MEMC Electronic Materials WFR [NYSE]

Morningstar Rating	Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat	Stewardship Grade	Industry	Sector
★	44.86	20.00	13.00	30.00	High	None	C	Semiconductors	Hardware

Per share prices in USD

The good times at MEMC won't last forever.

by Andy Ng
Stock Analyst
Analysts covering this company do not own its stock.

Report updated on August 01, 2008.
Data and Rating updated as of August 08, 2008.

Currency amounts expressed with "$" are in U.S. dollars (USD) unless otherwise denoted.

Thesis Aug. 01, 2008

MEMC has been propelled by a strong pricing environment for silicon wafers, thanks to a supply shortage in the market. However, the firm is one of many players in a commodity industry that has seen its fair share of difficult downturns.

MEMC supplies bare silicon wafers, which are used by chipmakers to fabricate semiconductor chips. According to company estimates, there are fewer than 10 major players in the wafer market. MEMC ranks in the top three, though no single supplier holds a dominant position.

The firm barely avoided bankruptcy during the previous industry downturn after several years of heavy capital spending. It was rescued in 2001, when private-equity firm Texas Pacific Group acquired a 72% stake in the company from E.ON for only $6 plus the assumption of debt. TPG subsequently strengthened MEMC's balance sheet and returned the firm to profitability. The company has made huge strides in cost-cutting and streamlining operations; it generated free cash flow in each of the past several years.

MEMC is currently benefiting from strong demand and tight supply for wafers, which has increased its profits. Nevertheless, we think industry dynamics will eventually take their toll on MEMC. Wafers are commodity products and are subject to long-term price declines. Chipmakers transition to a larger wafer size about every seven to 10 years, which temporarily stabilizes prices, but there is minimal product differentiation within each product cycle. As a result, the marketplace tends to become flooded with supply over time, which exposes MEMC to mounting price pressures. We think the current strong pricing environment makes it compelling for suppliers to expand wafer manufacturing capacity, and this will bring increased competition and subsequent price erosion.

Historically, volume growth of the silicon wafer market has tracked unit shipments of semiconductor devices. We expect the chip industry to remain a long-term driver for overall wafer demand. The emergence of the solar panel market has added a new growth opportunity for the wafer industry. To capitalize on the trend, MEMC has signed 10-year silicon wafer supply agreements with several solar manufacturers, including Suntech and Conergy, that are worth roughly $15 billion-$18 billion in total.

MEMC has successfully transformed itself into a topnotch supplier in the wafer market, but we remain concerned about the cyclical pricing environment over the long term, over which MEMC has no control.

Valuation

Our fair value estimate for MEMC is $20 per share. Our model assumes 11% average sales growth during the next five years. This forecast is partly based on wafer unit demand roughly tracking broader shipments in the chip and solar industries. We believe the supply shortage in the wafer market that has been benefiting MEMC will persist for a couple of more years and expect the selling prices of wafers to remain relatively healthy through 2009. However, we believe the firm will face pricing pressures from 2010 forward as continued additions of production capacity throughout the industry alleviate the wafer shortage and actually cause excess supply to flood the market. As a result, we anticipate that operating margins will hover in the low 40s through 2009 but decline to the midteens starting in 2010. We assume some economies of scale in profitability, but margins will ultimately be limited by competitive pricing and the capital-intensity of the wafer business in the long run.

Risk

MEMC operates in a cyclical and very competitive industry. TPG has reduced its ownership stake in MEMC to 2.1%, compared with 24.8% in August 2006. Nonetheless TPG remains an influential shareholder, with representatives on MEMC's board of directors, and might

MEMC Electronic Materials WFR [NYSE]

Morningstar Rating	Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat	Stewardship Grade	Industry	Sector
★	44.86	20.00	13.00	30.00	High	None	C	Semiconductors	Hardware

Per share prices in USD

Close Competitors	Currency(Mil)	Market Cap	TTM Sales	Oper Income	Net Income
MEMC Electronic Materials	USD	10,134	2,042	916	662
Intel Corporation	USD	136,221	39,945	9,508	7,106
Taiwan Semiconductor Manufacturing	USD	54,138	10,793	3,848	3,731
Texas Instruments, Inc.	USD	33,742	13,843	3,648	2,782

Morningstar data as of August 08, 2008.

have interests that aren't aligned with those of individual shareholders. Customer concentration is another risk.

