
Percent of Revenues	4.0%	-4.0%	-5.2%	-5.7%	-55.9%	-11.6%	-3.5%	-25.8%	-51.5%	-52.4%	-35.2%	-27.0%	-2.7%	-24.1%	-40.2%	-3.2%
Total Non-operating Income(Loss)	(12.2)	6.3	(4.3)	(1.7)	(3.6)	(5.2)	(15.6)	(7.6)	(12.6)	(12.6)	(12.6)	(12.6)	(11.9)	(32.0)	(50.3)	(54.0)
Forex gain	0.4	(1.5)	7.7	4.6	10.3	2.5	0.0	5.0	0.0	0.0	0.0	0.0	11.2	17.8	0.0	0.0
Interest expense	(15.0)	3.3	(14.8)	(11.5)	(17.3)	(15.3)	(11.1)	(15.1)	(15.1)	(15.1)	(15.1)	(15.1)	(38.0)	(58.7)	(60.3)	(65.0)
Convertible Bond Issue Exp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest income	1.9	2.9	2.2	4.0	3.8	4.1	2.5	2.5	2.5	2.5	2.5	2.5	11.1	12.9	10.0	10.0
Other income (expense)	0.4	1.6	0.5	0.0	(0.4)	3.5	0.0	0.0	0.0	0.0	0.0	0.0	2.5	3.1	0.0	1.0
Associates	0.0	0.0	0.0	1.2	0.0	0.0	(7.1)	0.0	0.0	0.0	0.0	0.0	1.2	(7.1)	0.0	0.0
Profit Before Taxes	3.1	(8.6)	(24.5)	(24.0)	(206.3)	(45.1)	(28.9)	(75.0)	(114.7)	(114.1)	(95.1)	(82.4)	(54.0)	(355.3)	(406.3)	(96.7)
Percent of Revenues	0.8%	-2.3%	-6.3%	-6.1%	-56.9%	-13.2%	-7.7%	-28.7%	-57.8%	-58.9%	-40.6%	-31.8%	-3.5%	-26.5%	-45.9%	-7.3%
Change vs Year Ago																
Taxes	6.0	1.6	(1.0)	2.6	(19.1)	(2.0)	(4.5)	2.3	3.4	3.4	2.9	2.5	9.2	(23.4)	12.2	(1.0)
Tax Rate	-189.7%	18.8%	-3.9%	10.7%	-9.3%	-4.5%	-15.6%	3.0%	3.0%	3.0%	3.0%	3.0%	17.0%	-6.6%	3.0%	5.0%
Net Income (Loss), Cont Ops	9.1	(7.0)	(25.5)	(21.4)	(225.4)	(47.1)	(33.4)	(72.8)	(111.3)	(110.7)	(92.2)	(79.9)	(44.8)	(378.7)	(394.1)	(97.6)
Percent of Revenues	2.3%	-1.9%	-6.5%	-5.4%	-62.2%	-13.7%	-8.9%	-27.9%	-56.1%	-57.1%	-39.4%	-30.9%	-2.9%	-28.2%	-44.5%	-7.4%
Minority Interests	1.0	(0.1)	0.9	1.2	0.8	1.6	3.1	0.0	0.0	0.0	0.0	0.0	2.9	5.5	0.0	0.0
Loss from equity investment	(1.2)	(1.0)	(0.9)	(0.9)	(0.2)	(0.1)	(0.0)	(1.6)	(0.3)	(0.3)	(0.3)	(0.2)	(4.0)	(2.0)	(1.0)	(0.5)
Total Net Income (Loss)	8.9	(8.1)	(25.6)	(21.2)	(224.8)	(45.6)	(30.3)	(74.4)	(111.5)	(110.9)	(92.5)	(80.2)	(46.0)	(375.2)	(395.1)	(98.1)
Deemed Dividend on Pref Shares	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Income to Ordinary Shareholders	8.9	(8.1)	(25.6)	(21.2)	(224.8)	(45.6)	(30.3)	(74.4)	(111.5)	(110.9)	(92.5)	(80.2)	(46.0)	(375.2)	(395.1)	(98.1)
Percent of Revenues	2.3%	-2.2%	-6.5%	-5.4%	-62.0%	-13.3%	-8.1%	-28.5%	-56.2%	-57.2%	-39.5%	-31.0%	-3.0%	-27.9%	-44.6%	-7.4%
Change vs Year Ago	-201.5%	-487.6%	-27.3%	-1823.6%	-2630.6%	461.4%	18.5%	251.7%	-50.4%	143.1%	205.3%	7.7%	13.3%	716.2%	5.3%	-75.2%
EPS (US\$ cts) - Basic	0.0	(0.0)	(0.1)	(0.1)	(1.21)	(0.2)	(0.2)	(0.4)	(0.6)	(0.6)	(0.5)	(0.4)	(0.25)	(2.02)	(2.1)	(0.5)

Source: Company data, Morgan Stanley Research E = Morgan Stanley Research estimates

