

1. News Summary (3 page)

2017년 8월 10일

News	
WTI comment	美원유재고 감소에 강세...WTI 0.8%↑
Headline	SK이노베이션, 텍사스산 원유 들어온다
News 1.	롯데케미칼, UK Wilton의 PET 생산시설 force majeure 선언
News 2.	美테슬라 인기여파? 전기차 배터리 대세 '각형' 급격히 무너졌다
News 3.	-
News 4.	-

Conclusion	
	미국의 환율, 무역 압박 속에서 미국산 에너지 수입은 불가피할 전망
	유럽 지역 PET 스팟 시장에서 일시적으로 공급 차질을 빚을 전망
	에너지 밀도가 높은 파우치형 보급이 EV 배터리 시장에서 더 확대될 것
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2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	49.6	0.8	(0.1)	8.9	4.7	18.8
Dubai	\$/bbl	51.2	0.0	1.9	9.4	5.9	23.9
Gasoline	\$/bbl	67.7	0.0	2.7	10.9	7.6	37.1
Diesel	\$/bbl	63.8	0.0	(1.0)	6.0	7.6	26.2
Complex margin ¹	\$/bbl	8.4	0.0	(0.4)	(0.0)	1.2	4.6
1M lagging	\$/bbl	13.6	1.0	1.0	4.8	10.7	10.4
Petrochemical			%	%	%	%	%
Naphtha	\$/t	468	0.8	(1.7)	12.6	8.1	31.9
Butadiene	\$/t	910	0.0	0.0	(6.7)	(25.7)	(9.5)
HDPE	\$/t	1,120	0.0	0.9	3.7	0.0	(1.3)
MEG	\$/t	870	(1.1)	(1.1)	7.3	24.1	42.4
PX	\$/t	814	(0.4)	(0.5)	6.1	4.8	4.4
SM	\$/t	1,124	1.3	1.0	1.7	12.6	12.6
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.88	2.2	2.6	(3.1)	(15.1)	(3.3)
Natural rubber	\$/t	1,490	0.7	4.2	1.4	0.7	16.4
Cotton	C/lbs	71.8	(0.1)	0.1	5.4	(6.1)	0.9

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	08/07	\$/t	1,030	5.6	17.7	(5.1)	0.0
Propylene	08/07	\$/t	770	1.0	2.0	6.2	13.2
Benzene	08/07	\$/t	750	1.0	1.0	(0.7)	22.0
Toluene	08/07	\$/t	650	2.4	3.2	(0.8)	14.0
Xylene	08/07	\$/t	633	1.6	2.8	(1.2)	5.4
PP	08/07	\$/t	1,088	1.4	5.8	3.8	7.7
PVC	08/07	\$/t	860	0.0	(1.1)	(2.0)	6.8
ABS	08/07	\$/t	1,850	1.6	3.4	12.8	36.3
SBR	08/07	\$/t	1,490	0.0	2.8	(16.8)	8.0
SM	08/07	\$/t	1,150	(1.9)	(0.9)	8.0	11.1
BPA	08/07	\$/t	1,543	0.2	3.0	13.4	1.0
Caustic	08/07	\$/t	468	1.1	3.3	4.5	55.8
2-EH	08/07	\$/t	960	(1.0)	5.5	3.8	27.2
Caprolactam	08/07	\$/t	1,760	1.7	9.3	(0.6)	34.4
Solar				%	%	%	%
Polysilicon	08/02	\$/kg	15.6	1.4	12.2	15.8	(0.4)
Module	08/02	\$/W	0.33	0.0	(0.6)	(2.4)	(27.3)

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	80.2	0.3	(0.5)	(0.0)	(2.6)	(9.6)
Shell	EUR	2,213	(0.0)	2.5	8.3	5.8	15.4
Petrochina	CNY	8.12	(0.7)	(0.2)	4.1	8.4	11.5
Gazprom	RUB	118.7	(0.8)	(0.3)	(3.5)	(11.7)	(13.6)
Petrobras	BRL	13.5	0.2	0.1	13.3	(4.4)	13.8
Refinery							
Phillips66	USD	84.5	(0.6)	(2.5)	2.3	6.1	10.1
Valero	USD	66.9	(1.3)	(2.3)	(1.8)	0.5	27.5
JX	JPY	508.3	3.3	3.3	3.5	(1.1)	36.2
Neste Oil	EUR	34.7	(0.4)	(6.4)	(0.9)	(8.1)	(7.1)

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	80.8	(0.9)	0.2	(0.5)	(10.2)	12.5
Dow Chemical	USD	63.5	0.1	(1.2)	(0.6)	2.7	18.9
SABIC	SAR	98.0	(0.2)	0.7	(2.8)	0.9	16.7
Formosa Pla.	TWD	92.8	(0.4)	2.0	(0.6)	4.9	17.8
Shin-Etsu	JPY	9,523	(4.3)	(7.6)	(4.2)	(3.8)	32.4
Renewable							
Wacker	EUR	103.1	(1.9)	(1.9)	8.7	3.1	24.0
First Solar	USD	47.43	(0.9)	(2.5)	20.4	32.6	13.9
GCL-Poly	HKD	0.92	0.0	8.2	5.7	(2.1)	(15.6)
Tesla Motors	USD	363.5	(0.5)	11.5	16.1	13.2	58.7

4. Coverage Summary

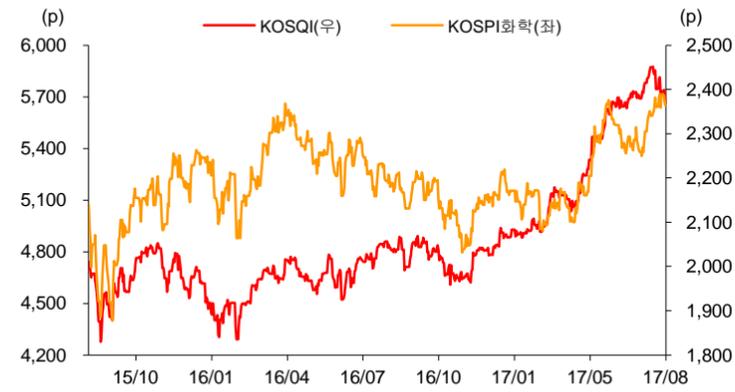
	08/09	1D	1W	1M	3M	6M	12M
KOSPI	2,368	(1.1)	(2.4)	(0.6)	3.1	14.1	16.6
KOSPI화학	5,650	(0.5)	(1.1)	5.5	2.2	11.9	9.1
LG화학	332,500	(2.2)	(0.3)	14.1	16.5	21.8	34.1
롯데케미칼	380,000	(1.7)	(0.8)	9.5	8.6	(1.7)	26.2
한화케미칼	33,500	(0.4)	0.3	5.8	23.6	31.4	31.6
금호석유화학	73,800	(1.1)	(4.7)	(0.3)	(2.5)	(6.6)	18.6
KCC	411,500	0.9	(6.6)	1.7	16.7	25.6	(3.1)
OCI	92,000	0.5	(1.2)	6.2	11.7	8.2	1.9
SKC	37,550	3.7	0.5	8.1	27.1	19.2	23.3
국도화학	56,300	(0.7)	(2.4)	6.4	14.9	6.2	(3.4)
SK이노베이션	174,500	(1.4)	(1.1)	9.1	0.9	15.2	15.6
S-Oil	116,500	(0.4)	(0.4)	16.5	8.9	43.1	53.3
GS	75,000	(0.1)	(1.3)	7.9	25.4	46.2	55.0
SK가스	116,000	(1.3)	(1.7)	(3.3)	(1.3)	14.3	35.8
포스코대우	23,500	(0.8)	(3.1)	5.4	(1.7)	(5.8)	9.3
LG상사	29,200	(0.3)	0.7	(2.8)	(11.2)	(15.7)	(17.3)
한국전력	44,150	(0.9)	(0.1)	5.6	2.6	6.9	(27.9)
한국가스공사	50,400	(0.4)	(0.4)	0.8	7.9	8.3	18.3

