MEMC Electronic Materials

Initiating Coverage With a Neutral 2 Rating

Global Equity Research

Americas

Electric Components & Equipment

Rating	Neutral 2
	Prior: Not Rated
Price target	US$12.00
	Prior:Not Rated
Price	US$12.06

RIC: WFR.N BBG: WFR US

13 January 2005

Trading data	
52-wk. range	US$13.25-7.39
Market cap.	US$2.51bn
Shares o/s	208m
Free float	37%
Avg. daily volume ('000)	626
Avg. daily value (US$m)	6.7

Balance sheet data 12/04E	
Shareholders' equity	US$0.41bn
P/BV (UBS)	6.6x
Net cash (debt)	US$0.02bn

Forecast returns	
Forecast price appreciation	-0.5%
Forecast dividend yield	0.0%
Forecast stock return	-0.5%
Market return assumption	8.2%
Forecast excess return	-8.7%

EPS (UBS, US$)

	12/04E			12/03
	From	To	Cons.	Actual
Q1	-	0.16	*0.16*	0.09
Q2	-	0.20	*0.20*	0.13
Q3	-	0.27	*0.27*	0.16
Q4E	-	0.24	*0.24*	0.15
12/04E	-	0.87	*0.86*	
12/05E	-	0.98	*1.09*	

■ Pure play wafer supplier benefiting from demand growth

We estimate the wafer industry can grow 5% in 2005, to $8.4B based on volume growth of 5% (tracking chip units) and flat wafer average selling prices. While the wafer industry remains highly competitive and MEMC was #4 in market share in 2003 (12% share), we believe MEMC can grow faster than the industry on modest share gains.

■ Expect stable pricing despite likely decline in 300mm prices

We believe declining 300mm wafer prices will have a neutral impact on overall mix-adjusted average selling prices. We expect declines in 300mm wafer prices to be offset by: 1) an increasing share of 300mm wafers in the mix (we expect 17% in 2005 versus 12% in 2004); and 2) 300mm premium prices versus smaller wafers (currently 2x).

■ Texas Pacific Group's 63% ownership remains an overhang

We expect the company's controlling shareholder to reduce its position over the next 2-3 years as TPG previously sold 12M shares at $10 in May-03 and 34M shares at $9.70 in Feb-04. We look for a more attractive entry point and further clarity on potential TPG's share sales before getting more positive on the stock.

■ Valuation: Establishing a 12-month price target of $12

Our price target is based on an EV/EBITDA multiple of 8.5x applied to our 2005E EBITDA estimate of $344M. Our DCF model implies intrinsic value of $11 based on a 12% discount rate, 3% terminal growth, 7% revenue CAGR and a 20% EBIT margin

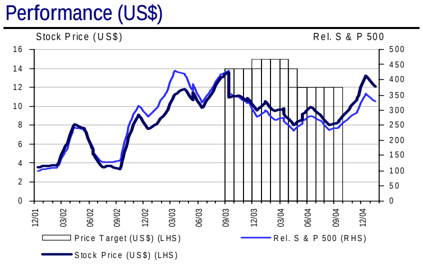
Highlights (US$m)	12/02	12/03	12/04E	12/05E	12/06E
Revenues	687	781	1,029	1,095	1,165
EBIT	80	143	267	300	319
Net income (UBS)	(22)	117	209	223	229
EPS (UBS, US$)	(0.20)	0.53	0.87	0.98	0.98
Net DPS (UBS, US$)	0.00	0.00	0.00	0.00	0.00

Profitability & Valuation	5-yr hist. av.	12/03	12/04E	12/05E	12/06E
EBIT margin %	-12.8	18.3	25.9	27.4	27.4
ROIC (EBIT) %	-9.7	50.9	63.4	52.9	45.6
EV/EBITDA x	27.6	14.1	9.0	7.9	7.1
PE (UBS) x	-11.8	20.1	13.9	12.3	12.4
Dividend yield %	0.0	0.0	0.0	0.0	0.0

Source: UBS adjusted EPS is stated before goodwill-related charges and other adjustments for abnormal and economic items at the analysts' judgement.

Valuations: based on an average share price that year, (E): based on a share price of US$12.06 on 12 Jan 2005

Performance (US$)



Source: UBS

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ANALYST CERTIFICATION AND REQUIRED DISCLOSURES BEGIN ON PAGE 21

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Summary and Investment Case

Initiating coverage with Neutral 2 rating and $12 price target

We are initiating coverage of MEMC Electronic Materials with a Neutral 2 rating and a 12-month price target of $12. MEMC produces and sells silicon wafers to the semiconductor industry. Wafers are the substrate upon which semiconductors are fabricated. Despite the overall semiconductor market seeing decelerating growth, we believe the outlook for the wafer industry is relatively stable. However, after factoring in the overhang of further share sales by controlling shareholder Texas Pacific Group (TPG), we believe MEMC shares are fairly valued at current levels.

MEMC reported revenues of $781 million in 2003 and was estimated to be the #4 player having an estimated 12% market share (per VLSI). For 2004, we estimate MEMC can report revenues of $1.029 billion (up 32% year over year). The company's main competitors are Shint-Etsu Handotai (31% share in 2003), Sumco (23%), and Siltronic (14%). MEMC's customers include the major semiconductor device manufacturers with both Samsung and Texas Instruments each accounting for more than 10% of the company's sales in 2003.

Forecast record EBITDA levels in 2005 and 2006, and solid management execution to continue

We estimate MEMC's revenues can grow 6% in 2005 and 2006 on modest share gains, and forecast record EBITDA levels in 2005 ($344 million, 11% year-over-year growth) and 2006 ($368 million, 7% year-over-year growth). We expect MEMC's management team to continue to deliver the solid execution shown following the company's 2001 restructuring.

Expect industry revenue growth of 5% in '05 and '06

The semiconductor market started to slow down during the summer of 2004 as inventory issues at some of the larger semiconductor manufacturers and the strength of end-market demand became areas of concern. However, we estimate integrated circuit (IC) units—the driver of wafer demand—can grow about 5% in 2005 and 6% in 2006. IC units had a CAGR of 9% over the last 10 years, and only once during this period (2001) exhibited negative growth. We estimate the wafer industry's revenues can grow 5% in both 2005 and 2006. Although we expect 300mm wafer prices to continue to decline, they still command a hefty premium over 200mm wafers of about 2 times, and we forecast mix-adjusted ASPs to remain approximately flat.

Risk of excess 300mm wafer capacity

The wafer industry has a poor track record of supply discipline. As the semiconductor industry transitions from today's volume leader 200mm wafer to the more efficient and larger 300mm wafer, the risk remains that wafer manufacturers may build too much 300mm wafer capacity, which would depress capacity utilization rates (CUR), prices, and margins.

All of the major wafer manufacturers are currently building (or have plans to build) 300mm wafer plants. We believe capacity utilization rates for 300mm wafer facilities can decline to the mid- to high-80% range in 2005 (from 90%-plus in 2004). However, one risk is that if demand falters and producers do not adjust their expansion plans accordingly, CURs could decline more, hurting revenues and margins. Still, 300mm wafer prices today sell at about 2.0x higher prices per square inch than 200mm wafers (hence the rush to build capacity). Our base case scenario assumes 300mm wafer prices will decline 15% in 2005, and smaller 200mm and below wafer prices will remain relatively flat.

