

1. News Summary (3 page)

2017년 9월 19일

News	
WTI comment	국제유가 강보합세...WTI 49.91달러
Headline	바레인 Bapco, Sitra Refinery 확장 공사 계약 연내 확정 계획
News 1.	대한유화 온산 스팀크래커 가동률 100%로 끌어 올릴 전망
News 2.	-
News 3.	-
News 4.	-

Conclusion	
Refinery 증설	뉴스는 지속될 전망이며 건설사 수혜가 예상됨 현재 가동률이 이미 90-95% 가량 수준이므로 수급차질 이슈는 없을 것
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-	-
-	-

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	49.9	0.0	3.8	5.4	12.9	15.3
Dubai	\$/bbl	54.2	1.0	1.9	6.8	18.6	27.7
Gasoline	\$/bbl	71.2	0.2	1.1	4.0	22.4	22.4
Diesel	\$/bbl	68.3	0.0	0.7	6.8	19.1	26.9
Complex margin	\$/bbl	9.4	(0.3)	0.0	0.3	1.9	1.5
1M lagging	\$/bbl	14.1	(0.0)	2.7	1.7	11.3	10.4
Petrochemical			%	%	%	%	%
Naphtha	\$/t	514	1.8	2.5	10.7	24.9	33.7
Butadiene	\$/t	1,550	0.0	5.4	29.2	87.9	34.8
HDPE	\$/t	1,190	0.0	0.0	5.8	10.2	4.4
MEG	\$/t	911	0.9	(3.0)	5.3	16.1	45.3
PX	\$/t	827	1.0	(0.2)	2.7	6.4	8.6
SM	\$/t	1,302	0.4	(5.2)	11.2	17.9	29.8
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	3.15	4.0	6.6	5.1	7.2	1.5
Natural rubber	\$/t	1,540	(3.1)	(7.8)	1.3	7.7	14.9
Cotton	C/lbs	70.4	0.4	(4.5)	2.5	(1.4)	2.1

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	09/18	\$/t	1,250	2.0	7.3	46.2	16.8
Propylene	09/18	\$/t	860	(1.1)	11.0	16.6	8.9
Benzene	09/18	\$/t	795	(3.3)	2.6	1.6	24.2
Toluene	09/18	\$/t	700	2.2	6.9	8.5	10.2
Xylene	09/18	\$/t	658	3.5	3.5	6.0	6.0
PP	09/18	\$/t	1,168	1.7	5.4	10.4	16.8
PVC	09/18	\$/t	950	0.5	6.7	8.0	10.5
ABS	09/18	\$/t	2,070	2.0	10.7	21.1	49.5
SBR	09/18	\$/t	1,830	2.2	18.8	26.2	31.2
SM	09/18	\$/t	1,358	(5.7)	13.8	16.5	31.8
BPA	09/18	\$/t	1,655	(12.3)	(18.2)	18.6	4.9
Caustic	09/18	\$/t	480	0.6	0.8	9.7	47.7
2-EH	09/18	\$/t	990	0.0	3.1	7.0	28.6
Caprolactam	09/18	\$/t	1,780	3.5	(1.1)	11.3	26.2
Solar				%	%	%	%
Polysilicon	09/13	\$/kg	16.7	0.0	7.5	19.4	23.3
Module	09/13	\$/W	0.32	(0.3)	(0.3)	(3.3)	(21.7)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	80.1	0.0	1.1	4.5	(4.1)	(4.7)
Shell	EUR	2,113	0.5	(1.5)	(0.1)	(0.1)	17.5
Petrochina	CNY	8.00	0.3	(1.0)	0.6	4.6	9.9
Gazprom	RUB	122.7	0.2	1.4	5.8	5.8	(10.1)
Petrobras	BRL	15.0	0.0	0.3	10.6	22.5	14.3
Refinery							
Phillips66	USD	88.3	0.7	3.7	8.3	9.1	11.7
Valero	USD	72.2	1.5	3.4	11.5	9.7	27.3
JX	JPY	548.5	0.0	2.0	2.8	12.3	39.6
Neste Oil	EUR	36.2	0.6	(0.1)	4.5	1.9	(0.3)

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	87.2	1.1	1.9	7.3	2.4	23.8
DowDuPont	USD	69.8	(0.1)	4.4	10.0	8.4	32.3
SABIC	SAR	101.5	(0.2)	1.6	3.5	0.1	22.2
Formosa Pla.	TWD	96.0	0.6	0.1	3.4	7.1	26.5
Shin-Etsu	JPY	9,982	0.0	2.0	3.8	0.5	41.7
Renewable							
Wacker	EUR	112.7	0.6	0.4	8.2	23.3	49.8
First Solar	USD	48.54	(3.8)	2.9	1.0	35.5	39.4
GCL-Poly	HKD	1.02	0.0	14.6	8.5	39.7	(8.9)
Tesla Motors	USD	385.0	1.4	5.9	10.8	3.7	87.4