Bulls Say

- MEMC has made an impressive comeback since almost filing for bankruptcy in 2001. Its balance sheet is solid, and it is earning decent margins and generating free cash flow.
- The rapid emergence of the solar industry, combined with unit growth in the semiconductor market, will drive demand for silicon wafers.
- MEMC appears to be regaining some share in the semiconductor wafer market.

Bears Say

- Competitor Siltronic recently formed a silicon wafer joint venture with Samsung, a key customer for MEMC. As a result, MEMC could lose a significant portion of its business from Samsung.
- The wafer industry is capital-intensive and often suffers from overcapacity at some point in each product cycle.
- MEMC must compete with a large number of foreign rivals. Some of these overseas rivals are larger conglomerates that can afford to forgo profits for an extended time.

Financial Overview

Growth: Growth of the semiconductor and solar industries will drive long-term demand for wafers. However, sales can be volatile in the wafer industry because of pricing instability.

Profitability: A temporary supply shortage in the wafer market has boosted MEMC's profitability in the past several years. However, we do not expect current business conditions to last, given the ongoing industrywide expansions for wafer production capacity. As additional wafer supply comes online, we believe MEMC will face pricing pressures, causing declines in profitability.

Financial Health: MEMC's balance sheet has improved substantially during the past several years. The firm has $1.5 billion in cash and investments versus $857 million in total liabilities on its balance sheet. MEMC has started to use excess cash to repurchase shares in its stock-buyback program.

Company Overview

Profile: MEMC Electronic Materials produces silicon wafers that are the basic material used by chipmakers to fabricate semiconductors. The company operates manufacturing facilities in Europe, Japan, Malaysia, South Korea, Taiwan, and the U.S. Customers include manufacturers of computer memory and microprocessors.

Strategy: MEMC aims to strengthen its market position by maintaining technology leadership and providing customers with top-quality wafers. The firm carries a portfolio of wafers to meet chipmakers' specific needs and markets its products globally with a direct salesforce. MEMC is also focused on minimizing costs and streamlining the firm's global manufacturing infrastructure to maintain its profitability.

Management: Nabeel Gareeb has been president and CEO since April 2002. Before MEMC, Gareeb served in various roles, including COO, at International Rectifier from 1992 to 2002. CFO Ken Hannah joined MEMC in April 2006. Previously, Hannah was senior vice president of operations at Home Depot. He has also held various positions at Boeing and General Electric. Executive compensation appears reasonable, but none of the senior executives holds a significant stake in the firm. Texas Pacific Group, formerly the majority shareholder, no longer has an ownership interest in MEMC, but still has two representatives on the firm's eight-person board and therefore can exert considerable influence on MEMC. The company had to delay its regulatory filings for fiscal 2005 because of the restatement of financial results.

MEMC Electronic Materials WFR [NYSE]

Morningstar Rating	Last Price	Fair Value	Consider Buy	Consider Sell	Uncertainty	Economic Moat	Stewardship Grade	Industry	Sector
★	44.86	20.00	13.00	30.00	High	None	C	Semiconductors	Hardware

Per share prices in USD

Analyst Notes

May 06, 2008

MEMC's 1Q In Line

MEMC Electronic Materials reported first-quarter results that were in line with our expectations. The firm posted revenue of $501 million, a decrease of 6% from the fourth quarter. MEMC had production issues at one of its manufacturing facilities, which put a drag on revenue during the quarter. Given the supply shortages in the silicon wafer market, pricing remained strong and again helped MEMC report solid profitability. The firm reported a gross margin of 51.7% and achieved an operating income of $218 million.

Management said demand for wafers from the semiconductor industry has weakened a bit, while solar wafer business conditions remain strong. Nonetheless, even if overall wafer demand remains strong and grows, the enormous amounts of wafer production capacity coming online over the next several years will be tough on MEMC. We think the current wafer supply shortage will eventually give way to an oversupply situation, which will result in steep price declines for wafers and drastically reduced profitability for MEMC.