We believe significant share price appreciation beyond the $10-12 range will be difficult while the uncertainty over the exit strategy of controlling shareholder Texas Pacific Group (TPG) remains. A private equity firm, TPG rescued MEMC from near bankruptcy in 2001, orchestrated its turnaround, and now needs an exit strategy, in our view. TPG currently owns 125.3 million MEMC shares and 16.7 million warrants (equivalent to 63% of the outstanding shares, assuming conversion of the warrants), after selling 12 million shares in May 2003 (selling price $10.00), and 34 million shares on February 13, 2004 (selling price $9.70). The timing of future MEMC share sales by TPG is uncertain, but we believe most of it should occur within the next two to three years. Given the size of TPG's holdings, we are concerned about the impact of future sales on MEMC's share price.

We rate MEMC shares Neutral 2 with a 12-month target price of $12. Although the shares appear attractive on a fundamental basis, they appear fairly priced after we apply a 15% overhang discount, a discount comparable to what we have seen in similar situations. Our target price implies a potential total return of –0.5% (or –8.7% excess return, after subtracting UBS's market return assumption of 8.2%)—thus, our Neutral 2 rating.

Investment Positives

Shares Attractive on Fundamental Basis

Shares look attractive on fundamentals (ignoring potential future stock sales by controlling shareholder, Texas Pacific Group)

We believe MEMC's shares appear attractive on a fundamental basis. The stock is trading at an EV/EBITDA multiple of 7.9x based on our 2005 estimates, below the 10.0x average of the industrial technology group, and the 9.1x multiple of semiconductor materials provider ATMI. We use the industrial technology group to value MEMC, as those companies have growth and margin profile similar to MEMC's. Our 8.5x target multiple for MEMC represents a 15% discount to the 10x average of the industrial technology group, to reflect the overhang of further share sales by controlling shareholder Texas Pacific Group (TPG). At current levels, our $12 target price implies a total return of –0.5% (excess return of –8.7% after UBS's market return assumption of 8.2%)—hence, the Neutral 2 rating.

We note that while the stock may appear attractive at current levels given its P/E ratio of 12.3x based on our 2005 EPS estimate of $0.98, we prefer EV/EBITDA as a valuation metric for MEMC because it is independent of depreciation. MEMC's depreciation expense has declined significantly from about $40-50 million per quarter to only $10-11 million per quarter currently following the company's $800 million asset write-down in 2001. Gross profit, operating income, earnings, and the corresponding margins improved significantly as a result. Thus, comparisons of MEMC to its past trading history or to other companies using metrics that involve depreciation expense or book value are not relevant, in our opinion.

We have selected to use the industrial technology group (3M, Cambrex, Pall, Sigma-Aldrich) as a comparable for MEMC because these companies have a growth profile and margins similar to MEMC's. We believe comparing MEMC to semiconductor or semiconductor equipment companies is not appropriate given the differences in growth and margins. We believe ATMI is the closest comparable to MEMC. After divesting its technology operations, ATMI has become a pure semiconductor materials provider, and its business is now entirely driven by IC units, similar to MEMC's. However, we believe ATMI has a better growth outlook than the wafer industry, given its focus on the high growth copper materials market; hence, we believe ATMI deserves to trade at a premium to MEMC.

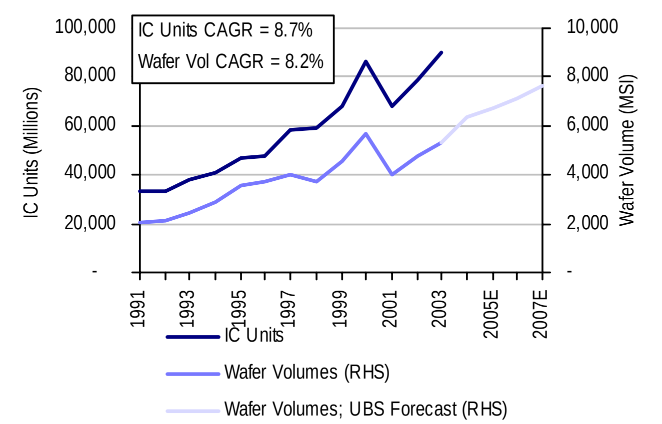
Expect Wafer Industry Growth of About 5% in 2005 and 2006

We expect the wafer industry's revenues to grow 5% in 2005 and 2006. Our base case scenario assumes wafer unit growth of 5% in 2005 and 6% in 2006, with flat average selling prices (ASPs).

Wafer units have historically tracked in line with IC units (Chart 1), as the effect of chip shrinking geometries is approximately offset by the impact of increasing chip density. Typically, IC and wafer units exhibit positive growth (2001 being the exception in the last 10 years for IC units). We expect wafer volumes to be up 21% in 2004, which is significantly higher than the CAGR of 8.2% recorded in the last 12 years. Consistent with expectations for lower IC unit demand in 2005 and 2006, we expect wafer volumes to grow about 5% in 2005 and 6% in 2005.

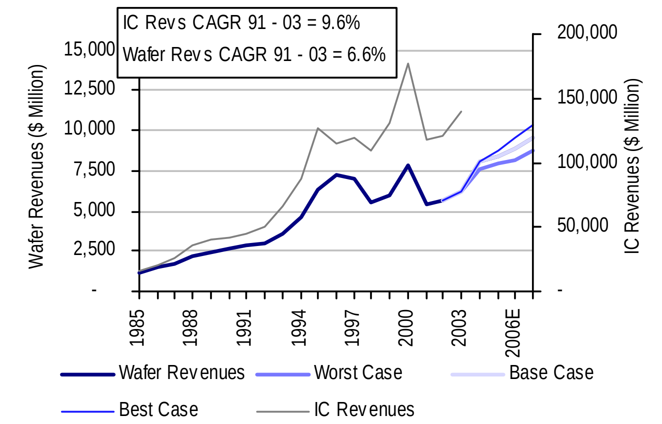
Expect wafer unit growth of 5% in 2005

Chart 1: Wafer Units vs. IC Units



Source: Gartner Dataquest, SIA, and UBS estimates

Chart 2: Wafer Revenues vs. IC Revenues



Source: Gartner Dataquest, SIA, and UBS estimates

We believe ASPs will remain about flat over the next two years because of a better product mix (i.e., higher sales of 300mm wafers, which currently sell at about 2.0x higher price per square inch than 200mm wafers). In our view, estimating wafer ASPs is the most challenging part of forecasting the wafer industry's revenues. We have conducted a sensitivity analysis to evaluate this impact (Table 1). Assuming wafer unit growth of 5%, our analysis indicates that wafer revenue growth could range from 4% (worst case) to 9% (best case) in 2005. (See *Industry Forecast* section for details.)