투자 의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	330,000	(0.8)	13.23	1.78
매수	410,000	7.9	7.85	1.38
매수	33,000	(1.5)	7.99	0.99
매수	100,000	35.5	14.03	1.40
매수	450,000	9.4	23.40	0.66
매수	100,000	8.7	18.62	0.72
매수	40,000	6.5	14.15	1.00
매수	70,000	24.3	9.45	0.68
매수	180,000	3.2	7.84	0.95
매수	100,000	(14.2)	15.65	2.27
매수	80,000	6.7	6.24	1.11
매수	150,000	29.3	7.04	0.84
매수	27,000	14.9	8.17	0.97
매수	42,000	43.8	9.03	0.94
매수	60,000	35.9	7.63	0.35
매수	60,000	19.0	8.55	0.60

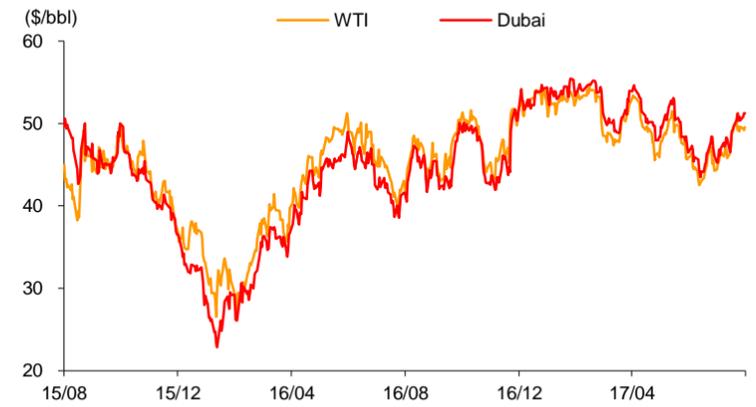
· 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
· 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
· 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
· 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

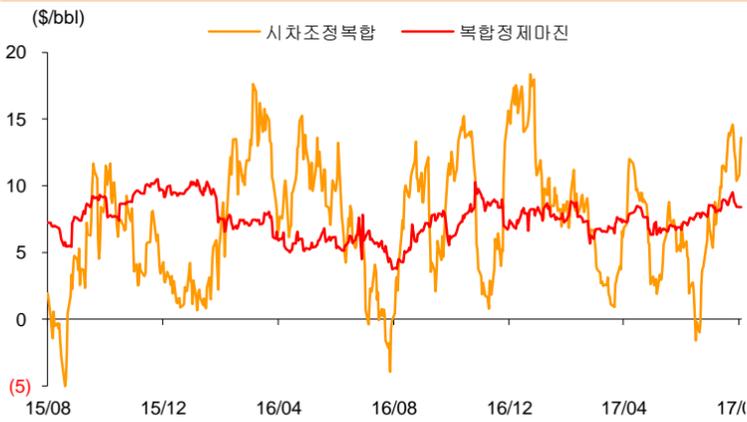
KOSPI/KOSPI화학



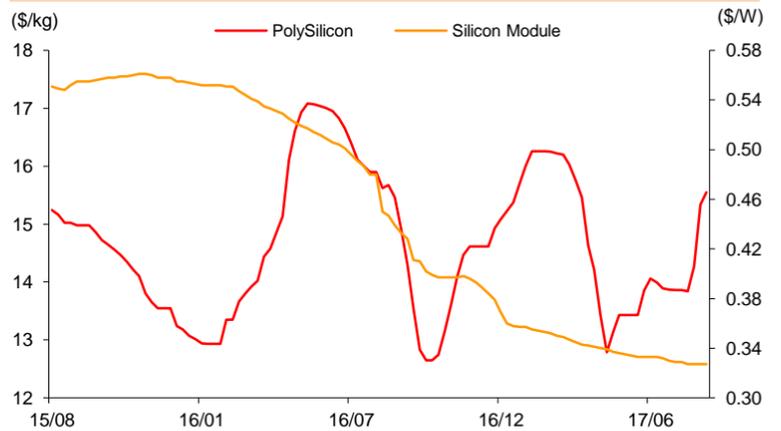
WTI/Dubai



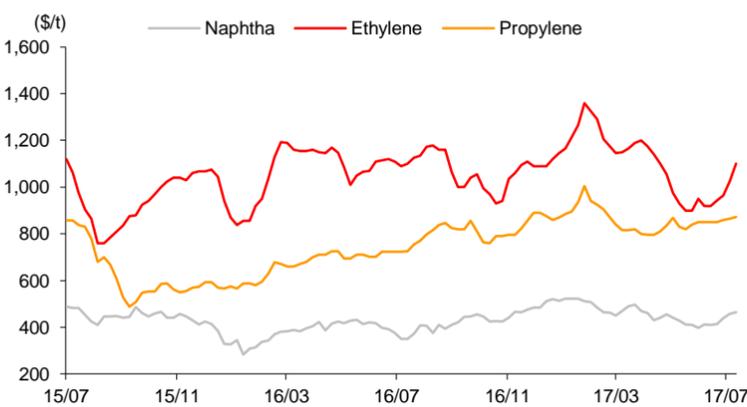
Complex & 1M lagging margin



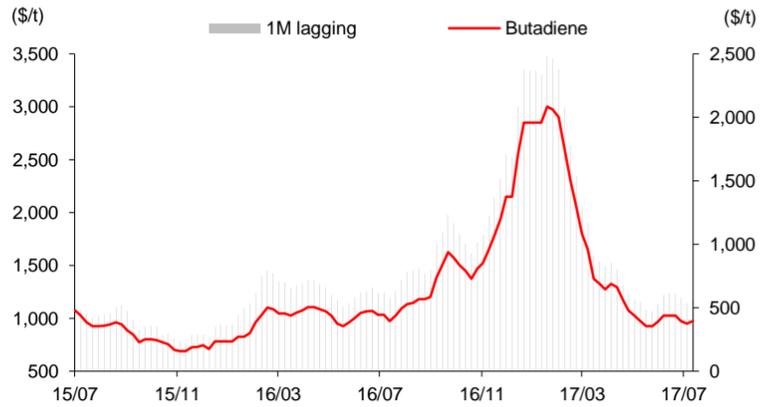
Polysilicon & Module prices



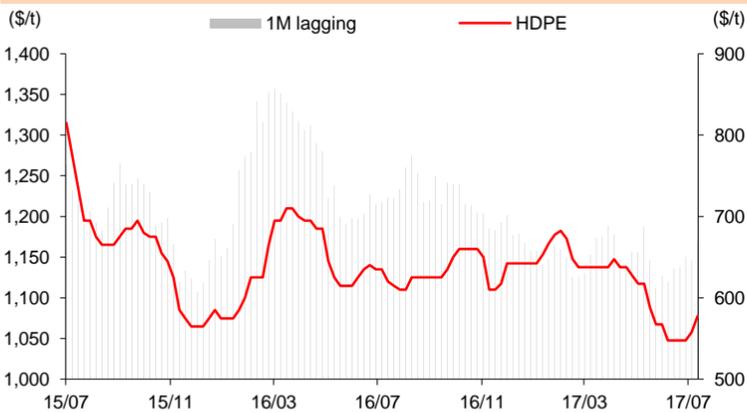
Naphtha/Ethylene/Propylene prices



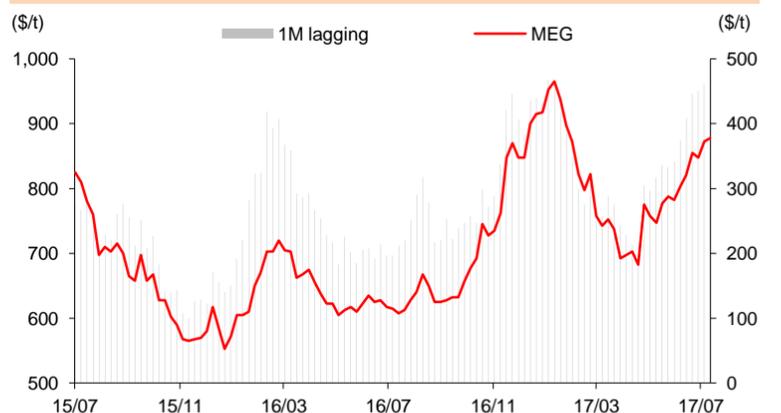
Butadiene price & 1M lagging naphtha spread