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Exhibit 36

TSMC: P&L Statement

NT\$ in million	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08E	4Q08E	1Q09E	2Q09E	3Q09E	4Q09E	2006	2007	08e	09e	10e
Total Revenues	64,897	74,918	88,956	93,860	87,480	88,137	92,979	63,544	41,143	46,313	60,515	70,746	317,407	322,631	332,139	218,716	300,875
Sequential Change	-13.4%	15.4%	18.7%	5.5%	-6.8%	0.8%	5.5%	-31.7%	-35.3%	12.6%	30.7%	16.9%					
Change vs Year Ago	-16.6%	-8.8%	7.9%	25.2%	34.8%	17.6%	4.5%	-32.3%	-53.0%	-47.5%	-34.9%	11.3%	20.0%	1.6%	2.9%	-34.1%	37.6%
Cost of Sales	(40,287)	(42,738)	(48,231)	(49,024)	(49,241)	(47,915)	(49,885)	(43,124)	(33,889)	(34,714)	(40,400)	(43,718)	(161,597)	(180,290)	(190,165)	(152,721)	(168,744)
Percent of Revenues	62.1%	57.0%	54.2%	52.2%	56.3%	54.4%	53.7%	67.9%	82.4%	75.0%	66.8%	61.8%	50.9%	55.9%	57.3%	69.8%	56.1%
Variable costs	(21,787)	(24,838)	(29,396)	(30,534)	(31,141)	(29,685)	(30,825)	(23,915)	(15,364)	(17,545)	(22,802)	(26,617)	(93,897)	(106,555)	(115,566)	(82,328)	(110,245)
as a % of revenue	33.6%	33.2%	33.0%	32.5%	35.6%	33.7%	33.2%	37.6%	37.3%	37.9%	37.7%	37.6%	29.6%	33.0%	34.8%	37.6%	36.6%
Depreciation & amort	(18,500)	(17,900)	(18,835)	(18,490)	(18,100)	(18,230)	(19,060)	(19,209)	(18,524)	(17,169)	(17,598)	(17,101)	(67,700)	(73,725)	(74,599)	(70,393)	(58,499)
as a % of COGS	45.9%	41.9%	39.1%	37.7%	36.8%	38.0%	38.2%	44.5%	54.7%	49.5%	43.6%	39.1%	41.9%	40.9%	39.2%	46.1%	34.7%
as a % of revenue	28.5%	23.9%	21.2%	19.7%	20.7%	20.7%	20.5%	30.2%	45.0%	37.1%	29.1%	24.2%	21.3%	22.9%	22.5%	32.2%	19.4%
Gross Profit before dep	43,110	50,080	59,560	63,325	56,339	58,451	62,154	39,629	25,778	28,768	37,713	44,129	223,510	216,075	216,573	136,388	190,630
Percent of Revenues	66.4%	66.8%	67.0%	67.5%	64.4%	66.3%	66.8%	62.4%	62.7%	62.1%	62.3%	62.4%	70.4%	67.0%	65.2%	62.4%	63.4%
Gross Margin	24,610	32,180	40,725	44,835	38,239	40,221	43,094	20,420	7,254	11,599	20,115	27,028	155,810	142,350	141,974	65,995	132,132
Percent of Revenues	37.9%	43.0%	45.8%	47.8%	43.7%	45.6%	46.3%	32.1%	17.6%	25.0%	33.2%	38.2%	49.1%	44.1%	42.7%	30.2%	43.9%
Total Opex	(6,733)	(7,446)	(8,372)	(8,077)	(9,116)	(9,848)	(10,176)	(9,097)	(8,074)	(8,272)	(9,286)	(9,704)	(28,545)	(30,628)	(38,237)	(35,335)	(35,343)
Percent of Revenues	10.4%	9.9%	9.4%	8.6%	10.4%	11.2%	10.9%	14.3%	19.6%	17.9%	15.3%	13.7%	9.0%	9.5%	11.5%	16.2%	11.7%
R&D	(3,942)	(4,301)	(4,691)	(5,012)	(5,270)	(5,404)	(5,981)	(5,401)	(4,731)	(4,863)	(5,749)	(6,013)	(15,979)	(17,946)	(22,056)	(21,357)	(20,581)
Percent of Revenues	6.1%	5.7%	5.3%	5.3%	6.0%	6.1%	6.4%	8.5%	11.5%	10.5%	9.5%	8.5%	5.0%	5.6%	6.6%	9.8%	6.8%
Sales and Marketing	(889)	(994)	(808)	(1,027)	(1,184)	(1,274)	(1,217)	(1,017)	(864)	(880)	(908)	(1,061)	(3,751)	(3,718)	(4,691)	(3,713)	(4,249)
Percent of Revenues	1.4%	1.3%	0.9%	1.1%	1.4%	1.4%	1.3%	1.6%	2.1%	1.9%	1.5%	1.5%	1.2%	1.2%	1.4%	1.7%	1.4%
General and Admin	(1,902)	(2,151)	(2,873)	(2,038)	(2,663)	(3,170)	(2,979)	(2,679)	(2,479)	(2,629)	(2,629)	(2,629)	(8,815)	(8,964)	(11,491)	(10,266)	(10,512)
Percent of Revenues	2.9%	2.9%	3.2%	2.2%	3.0%	3.6%	3.2%	4.2%	6.0%	5.5%	4.3%	3.7%	2.8%	2.8%	3.5%	4.7%	3.5%
Operating Income	17,877	24,734	32,353	36,758	29,123	30,373	32,917	11,323	(821)	3,327	10,829	17,324	127,265	111,722	103,737	30,660	96,789
Percent of Revenues	27.5%	33.0%	36.4%	39.2%	33.3%	34.5%	35.4%	17.8%	-2.0%	7.2%	17.9%	24.5%	40.1%	34.6%	31.2%	14.0%	32.2%
Total Non-operating Income(Loss)	2,191	3,290	1,865	2,574	2,449	2,004	1,513	1,438	1,224	1,239	1,282	1,313	6,097	9,920	7,403	5,058	6,686
Forex gain	95	117	17	64	(1,764)	24	1,976	0	0	0	0	0	(401)	293	236	0	0
Interest expense	(191)	(233)	(200)	(218)	(155)	(151)	(154)	(145)	(163)	(163)	(163)	(163)	(891)	(842)	(605)	(653)	(635)
Interest income	1,315	1,608	1,364	1,364	1,349	1,394	1,300	1,365	1,262	1,262	1,262	1,262	4,542	5,652	5,407	5,050	6,487
Net Investment Income	361	488	782	877	577	279	185	218	124	140	183	214	2,347	2,508	1,260	662	834
Other income (expense)	610	1,311	(98)	487	2,442	458	(1,795)	0	0	0	0	0	500	2,310	1,105	0	0
Profit Before Taxes	20,068	28,024	34,218	39,332	31,572	32,377	34,430	12,761	403	4,566	12,111	18,637	133,362	121,642	111,140	35,718	103,475
Percent of Revenues	30.9%	37.4%	38.5%	41.9%	36.1%	36.7%	37.0%	20.1%	1.0%	9.9%	20.0%	26.3%	42.0%	37.7%	33.5%	16.3%	34.4%
Taxes	(1,107)	(2,394)	(3,601)	(4,608)	(3,336)	(3,503)	(3,658)	(1,276)	(40)	(457)	(1,211)	(1,864)	(7,774)	(11,710)	(11,773)	(3,572)	(11,382)
Tax Rate	5.5%	8.5%	10.5%	11.7%	10.6%	10.8%	10.6%	10.0%	10.0%	10.0%	10.0%	10.0%	5.8%	9.6%	10.6%	10.0%	11.0%
Net Income, Cont Ops	18,961	25,630	30,617	34,724	28,236	28,874	30,772	11,485	363	4,110	10,900	16,774	125,588	109,932	99,367	32,146	92,092
Cumulative Effects	0	0	0	0	0	0	0	0	0	0	0	0	1,607	0	0	0	0
Minority Interest	(122)	(146)	(248)	(239)	(93)	(104)	(198)	(100)	(100)	(100)	(100)	(100)	(185)	(755)	(494)	(400)	0
Net Income (excl. Emp. Bonus Expense)	18,839	25,484	30,369	34,485	28,143	28,770	30,574	11,385	263	4,010	10,800	16,674	127,010	109,177	113,703	36,508	105,906
Percent of Revenues	29.0%	34.0%	34.1%	36.7%	32.2%	32.6%	32.9%	17.9%	0.6%	8.7%	17.8%	23.6%	40.0%	33.8%	34.2%	16.7%	35.2%
Employee bonus expense	4,368	5,908	7,041	7,995	4,222	4,316	4,586	1,708	39	601	1,620	2,501	34,445	25,311	14,831	4,762	13,814
Net Income (incl. Emp. Bonus Expense)	14,471	19,576	23,328	26,490	23,921	24,454	26,088	9,677	224	3,409	9,180	14,173	92,565	83,866	98,873	31,746	92,092
Percent of Revenues	22.3%	26.1%	26.2%	28.2%	27.4%	27.8%	29.2%	15.2%	0.6%	4.5%	12.8%	20.0%	29.2%	26.0%	29.8%	14.5%	30.6%
Reported Income (TW GAAP)	18,839	25,484	30,369	34,485	28,143	28,770	30,574	11,385	263	4,010	10,800	16,674	127,010	109,177	98,873	31,746	92,092
Change vs Year Ago	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-29.0%	-42.2%	-25.1%	-6.5%	23.5%	49.4%
EPS (NT\$, excl. Emp. Bonus Expense)	0.71	0.97	1.15	1.31	1.26	1.29	1.36	0.51	0.01	0.18	0.48	0.74	4.97	4.14	4.38	1.42	4.12
Change vs Year Ago	-44.0%	-27.4%	-9.4%	20.2%	76.8%	33.5%	18.0%	-61.3%	-99.1%	-96.1%	-64.5%	46.2%	32.7%	-16.7%	5.8%	-67.6%	190.1%
ModelWare EPS (NT\$, incl. Emp. Bonus Expense)	0.55	0.74	0.89	1.01	1.10	1.12	1.18	0.44	0.01	0.16	0.42	0.65	3.63	3.18	3.81	1.24	3.58
EBS Dilution (%)	-2.3%	-2.3%	-2.3%	-2.3%	-1.3%	-1.3%	-1.3%	-13.0%	-13.0%	-13.0%	-13.0%	-13.0%	-27.1%	-23.2%	-15.0%	-15.0%	-15.0%
Reported EPS (NT\$, TW GAAP)	0.71	0.97	1.15	1.31	1.10	1.12	1.18	0.44	0.01	0.16	0.42	0.65	4.97	4.14	3.81	1.24	3.58