Expect flat ASPs

Table 1: Wafer Industry Assumptions

	Wafer Volume	300mm Wafer	ASP Growth			Revenue Growth		
	Growth	% of Total	Worst Case (2)	Base Case (1)	Best Case (3)	Worst Case	Base Case	Best Case
CAGR 1991 - 2003	9%		-2%	-2%	-2%	7%	7%	7%
2003A	10%	8%	0%	0%	0%	11%	11%	11%
2004E	21%	12%	1%	6%	6%	22%	28%	29%
2005E	5%	17%	-1%	0%	4%	4%	5%	9%
2006E	6%	19%	-3%	-1%	2%	3%	5%	8%
CAGR 2004 - 2007	6%		-2%	0%	2%	5%	6%	9%

(1) Base Case: Price of 300mm wafers declines by 26% in four years (2004-07)
(2) Worst Case: Price of 300mm wafers declines by 35% in four years (2004-07)
(3) Best Case: Price of 300mm wafers declines by 15% in four years (2004-07)
Source: UBS estimates

Forecast EPS Growth of 13% and EBITDA Growth of 11% in 2005

For 2005, we forecast EPS growth of 13% for MEMC and EBITDA growth of 11%, on 6% higher revenues. For 2006, we expect flat EPS and EBITDA growth of 7%, on 6% higher revenues. We expect a higher interest expense in 2006 (although mostly non-cash) given the accretion schedule of the $50 million senior subordinated notes due in 2007. This is the main reason why we expect flat EPS in 2006. At the time of this publication, MEMC has announced that it redeemed in full its outstanding senior subordinated secured notes on December 30, 2004. We have not incorporated this new information into our forecast at this time.

Table 2: MEMC—Summary of P&L Forecast

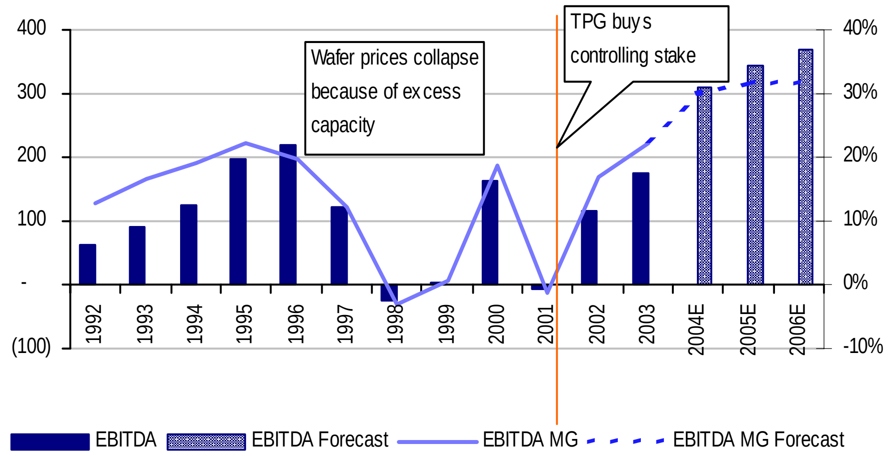
Million USD, except where noted	2004E	2005E	2006E
Revenues	1,029	1,095	1,165
Revenue Growth (1)	32%	6%	6%
GM	36%	38%	38%
EBITDA	309	344	368
EBITDA Growth (1)	78%	11%	7%
EBITDA MG	30%	31%	32%
EPS	0.87	0.98	0.98
EPS Growth	63%	13%	0%

(1) Growth rates for 2004 are distorted by the acquisition of 55% of Taisil in February 2004.
Source: UBS estimates

We believe that MEMC's revenues can grow slightly faster than the industry over the next two years, as the company continues to gain market share it had previously lost from the late 1990's through 2001, and demonstrates MEMC has regained strength and reliability to its customers. Thus, we are modeling top-line growth of 6% both in 2005 and 2006, compared with our estimate of 5% for the industry.

We expect MEMC to post record EBITDA in 2005 and 2006. In the 12 months ending in September 2004, MEMC generated an all-time high EBITDA margin of 28% on revenues of $965 million (EBITDA of $270 million). We estimate EBITDA of $309 million in 2004, $344 million in 2005, and $368 million in 2006. The company's prior peak EBITDA of $219 million was achieved in 1996 on revenues of $1.120 billion (EBITDA margin of 19%). (See Chart 3.)

Chart 3: MEMC—EBITDA and EBITDA Margin



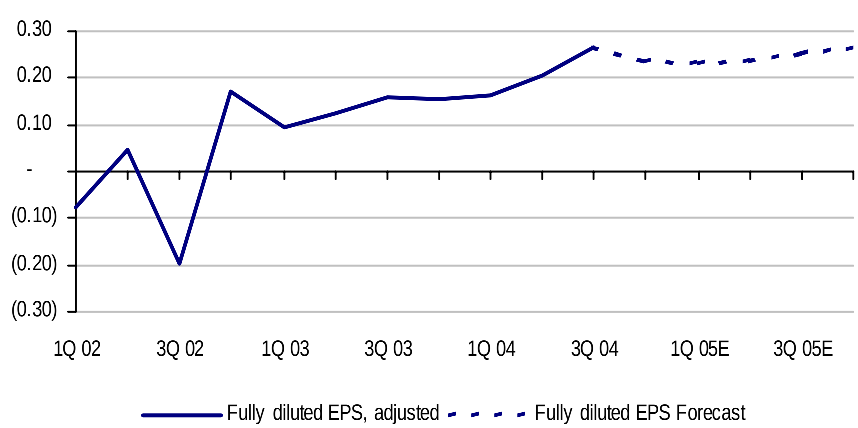
Source: Company reports and UBS estimates

Expect Solid Management Execution to Continue

MEMC is a successful turnaround story

MEMC's financial results have improved steadily since the company's 2001 restructuring. As of 3Q04, gross margin of 40.2% and operating margin of 30.4% significantly exceeded the company's long-term financial goal of 35% and 23%, respectively. EPS of $0.27 was a record high. However, given the slowdown in the semiconductor market, management guided gross margin to fall about two percentage points in 4Q04.

Chart 4: MEMC—Quarterly EPS



Source: Company reports and UBS estimates

Cost-cutting and a stronger focus on operational improvements has enabled MEMC's turnaround, along with a strategy of segmenting the customer base and balancing profitability, market share, and investment in technology. Although part of the improvement in earnings after the restructuring was due to lower depreciation charges, there has been important improvement in cash production costs. We look at gross profit and add back depreciation to analyze the evolution of cash production costs (Table 3). The ratio of gross profit plus depreciation to sales was 19.9% in 2001. This ratio improved to 30.2% in 2002, and to 33.8% in 2003, even though wafer ASPs declined about 11% in 2002 (and were about flat in 2003).

Table 3: MEMC—GM Improvement Excluding Depreciation

Million USD	2000	2001	2002	2003
Sales	872	618	687	781
Gross Profit	129	(51)	173	233
Depreciation	173	175	34	31
Gross Profit + Depreciation	302	123	208	264
(Gross Profit + Depreciation) / Sales	34.7%	19.9%	30.2%	33.8%
Wafer Industry ASPs ($ / SQI)	1.37	1.34	1.18	1.19
YoY Growth		-3%	-11%	0%

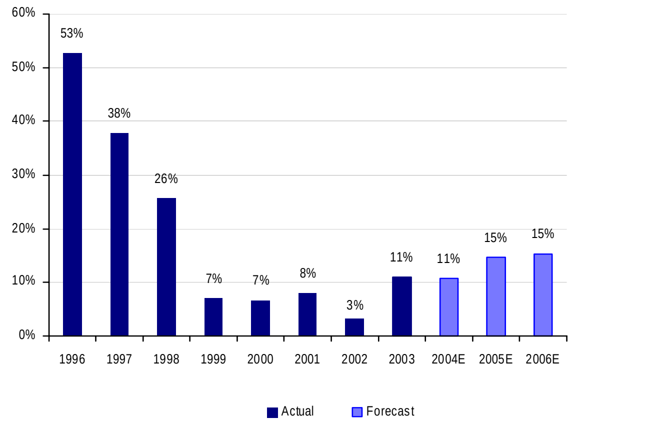
Source: Company reports, Gartner Dataquest, and UBS

Increased Investment in Capex and R&D Viewed Positively

MEMC also reduced SG&A and R&D after the 2001 restructuring (Charts 5 and 6). The company has indicated that half of the reduction in R&D is related to lower depreciation expense. Even so, we would welcome higher investment in R&D.