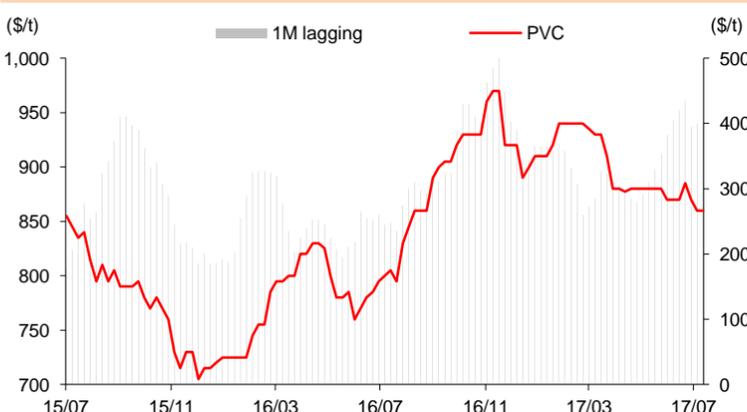
HDPE price & 1M lagging naphtha spread



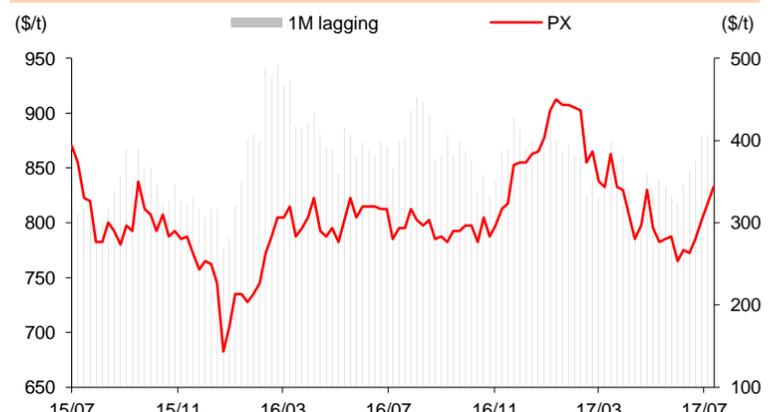
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Ciscem, Petronet, Platts, Pviewsights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용

News Comment

Headline (출처: 이데일리)

제목 SK이노베이션, 텍사스산 원유 들여온다

결론 미국의 환율, 무역 압박 속에서 미국산 에너지 수입은 불가피할 전망

세부

- 1) SK이노베이션이 국내 업체 가운데 세 번째로 미국산 원유 도입을 결정
- 2) 미국산 원유 수입은 미국 정부의 통상 압력을 줄이는 계기가 될 전망
- 3) SK에너지는 지난달 미국 WTI 100만 배럴 수입 계약을 체결함
- 4) 이번 달 멕시코산 원유와 함께 선적해 오는 10월 중 국내로 운반할 계획
- 5) 미국의 환율, 무역 압박 속에서 미국산 에너지 수입은 불가피할 전망

Issue 1 (출처: Platts)

제목 롯데케미칼, UK Wilton의 PET 생산시설 force majeure 선언

결론 유럽 지역 PET 스팟 시장에서 일시적으로 공급 차질을 빚을 전망

세부

- 1) 영국 동북지역 Wilton의 롯데케미칼 PET 생산시설이 가동 중단됨
- 2) 두 공장 중 연간 16만톤 생산 capa 보유한 공장이 force majeure 상태임
- 3) 금요일 가동 중단되었으며 재가동시점은 불투명한 상황
- 4) 연간 21만톤 생산 capa 보유한 공장은 영향 없음
- 5) 유럽 지역 PET 스팟 시장에서 일시적으로 공급 차질을 빚을 전망

Issue 3

제목

결론

세부

- 1)
- 2)
- 3)
- 4)
- 5)

Issue 5

제목

결론

세부

- 1)
- 2)
- 3)
- 4)
- 5)

WTI Comment (출처: 연합뉴스)

제목 미원유재고 감소에 강세...WTI 0.8%↑

상승 EIA에 따르면 지난주 미국 원유재고는 전주 대비 650만 배럴 줄어듦

요인 이는 '270만 배럴 감소'를 예상했던 시장 눈높이를 훌쩍 뛰어넘는 수준

하락

요인

Issue 2 (출처: 노컷뉴스)

제목 메테슬라 인기여파? 전기차 배터리 대세 '각형' 급격히 무너졌다

결론 에너지 밀도가 높은 파우치형 보급이 EV 배터리 시장에서 더 확대될 것

세부

- 1) 상반기 출하된 전세계 EV 배터리 유형별 공급량에서 파우치형이 약진
- 2) 원통형: 출하량 5.9GWh로 점유율 35.0%에서 40.6% yoy 5.6%p 상승
- 3) 파우치형: 출하량 3.7GWh로 점유율 18.9%에서 25.2% yoy 6.3%p 상승
- 4) 각형: 출하량 5.0GWh로 점유율 46.0%에서 34.2% yoy 11.8%p 하락
- 5) 에너지 밀도가 높은 파우치형 보급이 EV 배터리 시장에서 더 확대될 것

Issue 4

제목

결론

세부

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Issue 6

제목

결론

세부

- 1)
- 2)
- 3)
- 4)
- 5)