4. Coverage Summary

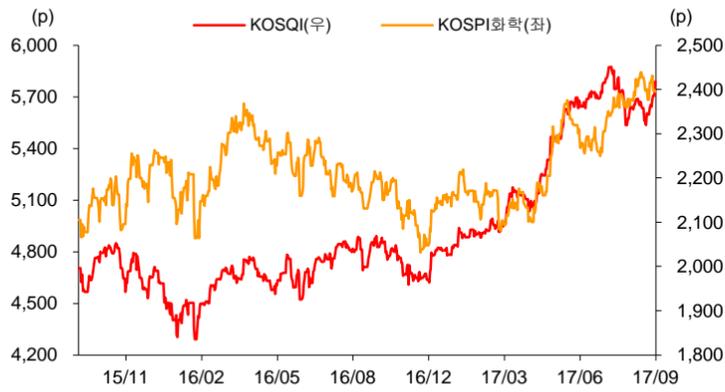
	09/18	1D	1W	1M	3M	6M	12M
KOSPI	2,418	1.3	2.5	2.5	2.1	11.7	20.9
KOSPI화학	5,729	(0.1)	(0.9)	0.8	6.7	12.7	13.4
LG화학	395,000	(1.5)	0.8	13.2	43.4	41.3	66.3
롯데케미칼	388,500	0.3	(6.7)	(1.1)	19.5	3.5	41.0
한화케미칼	38,000	1.7	2.6	7.6	23.2	52.6	62.0
금호석유화학	77,300	0.3	(4.7)	(0.1)	5.2	0.3	19.7
KCC	384,500	1.2	1.3	(4.0)	(5.2)	8.3	(1.5)
OCI	109,000	0.5	5.3	17.5	14.6	28.8	35.4
SKC	43,400	5.2	8.9	15.7	30.7	41.6	64.4
국도화학	52,900	2.5	5.6	(3.5)	(2.8)	10.2	(6.7)
SK이노베이션	191,000	1.1	0.0	12.0	21.3	16.1	26.1
S-Oil	119,000	2.1	(4.0)	4.8	25.9	22.9	59.7
GS	66,000	(1.6)	(2.5)	(2.9)	0.6	17.2	28.2
SK가스	106,500	0.0	0.9	(2.7)	(18.4)	(9.0)	5.4
포스코대우	21,600	2.9	2.1	(0.7)	(4.4)	(8.5)	(3.1)
LG상사	29,900	(0.8)	4.2	5.5	(2.1)	(2.3)	(14.7)
한국전력	41,150	(0.1)	0.5	(8.2)	(0.1)	(7.2)	(28.9)
한국가스공사	43,700	0.0	1.6	(5.1)	(15.5)	(6.8)	1.5

투자 의견	TP	%	P/E	P/B
매수	330,000	(16.5)	15.72	2.11
매수	410,000	5.5	8.02	1.41
매수	33,000	(13.2)	9.07	1.13
매수	100,000	29.4	14.70	1.47
매수	450,000	17.0	21.87	0.62
매수	100,000	(8.3)	22.06	0.85
매수	40,000	(7.8)	16.36	1.16
매수	70,000	32.3	8.88	0.64
매수	180,000	(5.8)	8.58	1.04
매수	100,000	(16.0)	15.98	2.32
매수	80,000	21.2	5.49	0.97
매수	150,000	40.8	6.46	0.77
매수	27,000	25.0	7.51	0.89
매수	42,000	40.5	9.24	0.97
매수	60,000	45.8	7.11	0.33
매수	60,000	37.3	7.42	0.52

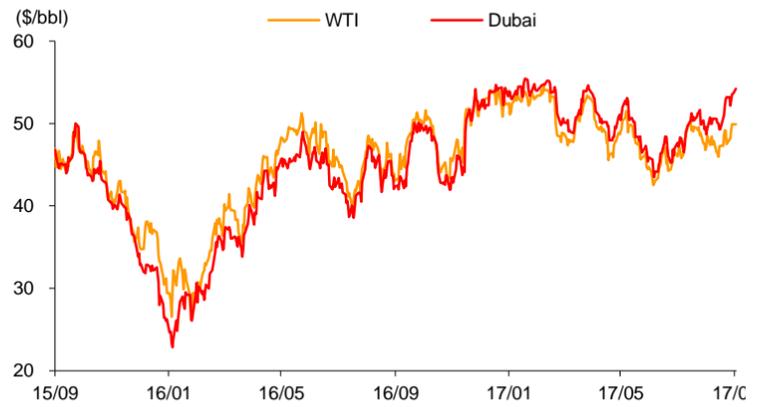
* 작성자(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
* 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
* 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
* 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