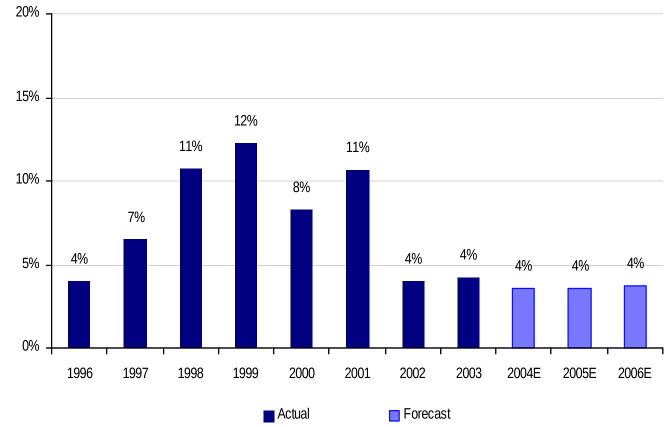
MEMC increased R&D and capital spending in absolute dollar terms in 2003, and is on track to further increase these investments in 2004. We view this as a positive development because we believe investment in new generation infrastructure and R&D are a critical requirement to support a successful ongoing wafer business. Management’s target model calls for capital spending of not more than 15% of revenues, and operating expenses of not more than 12% of revenues (we estimate 7-8% SG&A and 4-5% R&D in our model).

Chart 5: MEMC—Capex to Revenues



Source: Company reports and UBS estimates

Chart 6: MEMC—R&D to Revenues



Source: Company reports and UBS estimates

Solid Cash Generation to Enable Further Balance Sheet Improvements

MEMC's management has stated that debt reduction is a priority, and that it expects the balance sheet to be debt-free by the end of 2005. As of 3Q04, MEMC's debt amounted to $203 million (including the $50 million senior subordinated notes' actual liability) and cash and marketable securities totaled $103 million, for a net debt position of $99 million. Interest coverage (including interest in kind on senior notes) was healthy at 18.4x, and we expect it to average 15.2x in 2004.

Management expects MEMC to be debt-free by the end of 2005

Table 4: MEMC—Balance Sheet Metrics and Interest Coverage

Million USD, except where noted	2002	2003	3Q04	2004E
Cash	166	131	103	172
Debt on Books	285	131	142	144
Portion of $50 mm senior subordinated note yet not accreted	55	57	60	61
Total Debt adjusted for debt accretion	339	188	203	205
Net Debt, adjusted for debt accretion	174	57	99	32
Pension Liabilities (unfunded status)	63	83	83	83
Core EBITDA	117	174	95	309
Interest Expense	73	13	3	13
Interest in Kind	4	4	2	7
Total Interest Expense	77	17	5	20
Interest Coverage (x)	1.5	10.3	18.4	15.2

Source: Company reports and UBS estimates

The $910 million debt restructuring of November 2001 (most of which was converted into equity) made MEMC's balance sheet viable. Since 1Q02 (Table 5), the company generated $390 million in cash from operations, received $104 million of proceeds from stock issuance, repaid $188 million in debt (net of new borrowings), and invested $205 million in capex and $57 million in the Taisil acquisition. We expect MEMC's management team to continue its strict cost controls and focus on cash flow generation.

Has generated $390 million in cash from operations since 1Q02

Table 5: MEMC—Cash Flow Highlights ($'s in millions)

	1Q02 Through 3Q04
Cash Flow From Operations	$390
Stock Issuance (mostly secondary of May 2003)	$104
Capex	-$205
Acquisition of Taisil	-$57
Debt Repayments (net of new borrowing)	-$188
Other	-$47
Change in Cash and Marketable Securities	-$4

Source: Company reports and UBS

Adequate Liquidity Sources in a Decelerating Environment

MEMC currently has two credit lines available: 1) $150 million revolver from Citibank/UBS, of which $90 million is currently available; and 2) $35 million credit line from TPG. The TPG facility cannot be used until the full amount available under the Citibank/UBS facility has been fully drawn down. Both of these facilities are secured either directly or indirectly by MEMC's domestic assets.

Consolidation Desirable and Possible, But Timing Is Uncertain

We believe there is room for further consolidation in the wafer industry. Some of the smaller players in this space have unprofitable operations. In the past, MEMC's management has indicated that it has held acquisition-related conversations with other suppliers, but that none of those has prospered to date. Although we believe it makes sense that the industry consolidates further, the timing is uncertain, in our view. The reason is that most players (except for MEMC) are part of larger conglomerates (largely Japanese companies and one German company). These players don't need to be self-funding, can withstand ongoing losses if necessary, and may take a longer-term strategic view on their businesses (refer to *Competition Likely to Remain Intense* in the *Investment Negatives* section). Thus, below-average financial performance is not likely enough of an incentive to foster further consolidation.

Investment Negatives

Stock Overhang

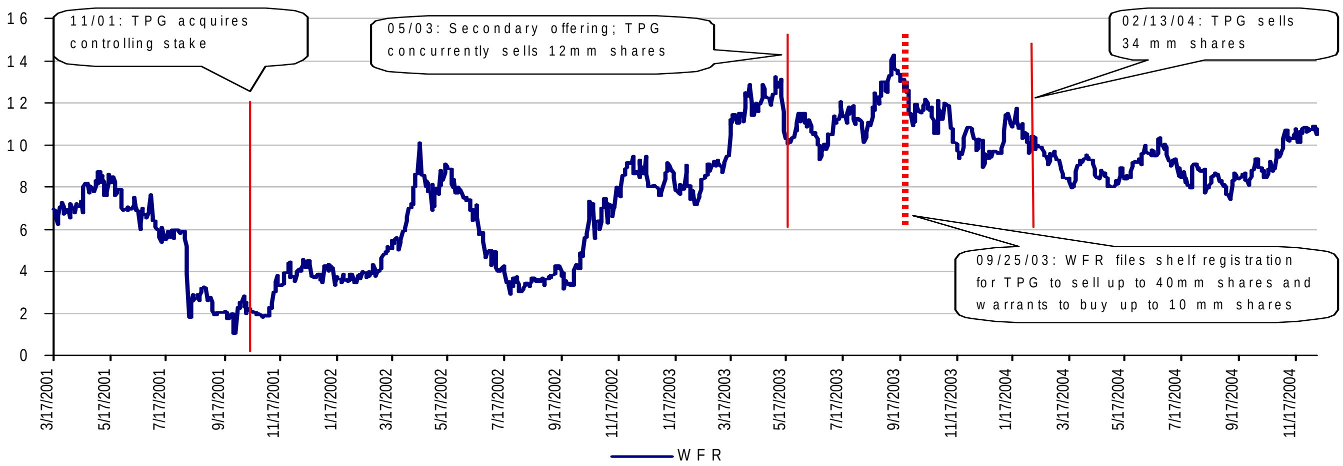
TPG needs an exit strategy, in our view

We believe Texas Pacific Group, MEMC's controlling shareholder, will likely seek to sell its MEMC shares within the next two to three years. TPG is a private equity firm who acquired a controlling stake in MEMC from E.ON in 2001, rescuing the company from a near-bankruptcy situation. TPG has orchestrated its turnaround, and now needs an exit strategy, in our opinion.