Apr. 23, 2008

MEMC Earnings Preview

MEMC Electronic Materials is scheduled to announce first-quarter results Thursday. The firm recently lowered its revenue forecast for the quarter to $500 million from $560 million because of production issues at a manufacturing facility. We believe it is only a matter of time until the silicon wafer supply shortage that has been boosting MEMC fades and ultimately gives way to deteriorating business conditions. We look forward to hearing about the latest happenings at MEMC and in the wafer market, and whether the firm is seeing any effects from the slowing economy.

Disclaimers & Disclosures

No Morningstar employees are officers or directors of this company. Morningstar Inc. does not own more than 1% of the shares of this company. Analysts covering this company do not own its stock. The information contained herein is not represented or warranted to be accurate, correct, complete, or timely. This report is for information purposes only, and should not be considered a solicitation to buy or sell any security.

MEMC Electronic Materials WFR

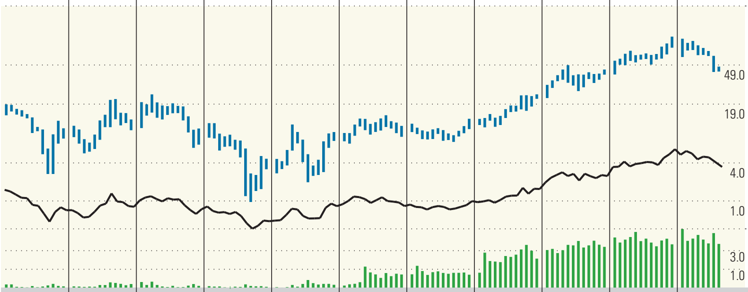
Sales Mil	Mkt Cap Mil	Industry	Sector
$2,042	$10,134	Semiconductors	Hardware

MEMC Electronic Materials produces silicon wafers that are the basic material used by chipmakers to fabricate semiconductors. The company operates manufacturing facilities in Europe, Japan, Malaysia, South Korea, Taiwan, and the U.S. Customers include manufacturers of computer memory and microprocessors.

501 Pearl Drive (City of O'Fallon)
St. Peters, MO 63376
Phone: 1 636 474-5000Website: http://www.memc.com

Morningstar Rating	Last Price	Fair Value	Uncertainty	Economic Moat	Stewardship Grade
★	$44.86	$20.00	High	None	C

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	YTD	
19.00	21.63	24.25	11.90	11.50	14.51	13.28	24.27	48.90	96.08	91.45	Annual Price High
2.94	5.38	6.25	1.05	2.25	7.00	7.33	10.70	22.17	39.14	41.58	Low
											Recent Splits



Price Volatility
Monthly High/Low
Rel Strength to S&P 500
52 week High/Low $
96.08 - 41.58
10 Year High/Low $
96.08 - 1.05
Bear-Market Rank
2 (10=worst)
Trading Volume Million

Growth Rates Compound Annual

Grade: B	1 Yr	3 Yr	5 Yr	10 Yr
Revenue %	24.7	23.2	22.8	6.9
Operating Income %	52.2	48.3	67.3	—
Earnings/Share %	121.1	51.7	—	—
Dividends %	—	—	—	—
Book Value/Share %	69.2	60.9	—	-6.2
Stock Total Return %	-21.7	37.7	34.8	16.8
+/- Industry	-2.7	41.6	34.1	15.3
+/- Market	-8.3	35.7	29.0	15.6

Profitability Analysis

Grade: B	Current	5 Yr Avg	Ind	Mkt
Return on Equity %	36.6	68.7	6.0	21.8
Return on Assets %	25.4	25.4	3.9	9.0
Fixed Asset Turns	2.5	2.8	2.4	7.3
Inventory Turns	20.8	8.3	5.1	12.8
Revenue/Employee $K	378.1	279.1*	312.3	949.5
Gross Margin %	52.6	39.1	41.2	31.9
Operating Margin %	44.9	29.4	8.4	17.8
Net Margin %	32.4	25.3	5.1	9.3
Free Cash Flow/Rev %	27.6	18.1	13.9	0.1
R&D/Rev %	2.0	0.0	—	11.0

