MIRAE ASSET
Building on principles

Overweight (Maintain)

Industry Report
July 19, 2018

Mirae Asset Daewoo Co., Ltd.

[Oil Refining/Chemicals/Renewables]

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Chemicals/Solar PV/Oil Refining

Poised for a near-term pickup

[Chemicals] Poised for a near-term pickup; LG Chem remains our top pick

Sluggish chemicals cycle to cripple 3Q18 earnings: The chemicals cycle has weakened sharply since March. While we expect 2Q18 earnings results to be in line with the consensus, it looks increasingly likely that 3Q18 earnings will be 10-20% lower than consensus expectations, if current conditions continue. The key issue will be the recovery of the chemicals cycle.

Weak demand largely due to China's credit tightening: We believe one of the biggest reasons for the weakness in the chemicals cycle is China's credit tightening, which has dampened infrastructure spending and stymied cash liquidity. However, recent concerns about economic growth have prompted the People's Bank of China (PBOC) to cut the reserve requirement ratio and shift to a more easing stance. As such, we think China's infrastructure spending is likely to pick up in 2H18, supporting a near-term recovery in the chemicals cycle in 3Q18. We also note that MEG inventory has come down to more normal levels. Considering that chemicals stocks have already pulled back quite a bit and typically move in line with spot spreads, we believe a near-term recovery in the chemicals cycle will trigger a rebound in stock prices across the sector.

Strength of rebound: We think the sector rebound may prove to be weaker compared with the past several years, given: 1) lingering worries over demand, due to US rate hikes and trade tensions; 2) the expected increase in supply from 2022, which may make stocks less attractive to long-term investors; and 3) the decreasing appeal of naphtha crackers relative to ethane crackers as a result of tight crude supply. At the stock level, we believe non-ethylene/downstream names (rather than ethylene names) or stocks with individual momentum are better positioned for a rebound.

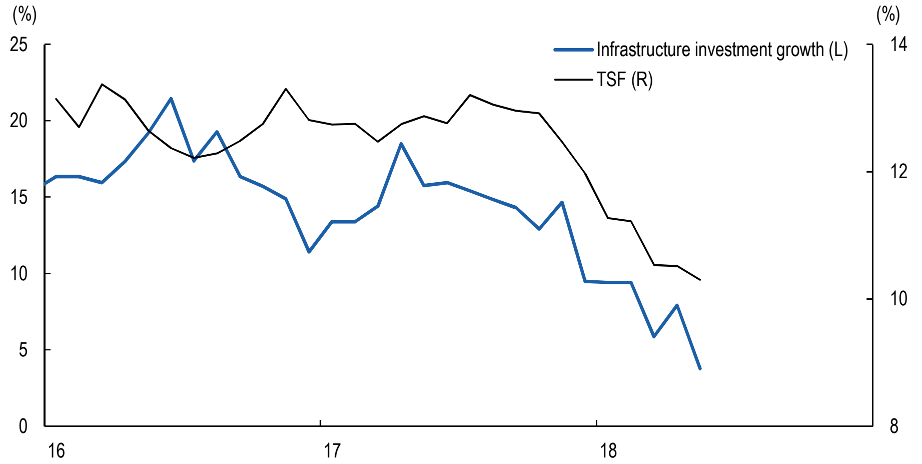
LG Chem (051910 KS/Buy/TP: W460,000/CP: W331,000) remains our top pick: We believe LG Chem is currently undervalued, given the value of its mid/large-sized battery business. We expect the stock to bounce back if the chemicals cycle picks up in the near term.

[Solar PV/Oil refining] Polysilicon prices bottoming out; balancing between oil prices and IMO rules

Polysilicon prices bottoming out: Polysilicon prices have slumped to the cash cost level of leading polysilicon suppliers, which are now beginning to adjust utilization. As such, we believe polysilicon prices are bottoming out.