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
F/X	USD/EUR	0.850	0.851	0.844	0.877	0.920	0.939	0.900	0.951	0.901	0.904	0.913	
	Change, %		(0.1)	0.8	(3.1)	(7.5)	(9.4)	(5.5)	(10.5)	(5.6)	(5.9)	(6.8)	
	USD/JPY	110.1	110.3	110.7	113.9	114.0	113.3	101.9	117.0	121.1	108.8	112.3	
	Change, %		(0.2)	(0.6)	(3.4)	(3.4)	(2.8)	8.0	(5.9)	(9.1)	1.2	(2.0)	
	USD/KRW	1,135.2	1,125.2	1,123.9	1,154.3	1,139.2	1,146.1	1,106.2	1,205.8	1,131.2	1,160.5	1,140.3	
	Change, %		0.9	1.0	(1.7)	(0.4)	(1.0)	2.6	(5.9)	0.4	(2.2)	(0.4)	
	<hr/>												
	Agriculture	Corn	372.3	369.8	365.0	382.3	358.3	369.5	322.3	352.0	376.8	358.5	367.5
Change, %			0.7	2.0	(2.6)	3.9	0.7	15.5	5.8	(1.2)	3.8	1.3	
Soybean		963.0	963.0	966.5	996.0	965.3	1,050.5	1,022.0	996.5	945.4	987.5	981.3	
Change, %			0.0	(0.4)	(3.3)	(0.2)	(8.3)	(5.8)	(3.4)	1.9	(2.5)	(1.9)	
Wheat		459.5	457.0	460.8	515.3	421.8	443.5	417.0	408.0	508.1	436.4	443.2	
Change, %			0.5	(0.3)	(10.8)	9.0	3.6	10.2	12.6	(9.6)	5.3	3.7	
Rice		12.3	12.1	12.5	11.7	9.6	9.5	9.7	9.4	11.1	10.3	10.4	
Change, %			1.4	(1.4)	5.0	27.6	29.9	26.9	31.6	11.3	19.0	18.3	
Oats		270.5	273.5	289.5	282.5	250.0	254.5	175.3	228.5	250.2	196.3	253.7	
Change, %			(1.1)	(6.6)	(4.2)	8.2	6.3	54.4	18.4	8.1	37.8	6.6	
MYR/mt		Palm Oil	2,628.0	2,624.0	2,630.0	2,668.0	2,850.0	3,301.0	2,561.0	3,218.0	2,190.3	2,653.8	2,873.5
		Change, %		0.2	(0.1)	(1.5)	(7.8)	(20.4)	2.6	(18.3)	20.0	(1.0)	(8.5)
	Cocoa	2,002.0	2,018.0	2,055.0	1,835.0	1,990.0	1,974.0	2,976.0	2,126.0	3,091.6	2,854.0	2,000.0	
	Change, %		(0.8)	(2.6)	9.1	0.6	1.4	(32.7)	(5.8)	(35.2)	(29.9)	0.1	
	Cotton	71.8	71.9	71.8	75.3	77.4	75.6	73.1	70.7	63.3	65.6	75.1	
	Change, %		(0.1)	0.1	(4.6)	(7.2)	(5.0)	(1.7)	1.7	13.5	9.5	(4.3)	
	Sugar	13.6	13.8	14.8	14.2	15.4	20.7	20.4	19.5	13.1	18.2	16.8	
Change, %		(1.0)	(7.8)	(3.6)	(11.7)	(33.9)	(33.1)	(30.1)	3.8	(24.9)	(18.8)		
Energy	Coffee	142.7	142.8	140.4	126.6	132.8	145.2	141.1	137.1	132.6	136.1	136.8	
	Change, %		(0.1)	1.6	12.7	7.4	(1.8)	1.1	4.1	7.5	4.8	4.3	
	<hr/>												
	Energy	WTI	49.6	49.2	49.6	44.2	45.9	53.0	42.8	53.7	48.8	43.4	49.6
		Change, %		0.8	(0.1)	12.1	8.0	(6.5)	15.9	(7.7)	1.5	14.2	(0.1)
		Brent	52.7	52.1	52.4	46.7	48.7	55.6	45.0	56.8	53.7	45.1	52.3
		Change, %		1.1	0.6	12.8	8.1	(5.3)	17.2	(7.3)	(1.8)	16.9	0.8
		Natural Gas	2.9	2.8	2.8	2.9	3.2	3.1	2.6	3.7	2.6	2.6	3.1
		Change, %		2.2	2.6	0.7	(10.7)	(8.2)	10.2	(22.6)	9.7	13.0	(6.3)
		Ethanol	1.6	1.6	1.6	1.5	1.5	1.6	1.4	1.6	1.5	1.5	1.5
		Change, %		(0.2)	2.1	4.8	9.6	0.1	11.9	(0.9)	5.4	5.0	3.5
		RBOB Gasoline	162.0	162.1	164.5	149.8	149.0	157.0	134.6	166.5	163.6	140.0	158.4
Change, %			(0.0)	(1.5)	8.1	8.8	3.2	20.3	(2.7)	(1.0)	15.7	2.3	
Coal		95.2	94.1	95.1	82.6	73.9	79.8	67.0	88.4	59.0	65.5	82.0	
Change, %			1.2	0.2	15.3	28.9	19.4	42.1	7.7	61.5	45.4	16.1	
<hr/>													
Metal	Gold	1,277.3	1,261.0	1,266.7	1,213.2	1,221.4	1,228.4	1,340.7	1,152.3	1,160.6	1,248.5	1,239.9	
	Change, %		1.3	0.8	5.3	4.6	4.0	(4.7)	10.9	10.1	2.3	3.0	
	Silver	17.0	16.5	16.6	15.6	16.2	17.7	19.8	15.9	15.7	17.1	17.2	
	Change, %		3.0	2.2	8.5	4.7	(4.0)	(14.6)	6.5	7.8	(0.9)	(1.2)	
	Copper	6,455.0	6,480.0	6,352.0	5,828.0	5,512.0	5,822.0	4,779.0	5,535.5	5,503.1	4,872.0	5,833.2	
	Change, %		(0.4)	1.6	10.8	17.1	10.9	35.1	16.6	17.3	32.5	10.7	
	Nickel	686.7	684.0	658.9	580.8	597.0	686.3	721.2	682.0	759.5	646.4	640.9	
	Change, %		0.4	4.2	18.2	15.0	0.1	(4.8)	0.7	(9.6)	6.2	7.1	
	Zinc	2,931.5	2,925.0	2,801.5	2,793.0	2,612.0	2,830.0	2,274.0	2,576.0	1,941.9	2,097.5	2,715.0	
	Change, %		0.2	4.6	5.0	12.2	3.6	28.9	13.8	51.0	39.8	8.0	
	Lead	2,331.3	2,365.0	2,335.8	2,282.3	2,168.8	2,338.5	1,795.3	2,003.5	1,791.2	1,868.3	2,232.1	
	Change, %		(1.4)	(0.2)	2.1	7.5	(0.3)	29.9	16.4	30.2	24.8	4.4	
	Aluminum	15,870.0	15,270.0	14,545.0	14,030.0	13,670.0	13,705.0	12,565.0	12,765.0	12,184.0	12,373.5	13,844.3	
	Change, %		3.9	9.1	13.1	16.1	15.8	26.3	24.3	30.3	28.3	14.6	
	Cobalt	57,200.0	57,150.0	55,750.0	60,000.0	54,550.0	39,500.0	26,200.0	32,734.0	28,444.4	25,480.1	51,265.7	
	Change, %		0.1	2.6	(4.7)	4.9	44.8	118.3	74.7	101.1	124.5	11.6	
	HR Coil	619.0	619.0	625.0	625.0	610.0	620.0	596.0	633.0	461.5	519.3	620.6	
	Change, %		0.0	(1.0)	(1.0)	1.5	(0.2)	3.9	(2.2)	34.1	19.2	(0.3)	
Scrap	365.0	360.0	354.0	360.0	360.0	305.0	260.0	302.0	252.9	275.7	341.0		
Change, %		1.4	3.1	1.4	1.4	19.7	40.4	20.9	44.3	32.4	7.0		

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		08/09	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	WTI	49.6	49.2	49.6	45.5	47.3	52.3	41.7	53.7	48.8	43.4	49.5
	Change, %		0.8	(0.1)	8.9	4.7	(5.3)	18.8	(7.7)	1.6	14.3	0.0
	Dubai	51.2	51.2	50.3	46.8	48.4	53.4	41.3	53.8	50.8	41.3	50.8
	Change, %		0.0	1.9	9.4	5.9	(4.0)	23.9	(4.8)	0.9	24.1	0.9
Crude Oil Product	Gasoline(휘발유)	67.7	67.7	65.9	61.0	62.9	69.0	49.3	69.8	69.5	56.3	65.3
	Change, %		0.0	2.7	10.9	7.6	(1.9)	37.1	(3.1)	(2.7)	20.3	3.6
	Kerosene(등유)	63.4	63.4	63.3	59.0	58.3	64.9	50.5	66.4	64.7	52.9	62.1
	Change, %		0.0	0.1	7.5	8.7	(2.2)	25.7	(4.5)	(2.0)	19.9	2.2
	Diesel(경유)	63.8	63.8	64.4	60.2	59.3	65.4	50.5	65.5	64.8	52.1	62.7
	Change, %		0.0	(1.0)	6.0	7.6	(2.5)	26.2	(2.7)	(1.6)	22.3	1.7
	Bunker-C	48.3	48.3	47.0	45.5	45.4	48.5	34.7	52.1	45.3	35.5	47.5
	Change, %		0.0	2.8	6.3	6.4	(0.4)	39.1	(7.2)	6.8	36.0	1.6
	Naphtha	50.4	50.4	50.0	44.6	47.1	55.2	37.1	53.5	52.6	42.6	50.4
	Change, %		0.0	0.9	13.2	7.1	(8.6)	35.9	(5.7)	(4.1)	18.4	0.1
Dubai Spread	Gasoline(휘발유)	16.4	16.4	15.6	14.2	14.5	15.6	8.0	16.0	18.7	14.9	14.5
	Change		0.0	0.8	2.2	1.9	0.8	8.4	0.4	(2.3)	1.5	1.9
	Kerosene(등유)	12.2	12.2	13.1	12.2	10.0	11.5	9.1	12.6	14.0	11.6	11.3
	Change		0.0	(0.9)	0.0	2.2	0.6	3.1	(0.4)	(1.8)	0.6	0.9
	Diesel(경유)	12.5	12.5	14.1	13.3	10.9	12.0	9.2	11.7	14.0	10.8	11.9
	Change		0.0	(1.6)	(0.8)	1.6	0.5	3.4	0.8	(1.5)	1.7	0.6
Dubai Spread	Bunker-C	(2.9)	(2.9)	(3.3)	(1.4)	(3.0)	(4.8)	(6.6)	(1.8)	(5.5)	(5.8)	(3.3)
	Change		0.0	0.4	(1.6)	0.1	1.9	3.7	(1.2)	2.6	2.9	0.3
	Naphtha	(0.8)	(0.8)	(0.3)	(2.3)	(1.3)	1.8	(4.2)	(0.4)	1.8	1.3	(0.4)
	Change		0.0	(0.5)	1.5	0.5	(2.6)	3.4	(0.4)	(2.6)	(2.1)	(0.4)
Refining Margin	Simple(단순)	3.5	3.5	3.8	4.2	2.7	2.5	(0.2)	3.8	3.3	1.9	2.9
	Change		0.0	(0.2)	(0.7)	0.8	1.1	3.8	(0.3)	0.2	1.6	0.6
	Complex(복합)	8.4	8.4	8.8	8.4	7.2	7.7	3.8	8.3	9.3	7.0	7.6
	Change		0.0	(0.4)	(0.0)	1.2	0.7	4.6	0.2	(0.9)	1.4	0.8
Refining Margin	Complex(lagging)	13.6	12.6	12.6	8.8	2.9	6.8	3.2	18.0	7.3	8.5	7.1
	Change		1.0	1.0	4.8	10.7	6.8	10.4	(4.4)	6.3	5.1	6.5