Source: Company data, Morgan Stanley Research E = Morgan Stanley Research estimates

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Exhibit 37

UMC: P&L Statement

NT\$ in million	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08E	1Q09E	2Q09E	3Q09E	4Q09E	2007	2008E	2009E	2010E
Total Revenues	23,025	25,097	31,029	27,621	24,003	25,238	24,748	18,334	11,853	12,824	16,040	18,976	106,772	92,323	59,694	85,105
Sequential Change	-11.8%	9.0%	23.6%	-11.0%	-13.1%	5.1%	-1.9%	-25.9%	-35.3%	8.2%	25.1%	18.3%				
Change vs Year Ago	-5.6%	-2.5%	11.4%	5.8%	4.2%	0.6%	-20.2%	-33.6%	-50.6%	-49.2%	-35.2%	3.5%	2.6%	-13.5%	-35.3%	42.6%
Cost of Sales	(19,349)	(20,140)	(22,806)	(21,972)	(20,427)	(19,443)	(20,380)	(16,958)	(13,671)	(14,047)	(15,773)	(17,368)	(84,267)	(77,207)	(60,860)	(71,562)
Percent of Revenues	84.0%	80.2%														
Variable costs as a % of revenue	(11,700)	(12,241)	(14,361)	(13,572)	(12,189)	(11,933)	(12,294)	(9,708)	(6,887)	(7,195)	(8,921)	(10,427)	(51,874)	(46,124)	(33,429)	(48,317)
Percent of Revenues	50.8%	48.8%	46.3%	49.1%	50.8%	47.8%	49.7%	53.0%	58.1%	56.1%	55.6%	54.9%	48.6%	50.0%	56.0%	56.8%
Depreciation & amort as a % of COGS	(7,649)	(7,899)	(8,445)	(8,400)	(8,238)	(7,510)	(8,086)	(7,249)	(6,785)	(6,852)	(6,852)	(6,942)	(32,393)	(31,083)	(27,431)	(23,245)
Percent of Revenues	33.2%	31.5%	27.2%	30.4%	34.3%	29.8%	32.7%	39.5%	57.2%	53.4%	42.7%	36.6%	30.3%	33.7%	46.0%	27.3%
Gross Profit before dep	11,325	12,856	16,668	14,049	11,814	13,305	12,454	8,626	4,967	5,630	7,119	8,550	54,898	46,199	26,265	36,788
Percent of Revenues	49.2%	51.2%	53.7%	50.9%	49.2%	52.7%	50.3%	47.0%	41.9%	43.9%	44.4%	45.1%	51.4%	50.0%	44.0%	43.2%
Gross Margin	3,676	4,957	8,223	5,649	3,576	5,795	4,368	1,377	(1,818)	(1,222)	267	1,608	22,505	15,116	(1,165)	13,543
Percent of Revenues	16.0%	19.8%	26.5%	20.5%	14.9%	23.0%	17.6%	7.5%	-15.3%	-9.5%	1.7%	8.5%	21.1%	16.4%	-2.0%	15.9%
Total Opex	(3,657)	(3,732)	(3,988)	(4,323)	(3,386)	(3,454)	(3,421)	(3,085)	(2,688)	(2,779)	(3,065)	(3,271)	(15,700)	(13,346)	(11,803)	(13,798)
Percent of Revenues	15.9%	14.9%	12.9%	15.7%	14.1%	13.7%	13.8%	16.8%	22.7%	21.7%	19.1%	17.2%	14.7%	14.5%	19.8%	16.2%
R&D	(2,330)	(2,309)	(2,314)	(2,535)	(2,034)	(2,090)	(2,109)	(1,929)	(1,778)	(1,860)	(2,085)	(2,182)	(9,488)	(8,162)	(7,905)	(9,142)
Percent of Revenues	10.1%	9.2%	7.5%	9.2%	8.5%	8.3%	8.5%	10.5%	15.0%	14.5%	13.0%	11.5%	8.9%	8.8%	13.2%	10.7%
Sales and Marketing	(650)	(732)	(922)	(882)	(716)	(620)	(673)	(587)	(391)	(410)	(481)	(569)	(3,186)	(2,596)	(1,852)	(2,613)
Percent of Revenues	2.8%	2.9%	3.0%	3.2%	3.0%	2.5%	2.7%	3.2%	3.3%	3.2%	3.0%	3.0%	3.0%	2.8%	3.1%	2.6%
General and Admin	(677)	(691)	(752)	(906)	(635)	(744)	(639)	(569)	(519)	(509)	(499)	(519)	(3,026)	(2,587)	(2,046)	(2,043)
Percent of Revenues	2.9%	2.8%	2.4%	3.3%	2.6%	2.9%	2.6%	3.1%	4.4%	4.0%	3.1%	2.7%	2.8%	2.8%	3.4%	2.4%
Operating Income	19	1,225	4,235	1,326	190	2,341	947	(1,708)	(4,506)	(4,001)	(2,798)	(1,663)	6,805	1,770	(12,969)	(255)
Percent of Revenues	0.1%	4.9%	13.6%	4.8%	0.8%	9.3%	3.8%	-9.3%	-38.0%	-31.2%	-17.4%	-8.8%	6.4%	1.9%	-21.7%	-0.3%
% QoQ	-98.6%	6347.4%	245.7%	-68.7%	-85.6%	1130.2%	-59.5%	-280.4%	163.8%	-11.2%	-30.1%	-40.6%				
Total Non-operating Income(Loss)	1,718	4,182	5,764	1,097	70	120	(2,105)	(1,092)	(392)	8	708	368	12,761	(3,007)	692	2,050