Financial Position

Grade: B	12-07 $Mil	06-08 $Mil
Cash	859	1111
Inventories	36	34
Receivables	198	231
Current Assets	1590	1678
Fixed Assets	834	950
Intangibles	—	—
Total Assets	2887	2980
Payables	244	190
Short-Term Debt	5	6
Current Liabilities	444	451
Long-Term Debt	26	25
Total Liabilities	852	892
Total Equity	2035	2089

Stock Performance

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	YTD	Stock Performance
-44.3	44.1	-20.9	-63.4	113.2	27.1	37.7	67.3	76.5	126.1	-49.3	Total Return %
-71.0	24.6	-10.8	-50.4	136.6	0.7	28.7	64.3	62.9	122.6	-37.6	+/- Market
-94.0	-86.8	14.6	-50.2	166.6	-67.5	58.0	54.1	80.1	122.6	-34.2	+/- Industry
—	—	—	—	—	—	—	—	—	—	—	Dividend Yield %
344	685	674	247	1480	1991	2754	4898	8701	20274	10134	Market Cap $Mil

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TTM	Financials
759	694	872	618	687	781	1028	1107	1541	1922	2042	Revenue $Mil
-4.2	-1.5	14.8	-8.3	25.2	29.8	35.9	33.1	44.7	52.1	52.6	Gross Margin %
-333	-153	-12	-219	65	143	260	257	558	850	916	Oper Income $Mil
-43.9	-22.1	-1.4	-35.5	9.5	18.3	25.3	23.2	36.2	44.2	44.9	Operating Margin %
-316	-151	-43	-518	-5	117	226	249	369	826	662	Net Income $Mil
-7.80	-2.43	-0.62	-3.76	-0.17	0.53	1.02	1.10	1.61	3.56	2.85	Earnings Per Share $
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Dividends $
40	62	69	69	129	218	221	226	229	232	231	Shares Mil
9.85	7.74	5.26	-0.29	-0.13	0.94	2.13	3.22	5.25	8.88	9.25	Book Value Per Share $
-34	-103	52	-25	87	127	283	321	528	917	907	Oper Cash Flow $Mil
-195	-49	-58	-50	-22	-85	-150	-163	-148	-276	-344	Cap Spending $Mil
-228	-152	-6	-74	65	42	133	158	379	641	564	Free Cash Flow $Mil

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TTM	Profitability
-17.8	-8.7	-2.4	-42.8	-3.7	17.2	26.1	23.1	25.4	35.5	25.4	Return on Assets %
-57.6	-36.4	-10.9	—	—	138.1	71.1	43.2	39.3	51.6	36.6	Return on Equity %
-41.7	-21.8	-5.0	-83.9	-0.7	14.9	22.0	22.5	24.0	43.0	32.4	Net Margin %
0.43	0.40	0.48	0.51	1.16	1.15	1.18	1.03	1.06	0.83	0.78	Asset Turnover
4.4	4.0	5.2	—	—	3.8	2.3	1.6	1.5	1.4	1.4	Financial Leverage

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	06-08	Financial Health
41	86	87	42	78	121	175	211	642	1145	1228	Working Capital $Mil
871	870	943	145	161	59	116	35	29	26	25	Long-Term Debt $Mil
399	433	366	-20	-25	194	443	711	1167	2035	2089	Total Equity $Mil
2.18	2.01	2.57	—	—	0.31	0.26	0.05	0.03	0.01	0.01	Debt/Equity

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	TTM	Valuation
—	—	—	—	—	18.1	13.0	20.2	24.3	24.9	15.8	Price/Earnings
—	—	—	—	—	0.9	0.7	1.2	1.4	1.5	0.8	P/E vs. Market
0.5	1.1	0.7	0.4	1.4	2.7	2.9	4.5	5.8	10.7	5.1	Price/Sales
0.9	1.6	1.8	—	—	10.3	6.2	6.9	7.5	10.0	4.8	Price/Book
—	—	11.6	—	11.3	16.5	10.4	15.4	16.8	22.4	11.5	Price/Cash Flow