Balancing between oil prices and IMO rules; favor S-Oil: We expect refining stocks to remain range-bound as investors weigh worries about oil prices against the positive impact of the International Maritime Organization's (IMO) regulations. Within the sector, we favor S-Oil (010950 KS/BUY/TP: W150,000/CP: W114,500), given its high dividend yield and pure exposure to oil refining.

China's total social financing (TSF) and infrastructure investment growth



Source: Mirae Asset Daewoo Research

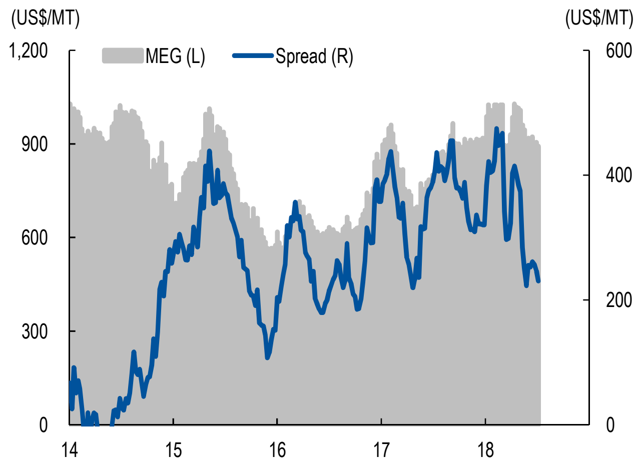
1. Near-term outlook hinges on China's monetary policy; pickup in 3Q18 looks likely

The chemicals cycle, which began to weaken in March, has yet to pick up as of mid-July. While we expect 2Q18 results to be in line with the consensus, it looks increasingly likely that earnings will contract in 3Q18. The question is: Why is the chemicals cycle softening, and when will it recover? Some blame the softness on the operation of ethane crackers and rising oil prices, but we believe the main culprit is weak demand, considering that prices are also falling for products facing no capacity additions (ABS, PVC, etc.).

We believe one of the biggest reasons for the weakness in demand is China's credit tightening. This has led to a steep decline in China's fixed asset investments (including infrastructure spending), which are closely tied to demand for chemical products. We think China's tighter financial conditions have squeezed liquidity for those related to the chemicals supply chain. In addition, the trade dispute between the US and China is likely to have had some negative impact on export orders.

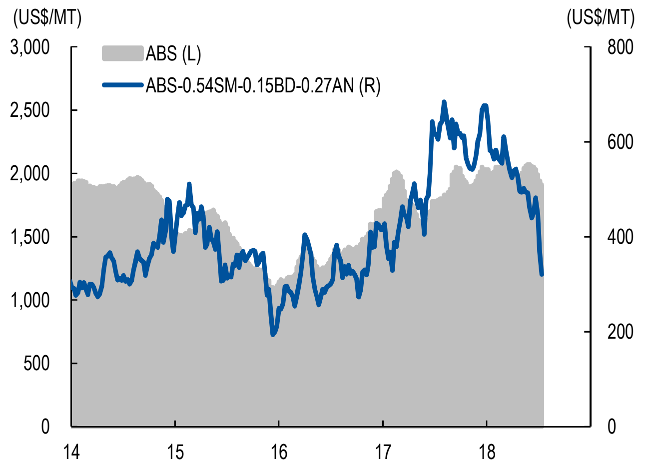
Recently, however, Chinese authorities have been moving toward easing monetary policy, including cutting the reserve requirement ratios. If infrastructure spending gets back on track, this should help revive demand, supporting a near-term recovery in the chemicals cycle. MEG inventory has also come down to more normal levels, further raising the prospect of a recovery in 3Q18.