Forex gain	17	(46)	62	108	(718)	36	735	0	0	0	0	0	141	53	0	0
Interest expense	(92)	10	(37)	(44)	(33)	(35)	(40)	(40)	(40)	(40)	(40)	(40)	(163)	(148)	(160)	(150)
Interest income	352	338	285	187	149	195	148	148	148	148	148	148	1,162	640	592	700
Net Investment Income	697	490	3,624	(370)	(319)	(575)	(2,860)	(1,500)	(800)	(300)	400	100	4,441	(5,254)	(600)	1,000
Investment Disposal Gain	1,624	2,634	3,437	2,025	652	524	611	300	300	200	200	160	9,720	2,087	860	500
Other income (expense)	(880)	756	(1,607)	(809)	339	(25)	(699)	0	0	0	0	0	(2,540)	(385)	0	0
Profit Before Taxes	1,737	5,407	9,999	2,423	261	2,461	(1,158)	(2,800)	(4,898)	(3,993)	(2,090)	(1,295)	19,566	(1,236)	(12,277)	1,795
Percent of Revenues	7.5%	21.5%	32.2%	8.8%	1.1%	9.8%	-4.7%	-15.3%	-41.3%	-31.1%	-13.0%	-6.8%	18.3%	-1.3%	-20.6%	2.1%
Change vs Year Ago	-87.7%	-19.4%	5.5%	-63.6%	-85.0%	-54.5%	-111.6%	-215.6%	-1978.7%	-262.3%	80.5%	-53.8%				
Taxes	(278)	(496)	(766)	(1,064)	(55)	(64)	(255)	280	490	399	209	129	(2,604)	(94)	1,228	(233)
Tax Rate	16.0%	9.2%	7.7%	43.9%	21.1%	2.6%	-22.0%	10.0%	10.0%	10.0%	10.0%	10.0%	13.3%	7.6%	10.0%	13.0%
Net Income, Cont Ops	1,459	4,911	9,233	1,359	206	2,397	(1,413)	(2,520)	(4,408)	(3,594)	(1,881)	(1,165)	16,962	(1,330)	(11,049)	1,562
Percent of Revenues	6.3%	19.6%	29.8%	4.9%	0.9%	9.5%	-5.7%	-13.7%	-37.2%	-28.0%	-11.7%	-6.1%	15.9%	-1.4%	-18.5%	1.8%
Cumulative Effects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income (excl. Emp. Bonus Expense)	1,459	4,911	9,233	1,359	234	2,721	(1,604)	(2,681)	(4,408)	(3,594)	(1,881)	(1,165)	16,962	(1,330)	(12,540)	1,773
Percent of Revenues	6.3%	19.6%	29.8%	4.9%	1.0%	10.8%	-6.5%	-14.6%	-37.2%	-28.0%	-11.7%	-6.1%	15.9%	-1.4%	-21.0%	2.1%
Employee bonus expense	153	514	967	142	28	324	(191)	(161)	0	0	0	0	1,776	0	(1,492)	211
Net Income (incl. Emp. Bonus Expense)	1,306	4,397	8,266	1,217	206	2,397	(1,413)	(2,520)	(4,408)	(3,594)	(1,881)	(1,165)	15,186	(1,330)	(11,049)	1,562
Percent of Revenues	5.7%	17.5%	26.6%	4.4%	0.9%	9.5%	-5.7%	-13.7%	-37.2%	-28.0%	-11.7%	-6.1%	14.2%	-1.4%	-18.5%	1.8%
Change vs Year Ago	-88.5%	-21.7%	3.6%	-77.0%	-84.2%	-45.5%	-117.1%	-307.1%	-2241.8%	-249.9%	33.2%	-53.8%	-49.8%	-108.8%	730.6%	-114.1%
Reported Income (TW GAAP)	1,459	4,911	9,233	1,359	206	2,397	(1,413)	(2,520)	(4,408)	(3,594)	(1,881)	(1,165)	16,962	(1,330)	(11,049)	1,562
Percent of Revenues	6.3%	19.6%	29.8%	4.9%	0.9%	9.5%	-5.7%	-13.7%	-37.2%	-28.0%	-11.7%	-6.1%	15.9%	-1.4%	-18.5%	1.8%
Change vs Year Ago	-88.1%	-18.9%	7.5%	-76.1%	-85.9%	-51.2%	-115.3%	-285.4%	-2241.8%	-249.9%	33.2%	-53.8%	-48.0%	-107.8%	730.6%	-114.1%
EPS (NT\$, excl. Emp. Bonus Expense)	0.09	0.30	0.57	0.11	0.02	0.22	(0.12)	(0.20)	(0.33)	(0.27)	(0.14)	(0.09)	1.04	(0.10)	(0.95)	0.13
Change vs Year Ago	-90.4%	-34.6%	-13.4%	-74.7%	-78.8%	-27.6%	-120.5%	-286.7%	-1859.8%	-225.1%	23.2%	-56.7%	-58.1%	-110.0%	812.2%	-114.1%
ModelWare EPS (NT\$, incl. Emp. Bonus)	0.08	0.27	0.51	0.10	0.02	0.19	(0.11)	(0.19)	(0.33)	(0.27)	(0.14)	(0.09)	0.93	(0.10)	(0.84)	0.12
EBS Dilution (%)	10.5%	10.5%	10.5%	10.5%	11.9%	11.9%	7.0%	6.0%	0.0%	0.0%	0.0%	0.0%	10.5%	0.0%	11.9%	11.9%
Reported EPS (NT\$, TW GAAP)	0.09	0.30	0.57	0.11	0.02	0.19	(0.11)	(0.19)	(0.33)	(0.27)	(0.14)	(0.09)	1.04	(0.10)	(0.84)	0.12