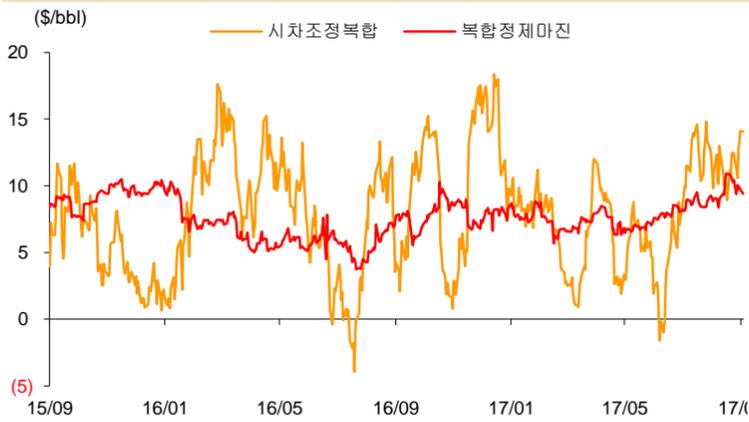
KOSPI/KOSPI화학



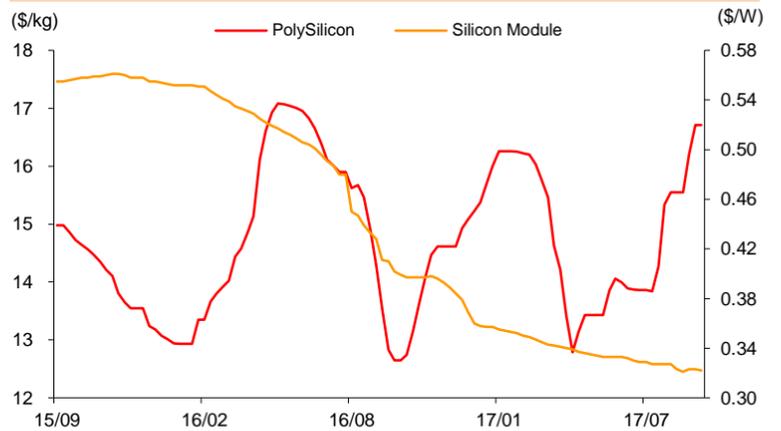
WTI/Dubai



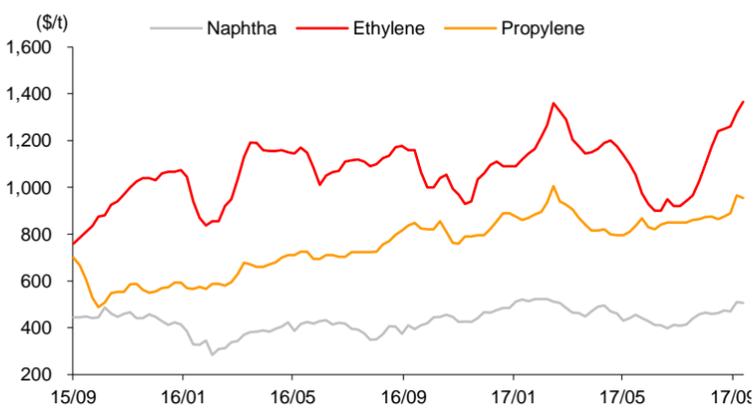
Complex & 1M lagging margin



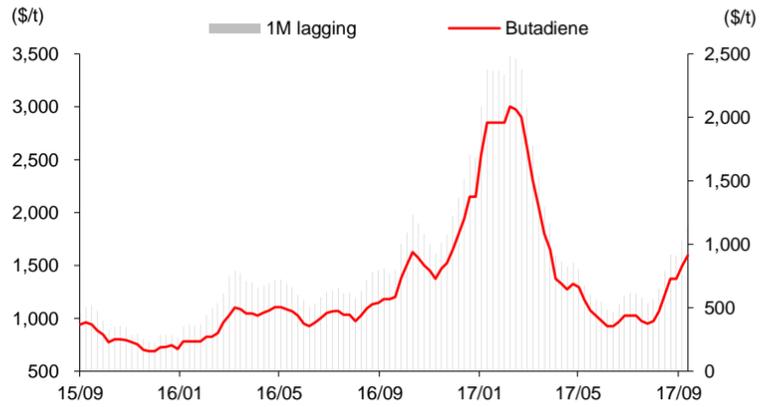
Polysilicon & Module prices



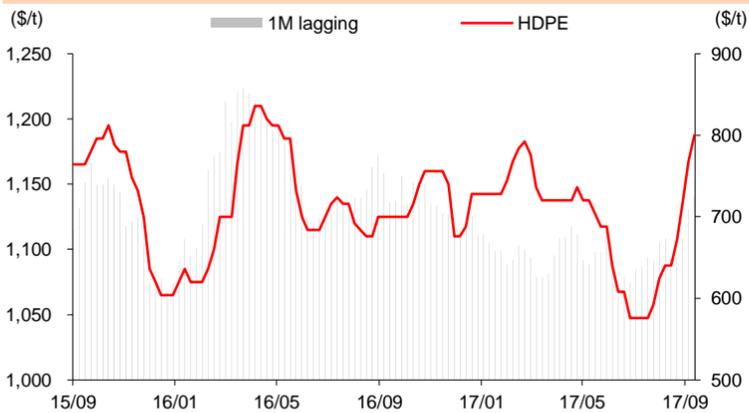
Naphtha/Ethylene/Propylene prices



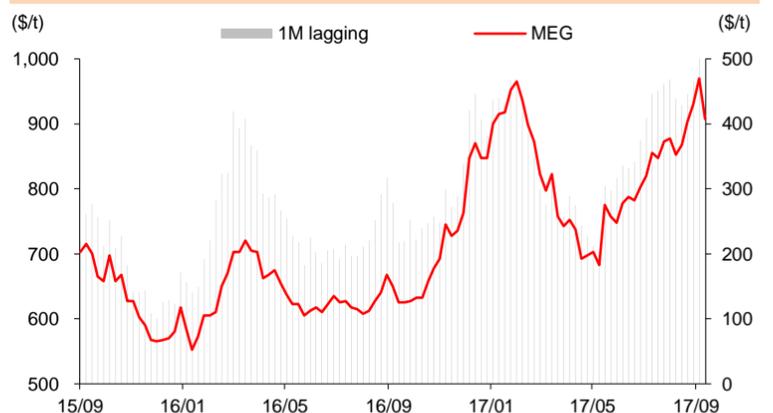
Butadiene price & 1M lagging naphtha spread



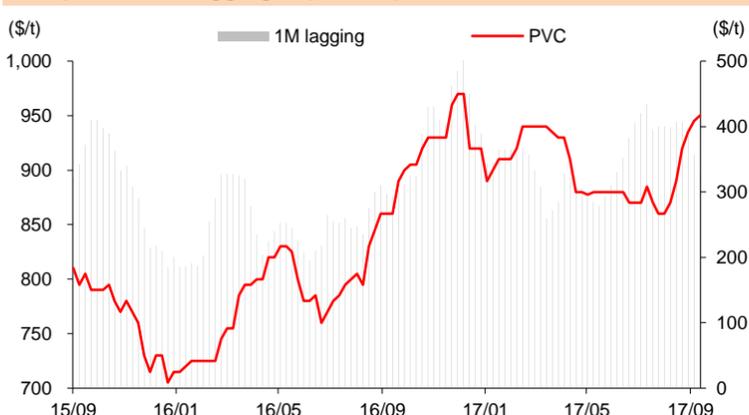
HDPE price & 1M lagging naphtha spread



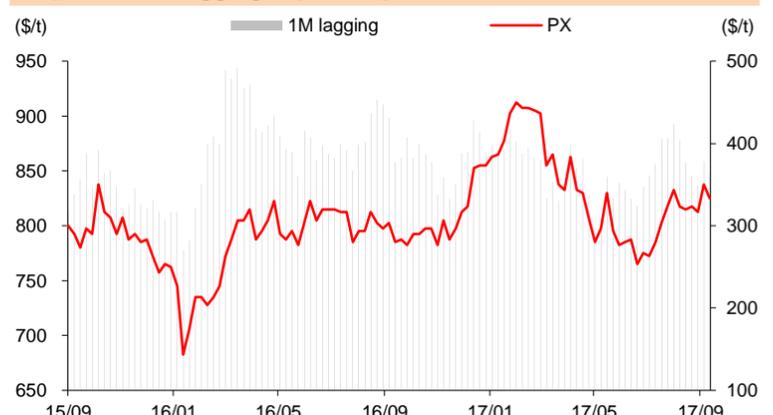
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