Figure 1. MEG spread trend



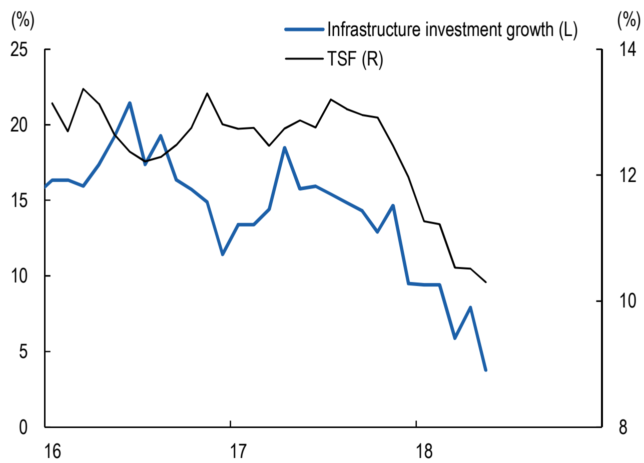
Source: Cischem, Mirae Asset Daewoo Research

Figure 2. ABS spread trend



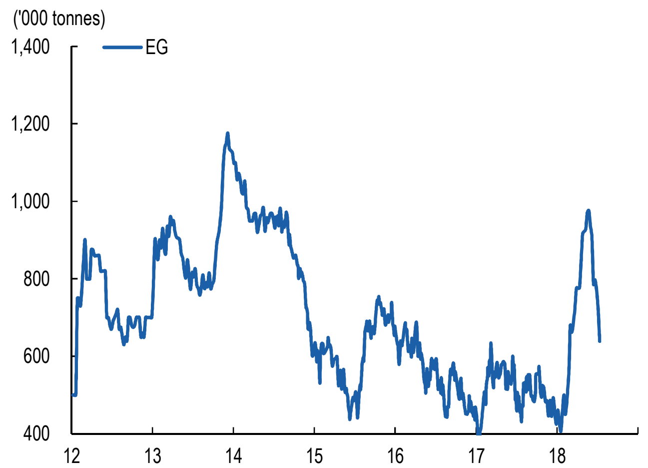
Source: Cischem, Mirae Asset Daewoo Research

Figure 3. China's total social financing (TSF) and infrastructure investment growth



Source: Bloomberg, Mirae Asset Daewoo Research

Figure 4. MEG inventory trend in Eastern China



Source: Wind, Mirae Asset Daewoo Research

2. Strength of rebound; LG Chem remains our top pick

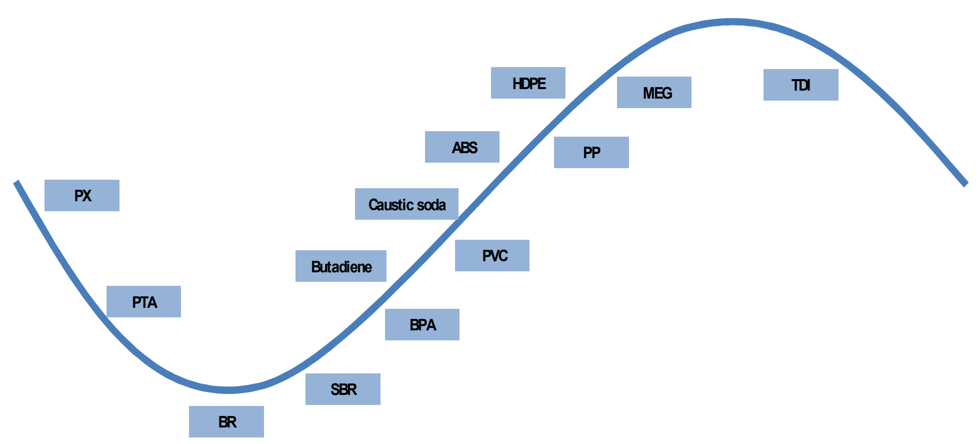
Chemicals stocks have generally pulled back, due to the softening chemicals cycle, rising oil prices, and concerns about global growth. While earnings estimates for the coming quarters will likely move lower, we think this has been more than reflected in the pullback in stock prices, making valuations more attractive. We believe a near-term recovery in the chemicals cycle will trigger a rebound in stock prices across the sector.