Source: Company data, Morgan Stanley Research E = Morgan Stanley Research estimates

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Exhibit 38

Chartered: Residual Income Model

Intrinsic Value Model				Value Breakdown										
Inputs:	10.0%	Outputs:	7.9%	Residual Income (operating):						DCF (operating):				
Cost of equity	10.0%	WACC	7.9%	Beginning NOA	2,792	Sum of PVFCFO		Sum of div & net rep				1,253		
Long-term ROE on new investments	50.0%	Long-term RNOA on new investments	8.3%	Sum of PVRI	(1,539)	Beginning NNOAL		DC Equity Value				(995)		
Explicit forecast period (years)	5	Price	0.18	Beginning NNOAL	(995)	ROI equity value						258		
Years to reach steady-state growth	15	Conv. factor - Model to t	1.51	Residual Income (equity):						DDM (Equity):				
Steady-state revenue growth rate (%)	4%	Conv. factor - Millions	1.000	Beginning equity	1,798	Sum of div & net rep		DDM equity value				258		
Shares Outstanding	2,543.08	IV per share (Current)	December-08	Sum of PVRI	(1,540)	RI equity value						258		
Steady-state borrowing cost (net of tax)	5.0%	IV Per Share (12 Month), Ex. Di	December-09											
Steady-state leverage (Net debt/Equity)	50%	Expected share price return	-14.63%											
Price target horizon (months)	12	Expected dividend yield	0.00%											
Fiscal Year Ending	12	Expected total return	-14.83%											
Option: Sum-Of-The-parts (SOTP) Valuation														
Operating Level														
	F2008e	F2009e	F2010e	F2011e	F2012e	F2013e	F2014e	F2015e	F2016e	F2017e	F2018e	F2019e	F2020e	F2021e
Operating revenue	1,641	1,064	1,492	1,758	2,173	2,642	3,162	3,721	4,307	4,901	5,480	6,021	6,498	6,885
Operating revenue growth		-35.1%	40.2%	17.8%	23.6%	17.7%	19.7%	17.7%	15.7%	13.8%	11.8%	9.9%	7.9%	6.0%
Operating asset turnover	0.59	0.36	0.54	0.63	0.79	0.94	0.81	0.82	0.82	0.82	0.83	0.83	0.83	0.83
NOPAT	(36)	(280)	(94)	(33)	177	183	263	312	363	415	465	512	554	588
NOPAT margin	-2.2%	-26.3%	-6.3%	-1.9%	8.2%	6.9%	8.3%	8.4%	8.4%	8.5%	8.5%	8.5%	8.5%	8.5%
Net operating assets	2,996	2,764	2,794	2,737	2,814	3,900	4,559	5,248	5,947	6,630	7,267	7,828	8,284	8,608
RNOA	-1.3%	-9.4%	-3.4%	-1.2%	6.5%	6.5%	6.7%	6.8%	6.9%	7.0%	7.0%	7.1%	7.1%	7.1%
FCFO	(240)	(49)	(123)	24	101	(904)	(395)	(378)	(336)	(268)	(172)	(49)	98	263
PVFCFO	(222)	(42)	(98)	17	69	(572)	(232)	(205)	(169)	(125)	(74)	(20)	36	91
Residual income (operating)	(257)	(517)	(313)	(254)	(40)	(40)	(46)	(49)	(53)	(56)	(60)	(63)	(66)	(68)
PVRI (operating)	(239)	(444)	(249)	(187)	(27)	(25)	(27)	(27)	(26)	(26)	(26)	(25)	(24)	(23)
Financing and Other														
Net financial expense (income)	35	26	30	34	34	78	106	120	133	145	155	162	165	163
Other nonoperating expense (income)	(1)	106	39	17	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)	(13)
Net debt (cash)	1,262	1,427	1,613	1,641	1,561	2,111	2,392	2,660	2,901	3,097	3,233	3,293	3,267	3,146
Other nonoperating liabilities (assets) (ONOLA)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Leverage EOP (net debt/equity)	73%	107%	137%	150%	125%	118%	110%	103%	95%	88%	80%	73%	65%	58%
Equity Level														
Net income	(71)	(412)	(163)	(84)	156	117	170	205	243	282	323	363	402	437
Equity	1,737	1,335	1,179	1,093	1,249	1,792	2,169	2,590	3,048	3,534	4,036	4,537	5,019	5,464
ROE	-3.9%	-23.7%	-12.2%	-7.1%	14.3%	9.4%	9.5%	9.5%	9.4%	9.3%	9.1%	9.0%	8.9%	8.7%
Dividends and net rep	-	-	(248)	(5)	-	(425)	(207)	(216)	(216)	(204)	(178)	(137)	(81)	(8)
PV div and net rep	-	-	(187)	(3)	-	(240)	(106)	(101)	(91)	(79)	(62)	(44)	(23)	(2)
Residual income	(241)	(576)	(538)	(209)	47	(7)	(9)	(12)	(16)	(22)	(30)	(40)	(52)	(65)
PVRI	(219)	(476)	(404)	(143)	29	(4)	(5)	(6)	(7)	(9)	(11)	(13)	(15)	(17)