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

News Comment

Headline (출처: Platts)

제목 바레인 Bapco, Sitra Refinery 확장 공사 계약 연내 확정 계획

결론 Refinery 증설 뉴스는 지속될 전망이며 건설사 손해가 예상됨

세부

- 1) Bapco가 26.5만b/d 규모의 Sitra Refinery 확장 공사 계약 맺을 예정
- 2) 2021년 완공 목표이며 확장 이후 capa는 36만b/d로 확대될 예정
- 3) 50억\$가 투입될 예정이며 이미 2016년 5월부터 epc 선정에 들어감
- 4) 4개의 컨소시엄이 이번 입찰에 참여함
- 5) Refinery 증설 뉴스는 지속될 전망이며 건설사 손해가 예상됨

Issue 1 (출처: Platts)

제목 대한유화 온산 스팀크래커 가동률 100%로 끌어 올릴 전망

결론 현재 가동률이 이미 90-95% 가량 수준이므로 수급차질 이슈는 없을 것

세부

- 1) 대한유화 온산 NCC 가동률을 10월에 100%로 올릴 계획
- 2) 해당 NCC는 9월 5일 기술 결함으로 섯다운 된 후 9월 7일 재가동됨
- 3) 해당 NCC는 80만톤/년의 에틸렌과 50만톤/년의 프로필렌 capa 보유
- 4) 관계자, "연말까지 가동률 100% 달성 못할 수도 있음"
- 5) 현재 가동률이 이미 90-95% 가량 수준이므로 수급차질 이슈는 없을 것