That said, we think the sector rebound may prove to be weaker, compared with the past several years, given: 1) lingering worries over demand, due to US rate hikes and trade tensions; 2) the expected increase in supply from 2022, which may make chemical stocks less attractive to medium/long-term investors; and 3) the decreasing appeal of naphtha crackers relative to ethane crackers as a result of tight crude supply. At the stock level, we believe non-ethylene/downstream names (rather than ethylene names) or stocks with individual momentum will deliver better returns.

We maintain LG Chem as our top pick. The shares have come under pressure on worries about the chemicals segment. However, we believe the battery business alone is worth W12tr and think concerns about chemicals have now been largely priced in. We expect the stock to bounce back if the chemicals cycle picks up in 3Q18.

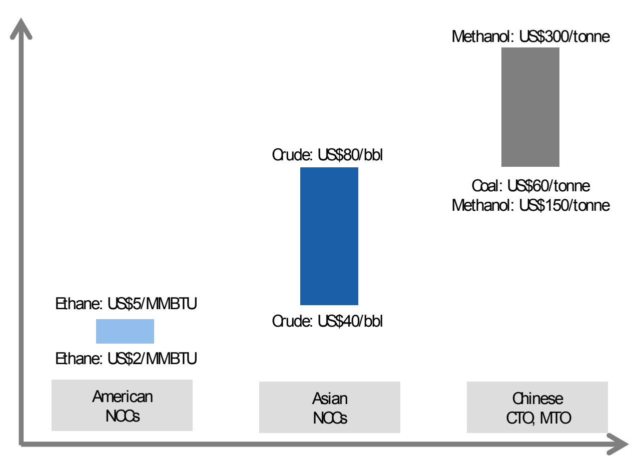
From a medium-term perspective, we remain bullish on Kumho Petrochemical (011780 KS/Buy/TP: 150,000/CP: W111,500), as the company is mainly engaged in the non-ethylene/downstream chain, which is likely to recover over the medium term.