Valuation Analysis

	Current	5 Yr Avg	Ind	Mkt
Price/Earnings	15.8	20.1	33.8	19.8
Forward P/E	8.7	—	—	14.1
Price/Cash Flow	11.5	16.3	6.9	12.8
Price/Free Cash Flow	18.4	31.7	12.5	22.7
Dividend Yield %	—	—	—	2.5
Price/Book	4.8	8.2	7.9	3.9
Price/Sales	5.1	5.3	1.7	2.6
PEG Ratio	0.3	—	—	1.3

*3Yr Avg data is displayed in place of 5Yr Avg

Quarterly Results

Revenue $Mil	Sep 07	Dec 07	Mar 08	Jun 08
Most Recent Period	472.8	535.9	501.4	531.4
Prior Year Period	407.9	420.6	440.4	472.7

Rev Growth %	Sep 07	Dec 07	Mar 08	Jun 08
Most Recent Period	15.9	27.4	13.9	12.4
Prior Year Period	45.3	38.6	28.9	27.6

Earnings Per Share $	Sep 07	Dec 07	Mar 08	Jun 08
Most Recent Period	0.65	1.62	-0.18	0.76
Prior Year Period	0.40	0.56	0.58	0.70

Industry Peers by Market Cap

	Mkt Cap $Mil	Rev $Mil	P/E	ROE%
MEMC Electronic Mate	10134	2042	15.8	36.6
Intel Corporation	136221	39945	20.0	17.8
Taiwan Semiconductor	54138	10793	13.5	22.8

Major Fund Holders

	% of shares
	—
	—
	—

Morningstar's Approach to Rating Stocks

Our Key Investing Concepts

- Economic Moat
- Discounted Cash Flow
- Discount Rate
- Fair Value
- Uncertainty
- Margin of Safety
- Consider Buying/Consider Selling
- Stewardship Grades

At Morningstar, we evaluate stocks as pieces of a business, not as pieces of paper. We think that purchasing shares of superior businesses at discounts to their intrinsic value and allowing them to compound their value over long periods of time is the surest way to create wealth in the stock market.

We rate stocks 1 through 5 stars, with 5 the best and 1 the worst. Our star rating is based on our analyst's estimate of how much a company's business is worth per share. Our analysts arrive at this "fair value estimate" by forecasting how much excess cash--or "free cash flow"--the firm will generate in the future, and then adjusting the total for timing and risk. Cash generated next year is worth more than cash generated several years down the road, and cash from a stable and consistently profitable business is worth more than cash from a cyclical or unsteady business.

Stocks trading at meaningful discounts to our fair value estimates will receive high star ratings. For high-quality businesses, we require a smaller discount than for mediocre ones, for a simple reason: We have more confidence in our cash-flow forecasts for strong companies, and thus in our value estimates. If a stock's market price is significantly above our fair value estimate, it will receive a low star rating, no matter how wonderful we think the business is. Even the best company is a bad deal if an investor overpays for its shares.

Our fair value estimates don't change very often, but market prices do. So, a stock may gain or lose stars based just on movement in the share price. If we think a stock's fair value is $50, and the shares decline to $40 without much change in the value of the business, the star rating will go up. Our estimate of what the business is worth hasn't changed, but the shares are more attractive as an investment at $40 than they were at $50.

Because we focus on the long-term value of businesses, rather than short-term movements in stock prices, at times we may appear out of step with the overall stock market. When stocks are high, relatively few will receive our highest rating of 5 stars. But when the market tumbles, many more will likely garner 5 stars. Although you might expect to see more 5-star stocks as the market rises, we find assets more attractive when they're cheap.

We calculate our star ratings nightly after the markets close, and issue them the following business day, which is why the rating date on our reports will always be the previous business day. We update the text of our reports as new information becomes available, usually about once or twice per quarter. That is why you'll see two dates on every Morningstar stock report. Of course, we monitor market events and all of our stocks every business day, so our ratings always reflect our analyst's current opinion.