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 국제유가 강보합세...WTI 49.91달러

상승 rig count가 지난 6월 이후 최저 수준으로 떨어졌다는 소식

요인

하락 허리케인 여파로 일시 폐쇄됐던 정유공장이 재가동을 시작

요인

Issue 2

제목

결론

세부

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

Issue 4

제목

결론

세부

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

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	0.837	0.837	0.837	0.850	0.893	0.931	0.896	0.951	0.901	0.904	0.902	
	Change, %		(0.1)	(0.0)	(1.6)	(6.3)	(10.2)	(6.7)	(12.0)	(7.2)	(7.5)	(7.2)	
	USD/JPY	111.6	110.8	109.4	109.2	110.9	112.7	102.3	117.0	121.1	108.8	111.9	
	Change, %		0.7	2.0	2.2	0.6	(1.0)	9.1	(4.6)	(7.8)	2.6	(0.3)	
	USD/KRW	1,126.7	1,131.8	1,131.9	1,141.4	1,134.2	1,131.8	1,121.9	1,205.8	1,131.2	1,160.5	1,139.0	
	Change, %		(0.4)	(0.5)	(1.3)	(0.7)	(0.4)	0.4	(6.6)	(0.4)	(2.9)	(1.1)	
	Agriculture	Corn	351.5	354.8	345.5	352.0	384.0	367.5	337.0	352.0	376.8	358.5	364.3
		Change, %		(0.9)	1.7	(0.1)	(8.5)	(4.4)	4.3	(0.1)	(6.7)	(2.0)	(3.5)
Soybean		967.8	968.8	954.8	937.5	939.0	1,000.0	966.0	996.5	945.4	987.5	975.6	
Change, %			(0.1)	1.4	3.2	3.1	(3.2)	0.2	(2.9)	2.4	(2.0)	(0.8)	
	Wheat	443.5	449.0	412.3	416.0	465.3	436.3	403.3	408.0	508.1	436.4	439.7	
	Change, %		(1.2)	7.6	6.6	(4.7)	1.7	10.0	8.7	(12.7)	1.6	0.9	
	Rice	12.9	12.8	12.4	12.1	11.4	9.9	9.8	9.4	11.1	10.3	10.7	
	Change, %		0.6	3.9	6.1	13.0	30.0	31.3	37.7	16.5	24.6	20.2	
	Oats	239.8	236.0	235.5	254.8	269.3	250.0	175.8	228.5	250.2	196.3	251.7	
	Change, %		1.6	1.8	(5.9)	(11.0)	(4.1)	36.4	4.9	(4.2)	22.1	(4.8)	
	MYR/mt	Palm Oil	2,834.0	2,885.0	2,803.0	2,675.0	2,656.0	2,966.0	2,833.0	3,218.0	2,190.3	2,653.8	2,852.9
		Change, %		(1.8)	1.1	5.9	6.7	(4.5)	0.0	(11.9)	29.4	6.8	(0.7)
Cocoa		1,975.0	2,009.0	1,973.0	1,922.0	1,975.0	2,013.0	2,803.0	2,126.0	3,091.6	2,854.0	1,994.1	
Change, %			(1.7)	0.1	2.8	0.0	(1.9)	(29.5)	(7.1)	(36.1)	(30.8)	(1.0)	
	Cotton	70.4	70.1	73.7	67.8	71.9	78.4	67.7	70.7	63.3	65.6	74.4	
	Change, %		0.4	(4.5)	3.9	(2.0)	(10.1)	3.9	(0.3)	11.3	7.3	(5.4)	
	Sugar	14.3	14.6	14.3	13.4	13.4	18.2	21.8	19.5	13.1	18.2	16.4	
	Change, %		(1.6)	0.1	6.7	6.5	(21.2)	(34.3)	(26.7)	8.9	(21.2)	(12.5)	
	Coffee	139.0	140.0	130.6	128.1	123.6	140.8	147.1	137.1	132.6	136.1	136.0	
	Change, %		(0.8)	6.4	8.5	12.5	(1.3)	(5.5)	1.4	4.8	2.1	2.2	
	Energy	WTI	49.9	49.9	48.1	48.5	44.7	48.8	43.0	53.7	48.8	43.4	49.4
		Change, %		0.0	3.8	2.9	11.6	2.3	16.0	(7.1)	2.2	15.0	1.1
Brent		55.5	55.6	53.8	52.7	47.4	51.8	45.8	56.8	53.7	45.1	52.4	
Change, %			(0.3)	3.0	5.2	17.1	7.2	21.2	(2.4)	3.4	23.1	5.9	
	Natural Gas	3.1	3.0	3.0	2.9	3.0	2.9	2.9	3.7	2.6	2.6	3.1	
	Change, %		4.0	6.6	8.7	3.6	6.7	6.7	(15.5)	19.7	23.3	2.7	
	Ethanol	1.6	1.5	1.5	1.5	1.6	1.5	1.5	1.6	1.5	1.5	1.5	
	Change, %		1.4	1.4	3.9	(0.3)	1.6	3.8	(2.5)	3.7	3.4	1.9	
	RBOB Gasoline	166.9	166.2	163.5	162.4	145.5	159.9	146.2	166.5	163.6	140.0	159.7	
	Change, %		0.4	2.1	2.7	14.7	4.4	14.2	0.2	2.0	19.2	4.5	
	Coal	98.3	99.2	99.6	98.3	80.9	81.3	71.2	88.4	59.0	65.5	84.4	
	Change, %		(1.0)	(1.3)	(0.1)	21.5	20.8	38.1	11.1	66.7	50.1	16.4	
Metal	Gold	1,307.5	1,320.2	1,327.5	1,284.0	1,253.7	1,229.3	1,310.3	1,152.3	1,160.6	1,248.5	1,250.6	
	Change, %		(1.0)	(1.5)	1.8	4.3	6.4	(0.2)	13.5	12.7	4.7	4.6	
	Silver	17.2	17.6	17.8	17.0	16.7	17.4	18.8	15.9	15.7	17.1	17.2	
	Change, %		(2.1)	(3.3)	1.5	3.1	(1.1)	(8.4)	8.1	9.5	0.6	0.1	
	Copper	6,527.0	6,507.0	6,748.0	6,486.0	5,663.0	5,935.0	4,788.0	5,535.5	5,503.1	4,872.0	5,954.6	
	Change, %		0.3	(3.3)	0.6	15.3	10.0	36.3	17.9	18.6	34.0	9.6	
	Nickel	714.6	710.6	753.3	704.0	574.7	671.9	651.6	682.0	759.5	646.4	654.3	
	Change, %		0.6	(5.1)	1.5	24.3	6.4	9.7	4.8	(5.9)	10.6	9.2	
	Zinc	3,098.0	3,031.0	3,083.0	3,124.0	2,527.0	2,882.0	2,215.0	2,576.0	1,941.9	2,097.5	2,769.5	
	Change, %		2.2	0.5	(0.8)	22.6	7.5	39.9	20.3	59.5	47.7	11.9	
	Lead	2,364.3	2,332.3	2,248.0	2,346.3	2,091.5	2,285.5	1,935.5	2,003.5	1,791.2	1,868.3	2,247.1	
	Change, %		1.4	5.2	0.8	13.0	3.4	22.2	18.0	32.0	26.5	5.2	
	Aluminum	16,190.0	16,225.0	15,925.0	16,200.0	13,520.0	13,755.0	12,565.0	12,765.0	12,184.0	12,373.5	14,205.3	
	Change, %		(0.2)	1.7	(0.1)	19.7	17.7	28.8	26.8	32.9	30.8	14.0	
	Cobalt	59,850.0	61,850.0	60,850.0	60,296.0	57,750.0	52,750.0	26,750.0	32,734.0	28,444.4	25,480.1	52,598.7	
	Change, %		(3.2)	(1.6)	(0.7)	3.6	13.5	123.7	82.8	110.4	134.9	13.8	
	HR Coil	620.0	624.0	638.0	621.0	589.0	625.0	545.0	633.0	461.5	519.3	621.6	
	Change, %		(0.6)	(2.8)	(0.2)	5.3	(0.8)	13.8	(2.1)	34.4	19.4	(0.3)	
	Scrap	347.0	360.0	374.9	371.0	355.0	335.0	240.0	302.0	252.9	275.7	345.3	
	Change, %		(3.6)	(7.4)	(6.5)	(2.3)	3.6	44.6	14.9	37.2	25.9	0.5	