Figure 5. Market cycle outlook by product



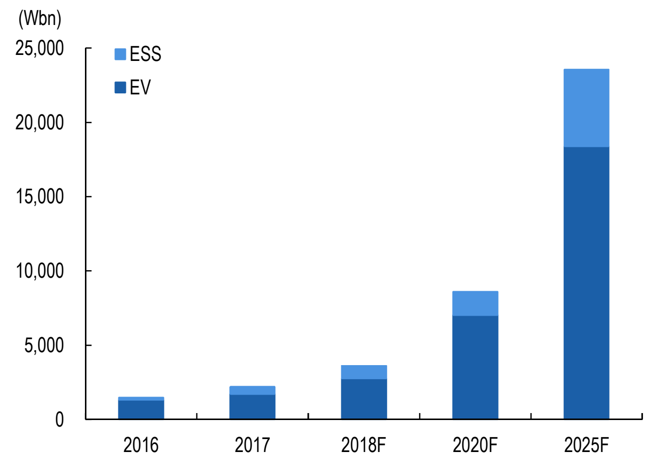
Source: Mirae Asset Daewoo Research

Figure 6. Ethylene cost curve



Source: Mirae Asset Daewoo Research

Figure 7. LG Chem's EV and ESS battery revenue outlook



Source: Mirae Asset Daewoo Research

3. [Solar PV] Polysilicon prices are bottoming out

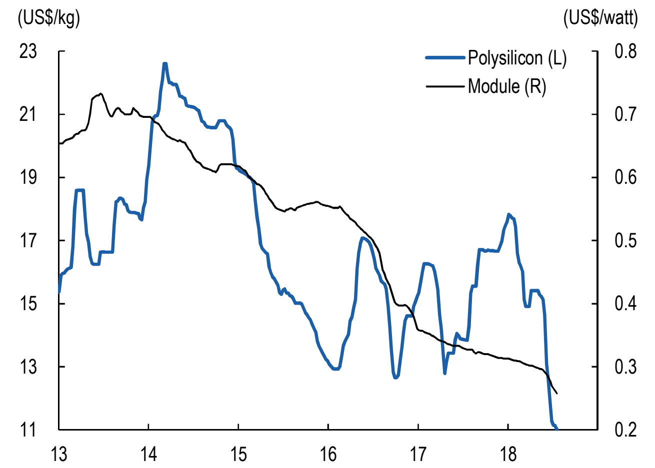
Prices across the solar PV supply chain have plummeted since China's unexpected announcement of policy changes in May. We believe the virtual disappearance of China demand in the near term has sparked aggressive inventory adjustments across the supply chain. However, with polysilicon prices now down to the cash cost level (US$11/kg) of leading suppliers, many are now beginning to scale back utilization. As such, we believe polysilicon prices are bottoming out.

We expect earnings at related companies to decline sharply in 2Q-3Q18. In particular, weaker polysilicon prices coupled with increased costs due to lower utilization should weigh heavily on 3Q18 earnings. That said, we think earnings momentum is bottoming out, alongside polysilicon prices.

Looking ahead, the pace of recovery will likely hinge on demand. The good news is that demand forecasts are being revised upwards in several markets. Among them, India has recently revealed plans to auction 30GW of solar power over the next two years and install 30GW annually through 2028. China's demand, though essentially nonexistent in the near term, should also recover heading into 4Q18, led by the top runner and poverty alleviation programs.

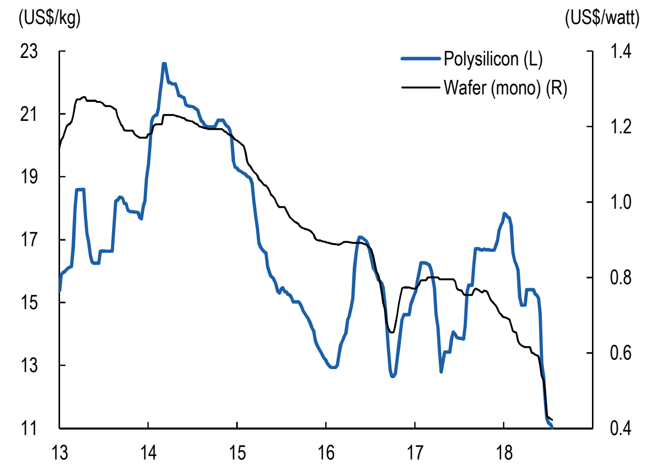
With some polysilicon capacity expansions planned in 4Q18-1Q19, the pace of market recovery will likely depend on how fast demand turns around. Nevertheless, we believe polysilicon prices have now reached levels where further downside is fairly limited.

Figure 8. Polysilicon and module price trends



Source: PV Insights, Mirae Asset Daewoo Research

Figure 9. Mono wafer and polysilicon price trends



Source: PV Insights, Mirae Asset Daewoo Research

4. [Oil refining] Balancing between oil prices and IMO rules; favor S-Oil

In our view, the share prices of oil refineries will be largely determined by oil price levels and the implementation of IMO regulations.

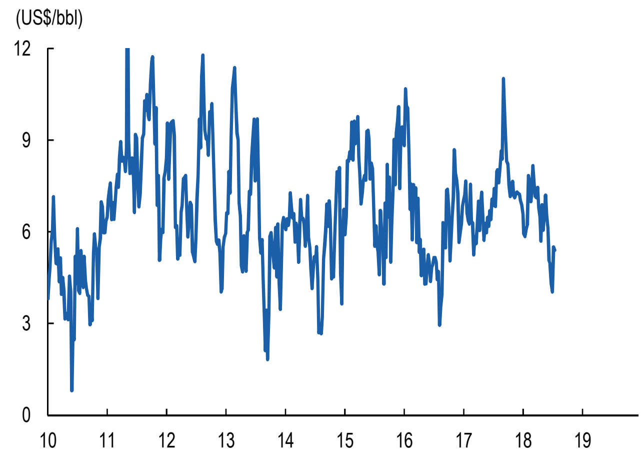
While refining margins have lately been weaker than expected, margins have historically rebounded after touching US$4/bbl—the level at which refineries start to adjust utilization. We thus think any sharp declines in refining margins are unlikely. That said, oil price levels will likely be a more important variable in the near term, as any rise in oil prices would erode earnings power by pushing up official selling prices (OSP) and fuel costs.