자료 : Petronet, SK증권

참고 1) Crude Oil 가격은 현물(spot) 기준으로 선물(future) 가격과 다를 수 있음

참고 2) Gasoline은 95RON, 경유는 L/P 0.5%, Bunker-C는 380cst/4.0% 기준임

Petrochemical Price Data

Daily Price			08/08	08/07	08/04	08/03	08/02	08/01	07/31	07/28	07/27	07/26	
Spot Price	Naphtha	CFR Japan	468.3	464.5	466.8	468.8	463.8	476.3	467.3	458.5	448.9	439.8	
	Ethylene	CFR SE Asia	1,020.0	1,020.0	1,020.0	1,010.0	970.0	940.0	905.0	905.0	905.0	900.0	
	Propylene	FOB Korea	895.0	855.0	857.0	850.0	850.0	849.0	855.0	856.0	857.0	857.0	
	Butadiene	FOB Korea	910.0	910.0	910.0	910.0	910.0	910.0	910.0	910.0	910.0	910.0	
	HDPE	CFR FE Asia	1,120.0	1,120.0	1,120.0	1,110.0	1,110.0	1,110.0	1,105.0	1,100.0	1,095.0	1,090.0	
	LDPE	CFR FE Asia	1,170.0	1,160.0	1,160.0	1,160.0	1,160.0	1,150.0	1,150.0	1,140.0	1,140.0	1,140.0	
	LLDPE	CFR FE Asia	1,120.0	1,120.0	1,110.0	1,100.0	1,100.0	1,095.0	1,090.0	1,090.0	1,085.0	1,080.0	
	MEG	CFR China	870.0	880.0	875.0	863.0	877.0	880.0	867.0	870.0	870.0	860.0	855.0
	PP	CFR FE Asia	1,025.0	1,020.0	1,020.0	1,010.0	1,020.0	1,020.0	1,010.0	1,005.0	1,010.0	1,010.0	1,020.0
	PX	CFR China	814.2	817.7	822.5	823.2	824.0	818.3	807.7	804.7	804.7	809.7	798.7
	PTA	CFR China	636.0	636.0	638.0	637.0	640.0	642.0	645.0	645.0	645.0	645.0	652.0
	Benzene	FOB Korea	755.0	751.0	746.0	739.0	727.0	731.0	732.5	728.5	728.5	729.5	732.0
	Toluene	FOB Korea	642.0	644.0	643.0	627.0	624.0	606.0	602.5	596.5	596.5	600.5	602.5
	Xylene	FOB Korea	670.0	670.0	669.0	662.0	658.0	656.0	655.0	653.0	653.0	653.0	643.0
	SM	FOB Korea	1,124.0	1,110.0	1,110.0	1,100.0	1,109.0	1,113.0	1,122.5	1,128.5	1,128.5	1,128.5	1,134.5

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Spot Price	Naphtha	CFR Japan	464.0	456.5	409.0	430.5	490.0	350.0	484.5	493.0	399.5	464.7	
	<i>Change, %</i>			1.6	13.4	7.8	(5.3)	32.6	(4.2)	(5.9)	16.1	(0.1)	
	Ethylene	CFR SE Asia	1,030.0	975.0	875.0	1,085.0	1,050.0	1,030.0	990.0	990.0	1,103.7	1,040.9	1,018.8
	<i>Change, %</i>			5.6	17.7	(5.1)	(1.9)	0.0	4.0	(6.7)	(1.0)	1.1	
	Propylene	CFR SE Asia	770.0	762.5	755.0	725.0	760.0	680.0	815.0	815.0	770.0	705.7	860.5
	<i>Change, %</i>			1.0	2.0	6.2	1.3	13.2	(5.5)	0.0	9.1	(10.5)	
	Butadiene	CFR SE Asia	925.0	900.0	975.0	1,245.0	1,325.0	935.0	2,100.0	2,100.0	877.5	1,116.8	1,669.1
	<i>Change, %</i>			2.8	(5.1)	(25.7)	(30.2)	(1.1)	(56.0)	5.4	(17.2)	(44.6)	
	Benzene	CFR SE Asia	750.0	742.5	742.5	755.0	862.5	615.0	822.5	822.5	690.0	646.7	843.4
	<i>Change, %</i>			1.0	1.0	(0.7)	(13.0)	22.0	(8.8)	8.7	16.0	(11.1)	
	Toluene	CFR SE Asia	650.0	635.0	630.0	655.0	675.0	570.0	690.0	690.0	700.8	630.5	684.2
	<i>Change, %</i>			2.4	3.2	(0.8)	(3.7)	14.0	(5.8)	(7.2)	3.1	(5.0)	
	Xylene	CFR SE Asia	632.5	622.5	615.0	640.0	710.0	600.0	675.0	675.0	699.3	627.7	670.8
	<i>Change, %</i>			1.6	2.8	(1.2)	(10.9)	5.4	(6.3)	(9.5)	0.8	(5.7)	

Spread	Ethylene	-Naphtha	566.0	518.5	466.0	654.5	560.0	680.0	505.5	610.6	641.4	554.2
	<i>Change, %</i>			9.2	21.5	(13.5)	1.1	(16.8)	12.0	(7.3)	(11.8)	2.1
	Propylene	-Naphtha	306.0	306.0	346.0	294.5	270.0	330.0	330.5	277.0	306.2	395.8
	<i>Change, %</i>			0.0	(11.6)	3.9	13.3	(7.3)	(7.4)	10.5	(0.1)	(22.7)
	Butadiene	-Naphtha	461.0	443.5	566.0	814.5	835.0	585.0	1,615.5	384.5	717.3	1,204.4
	<i>Change, %</i>			3.9	(18.6)	(43.4)	(44.8)	(21.2)	(71.5)	19.9	(35.7)	(61.7)
	Benzene	-Naphtha	286.0	286.0	333.5	324.5	372.5	265.0	338.0	197.0	247.2	378.7
	<i>Change, %</i>			0.0	(14.2)	(11.9)	(23.2)	7.9	(15.4)	45.2	15.7	(24.5)
	Toluene	-Naphtha	186.0	178.5	221.0	224.5	185.0	220.0	205.5	207.8	231.0	219.6
	<i>Change, %</i>			4.2	(15.8)	(17.1)	0.5	(15.5)	(9.5)	(10.5)	(19.5)	(15.3)
	Xylene	-Naphtha	168.5	166.0	206.0	209.5	220.0	250.0	190.5	206.3	228.2	206.1
	<i>Change, %</i>			1.5	(18.2)	(19.6)	(23.4)	(32.6)	(11.5)	(18.3)	(26.2)	(18.3)