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		09/18	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	WTI	49.9	49.9	48.1	47.4	44.2	48.2	43.3	53.7	48.8	43.4	49.3
	<i>Change, %</i>		<i>0.0</i>	<i>3.8</i>	<i>5.4</i>	<i>12.9</i>	<i>3.5</i>	<i>15.3</i>	<i>(7.1)</i>	<i>2.3</i>	<i>15.1</i>	<i>1.2</i>
	Dubai	54.2	53.6	53.2	50.7	45.7	50.1	42.4	53.8	50.8	41.3	50.8
	<i>Change, %</i>		<i>1.0</i>	<i>1.9</i>	<i>6.8</i>	<i>18.6</i>	<i>8.3</i>	<i>27.7</i>	<i>0.7</i>	<i>6.7</i>	<i>31.2</i>	<i>6.6</i>
Crude Oil Product	Gasoline(휘발유)	71.2	71.0	70.4	68.4	58.2	62.8	58.2	69.8	69.5	56.3	65.9
	<i>Change, %</i>		<i>0.2</i>	<i>1.1</i>	<i>4.0</i>	<i>22.4</i>	<i>13.4</i>	<i>22.4</i>	<i>1.9</i>	<i>2.4</i>	<i>26.5</i>	<i>8.0</i>
	Kerosene(등유)	68.1	67.4	66.6	63.0	56.6	60.4	54.2	66.4	64.7	52.9	62.4
	<i>Change, %</i>		<i>1.0</i>	<i>2.2</i>	<i>8.0</i>	<i>20.3</i>	<i>12.7</i>	<i>25.5</i>	<i>2.5</i>	<i>5.1</i>	<i>28.7</i>	<i>9.0</i>
	Diesel(경유)	68.3	68.3	67.9	64.0	57.4	61.5	53.8	65.5	64.8	52.1	63.1
	<i>Change, %</i>		<i>0.0</i>	<i>0.7</i>	<i>6.8</i>	<i>19.1</i>	<i>11.1</i>	<i>26.9</i>	<i>4.3</i>	<i>5.4</i>	<i>31.1</i>	<i>8.3</i>
	Bunker-C	51.5	51.2	49.3	47.7	45.0	45.0	39.1	52.1	45.3	35.5	47.6
	<i>Change, %</i>		<i>0.7</i>	<i>4.5</i>	<i>8.1</i>	<i>14.6</i>	<i>14.5</i>	<i>31.7</i>	<i>(1.0)</i>	<i>13.9</i>	<i>45.1</i>	<i>8.2</i>
	Naphtha	55.2	54.3	53.7	50.6	44.3	49.9	42.6	53.5	52.6	42.6	50.6
	<i>Change, %</i>		<i>1.6</i>	<i>2.6</i>	<i>9.0</i>	<i>24.5</i>	<i>10.6</i>	<i>29.4</i>	<i>3.2</i>	<i>4.8</i>	<i>29.5</i>	<i>9.0</i>
Dubai Spread	Gasoline(휘발유)	17.0	17.4	17.2	17.7	12.5	12.7	15.7	16.0	18.7	14.9	15.0
	<i>Change</i>		<i>(0.4)</i>	<i>(0.2)</i>	<i>(0.7)</i>	<i>4.5</i>	<i>4.3</i>	<i>1.3</i>	<i>1.0</i>	<i>(1.7)</i>	<i>2.0</i>	<i>2.0</i>
	Kerosene(등유)	13.9	13.8	13.4	12.3	10.9	10.4	11.8	12.6	14.0	11.6	11.6
	<i>Change</i>		<i>0.1</i>	<i>0.5</i>	<i>1.6</i>	<i>3.0</i>	<i>3.5</i>	<i>2.1</i>	<i>1.3</i>	<i>(0.1)</i>	<i>2.3</i>	<i>2.3</i>
	Diesel(경유)	14.1	14.7	14.7	13.2	11.7	11.4	11.4	11.7	14.0	10.8	12.2
	<i>Change</i>		<i>(0.5)</i>	<i>(0.6)</i>	<i>0.9</i>	<i>2.4</i>	<i>2.7</i>	<i>2.7</i>	<i>2.4</i>	<i>0.1</i>	<i>3.3</i>	<i>1.9</i>
Refining Margin	Bunker-C	(2.7)	(2.5)	(3.9)	(3.1)	(0.7)	(5.0)	(3.3)	(1.8)	(5.5)	(5.8)	(3.2)
	<i>Change</i>		<i>(0.2)</i>	<i>1.2</i>	<i>0.4</i>	<i>(2.0)</i>	<i>2.4</i>	<i>0.6</i>	<i>(0.9)</i>	<i>2.9</i>	<i>3.1</i>	<i>0.5</i>
	Naphtha	1.0	0.6	0.5	(0.1)	(1.4)	(0.2)	0.2	(0.4)	1.8	1.3	(0.2)
	<i>Change</i>		<i>0.3</i>	<i>0.4</i>	<i>1.1</i>	<i>2.3</i>	<i>1.1</i>	<i>0.8</i>	<i>1.3</i>	<i>(0.9)</i>	<i>(0.3)</i>	<i>1.2</i>
Refining Margin	Simple(단순)	4.3	4.6	3.9	3.9	3.9	1.7	3.2	3.8	3.3	1.9	3.2
	<i>Change</i>		<i>(0.2)</i>	<i>0.4</i>	<i>0.4</i>	<i>0.4</i>	<i>2.6</i>	<i>1.1</i>	<i>0.5</i>	<i>1.0</i>	<i>2.4</i>	<i>1.1</i>
	Complex(복합)	9.4	9.7	9.4	9.1	7.5	6.5	7.9	8.3	9.3	7.0	7.9
	<i>Change</i>		<i>(0.3)</i>	<i>0.0</i>	<i>0.3</i>	<i>1.9</i>	<i>2.9</i>	<i>1.5</i>	<i>1.1</i>	<i>0.1</i>	<i>2.4</i>	<i>1.5</i>
Refining Margin	Complex(lagging)	14.1	14.1	11.3	12.4	2.8	2.6	3.7	18.0	7.3	8.5	7.8
	<i>Change</i>		<i>(0.0)</i>	<i>2.7</i>	<i>1.7</i>	<i>11.3</i>	<i>11.5</i>	<i>10.4</i>	<i>(3.9)</i>	<i>6.8</i>	<i>5.6</i>	<i>6.2</i>

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			09/18	09/15	09/14	09/13	09/12	09/11	09/08	09/07	09/06	09/05
Spot Price	Naphtha	CFR Japan	513.5	504.5	504.5	504.5	501.0	500.8	511.5	508.8	501.0	487.0
	Ethylene	CFR SE Asia	1,205.0	1,205.0	1,200.0	1,200.0	1,200.0	1,200.0	1,185.0	1,175.0	1,165.0	1,165.0
	Propylene	FOB Korea	945.0	945.0	945.0	940.0	945.0	945.0	950.0	900.0	900.0	881.0
	Butadiene	FOB Korea	1,550.0	1,550.0	1,470.0	1,470.0	1,470.0	1,470.0	1,470.0	1,360.0	1,360.0	1,360.0
	HDPE	CFR FE Asia	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,190.0	1,195.0	1,195.0	1,190.0	1,180.0
	LDPE	CFR FE Asia	1,230.0	1,240.0	1,240.0	1,240.0	1,240.0	1,240.0	1,245.0	1,245.0	1,240.0	1,230.0
	LLDPE	CFR FE Asia	1,190.0	1,200.0	1,200.0	1,200.0	1,200.0	1,205.0	1,210.0	1,210.0	1,210.0	1,180.0
	MEG	CFR China	911.0	903.0	918.0	928.0	949.0	939.0	965.0	973.0	959.0	960.0
	PP	CFR FE Asia	1,120.0	1,130.0	1,130.0	1,135.0	1,135.0	1,125.0	1,130.0	1,130.0	1,140.0	1,140.0
	PX	CFR China	827.0	818.7	823.3	821.7	828.0	828.7	830.3	826.0	824.5	825.5
	PTA	CFR China	650.0	650.0	648.0	648.0	655.0	650.0	650.0	650.0	652.0	653.0
	Benzene	FOB Korea	776.5	777.0	774.0	778.0	783.0	794.0	801.0	804.0	810.0	824.0
	Toluene	FOB Korea	656.0	653.0	656.0	663.0	665.0	665.0	661.0	656.0	655.0	648.0
	Xylene	FOB Korea	655.0	654.5	665.5	663.0	663.0	671.0	674.5	664.5	669.0	662.0
	SM	FOB Korea	1,302.0	1,297.0	1,279.0	1,341.0	1,346.0	1,374.0	1,389.0	1,383.0	1,389.0	1,422.0