Given the size of TPG holdings (currently owns 63% of MEMC's shares), we are concerned about the impact of potential future stock sales. While TPG's potential divestitures will increase the liquidity of MEMC shares, which will be beneficial in the longer term, the near-term disadvantage is that the market would have to absorb sudden increases in share supply with a corresponding negative impact on the share price.

TPG currently has beneficial ownership (i.e., assuming conversion of 16.7 million warrants) of 142 million MEMC shares. The company sold 12 million shares in May 2003 (selling price $10.00), and 34 million shares in February 2004 (selling price $9.70; see Chart 7). In September 2003, had MEMC filed a shelf registration with the SEC for TPG to sell up to 40 million MEMC shares and warrants to buy up to 10 million MEMC shares. Of this total, 6 million shares remain to be sold, and no warrants have been converted or sold.

Chart 7: MEMC's Share Price



Source: Reuters and UBS

After the shelf registration was filed, the shares had suffered from what we would term the "TPG overhang," and traded in a narrow $8-11 range since this February sale (although it has reached the $12 level more recently). This trading behavior has occurred while MEMC's financial results were improving and industry fundamentals were getting better, suggesting to us that the lack of share price appreciation was unrelated to either of these.

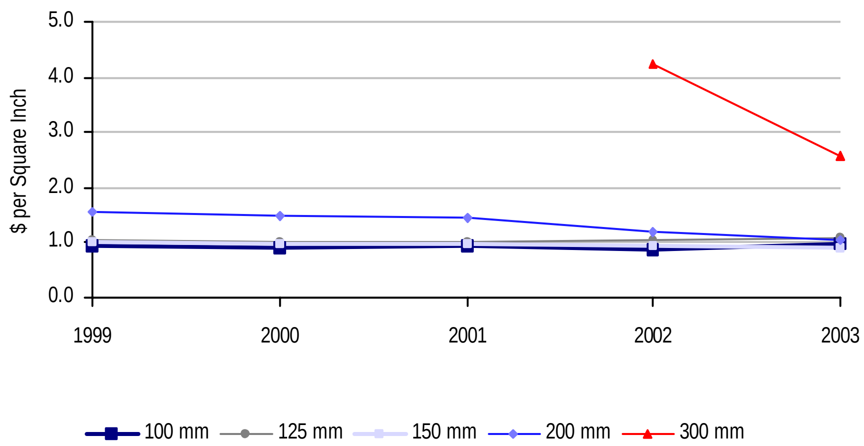
Given the size of TPG's holdings, we believe it is unlikely that MEMC could buy back shares in order to offset potential TPG's share sales. More importantly, MEMC has stated that its primary focus in terms of cash uses is to reduce its debt levels (short of an attractive acquisition), and that share buybacks are not in its plans in the near term.

Low Pricing Power Likely to Persist

Wafers are high tech, but become "quasi-commodities" over time

Wafers are a high tech material, but over time we believe they become "quasi-commodity" product. Pricing and margins will likely come under pressure as a wafer product matures (Chart 8) because: 1) there is little differentiation among competing wafer products; 2) product cycles are long (two decades or more); and 3) excess capacity is typically built in the rush to realize the high premium that newly introduced products enjoy.

Chart 8: Wafer Prices



Source: Gartner Dataquest

We believe the industry's low pricing power will persist in the foreseeable future, as we don't see any significant structural change in the industry's dynamics that could suggest otherwise.

Excess capacity build-ups for 300mm wafers is a risk

Overcapacity in the 200mm wafer market hurt wafer manufacturers' profitability significantly in the mid-1990s. Although we would expect the industry to be more rational this time around, the concern of overcapacity for 300mm wafers remains. New capacity is being built for 300mm wafers, and all the larger wafer manufacturers have executed on 300mm initiatives. This rush to build 300mm wafer capacity is mostly explained by the premium that the new 300mm wafers command over the older 200mm wafers (about two times higher price per square inch). This implies that:

(1) Most manufacturers will be able to offer 300mm wafers (i.e., little differentiation is likely to persist), and more important,

(2) 300mm wafer prices will continue to decline. Assuming that the announced 300mm wafer plants are built according to schedule, we anticipate that capacity utilization rates (CUR) for 300mm wafers could fall to the high to mid-80% range in 2005 (from 90%-plus in 2004).

300mm wafer CUR could fall to the high to mid 80% range in 2005

Because the industry is more consolidated today than it was 10 years ago (10 legitimate players then versus 7 legitimate players today), we believe capacity additions will likely be more rational in 2005 and 2006. But it remains to be seen whether wafer manufacturers will scale down their expansion plans if demand fails to materialize next year.

Small bargaining power versus large, powerful clients

The industry's structure also supports our belief that low pricing power is likely to persist. Semiconductor companies are the wafer manufacturers' only clients. It is in the best interest of semiconductor companies to have financially healthy wafer suppliers that provide quality products in a timely fashion. However, these are large and powerful clients, which suggests that wafer companies' bargaining power is limited.

Predatory pricing remains a risk

Finally, predatory pricing from the weakest players remains a risk. Some industry players are in difficult financial situations, which can work as an incentive to generate cash from additional sales in the short term. Further industry consolidation would help mitigate this risk, but the timing of such potential consolidation is uncertain at this time.

Competition Likely to Remain Intense—Most Players Have the Ability to Invest Heavily, as Required

Most players can access capital through their parent companies

Investment is a requirement for survival in the wafer industry. We believe most industry players can access capital through their parent companies, irrespective of their profitability or balance sheet. Just as it was the case with MEMC in the past, most other wafer players are divisions or affiliates of larger industrial organizations. We believe MEMC is the only wafer manufacturer that needs to be completely self-funding. Below, we review the profile of the wafer industry players.

Shin-Etsu Handotai (SEH). A division of Japanese chemical giant Shin-Etsu Chemical, is the market leader with 31% market share, per Gartner Dataquest. SEH posted 16% operating income margin in fiscal 2003.

Sumitomo Mitsubishi Silicon Corp. (Sumco). The second largest player with 23% market share, is equally owned (50%/50%) by Japanese conglomerates Mitsubishi Materials and Sumitomo Metal Industries (SMI). Sumco expects to turn profitable in the current fiscal year.