자료 : Cischem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차이임

Weekly Price		Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.	
Spot Price	HDPE	CFR SE Asia	1,077.5	1,057.5	1,047.5	1,137.5	1,137.5	1,120.0	1,142.5	1,230.1	1,134.6	1,120.9
	Change, %			1.9	2.9	(5.3)	(5.3)	(3.8)	(5.7)	(12.4)	(5.0)	(3.9)
	MEG	CFR SE Asia	877.5	872.5	820.0	702.5	752.5	607.5	847.5	780.8	660.8	816.1
	Change, %			0.6	7.0	24.9	16.6	44.4	3.5	12.4	32.8	7.5
	PVC	CFR SE Asia	860.0	860.0	870.0	877.5	930.0	805.0	920.0	820.8	823.4	899.0
	Change, %			0.0	(1.1)	(2.0)	(7.5)	6.8	(6.5)	4.8	4.4	(4.3)
	PP	CFR SE Asia	1,087.5	1,072.5	1,027.5	1,047.5	1,087.5	1,010.0	1,032.5	1,109.8	978.4	1,067.3
	Change, %			1.4	5.8	3.8	0.0	7.7	5.3	(2.0)	11.1	1.9
	2-EH	CFR Korea	960.0	970.0	910.0	925.0	1,010.0	755.0	865.0	930.1	772.4	948.5
	Change, %			(1.0)	5.5	3.8	(5.0)	27.2	11.0	3.2	24.3	1.2
	ABS	CFR SE Asia	1,850.0	1,820.0	1,790.0	1,640.0	1,690.0	1,357.5	1,635.0	1,431.1	1,347.1	1,757.8
	Change, %			1.6	3.4	12.8	9.5	36.3	13.1	29.3	37.3	5.2
	SBR	CFR SE Asia	1,490.0	1,490.0	1,450.0	1,790.0	2,290.0	1,380.0	2,000.0	1,332.1	1,483.0	2,170.8
	Change, %			0.0	2.8	(16.8)	(34.9)	8.0	(25.5)	11.9	0.5	(31.4)
	SM	CFR SE Asia	1,150.0	1,172.5	1,160.0	1,065.0	1,217.5	1,035.0	1,205.0	1,100.7	1,064.6	1,231.3
	Change, %			(1.9)	(0.9)	8.0	(5.5)	11.1	(4.6)	4.5	8.0	(6.6)
	Caustic	FOB NEA	467.5	462.5	452.5	447.5	456.0	300.0	422.5	296.8	316.6	440.2
	Change, %			1.1	3.3	4.5	2.5	55.8	10.7	57.5	47.7	6.2
	PX	CFR SE Asia	832.5	817.5	772.5	785.0	862.5	795.0	855.0	842.9	790.4	835.4
	Change, %			1.8	7.8	6.1	(3.5)	4.7	(2.6)	(1.2)	5.3	(0.3)
PO	CFR China	1,542.5	1,540.0	1,497.5	1,360.0	1,540.0	1,527.5	1,562.5	1,683.4	1,396.8	1,487.7	
Change, %			0.2	3.0	13.4	0.2	1.0	(1.3)	(8.4)	10.4	3.7	
Caprolactam	CFR SE Asia	1,760.0	1,730.0	1,610.0	1,770.0	2,220.0	1,310.0	1,850.0	1,581.5	1,344.9	1,922.0	
Change, %			1.7	9.3	(0.6)	(20.7)	34.4	(4.9)	11.3	30.9	(8.4)	
PTA	CFR SE Asia	657.5	667.5	635.0	627.5	667.5	617.5	642.5	648.0	613.7	657.6	
Change, %			(1.5)	3.5	4.8	(1.5)	6.5	2.3	1.5	7.1	(0.0)	
Spread	HDPE		613.5	601.0	638.5	707.0	647.5	770.0	658.0	737.1	735.1	656.3
	Change, %			2.1	(3.9)	(13.2)	(5.3)	(20.3)	(6.8)	(16.8)	(16.5)	(6.5)
	MEG		413.5	416.0	411.0	272.0	262.5	257.5	363.0	287.8	261.3	351.4
	Change, %			(0.6)	0.6	52.0	57.5	60.6	13.9	43.7	58.3	17.7
	PVC		396.0	403.5	461.0	447.0	440.0	455.0	435.5	327.8	423.9	434.3
	Change, %			(1.9)	(14.1)	(11.4)	(10.0)	(13.0)	(9.1)	20.8	(6.6)	(8.8)
	PP		623.5	616.0	618.5	617.0	597.5	660.0	548.0	616.8	578.9	602.7
	Change, %			1.2	0.8	1.1	4.4	(5.5)	13.8	1.1	7.7	3.5
	2-EH		496.0	513.5	501.0	494.5	520.0	405.0	380.5	437.0	372.9	483.9
	Change, %			(3.4)	(1.0)	0.3	(4.6)	22.5	30.4	13.5	33.0	2.5
	ABS		1,386.0	1,363.5	1,381.0	1,209.5	1,200.0	1,007.5	1,150.5	938.1	947.6	1,293.2
	Change, %			1.7	0.4	14.6	15.5	37.6	20.5	47.8	46.3	7.2
	SBR	BD spread	565.0	590.0	475.0	545.0	965.0	445.0	(100.0)	454.7	366.2	501.7
	Change, %			(4.2)	18.9	3.7	(41.5)	27.0	(665.0)	24.3	54.3	12.6
	SM		686.0	716.0	751.0	634.5	727.5	685.0	720.5	607.7	665.1	766.6
	Change, %			(4.2)	(8.7)	8.1	(5.7)	0.1	(4.8)	12.9	3.1	(10.5)
	Caustic											
	Change, %											
	PX		368.5	361.0	363.5	354.5	372.5	445.0	370.5	349.9	390.9	370.7
	Change, %			2.1	1.4	3.9	(1.1)	(17.2)	(0.5)	5.3	(5.7)	(0.6)
PO	propylene spread	772.5	777.5	742.5	635.0	780.0	847.5	747.5	913.4	691.1	627.3	
Change, %			(0.6)	4.0	21.7	(1.0)	(8.8)	3.3	(15.4)	11.8	23.2	
Caprolactam	benzene spread	1,010.0	987.5	867.5	1,015.0	1,357.5	695.0	1,027.5	891.6	698.2	1,078.7	
Change, %			2.3	16.4	(0.5)	(25.6)	45.3	(1.7)	13.3	44.7	(6.4)	
PTA	px spread	74.8	95.3	94.3	78.0	63.8	61.0	44.0	58.0	60.4	72.8	
Change, %			(21.5)	(20.7)	(4.2)	17.3	22.5	69.9	28.9	23.7	2.7	