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Spot Price	Naphtha	CFR Japan	506.5	510.0	462.0	409.5	455.0	393.5	484.5	493.0	399.5	467.1
	<i>Change, %</i>			(0.7)	9.6	23.7	11.3	28.7	4.5	2.7	26.8	8.4
	Ethylene	CFR SE Asia	1,250.0	1,225.0	1,165.0	855.0	995.0	1,070.0	990.0	1,103.7	1,040.9	1,045.9
	<i>Change, %</i>			2.0	7.3	46.2	25.6	16.8	26.3	13.3	20.1	19.5
	Propylene	CFR SE Asia	860.0	870.0	775.0	737.5	747.5	790.0	815.0	770.0	705.7	867.4
	<i>Change, %</i>			(1.1)	11.0	16.6	15.1	8.9	5.5	11.7	21.9	(0.8)
	Butadiene	CFR SE Asia	1,545.0	1,450.0	1,175.0	875.0	1,025.0	1,135.0	2,100.0	877.5	1,116.8	1,611.7
	<i>Change, %</i>			6.6	31.5	76.6	50.7	36.1	(26.4)	76.1	38.3	(4.1)
	Benzene	CFR SE Asia	795.0	822.5	775.0	782.5	780.0	640.0	822.5	690.0	646.7	835.9
	<i>Change, %</i>			(3.3)	2.6	1.6	1.9	24.2	(3.3)	15.2	22.9	(4.9)
	Toluene	CFR SE Asia	700.0	685.0	655.0	645.0	655.0	635.0	690.0	700.8	630.5	681.7
	<i>Change, %</i>			2.2	6.9	8.5	6.9	10.2	1.4	(0.1)	11.0	2.7
	Xylene	CFR SE Asia	657.5	635.0	635.0	620.0	630.0	620.0	675.0	699.3	627.7	665.5
	<i>Change, %</i>			3.5	3.5	6.0	4.4	6.0	(2.6)	(6.0)	4.7	(1.2)

Spread	Ethylene	-Naphtha	743.5	715.0	703.0	445.5	540.0	676.5	505.5	610.6	641.4	578.7
	<i>Change, %</i>			4.0	5.8	66.9	37.7	9.9	47.1	21.8	15.9	28.5
	Propylene	-Naphtha	353.5	360.0	313.0	328.0	292.5	396.5	330.5	277.0	306.2	400.3
	<i>Change, %</i>			(1.8)	12.9	7.8	20.9	(10.8)	7.0	27.6	15.5	(11.7)
	Butadiene	-Naphtha	1,038.5	940.0	713.0	465.5	570.0	741.5	1,615.5	384.5	717.3	1,144.6
	<i>Change, %</i>			10.5	45.7	123.1	82.2	40.1	(35.7)	170.1	44.8	(9.3)
	Benzene	-Naphtha	288.5	312.5	313.0	373.0	325.0	246.5	338.0	197.0	247.2	368.8
	<i>Change, %</i>			(7.7)	(7.8)	(22.7)	(11.2)	17.0	(14.6)	46.5	16.7	(21.8)
	Toluene	-Naphtha	193.5	175.0	193.0	235.5	200.0	241.5	205.5	207.8	231.0	214.6
	<i>Change, %</i>			10.6	0.3	(17.8)	(3.3)	(19.9)	(5.8)	(6.9)	(16.2)	(9.8)
	Xylene	-Naphtha	151.0	125.0	173.0	210.5	175.0	226.5	190.5	206.3	228.2	198.4
	<i>Change, %</i>			20.8	(12.7)	(28.3)	(13.7)	(33.3)	(20.7)	(26.8)	(33.8)	(23.9)