Siltronic (previously Wacker-Siltronic). Has 14% market share, as per Gartner Dataquest. The company is a subsidiary of Wacker-Chemie GmbH, a private company headquartered in Germany, with a portfolio of chemical and semiconductor operations. Siltronic posted negative (but improved) operating income in 2Q04. EBITDA margin was reported at 13%.

Komatsu Electronics Metals (KEM). A subsidiary of Komatsu Ltd. (63% ownership). The company has 9% market share, per Gartner Dataquest.

Toshiba Ceramics. An affiliate of Toshiba Corp. The company has 4% share, per Gartner Dataquest.

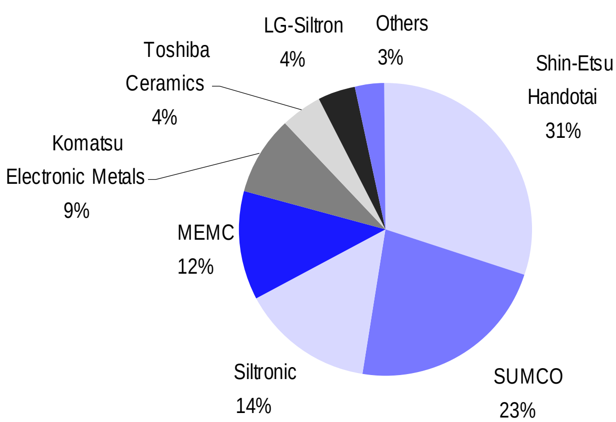
Currently, investment in additional infrastructure is needed to build 300mm wafer plants. The semiconductor industry is transitioning from 200mm wafers to 300mm wafers. We estimate that 300mm wafer demand will represent about 12% of total wafer area in 2004, and 17% in 2005. Shin-Etsu Handotai, Sumco, Siltronic, and MEMC have built (or have announced that they will build) 300mm plants.

Investments in R&D are currently focused on developing materials technology, such as silicon-on-insulator (SOI) wafers, silicon-germanium (SGe) wafers, and strained silicon (sS) wafers. Our industry checks indicate that SOI will be the first technology to take off. All major wafer manufacturers have some type of SOI development or alliance.

Significant Market Share Increases Unlikely, Short of an Acquisition

MEMC was number four in market share in 2003, according to Gartner Dataquest, after Shin-Etsu Handotai, Sumco, and Siltronic (Chart 9). MEMC believes that it has gained share in 2004 and that it is currently number 3 in market share.

Chart 9: Wafer Manufacturers' Market Share—2003



Note: MEMC includes 45% of Taisil's sales.
Source: Gartner Dataquest and UBS

We believe MEMC's current market position is defendable, but that, short of an acquisition, further significant share gains could be difficult to obtain. As long as other players continue to supply high quality wafers—which we believe will be the case in the near future—it will be difficult for MEMC to make significant share gains. Although it is true that some of MEMC's competitors are not in great financial shape, most can probably turn to their parent companies for support.

Valuation

We rate MEMC shares Neutral 2, with a 12-month target price of $12. We calculate our target price by applying an 8.5x multiple to our 2005 EBITDA estimate of $244 mm. Our 8.5x target multiple represents a 15% discount to the 10x average multiple of the industrial technology group. We believe a discount is warranted to reflect the overhang of future stock sales by controlling shareholder TPG. In our view, this overhang precluded significant share appreciation during 2004.

Table 6: MEMC—Target Price Calculation Based on EV/EBITDA Multiple

Target EV/EBITDA (x)	8.50
EBITDA 2005E ($ MM)	344
Target EV ($ MM)	2,912
Less: Core Net Debt (Cash) ($ MM)	48
Plus: Adjustments (1) ($ MM)	(213)
Target Market Cap ($ MM)	2,651
Target Price ($/share)	12.00

(1) Adjustments: Non Core Assets - Buy out of Minorities - Pension Provisions.
Source: UBS.

We believe an 8.5x target EV/EBITDA multiple is reasonable to value MEMC with. This represents a 10% discount to the average multiple at which the industrial technology group (3M, Cambrex, Pall, Sigma-Aldrich) traded in 2000 (forward basis), a peak year for the group, and is also a 15% discount to the group's current multiple of 10x (2005E basis), We believe that this group of industrial technology companies are the best comparables to MEMC, as their margin and growth profiles are similar.

Our 8.5x target multiple for MEMC compares to the EV/EBITDA multiple of 9.1x at which ATMI, a semiconductor materials supplier, is trading at. ATMI has become a pure semiconductor materials provider following the divestiture of all of its technology operations, and its business is now mostly driven by IC units, similar to MEMC's. However, we believe ATMI has a better growth outlook than the wafer industry; thus, we believe a premium to MEMC is warranted.

Tables 7 and 8 show MEMC's valuation versus a select industrial technology group in terms of EV/EBITDA and EV/revenues (UBS estimates).

Table 7: MEMC Valuation—Forward EV/EBITDA

Company Name	1999	2000	2001	2002	2003	99-'03 Average	2004E	2005E
Cabot Microelectronics (1)	NA	NA	11.5	20.5	14.9	15.6	12.5	7.5
Cambrex Corp.	NA	6.2	8.5	12.7	13.4	10.2	NA	NA
Diversa Corp. (1)	NA	NA	-ve	-ve	-ve	NA	-ve	(19.6)
3M Co.	9.6	9.4	10.1	11.1	10.4	10.1	9.8	10.3
Pall Corp.	12.0	11.2	12.2	11.9	8.7	11.2	8.7	9.6
Sigma-Aldrich Corp.	12.6	10.9	11.2	14.4	14.3	12.7	NA	NA
Average Industrial Technology (ex CCMP, DVSA)	11.4	9.4	10.5	12.5	11.7	11.1	9.3	10.0
Intel Corp.	9.9	14.2	+ve	19.4	11.5	13.7	9.9	8.3
Texas Instruments Inc.	6.8	12.7	+ve	26.4	16.1	15.5	8.9	7.9
STMicroelectronics	5.9	6.3	25.7	17.0	11.6	13.3	7.0	4.3
Infineon Technologies AG	NA	NA	+ve	+ve	7.8	7.8	4.4	3.8
Micron Technology Inc.	NA	6.3	+ve	+ve	NA	6.3	NA	NA
National Semiconductor Corp.	NA	7.3	29.2	22.0	7.6	16.5	7.0	8.0
LSI Logic Corp.	NA	NA	NA	NA	NA	NA	NA	NA
Advanced Micro Devices	16.6	2.6	13.5	-ve	4.9	9.4	2.5	5.0
International Rectifier Corp.	5.8	3.2	12.7	19.0	11.2	10.4	6.9	6.8
Cypress Semiconductor	3.0	2.4	16.9	16.0	9.8	9.6	6.6	5.5
Average Semis	8.0	6.9	19.6	20.0	10.1	12.9	6.7	6.2
MEMC Electronic Materials	+ve	9.9	-ve	9.4	6.0	8.4	7.9	7.7
ATMI, Inc.	NA	8.7	94.8	83.7	27.3	53.6	12.3	9.1

'+ve: EV/EBITDA>30 ; -ve: EV/EBITDA<0

(1) Revenue growth significantly exceeds group average.

Source: UBS estimates

Our 8.5 target multiple for MEMC implies a target EV/revenues of 2.7x, which compares to the 2.5x at which the industrial technology group is trading and to the 2.1x at which ATMI is trading (2005 basis).