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	08/09	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA		
											17E	18E	17E	18E	17E	18E	
Petrochemical																	
Dow Chemical	USD	63.5	0.1	(1.2)	(0.6)	2.7	5.4	18.9	11.0	77,689	15.7	14.3	2.9	2.7	8.8	8.2	
Du Pont	USD	81.3	0.3	(1.2)	(0.9)	2.3	6.5	18.2	10.8	70,579	20.8	19.7	6.4	5.4	13.3	12.6	
Eastman	USD	84.3	0.2	0.5	0.4	7.5	7.4	28.7	12.0	12,208	11.3	10.4	2.4	2.3	8.6	8.2	
BASF	EUR	80.8	(0.9)	0.2	(0.5)	(10.2)	(8.6)	12.5	(8.5)	87,134	13.9	13.7	2.2	2.1	7.7	7.5	
Akzo Nobel	EUR	76.3	(1.3)	(1.2)	(1.5)	(0.9)	18.9	28.6	28.5	22,782	17.7	17.1	3.0	3.0	9.9	9.5	
Arkema	EUR	95.0	(1.9)	(1.9)	(0.5)	(2.7)	3.4	19.3	2.2	8,454	14.0	12.9	1.7	1.5	6.3	6.0	
Lanxess	EUR	66.7	(1.6)	0.2	0.8	(1.0)	0.6	49.0	7.0	7,171	18.0	15.1	2.3	2.1	5.9	5.8	
Sumitomo Chemical	JPY	628	(0.9)	(1.1)	(2.2)	(2.6)	2.1	50.2	12.9	9,456	10.2	9.4	1.2	1.1	7.4	7.0	
Mitsubishi Chemical	JPY	933	(1.6)	(3.2)	(1.8)	3.4	16.0	59.6	23.1	12,786	9.3	9.1	1.1	1.1	6.3	6.2	
Shin-Etsu Chemical	JPY	9,523	(4.3)	(7.6)	(4.2)	(3.8)	(0.6)	32.4	5.0	37,429	19.1	17.1	1.8	1.6	8.2	7.2	
Asahi Kasei	JPY	1,269	(1.5)	(1.4)	5.7	14.9	18.3	54.2	24.5	16,190	15.1	14.3	1.4	1.3	7.3	7.0	
JSR	JPY	1,898	(0.1)	(1.1)	(2.4)	(4.6)	(4.7)	30.1	3.0	3,903	15.1	14.1	1.1	1.1	7.8	7.2	
Nitto Denko	JPY	9,806	(3.1)	(6.4)	1.6	6.7	6.6	40.5	9.3	15,498	20.2	18.3	2.3	2.1	8.8	8.2	
SABIC	SAR	98.0	(0.2)	0.7	(2.8)	0.9	2.0	16.7	7.1	78,376	14.7	14.2	1.7	1.7	7.4	7.2	
Yansab	SAR	55.0	(0.0)	0.4	3.1	1.6	(3.4)	26.7	1.0	8,254	14.1	13.3	2.3	2.2	8.7	8.2	
Formosa Plastics	TWD	92.8	(0.4)	2.0	(0.6)	4.9	2.9	17.8	4.0	19,525	14.4	14.7	1.8	1.8	19.1	19.6	
Formosa Fiber	TWD	92.7	(0.2)	1.3	3.0	3.9	(4.4)	9.8	(3.7)	17,958	12.7	13.3	1.6	1.6	10.2	10.6	
Nan Ya Plastics	TWD	76.2	(0.3)	1.1	1.5	8.2	1.2	23.3	7.0	19,975	16.1	16.5	1.8	1.7	16.8	16.3	
Sinopec Shanghai	CNY	6.99	(1.3)	1.5	4.0	10.1	5.4	14.0	8.5	9,758	14.4	13.5	2.7	2.3	7.5	7.5	
Sinopec Yizheng(Fiber)	CNY	3.24	(0.3)	2.2	(1.8)	0.6	(15.6)	(16.5)	(21.0)	6,189	#N/A	N/A	47.6	6.9	7.3	38.0	17.6
Reliance	INR	1,599	(0.2)	(1.9)	7.2	20.2	54.8	55.1	47.7	81,340	17.7	14.5	1.7	1.5	11.7	9.5	
Industries Qatar	QAR	93.5	(1.5)	(1.7)	0.1	(8.2)	(17.6)	(16.9)	(20.4)	15,537	14.8	13.0	1.6	1.6	49.7	45.8	
PTT Chemical	THB	72.3	0.3	(0.3)	3.2	(1.7)	5.9	17.5	14.7	9,695	10.1	10.1	1.3	1.2	5.2	5.1	
Petronas	MYR	7.0	(0.1)	0.4	(1.1)	(2.1)	(2.8)	6.2	0.4	13,075	15.8	15.7	1.9	1.8	8.5	8.5	
LG화학	KRW	332,500	(2.2)	(0.3)	15.1	18.8	22.2	29.1	27.4	20,590	13.0	12.6	1.6	1.5	5.7	5.3	
롯데케미칼	KRW	380,000	(1.7)	(0.8)	8.6	8.1	(3.1)	23.6	3.0	11,426	6.0	5.9	1.2	1.0	3.9	3.5	
한화케미칼	KRW	33,500	(0.4)	0.3	6.3	31.4	29.1	28.1	35.6	4,843	6.3	6.5	0.9	0.8	7.6	7.0	
금호석유	KRW	73,800	(1.1)	(4.7)	(0.4)	(2.1)	(7.8)	16.2	(10.0)	1,972	14.4	12.9	1.4	1.3	9.7	8.5	
SKC	KRW	37,550	3.7	0.5	7.4	30.2	20.4	18.3	13.8	1,236	10.8	9.3	0.9	0.9	9.0	7.7	
국도화학	KRW	56,300	(0.7)	(2.4)	6.2	16.9	8.3	(4.1)	2.6	287	9.2	9.9	0.7	0.7	5.3	5.4	
효성	KRW	6,320	(2.5)	(2.9)	11.5	(14.7)	(22.0)	23.4	(7.1)	5,360	10.2	8.8	1.5	1.3	7.8	6.9	
Average			(0.8)	(1.0)	2.1	4.5	4.7	23.6	8.1								
Refinery																	
Valero	USD	66.9	(1.3)	(2.3)	(1.8)	0.5	(1.0)	27.5	(2.0)	29,561	16.4	12.1	1.5	1.5	6.6	5.6	
Conoco Phillips	USD	45.7	0.0	0.1	6.2	(1.3)	(8.4)	10.7	(9.0)	55,554	232.9	35.0	1.8	1.8	8.9	6.8	
Formosa Petrochemical	TWD	105.0	0.0	(0.9)	1.0	2.9	0.5	10.9	(6.3)	33,060	16.1	18.6	3.2	3.2	9.8	11.1	
Andeavor	USD	95.4	(0.4)	(4.4)	(0.9)	14.3	8.9	24.7	9.1	15,259	19.8	13.6	1.8	1.8	9.1	7.1	
Marathon Petroleum	USD	53.0	(2.7)	(5.7)	(2.0)	3.0	6.1	29.1	5.2	26,826	19.5	15.7	2.1	1.9	8.8	7.7	
Devon Energy	USD	32.1	(0.2)	(4.0)	8.6	(15.3)	(28.3)	(19.6)	(29.8)	16,861	19.0	15.0	2.4	2.1	8.2	7.4	
Hollyfrontier	USD	29.1	(1.8)	(4.5)	7.5	4.7	(3.5)	10.3	(11.1)	5,161	23.3	13.3	1.1	1.1	8.4	6.3	
Phillips 66	USD	84.5	(0.6)	(2.5)	2.3	6.1	6.6	10.1	(2.2)	43,218	20.4	14.9	1.9	1.9	10.1	8.4	
Murphy Oil	USD	26.1	0.7	1.8	6.8	(1.9)	(7.5)	(7.4)	(16.1)	4,509	#N/A	N/A	76.2	1.0	1.0	4.7	4.5
JX Holdings	JPY	508.3	3.3	3.3	3.5	(1.1)	(0.4)	36.2	2.7	15,844	7.9	7.4	0.7	0.7	8.3	7.9	
Idemitsu	JPY	2,613.0	(0.6)	(0.9)	(6.8)	(32.4)	(21.3)	43.0	(15.8)	4,944	5.0	4.9	0.6	0.6	9.3	8.7	
Nesteoil	EUR	34.7	(0.4)	(6.4)	(0.9)	(8.1)	2.1	(7.1)	(5.0)	0	13.4	13.2	2.1	2.0	7.7	8.0	
Ashland	USD	61.4	(1.5)	(3.2)	(6.6)	1.8	6.4	9.9	14.8	3,829	13.9	16.6	1.0	1.0	8.1	9.2	
Fuchs Petrolub	EUR	47.8	(0.6)	(2.9)	(0.8)	(0.8)	10.5	17.3	19.7	7,317	24.5	23.2	4.9	4.4	14.2	13.5	
SK이노베이션	KRW	174,500	(1.4)	(1.1)	9.4	1.5	14.4	15.2	19.1	14,154	7.3	7.3	0.9	0.8	4.4	3.9	
S-Oil	KRW	116,500	(0.4)	(0.4)	19.6	14.2	42.2	51.7	37.5	11,506	12.5	9.7	2.0	1.9	9.6	7.1	
GS	KRW	75,000	(0.1)	(1.3)	8.4	26.9	47.3	54.2	38.6	6,113	6.4	6.3	0.9	0.8	7.3	6.9	
Average			(0.5)	(2.1)	3.1	0.9	4.4	18.6	2.9								