Source: Company data, Morgan Stanley Research

Exhibit 39

TSMC: Residual Income Model

Intrinsic Value Model				Value Breakdown										
Inputs:	9.0%	Outputs:	10.4%	Residual Income (operating):						DCF (operating):				
Cost of equity	9.0%	WACC	10.4%	Beginning NOA	383,803	Sum of PVFCFO		Sum of div & net rep				883,878		
Long-term ROE on new investments	9.0%	Long-term RNOA on new investments	11.7%	Sum of PVRI	500,075	Beginning NNOAL		DC Equity Value				103,288		
Explicit forecast period (years)	5	Price	44.00	Beginning NNOAL	103,288	ROI equity value						987,166		
Years to reach steady-state growth	15	Conv. factor - Model to t	1.00	Residual Income (equity):						DDM (Equity):				
Steady-state revenue growth rate (%)	4%	Conv. factor - Millions	1.000	Beginning equity	487,091	Sum of div & net rep		DDM equity value				987,166		
Shares Outstanding	26,427	IV per share (Current)	Dec-08	Sum of PVRI	500,075	RI equity value						987,166		
Steady-state borrowing cost (net of tax)	5.0%	IV Per Share (12 Month), Ex. Div	Dec-09											
Steady-state leverage (Net debt/Equity)	-40%	Expected share price return	-13.29%											
Price target horizon (months)	12	Expected dividend yield	6.82%											
Fiscal Year Ending	12	Expected total return	-6.47%											
Option: Sum-Of-The-parts (SOTP) Valuation														
Operating Level														
	F2008e	F2009e	F2010e	F2011e	F2012e	F2013e	F2014e	F2015e	F2016e	F2017e	F2018e	F2019e	F2020e	F2021e
Operating revenue	332,139	218,716	300,875	332,984	307,894	288,246	273,177	262,046	254,392	249,896	248,362	249,702	253,929	261,158
Operating revenue growth		-34.1%	37.6%	10.7%	-7.5%	-6.4%	-5.2%	-4.1%	-2.9%	-1.8%	-0.6%	0.5%	1.7%	2.8%
Operating asset turnover	0.87	0.71	1.14	1.23	1.08	0.97	1.10	1.11	1.12	1.13	1.13	1.13	1.12	1.11
NOPAT	93,363	27,594	87,110	102,891	88,399	90,705	80,289	77,698	75,919	74,875	74,519	74,830	75,811	77,491
NOPAT margin	28.1%	12.6%	29.0%	30.9%	28.7%	31.5%	29.4%	29.7%	29.8%	30.0%	30.0%	30.0%	29.9%	29.7%
Net operating assets	308,049	264,655	271,671	285,414	296,229	247,373	235,218	226,872	221,976	220,306	221,764	226,368	234,248	245,654
RNOA	24.3%	9.0%	32.9%	37.9%	31.0%	30.6%	32.5%	33.0%	33.5%	33.7%	33.8%	33.7%	33.5%	33.1%
FCFO	169,117	70,989	80,093	89,148	77,584	139,561	92,444	86,043	80,815	76,544	73,060	70,226	67,931	66,085
PVFCFO	153,200	58,255	59,540	60,034	47,329	77,124	46,279	39,020	33,200	28,486	24,630	21,446	18,793	16,562
Residual income (operating)	53,487	(4,412)	59,613	74,665	58,746	59,928	54,588	53,259	52,347	51,812	51,629	51,789	52,292	53,153
PVRI (operating)	48,453	(3,620)	44,315	50,281	35,837	33,117	27,327	24,153	21,505	19,282	17,405	15,816	14,466	13,321
Financing and Other														
Net financial expense (income)	(5,668)	(4,552)	(6,017)	(3,758)	(5,081)	(12,018)	(9,806)	(9,126)	(8,616)	(8,254)	(8,021)	(7,908)	(7,907)	(8,016)
Other nonoperating expense (income)	159	400	1,035	2,370	2,597	2,597	2,597	2,597	2,597	2,597	2,597	2,597	2,597	2,597
Net debt (cash)	(169,159)	(167,179)	(226,858)	(243,721)	(240,367)	(196,122)	(182,518)	(172,324)	(165,071)	(160,424)	(158,159)	(158,141)	(160,323)	(164,733)
Other nonoperating liabilities (assets) (ONOLA)	3,748	3,748	3,748	3,748	3,748	3,748	3,748	3,748	3,748	3,748	3,748	3,748	3,748	3,748
Leverage EOP (net debt/equity)	-36%	-39%	-46%	-46%	-45%	-45%	-44%	-44%	-43%	-43%	-42%	-42%	-41%	-41%
Equity Level														
Net income	98,873	31,746	92,092	104,279	90,884	100,127	87,499	84,227	81,938	80,531	79,943	80,141	81,121	82,910
Equity	473,460	428,086	494,781	525,387	532,847	439,747	413,988	395,448	383,299	376,982	376,175	380,761	390,823	406,639
ROE	20.3%	6.7%	21.5%	21.1%	17.3%	18.8%	19.9%	20.3%	20.7%	21.0%	21.2%	21.3%	21.3%	21.2%
Dividends and net rep	110,258	77,120	25,397	73,674	83,423	193,227	113,257	102,767	94,088	86,848	80,751	75,555	71,060	67,094
PV div and net rep	101,154	64,911	19,611	52,192	54,219	115,215	61,956	51,575	43,321	36,685	31,293	26,862	23,178	20,078
Residual income	52,789	(10,865)	53,565	59,749	43,599	52,170	47,921	46,968	46,348	46,035	46,015	46,285	46,853	47,736
PVRI	48,430	(9,145)	41,362	42,328	28,336	31,107	26,215	23,572	21,340	19,446	17,832	16,456	15,282	14,285

Source: Company data, Morgan Stanley Research

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Exhibit 40

UMC: Residual Income Model

Intrinsic Value Model		Value Breakdown	
Inputs:	Outputs:	Residual Income (operating):	DCF (operating):
Cost of equity	9.0%	WACC	171.4%
Long-term ROE on new investments	9.0%	Long-term RNOA on new investments	11.7%
Explicit forecast period (years)	5	Price	7.31
Years to reach steady-state growth	15	Conv. factor - Model tc	1.00
Steady-state revenue growth rate (%)	4%	Conv. factor - Millions	1.000
Shares Outstanding	13,543.50	IV per share (Current)	December-08
Steady-state borrowing cost (net of tax)	5.0%	IV Per Share (12 Month), Ex. Div	December-09
Steady-state leverage (Net debt/Equity)	-40%	Expected share price return	2.85%
Price target horizon (months)	12	Expected dividend yield	0.00%
Fiscal Year Ending	12	Expected total return	2.85%
		Residual Income (operating):	DCF (operating):
		Beginning NOA	147,969
		Sum of PVRI	(134,639)
		Beginning NNOAL	88,498
		ROI equity value	101,828
		Residual Income (equity):	DDM (Equity):
		Beginning equity	236,467
		Sum of PVRI	(134,639)
		RI equity value	101,828
		Sum of div & net rep	101,828
		DDM equity value	101,828