Table 8: MEMC Valuation—EV/Revenues

Company Name	1999	2000	2001	2002	2003E	99-'03 Average	2004E	2005E
Cabot Microelectronics (1)	NA	NA	3.6	6.3	4.3	4.7	3.6	2.1
Cambrex Corp.	NA	1.6	2.4	3.3	2.9	2.5	NA	NA
Diversa Corp. (1)	NA	NA	33.7	14.2	5.9	17.9	4.4	4.2
3M Co.	2.3	2.2	2.4	2.9	2.8	2.5	2.8	3.0
Pall Corp.	2.6	2.4	2.4	2.3	1.7	2.3	1.7	1.9
Sigma-Aldrich Corp.	3.3	2.8	2.7	3.9	3.9	3.3	NA	NA
Average Industrial Technology (ex CCMP, DVSA)	2.7	2.3	2.5	3.1	2.8	2.7	2.3	2.5
Intel Corp.	4.6	6.5	13.5	7.0	4.9	7.3	4.3	3.5
Texas Instruments Inc.	2.2	4.2	12.3	6.7	4.1	5.9	2.7	2.5
STMicroelectronics	1.7	2.4	8.4	5.4	3.4	4.3	2.1	1.4
Infineon Technologies AG	NA	NA	7.4	3.7	1.7	4.3	1.0	0.8
Micron Technology Inc.	NA	2.6	8.1	7.2	NA	6.0	NA	NA
National Semiconductor Corp.	NA	1.8	4.4	2.6	1.8	2.7	2.1	2.5
LSI Logic Corp.	NA	NA	NA	NA	NA	NA	NA	NA
Advanced Micro Devices	1.4	0.8	2.3	2.4	1.1	1.6	0.7	1.3
International Rectifier Corp.	1.0	0.8	2.8	2.9	2.0	1.9	1.6	1.6
Cypress Semiconductor	0.8	1.0	4.4	3.3	2.3	2.4	1.8	1.5
Average Semis	1.9	2.5	7.1	4.6	2.7	3.8	2.0	1.9
MEMC Electronic Materials	1.8	1.8	3.2	1.6	1.3	2.0	2.3	2.3
ATMI, Inc.	NA	2.0	3.9	2.7	3.7	3.1	2.7	2.1

(1) Revenue growth significantly exceeds group average.

Source: UBS estimates

While our $12 target price implies a PE ratio of 12.2 times our 2005 EPS estimate of $0.98, we believe that given MEMC's low depreciation expense following the 2001 asset write-down, using PE multiples is not appropriate. Our preferred valuation metrics for MEMC are EV/EBITDA and EV/revenues, because they are independent of depreciation. The November 2001 asset revaluation related to TPG's acquisition of E.ON's interest in MEMC resulted in significantly lower depreciation charges. Prior to this asset writedown, deprecation was about $40-$50 million per quarter which compares to $10-$11 million per quarter currently. This implies that MEMC earnings are now higher than what they would be otherwise, distorting historical comparisons of PE multiples. Similarly, MEMC's shareholders' equity decreased significantly as a consequence of the push-down accounting applied in connection with the November 2001 transaction. As a result, historical comparisons of P/B multiples are also distorted and not a useful metric for estimating potential downside, in our view.

Estimate MEMC's Options Expense Likely Remains Low

Given the recent FASB announcement that option expensing will become mandatory starting in the second half of 2005, we expect this to affect earnings results of the SCE vendors, as nearly all the companies in this sector use stock options to compensate employees.

We estimate that MEMC's current pro forma EPS will only be impacted by about a penny per quarter, or about 5% of 2005E and 4% of 2006E EPS. This compares to the average of the eight semiconductor capital equipment companies that we cover of –14% and –8%, respectively.

Table 9: MEMC—Estimated Options Expense Impact to EPS

	CY02	CY03	CY04E	CY05E	CY06E
Pro forma EPS	-$0.20	$0.53	$0.87	$0.98	$0.98
Options Expense Per Share	-$0.13	-$0.07	-$0.07	-$0.05	-$0.04
Pro forma EPS Adjusted for Options Expense	-$0.33	$0.47	$0.80	$0.93	$0.94
% EPS Impact	n/a	-13%	-8%	-5%	-4%

Source: Company reports and UBS estimates

Industry Forecast

We estimate the wafer industry's revenues can grow 5% in both 2005 and 2006. Our base case scenario assumes wafer unit growth of 5% in 2005 and 6% in 2006, and average selling prices (ASPs) to remain about flat.

Forecast wafer industry growth of 5% in 2005 and 2006

Table 10: Wafer Industry Assumptions

	Wafer Volume	300mm wafer		ASP Growth			Revenue Growth	
	Growth	% of Total	Worst Case (2)	Base Case (1)	Best Case (3)	Worst Case	Base Case	Best Case
CAGR 1991 - 2003	9%		-2%	-2%	-2%	7%	7%	7%
2003A	10%	8%	0%	0%	0%	11%	11%	11%
2004E	21%	12%	1%	6%	6%	22%	28%	29%
2005E	5%	17%	-1%	0%	4%	4%	5%	9%
2006E	6%	19%	-3%	-1%	2%	3%	5%	8%
CAGR 2004 - 2007	6%		-2%	0%	2%	5%	6%	9%

(1) Base Case: Price of 300mm wafers declines by 26% in four years (2004-07)
(2) Worst Case: Price of 300mm wafers declines by 35% in four years (2004-07)
(3) Best Case: Price of 300mm wafers declines by 15% in four years (2004-07)
Source: UBS estimates

Average Selling Price Forecast

We believe ASPs can remain about flat in the next two years because of a better mix (i.e., higher sales of 300mm wafers, which currently sell at about 2.0x higher prices per square inch than 200mm wafers).

ASPs to remain approximately flat in 2005-06

We estimate 300mm wafers will represent about 17% of silicon area demand in 2005 and 19% in 2006. Our base case assumes 300mm wafers will represent about 17% of the total silicon area in 2005 (from about 12% in 2004) and 17% in 2006. We base our forecast on our own estimate of total silicon demand (5%-plus in 2005; 6% in 2006) and on Gartner Dataquest's forecast of 300mm wafer demand. Gartner estimates that 300mm wafer demand will run at 700,000 wafers per month at the end of 2004, and at about 1,000,000 at the end of 2005.

We expect 200mm and below wafer prices to remain stable. We believe prices of 200mm and lower diameter wafers will remain relatively stable over the next two years. Since margins on 300mm wafer sales are much higher than those on lower diameter wafers, we expect no significant capacity expansion for 200mm (or lower diameter) wafers. By our calculations, the declining proportion of 200mm and lower diameter wafers in the sales mix should be approximately offset by the overall volume growth.

We expect prices of 300mm wafers to continue to decline. Our base case assumes 300mm price declines of 15% in 2005 and 8% in 2006, as we expect capacity utilization rates (CUR) for 300mm wafers to start declining as new capacity comes on line.