Meanwhile, expectations on the IMO regulations could start to build in 2019. The implementation of the IMO rules is likely to cripple high-sulfur fuel oil (HFO) margins and boost diesel/kerosene margins. From a medium-term perspective, it is also positive that refiners face limited risks of capacity expansions.

That said, we believe refining stocks will generally remain range-bound, as it remains uncertain where oil prices are headed or whether the IMO requirements will be mandatory.

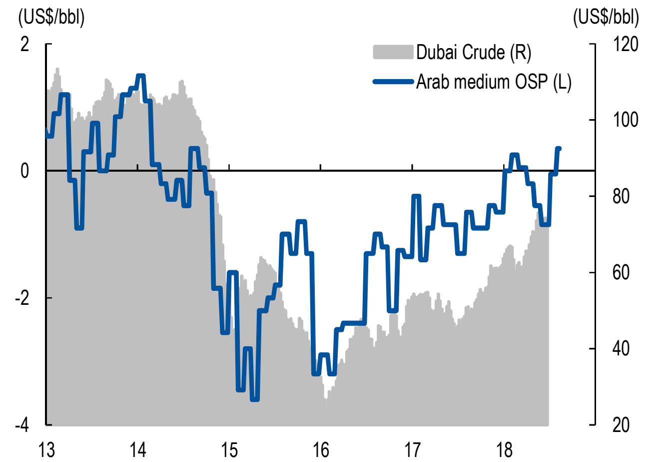
Within the sector, we favor S-Oil. We believe the stock's high dividend yield makes it more resilient against macro uncertainties, and its pure exposure to oil refining means the company has strong upside potential to earnings when refining margins pick up.

Figure 10. Singapore complex refining margin trend



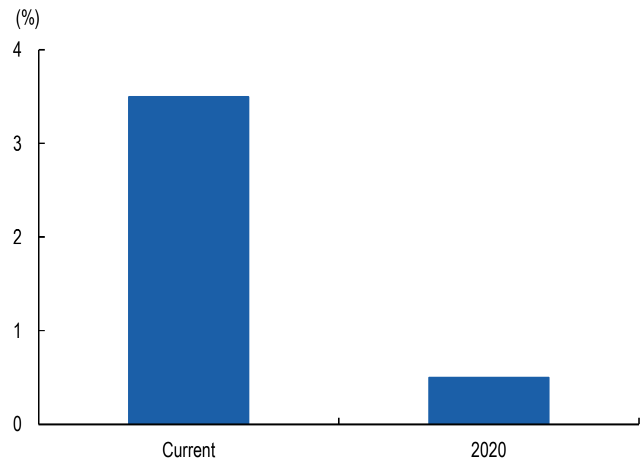
Source: Thomson Reuters, Mirae Asset Daewoo Research

Figure 11. Dubai crude and OSP



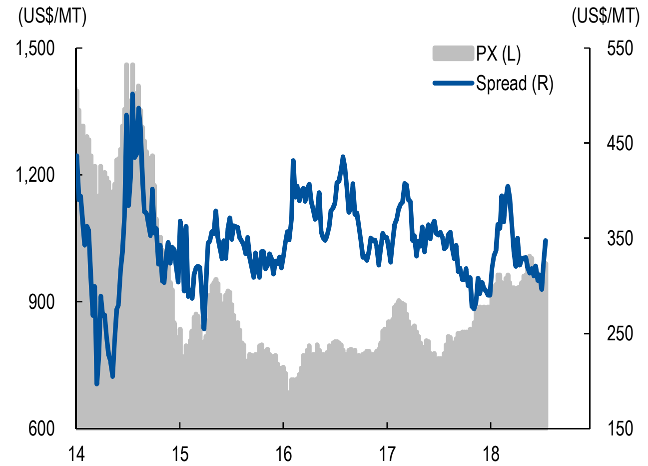
Source: Bloomberg, Mirae Asset Daewoo Research