	F2008e	F2009e	F2010e	F2011e	F2012e	F2013e	F2014e	F2015e	F2016e	F2017e	F2018e	F2019e	F2020e	F2021e
Operating Level														
Operating revenue	92,323	59,694	85,105	97,441	106,192	115,201	124,399	133,712	143,057	152,342	161,471	170,343	178,853	186,898
Operating revenue growth		-35.3%	42.6%	14.5%	9.0%	8.5%	8.0%	7.5%	7.0%	6.5%	6.0%	5.5%	5.0%	4.5%
Operating asset turnover	0.62	0.52	0.88	0.98	0.99	1.00	1.01	1.02	1.02	1.03	1.04	1.04	1.04	1.05
NOPAT	1,636	(11,672)	(222)	4,930	7,739	8,428	9,246	10,018	10,793	11,563	12,321	13,058	13,766	14,434
NOPAT margin	1.8%	-19.6%	-0.3%	5.1%	7.3%	7.3%	7.4%	7.5%	7.5%	7.6%	7.6%	7.7%	7.7%	7.7%
Net operating assets	115,668	96,189	99,740	107,344	114,641	123,306	131,483	139,895	147,860	155,892	163,701	171,194	178,280	184,866
RNOA	1.1%	-10.1%	-0.2%	4.9%	7.2%	7.4%	7.5%	7.6%	7.7%	7.8%	7.9%	8.0%	8.0%	8.1%
FCFO	33,937	7,807	(3,773)	(2,674)	442	(236)	1,068	1,806	2,628	3,532	4,512	5,565	6,680	7,848
PVFCFO	12,504	1,060	(189)	(49)	3	(1)	1	1	0	0	0	0	0	0
Residual income (operating)	(251,997)	(209,937)	(165,099)	(166,035)	(176,258)	(188,078)	(202,111)	(215,357)	(228,658)	(241,882)	(254,891)	(267,540)	(279,677)	(291,154)
PVRI (operating)	(92,848)	(28,500)	(8,258)	(3,060)	(1,197)	(471)	(186)	(73)	(29)	(11)	(4)	(2)	(1)	(0)
Financing and Other														
Net financial expense (income)	2,423	(623)	(1,784)	(1,720)	(1,667)	(4,100)	(4,379)	(4,637)	(4,892)	(5,142)	(5,383)	(5,613)	(5,829)	(6,027)
Other nonoperating expense (income)	543	0	0	-	0	0	0	0	0	0	0	0	0	0
Net debt (cash)	(80,483)	(88,913)	(86,924)	(84,876)	(81,998)	(87,580)	(92,737)	(97,840)	(102,834)	(107,661)	(112,261)	(116,575)	(120,547)	(124,120)
Other nonoperating liabilities (assets) (ONOLA)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leverage EOP (net debt/equity)	-41%	-48%	-47%	-44%	-42%	-42%	-41%	-41%	-41%	-41%	-41%	-41%	-40%	-40%
Equity Level														
Net income	(1,330)	(11,049)	1,562	6,650	9,407	12,528	13,625	14,654	15,685	16,705	17,704	18,671	19,594	20,462
Equity	196,151	185,102	186,664	192,220	196,640	210,886	224,220	237,536	250,694	263,553	275,961	287,769	298,827	308,986
ROE	-0.6%	-5.6%	0.8%	3.6%	4.9%	6.4%	6.5%	6.6%	6.7%	6.7%	6.7%	6.8%	6.8%	6.8%
Dividends and net rep	15,321	-	-	1,093	4,987	(1,718)	290	1,339	2,526	3,847	5,296	6,863	8,537	10,302
PV div and net rep	14,056	-	-	775	3,241	(1,025)	159	672	1,163	1,625	2,052	2,440	2,785	3,083
Residual income	(46,277)	(28,702)	(15,097)	(10,150)	(7,893)	(5,170)	(5,355)	(5,525)	(5,693)	(5,857)	(6,015)	(6,165)	(6,305)	(6,433)
PVRI	(42,456)	(24,158)	(11,658)	(7,191)	(5,130)	(3,082)	(2,929)	(2,773)	(2,621)	(2,474)	(2,331)	(2,192)	(2,057)	(1,925)

Source: Company data, Morgan Stanley Research

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(as of November 30, 2008)

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Stock Rating Category	Coverage Universe		Investment Banking Clients (IBC)		
	Count	% of Total	Count	% of Total IBC	% of Rating Category
Overweight/Buy	838	36%	254	40%	30%
Equal-weight/Hold	1037	44%	282	44%	27%
Not-Rated/Hold	32	1.4%	8	1.3%	25.0%
Underweight/Sell	427	18%	90	14%	21%
Total	2,334		634		

Data include common stock and ADRs currently assigned ratings. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations. Investment Banking Clients are companies from whom Morgan Stanley or an affiliate received investment banking compensation in the last 12 months.

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Overweight (O or Over) - The stock's total return is expected to exceed the total return of the relevant country MSCI Index, on a risk-adjusted basis over the next 12-18 months.

Equal-weight (E or Equal) - The stock's total return is expected to be in line with the total return of the relevant country MSCI Index, on a risk-adjusted basis over the next 12-18 months.

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Not-Rated/Hold (NA or NAV) - Currently the analyst does not have adequate conviction about the stock's total return relative to the relevant country MSCI Index, on a risk-adjusted basis, over the next 12-18 months. Please note that NA or NAV may also be used to designate stocks where a rating is not currently available for policy reasons. For the current list of Not-Rated/Hold stocks as counted above in the Global Stock Ratings Distribution Table, please email morganstanley.research@morganstanley.com.

Underweight (U or Under) - The stock's total return is expected to be below the total return of the relevant country MSCI Index, on a risk-adjusted basis, over the next 12-18 months.

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Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index.

Stock Price, Price Target and Rating History (See Rating Definitions)

Chartered Semiconductor (CSMF.SI) - As of 12/18/08 in SGD
 Industry : Singapore Foundry



Volatility shading indicates "more volatile" (V) flag. As of Nov-14-2008 the V flag has been discontinued.

Stock Rating History: 12/1/05 : E/NR; 1/24/06 : E/C; 6/3/06 : O/C; 8/5/06 : U/C

Price Target History: 10/7/05 : 1.35; 1/16/06 : 1.55; 4/7/06 : 1.65; 10/23/06 : 1.52; 1/24/08 : 0.78; 3/27/08 : 0.75; 4/25/08 : 0.78; 6/3/08 : 1.1; 8/5/08 : 0.43; 10/31/08 : 0.22

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ---
 Stock Ratings abbreviated as below (Effective 3/18/02, ratings appear as Stock Ratings/Industry View) ♦
 Stock Ratings as of 3/18/02: Overweight (O) Equal-weight (E) Underweight (U) More Volatile (V) No Rating Available (NAU)
 Stock Ratings prior to 3/18/02: Strong Buy (SB) Outperform (OP) Neutral (N) Underperform (UP) No Rating Available (NAU)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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SMIC (0981.HK) - As of 12/18/08 in HKD
 Industry : China Foundry