Economic Moat

This is our assessment of a firm's ability to earn returns consistently above its cost of capital in the future, usually by virtue of some competitive advantage. Competition tends to drive down such economic profits, but companies

Morningstar Research Methodology for Valuing Companies

Competitive Analysis → **Economic Moat Rating** → Company Valuation → **Fair Value Estimate** → Uncertainty Assessment → ★★★★★

Competitive Analysis

Analyst conducts company and industry research:

- Management interviews
- Conference calls
- Trade-show visits
- Competitor, supplier, distributor, and customer interviews

Economic Moat Rating

The depth of the firm's competitive advantage is rated:

- None
- Narrow
- Wide

Company Valuation

Analyst considers company financial statements and competitive position to forecast future cash flows.

Assumptions are input into a discounted cash-flow model.

Fair Value Estimate

DCF model leads to the firm's Fair Value Estimate, which anchors the rating framework.

Uncertainty Assessment

An uncertainty assessment establishes the margin of safety required for the stock rating.

★★★★★

★
★★
★★★
★★★★
★★★★★

The current stock price relative to fair value, adjusted for uncertainty, determines the rating.

that can earn them for an extended time by creating a competitive advantage possess an economic moat. We see these companies as superior investments.

We're big fans of companies that are low-cost producers, create high switching costs for their customers, or have strong brands or long-lasting patents, because all of these characteristics allow companies to protect their competitive position. For example, Tiffany is far more profitable than a run-of-the-mill jewelry chain because it has a strong brand that creates a moat around its business, allowing it to charge more than competitors.

Discounted Cash Flow
This is a method for valuing companies that involves projecting the amount of cash a business will generate in the future, subtracting the amount of cash that the company will need to reinvest in its business, and using the result to calculate the worth of the firm. We use this technique to value nearly all of the companies we cover.

Discount Rate
We use this number to adjust the value of our forecasted cash flows for the risk that they may not materialize. For a profitable company in a steady line of business, we'll use a lower discount rate, also known as "cost of capital," than for a firm in a cyclical business with fierce competition, since there's less risk clouding the firm's future.

Fair Value
This is the output of our discounted cash-flow valuation models, and is our per-share estimate of a company's intrinsic worth. We adjust our fair values for off-balance sheet liabilities or assets that a firm might have--for example, we deduct from a company's fair value if it has issued a lot of stock options or has an under-funded pension plan. Our fair value estimate differs from a "target price" in two ways. First, it's an estimate of what the business is worth, whereas a price target typically reflects what other investors may pay for the stock. Second, it's a long-term estimate, whereas price targets generally focus on the next two to 12 months.

Uncertainty
To generate the Morningstar Uncertainty Rating, analysts consider factors such as sales predictability, operating leverage, and financial leverage. Analysts then classify their ability to bound the fair value estimate for the stock into one of several uncertainty levels: Low, Medium, High, Very High, or Extreme. The greater the level of uncertainty, the greater the discount to fair value required before a stock can earn 5 stars, and the greater the premium to fair value before a stock earns a 1-star rating.

Margin of Safety
This is the discount to fair value we would require before recommending a stock. We think it's always prudent to buy stocks for less than they're worth.The margin of safety is like an insurance policy that protects investors from bad news or overly optimistic fair value estimates. We require larger margins of safety for less predictable stocks, and smaller margins of safety for more predictable stocks.

Consider Buying/Consider Selling
The consider buying price is the price at which a stock would be rated 5 stars, and thus the point at which we would consider the stock an extremely attractive purchase. Conversely, consider selling is the price at which a stock would have a 1 star rating, at which point we'd consider the stock overvalued, with low expected returns relative to its risk.

Stewardship Grades
We evaluate the commitment to shareholders demonstrated by each firm's board and management team by assessing transparency, shareholder friendliness, incentives, and ownership. We aim to identify firms that provide investors with insufficient or potentially misleading financial information, seek to limit the power of minority shareholders, allow management to abuse its position, or which have management incentives that are not aligned with the interests of long-term shareholders. The grades are assigned on an absolute scale--not relative to peers--and can be interpreted as follows: A means "Excellent," B means "Good," C means "Fair," D means "Poor," and F means "Very Poor."