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	08/09	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											17E	18E	17E	18E	17E	18E
E&P/Shale																
Exxon Mobil	USD	80	0.3	(0.5)	(0.0)	(2.6)	(2.0)	(9.6)	(11.1)	339,858	23.1	20.6	1.9	1.9	9.7	8.9
BP	GBP	469	(0.5)	2.1	5.6	2.9	2.2	10.3	(8.0)	120,325	21.6	16.4	1.3	1.3	6.2	5.6
Shell	EUR	2,213	(0.0)	2.5	8.3	5.8	3.3	15.4	(1.3)	239,022	16.6	14.5	1.2	1.2	6.5	5.9
Chevron	USD	111	0.5	0.4	7.2	5.5	(1.2)	9.4	(5.8)	210,137	27.1	22.1	1.4	1.4	8.0	7.2
Total	EUR	43	(1.1)	(0.4)	2.3	(9.1)	(8.4)	0.1	(10.8)	127,650	12.9	11.8	1.2	1.1	6.0	5.4
Sinopec	CNY	6	(0.2)	(2.0)	(0.3)	5.4	3.6	23.4	11.3	105,295	14.2	12.9	1.0	0.9	4.8	4.7
Petrochina	CNY	8	(0.7)	(0.2)	4.1	8.4	(3.7)	11.5	2.1	210,293	54.1	31.2	1.2	1.2	7.0	6.6
CNOOC	CNY	11	(0.3)	2.6	1.9	5.3	(12.2)	(7.0)	(11.4)	50,148	15.8	12.1	0.9	0.8	3.9	3.6
Gazprom	RUB	119	(0.8)	(0.3)	(3.5)	(11.7)	(16.5)	(13.6)	(23.2)	46,719	4.3	3.8	0.2	0.2	3.5	3.2
Rosneft	RUB	309	(1.8)	(4.0)	(2.7)	(1.0)	(18.6)	(6.3)	(23.2)	54,500	9.6	6.8	0.8	0.7	4.9	4.2
Anadarko	USD	44	(0.2)	(1.3)	1.7	(14.1)	(35.5)	(16.4)	(36.8)	24,712	#N/A	#N/A	1.7	1.7	6.9	6.2
Petrobras	BRL	14	0.2	0.1	13.3	(4.4)	(10.2)	13.8	(9.1)	57,095	10.2	8.1	0.6	0.6	5.3	4.7
Lukoil	USD	2,939	(1.2)	0.0	2.9	4.5	(10.0)	4.7	(14.8)	41,661	5.9	5.2	0.7	0.6	N/A	N/A
Kinder	USD	20	0.0	(2.9)	3.0	(0.8)	(11.8)	(3.4)	(4.6)	47,497	30.6	27.7	1.2	1.2	11.7	11.2
Statoil	NOK	148	(1.3)	(0.5)	9.1	(1.3)	(0.7)	8.5	(6.3)	61,248	16.5	17.6	1.6	1.6	3.3	3.2
BHP	AUD	26	0.4	1.8	6.6	13.2	3.1	27.3	4.6	104,210	17.6	18.1	1.8	1.8	6.8	6.8
PTT E&P	THB	87	(0.6)	(1.1)	2.4	(8.2)	(8.5)	5.2	(10.1)	10,330	13.0	12.0	0.8	0.8	3.1	2.8
Petronas gas	MYR	19	(0.7)	0.1	1.6	1.5	(9.3)	(15.3)	(11.8)	8,664	20.9	19.4	3.0	2.8	11.9	11.0
Chesapeake	USD	4	(0.7)	(5.4)	(3.7)	(19.1)	(30.7)	(9.1)	(37.7)	3,969	5.9	4.9	#N/A	#N/A	145.7	7.4
Noble Energy	USD	25	(0.4)	(10.2)	(6.4)	(18.7)	(34.1)	(25.7)	(33.6)	12,300	#N/A	#N/A	1.2	1.2	7.8	6.7
Average		0	(0.5)	(1.0)	2.7	(1.9)	(10.1)	1.2	(12.1)							
PV																
WACKER	EUR	103.1	(1.9)	(1.9)	8.7	3.1	(7.3)	24.0	4.2	6,312	28.1	21.0	1.7	1.7	6.5	6.1
GCL-Poly	HKD	0.9	0.0	8.2	5.7	(2.1)	(10.7)	(15.6)	(1.1)	2,188	7.6	7.2	0.6	0.6	5.7	5.3
SunPower	USD	9.3	(0.2)	1.5	6.8	31.2	33.9	(36.9)	41.1	1,301	#N/A	#N/A	1.8	1.8	45.2	13.7
Canadian Solar	USD	17.2	(1.3)	4.3	10.6	25.3	43.2	19.1	41.3	998	13.4	8.2	0.9	0.9	10.2	9.8
JA Solar	USD	6.2	(0.6)	3.1	0.6	(15.7)	36.2	(21.8)	31.1	297	155.1	15.7	1.5	1.5	4.9	3.5
Yingli	USD	2.2	(3.5)	(6.8)	(6.4)	(9.8)	(19.1)	(44.6)	(15.4)	40	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
First Solar	USD	47.4	(0.9)	(2.5)	20.4	32.6	47.2	13.9	47.8	4,953	27.5	47.1	0.9	0.9	9.0	9.6
한화큐셀	USD	8.5	(0.5)	7.8	25.9	24.6	8.9	(35.0)	3.7	704	65.1	38.5	#N/A	#N/A	7.7	7.2
OCI	KRW	92,000	0.5	(1.2)	5.0	13.7	1.7	(1.7)	16.9	1,925	15.4	20.3	0.7	0.6	7.6	7.2
웅진에너지	KRW	8,280	1.2	0.4	18.1	60.2	72.5	(2.0)	74.9	181	N/A	0.7	0.6	7.6	7.2	10.2
신성솔라에너지	KRW	2,200	(2.4)	(3.5)	2.6	22.2	12.2	(2.0)	(0.5)	334	N/A	0.6	7.6	7.2	10.2	8.8
Average			(0.9)	0.9	8.9	16.8	19.9	(9.3)	22.2							
Gas Company																
Towngas China	HKD	5.5	(0.7)	(0.5)	7.4	14.8	28.7	21.9	35.0	1,952	12.6	11.7	1.0	1.0	11.5	10.7
Kulun	HKD	7.7	0.3	(2.3)	9.1	10.9	17.8	29.6	32.1	7,910	12.3	11.4	1.4	1.3	5.9	5.6
Beijing Enterprise	HKD	40.8	(0.5)	0.0	6.7	10.4	1.5	(12.6)	11.2	6,579	8.0	7.6	0.8	0.8	13.6	13.1
ENN Energy	HKD	53.5	(0.7)	(1.5)	5.1	23.8	34.8	42.5	67.7	7,403	14.5	12.9	2.8	2.4	9.1	8.2
China Resources Gas	HKD	29.2	(1.0)	(2.8)	2.8	13.0	16.4	29.6	33.7	8,293	16.6	14.8	3.1	2.7	10.2	9.2
China Gas Holdings	HKD	19.5	0.2	(0.6)	13.4	57.1	67.9	57.1	85.2	12,382	17.8	15.2	3.9	3.3	14.2	12.3
Shenzen Gas	HKD	14.2	(1.0)	6.9	3.8	9.6	23.9	24.6	25.7	3,672	12.1	11.4	1.3	1.3	7.7	7.3
Shann Xi	CNY	8.8	(0.5)	0.3	(1.7)	3.2	(7.5)	(17.2)	(8.3)	1,463	18.6	16.7	1.8	1.6	#N/A	#N/A
Suntien	HKD	1.7	(2.9)	(0.6)	20.1	3.1	32.5	83.5	67.0	794	7.2	6.2	0.6	0.6	8.6	7.4
China Oil & Gas	HKD	0.5	0.0	(1.8)	(1.8)	(6.9)	(11.5)	(8.5)	(11.5)	402	9.3	8.1	0.9	0.8	6.0	5.3
Average			(0.7)	(0.3)	6.5	13.9	20.5	25.0	33.8							
EV																
LG화학	KRW	332,500	(2.2)	(0.3)	15.1	18.8	22.2	29.1	27.4	20,590	12.4	12.3	1.6	1.5	5.9	5.7
삼성SDI	KRW	170,500	(3.9)	(5.0)	(3.7)	20.1	35.3	45.1	56.4	10,285	17.9	11.6	1.1	1.0	19.7	12.3
Panasonic	JPY	1486.5	(1.2)	(0.6)	1.5	8.8	26.8	47.5	25.0	33,168	19.4	15.0	2.0	1.8	6.3	5.5
GS Yuasa	JPY	548.0	(2.5)	5.2	13.0	1.7	16.3	37.3	12.8	2,061	16.5	15.3	1.3	1.3	7.4	6.9
NEC	JPY	303.0	(0.3)	0.7	2.7	5.2	14.8	21.2	(2.3)	7,179	21.4	17.1	0.9	0.9	7.3	6.3
BYD Auto	CNY	49.1	(0.2)	1.3	(3.0)	0.3	(1.7)	(16.9)	(1.1)	19,110	24.1	17.5	2.4	2.2	13.7	10.7
Tesla Motors	USD	363.5	(0.5)	11.5	16.1	13.2	35.0	58.7	70.1	60,668	#N/A	#N/A	12.4	10.8	74.9	27.0
Kandi Technologies	USD	3.8	(5.0)	(3.8)	(13.6)	(15.6)	(5.0)	(47.8)	(22.4)	182	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			(2.0)	1.1	3.5	6.5	18.0	21.8	20.7							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임