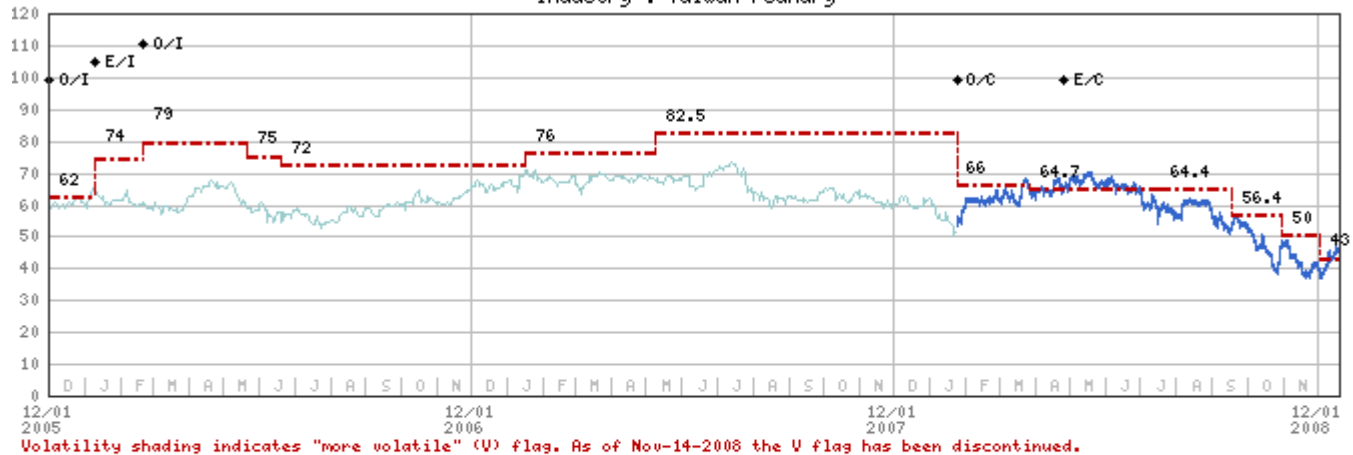


Stock Rating History: 12/1/05 : E/NR; 1/24/06 : E/C; 11/10/08 : NA

Price Target History: 8/11/05 : 1.87; 3/1/06 : 1.41; 8/20/07 : 1.26; 1/24/08 : 0.6; 3/27/08 : 0.49;
 9/18/08 : 0.3; 10/31/08 : 0.12; 11/10/08 : NA

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ■
 Stock Ratings abbreviated as below (Effective 3/18/02, ratings appear as Stock Ratings/Industry View) ♦
 Stock Ratings as of 3/18/02: Overweight (O) Equal-weight (E) Underweight (U) More Volatile (V) No Rating Available (NAU)
 Stock Ratings prior to 3/18/02: Strong Buy (SB) Outperform (OP) Neutral (N) Underperform (UP) No Rating Available (NAU)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

TSMC (2330.TW) - As of 12/18/08 in TWD
 Industry : Taiwan Foundry



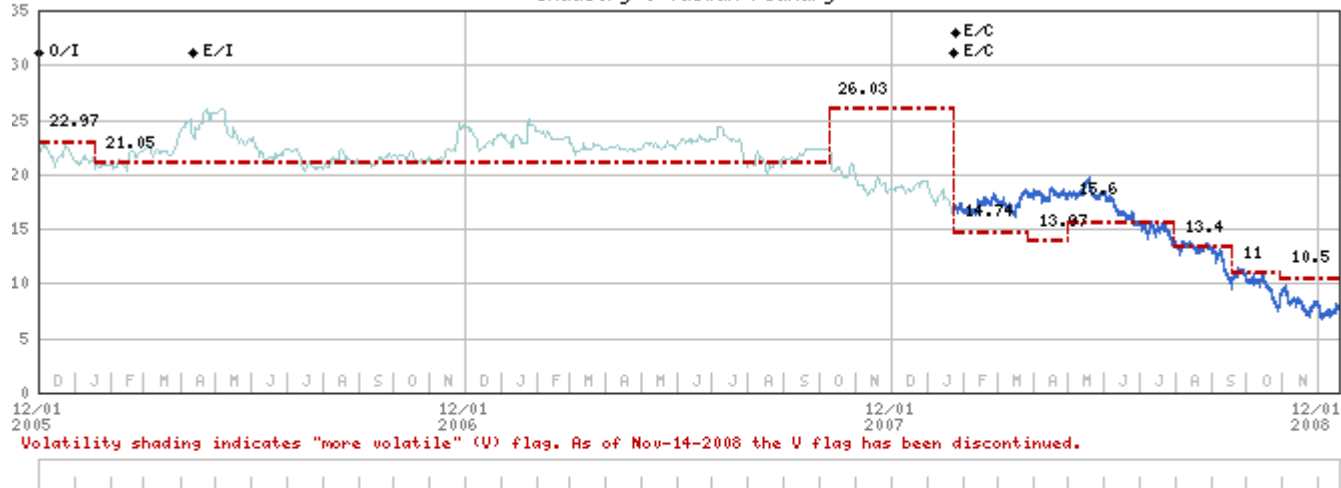
Stock Rating History: 12/1/05 : O/I; 1/10/06 : E/I; 2/20/06 : O/I; 1/24/08 : O/C; 4/25/08 : E/C

Price Target History: 6/17/05 : 62; 1/10/06 : 74; 2/20/06 : 79; 5/22/06 : 75; 6/20/06 : 72; 1/16/07 : 76;
 5/9/07 : 82.5; 1/24/08 : 66; 3/27/08 : 64.7; 7/17/08 : 64.4; 9/18/08 : 56.4; 10/31/08 : 50; 12/3/08 : 43

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ■
 Stock Ratings abbreviated as below (Effective 3/18/02, ratings appear as Stock Ratings/Industry View) ♦
 Stock Ratings as of 3/18/02: Overweight (O) Equal-weight (E) Underweight (U) More Volatile (V) No Rating Available (NAU)
 Stock Ratings prior to 3/18/02: Strong Buy (SB) Outperform (OP) Neutral (N) Underperform (UP) No Rating Available (NAU)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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UMC (2303.TW) - As of 12/18/08 in TWD
 Industry : Taiwan Foundry



Stock Rating History: 12/1/05 : O/I; 4/12/06 : E/I; 1/24/08 : E/C; 1/25/08 : E/C

Price Target History: 6/17/05 : 22.97; 1/18/06 : 21.05; 10/9/07 : 26.03; 1/24/08 : 14.74; 3/27/08 : 13.97;
 5/1/08 : 15.6; 7/31/08 : 13.4; 9/18/08 : 11; 10/30/08 : 10.5

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ---
 Stock Ratings abbreviated as below (Effective 3/18/02, ratings appear as Stock Ratings/Industry View) ♦
 Stock Ratings as of 3/18/02: Overweight (O) Equal-weight (E) Underweight (U) More Volatile (V) No Rating Available (NAU)
 Stock Ratings prior to 3/18/02: Strong Buy (SB) Outperform (OP) Neutral (N) Underperform (UP) No Rating Available (NAU)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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Industry Coverage:China Foundry

Company (Ticker)	Rating (as of)	Price (12/18/2008)
Bill Lu SMIC (0981.HK)	++	HK\$.24

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Industry Coverage:Taiwan Foundry

Company (Ticker)	Rating (as of)	Price (12/18/2008)
Bill Lu TSMC (2330.TW)	E (04/25/2008)	NT\$45
UMC (2303.TW)	E (01/25/2008)	NT\$7.72

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Industry Coverage:Singapore Foundry

Company (Ticker)	Rating (as of)	Price (12/18/2008)
Bill Lu Chartered Semiconductor (CSMF.SI)	U (08/05/2008)	S\$.19

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