Figure 12. IMO to strengthen sulfur cap regulations



Source: Mirae Asset Daewoo Research

Figure 13. PX spread trend



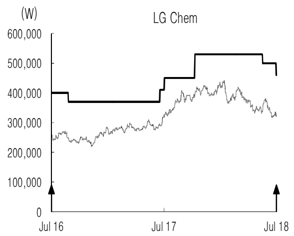
Source: Cischem, Mirae Asset Daewoo Research

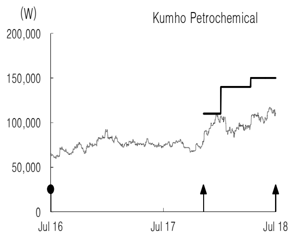
APPENDIX 1

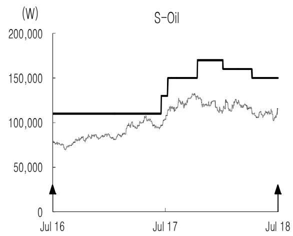
Important Disclosures & Disclaimers

2-Year Rating and Target Price History

Company (Code)	Date	Rating	Target Price	Company (Code)	Date	Rating	Target Price
LG Chem (051910)	07/17/2018	Buy	460,000		07/06/2017	After 1yr	
	06/03/2018	Buy	500,000		07/06/2016	Hold	-
	10/26/2017	Buy	530,000	S-Oil (010950)	04/25/2018	Buy	150,000
	07/19/2017	Buy	450,000		01/21/2018	Buy	160,000
	07/05/2017	Buy	410,000		10/30/2017	Buy	170,000
	09/11/2016	Buy	370,000		07/26/2017	Buy	150,000
	06/01/2016	Buy	400,000		07/05/2017	Buy	130,000
Kumho Petrochemical (011780)	04/28/2018	Buy	150,000		03/22/2017	After 1yr	
	01/21/2018	Buy	140,000		03/22/2016	Buy	110,000
	11/26/2017	Buy	110,000				







Stock Ratings	
Buy	: Relative performance of 20% or greater
Trading Buy	: Relative performance of 10% or greater, but with volatility
Hold	: Relative performance of -10% and 10%
Sell	: Relative performance of -10%

Industry Ratings	
Overweight	: Fundamentals are favorable or improving
Neutral	: Fundamentals are steady without any material changes
Underweight	: Fundamentals are unfavorable or worsening

Ratings and Target Price History (Share price (—), Target price (▬), Not covered (■), Buy (▲), Trading Buy (■), Hold (●), Sell (◆))

* Our investment rating is a guide to the relative return of the stock versus the market over the next 12 months.
* Although it is not part of the official ratings at Mirae Asset Daewoo Co., Ltd., we may call a trading opportunity in case there is a technical or short-term material development.
* The target price was determined by the research analyst through valuation methods discussed in this report, in part based on the analyst's estimate of future earnings.
* The achievement of the target price may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.

Equity Ratings Distribution & Investment Banking Services

	Buy	Trading Buy	Hold	Sell
Equity Ratings Distribution	73.40%	14.78%	11.82%	0.00%
Investment Banking Services	77.42%	9.68%	12.90%	0.00%

* Based on recommendations in the last 12-months (as of June 30, 2018)

Disclosures

As of the publication date, Mirae Asset Daewoo Co., Ltd. has acted as a liquidity provider for equity-linked warrants backed by shares of S-Oil, LG Chem as an underlying asset, and other than this, Mirae Asset Daewoo has no other special interests in the covered companies.

Analyst Certification

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