We estimate 300mm wafer capacity at 744,000 wafers per month at the end of 2004 (Table 11). In 2005, we estimate that capacity additions would bring 300mm wafer capacity to 1,134-1,184 thousand wafers per month. Gartner Dataquest estimates that 300mm wafer demand will rise to about 1 million wafers per month by the end of 2005, from about 700,000 wafers per month by the end of 2004, which we believe is a reasonable forecast. This implies that capacity utilization rates for 300mm wafers could drop to the mid- to high 80s by the end of 2005, from the 90%-plus level registered in 2004. A factor that could mitigate the ASP decline of 300mm wafers is the expected decrease of test wafers (cheaper wafers used to test fabs' lines) in the mix, as 300mm wafer fabs ramp up.

Table 11: 300mm Wafer Capacity Estimates

Company	Capacity by End of 2004	Capacity by End of 2005
MEMC	100	150
Shin-Etsu Handotai	300	400
SUMCO	200	300
Siltronic	75	225
Other	69	109
Total Capacity (000 wafers/month)	744	1,134 - 1,184

Source: Company reports and UBS

Table 12: 300mm Wafer Demand Estimates

	Demand - End of 2004	Demand – End of 2005
Gartner Estimates (000 wafers/month)	700	1,000
Implied Capacity Utilization Rate	94%	84% - 88%

Source: Gartner Dataquest and UBS

Wafer Units Forecast

Expect wafer volume growth of 5% in 2005, 6% in 2006

We expect wafer volumes to be up 21% in 2004, which is significantly higher than the CAGR of 8.2% recorded in the last 12 years. We believe wafer unit growth in 2005 and 2006 will be 5% and 6%, respectively, below the historical CAGR.

■ MEMC Electronic Materials

MEMC, headquartered in St Peters, MO, is the world's only publicly traded pure-play silicon wafer manufacturer. The company produces and sells silicon wafers for the semiconductor industry, and is fourth in market share. MEMC sells its products to most semiconductor device manufacturers. Products include prime polished, epitaxial and test/monitor wafers in diameters ranging from 100mm to 300mm. The company operates nine plants that are strategically located close to the major semiconductor markets in the U.S., Europe, and Asia. Texas Pacific Group, a private equity company, controls MEMC.

■ Statement of Risk

MEMC's business is subject to the cyclicality of semiconductor demand, which can result in share price volatility. There is a risk of overcapacity of 300mm wafers in the future, which can result in price and margin erosion. In addition, continued investment in R&D and infrastructure are needed to ensure the long-term viability of the business which could limit EPS upside.

MEMC shares have low liquidity, as 63% are held by the company's controlling shareholder Texas Pacific Group (TPG). Potential share sales by TPG could increase the supply of shares in the market and limit appreciation in MEMC's share price. MEMC has historically used stock options to compensate its employees. As highlighted in our valuation section, we estimate that the company's potential stock option expense in CY06 is -$0.04 or 4% of our official $0.98 EPS estimate.

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Neutral 1	FSR is between -10% and 10% of the MRA, higher degree of predictability	**Neutral 2**	FSR is between -10% and 10% of the MRA, lower degree of predictability	**Hold/Neutral**	53%	35%
Reduce 1	FSR is > 10% below the MRA, higher degree of predictability	**Reduce 2**	FSR is > 10% below the MRA, lower degree of predictability	**Sell**	11%	29%

1: Percentage of companies under coverage globally within this rating category.

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Source: UBS; as of 31 December 2004.

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Forecast Stock Return (FSR) is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months.
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Companies mentioned

Company Name	Reuters	Rating	Price
3M Co.[2b,4b,6a,6b,6c,7,16]	MMM.N	Buy 1	US$84.96
Advanced Micro Dev.[16]	AMD.N	Reduce 2	US$15.02
ATMI, Inc.[16]	ATMI.O	Neutral 2	US$22.83

Company Name	Reuters	Rating	Price
Cabot Micro[16]	CCMP.O	Buy 2	US$36.21
Cambrex Corp.[16]	CBM.N	Not rated	US$24.50
Cypress Semicond.[4b,6a,6b,7,8,13,16]	CY.N	Neutral 2 (RRD)	US$10.00
Diversa Corp.[16]	DVSA.O	Buy 2	US$8.37
Infineon[2b,16]	IFXGn.F	Neutral 2	€7.48
Intel Corp.[6b,6c,7,8,16]	INTC.O	Buy 2	US$23.16
Intl. Rectifier[16]	IRF.N	Buy 2	US$37.71
LSI Logic Corp.[16]	LSI.N	Not rated	US$5.63
MEMC Electronic[2a,4a,6a,16]	WFR.N	Neutral 2	US$12.06
Micron Technology[4b,6a,16]	MU.N	Not rated	US$11.33
National Semiconduct[16]	NSM.N	Neutral 2 (RRD)	US$16.85
Pall Corp.[2a,4b,6a,6b,7,12,16]	PLL.N	Buy 2	US$27.42
Shin-Etsu Chemical[16]	4063.T	Buy 1 (RRD)	¥4,100
Sigma-Aldrich Corp.[16]	SIAL.O	Not rated	US$59.22
STMicroelectronics[2a,3,4b,16]	STM.PA	Reduce 2	€13.42
Texas Instruments[4a,5,6a,6b,7,8,16]	TXN.N	Buy 2	US$22.39

Price(s) as of 13 January 2005. Source: UBS.

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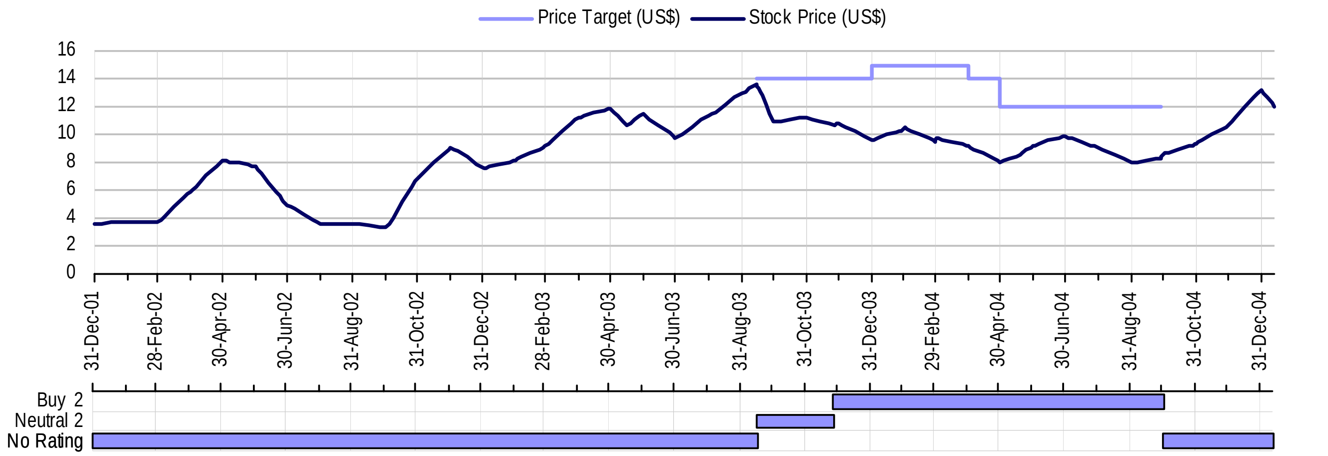
MEMC Electronic Materials (US$)



Source: UBS; as of 13 January 2005.

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