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	1,187.5	1,167.5	1,087.5	1,067.5	1,127.5	1,125.0	1,142.5	1,230.1	1,134.6	1,122.2
	Change, %			1.7	9.2	11.2	5.3	5.6	3.9	(3.5)	4.7	5.8
	MEG	CFR SE Asia	907.5	970.0	867.5	787.5	775.0	625.0	847.5	780.8	660.8	830.1
	Change, %			(6.4)	4.6	15.2	17.1	45.2	7.1	16.2	37.3	9.3
	PVC	CFR SE Asia	950.0	945.0	890.0	880.0	880.0	860.0	920.0	820.8	823.4	902.0
	Change, %			0.5	6.7	8.0	8.0	10.5	3.3	15.7	15.4	5.3
	PP	CFR SE Asia	1,167.5	1,147.5	1,107.5	1,057.5	1,037.5	1,000.0	1,032.5	1,109.8	978.4	1,076.8
	Change, %			1.7	5.4	10.4	12.5	16.8	13.1	5.2	19.3	8.4
	2-EH	CFR Korea	990.0	990.0	960.0	925.0	950.0	770.0	865.0	930.1	772.4	953.5
	Change, %			0.0	3.1	7.0	4.2	28.6	14.5	6.4	28.2	3.8
	ABS	CFR SE Asia	2,070.0	2,030.0	1,870.0	1,710.0	1,630.0	1,385.0	1,635.0	1,431.1	1,347.1	1,788.8
	Change, %			2.0	10.7	21.1	27.0	49.5	26.6	44.6	53.7	15.7
	SBR	CFR SE Asia	1,830.0	1,790.0	1,540.0	1,450.0	1,750.0	1,395.0	2,000.0	1,332.1	1,483.0	2,091.4
	Change, %			2.2	18.8	26.2	4.6	31.2	(8.5)	37.4	23.4	(12.5)
	SM	CFR SE Asia	1,357.5	1,440.0	1,192.5	1,165.0	1,112.5	1,030.0	1,205.0	1,100.7	1,064.6	1,241.0
	Change, %			(5.7)	13.8	16.5	22.0	31.8	12.7	23.3	27.5	9.4
	Caustic	FOB NEA	480.0	477.0	476.0	437.5	447.5	325.0	422.5	296.8	316.6	445.6
	Change, %			0.6	0.8	9.7	7.3	47.7	13.6	61.8	51.6	7.7
	PX	CFR SE Asia	825.0	837.5	815.0	787.5	830.0	785.0	855.0	842.9	790.4	833.1
	Change, %			(1.5)	1.2	4.8	(0.6)	5.1	(3.5)	(2.1)	4.4	(1.0)
PO	CFR China	1,655.0	1,887.5	2,022.5	1,395.0	1,350.0	1,577.5	1,562.5	1,683.4	1,396.8	1,545.9	
Change, %			(12.3)	(18.2)	18.6	22.6	4.9	5.9	(1.7)	18.5	7.1	
Caprolactam	CFR SE Asia	1,780.0	1,720.0	1,800.0	1,600.0	1,700.0	1,410.0	1,850.0	1,581.5	1,344.9	1,897.8	
Change, %			3.5	(1.1)	11.3	4.7	26.2	(3.8)	12.5	32.4	(6.2)	
PTA	CFR SE Asia	672.5	667.5	652.5	635.0	647.5	615.0	642.5	648.0	613.7	658.1	
Change, %			0.7	3.1	5.9	3.9	9.3	4.7	3.8	9.6	2.2	
Spread	HDPE		681.0	657.5	625.5	658.0	672.5	731.5	658.0	737.1	735.1	655.1
	Change, %			3.6	8.9	3.5	1.3	(6.9)	3.5	(7.6)	(7.4)	4.0
	MEG		401.0	460.0	405.5	378.0	320.0	231.5	363.0	287.8	261.3	363.0
	Change, %			(12.8)	(1.1)	6.1	25.3	73.2	10.5	39.3	53.5	10.5
	PVC		443.5	435.0	428.0	470.5	425.0	466.5	435.5	327.8	423.9	434.9
	Change, %			2.0	3.6	(5.7)	4.4	(4.9)	1.8	35.3	4.6	2.0
	PP		661.0	637.5	645.5	648.0	582.5	606.5	548.0	616.8	578.9	609.7
	Change, %			3.7	2.4	2.0	13.5	9.0	20.6	7.2	14.2	8.4
	2-EH		483.5	480.0	498.0	515.5	495.0	376.5	380.5	437.0	372.9	486.4
	Change, %			0.7	(2.9)	(6.2)	(2.3)	28.4	27.1	10.6	29.7	(0.6)
	ABS		1,563.5	1,520.0	1,408.0	1,300.5	1,175.0	991.5	1,150.5	938.1	947.6	1,321.7
	Change, %			2.9	11.0	20.2	33.1	57.7	35.9	66.7	65.0	18.3
	SBR	BD spread	285.0	340.0	365.0	575.0	725.0	260.0	(100.0)	454.7	366.2	479.7
	Change, %			(16.2)	(21.9)	(50.4)	(60.7)	9.6	(385.0)	(37.3)	(22.2)	(40.6)
	SM		851.0	930.0	730.5	755.5	657.5	636.5	720.5	607.7	665.1	773.9
	Change, %			(8.5)	16.5	12.6	29.4	33.7	18.1	40.0	28.0	10.0
	Caustic											
	Change, %											
	PX		318.5	327.5	353.0	378.0	375.0	391.5	370.5	349.9	390.9	366.0
	Change, %			(2.7)	(9.8)	(15.7)	(15.1)	(18.6)	(14.0)	(9.0)	(18.5)	(13.0)
PO	propylene spread	795.0	1,017.5	1,247.5	657.5	602.5	787.5	747.5	913.4	691.1	678.6	
Change, %			(21.9)	(36.3)	20.9	32.0	1.0	6.4	(13.0)	15.0	17.2	
Caprolactam	benzene spread	985.0	897.5	1,025.0	817.5	920.0	770.0	1,027.5	891.6	698.2	1,061.8	
Change, %			9.7	(3.9)	20.5	7.1	27.9	(4.1)	10.5	41.1	(7.2)	
PTA	px spread	95.0	81.3	82.0	83.8	66.5	65.5	44.0	58.0	60.4	74.9	
Change, %			16.9	15.9	13.4	42.9	45.0	115.9	63.8	57.2	26.8	

자료 : Cischem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	09/18	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA		
											17E	18E	17E	18E	17E	18E	
Petrochemical																	
DowDuPont	USD	69.8	(0.1)	4.4	10.0	8.4	9.0	32.3	21.9	162,981	21.2	17.3	2.7	3.1	11.1	9.6	
Eastman	USD	85.4	0.5	(0.2)	3.0	2.8	7.9	34.0	13.6	12,374	11.4	10.5	2.4	2.2	8.7	8.3	
BASF	EUR	87.2	1.1	1.9	7.3	2.4	(2.3)	23.8	(1.3)	95,582	14.9	14.7	2.4	2.2	8.2	8.0	
Akzo Nobel	EUR	78.7	0.9	0.7	1.8	1.2	4.6	32.2	32.4	23,870	18.4	17.8	3.1	3.1	10.2	9.8	
Arkema	EUR	99.0	2.2	3.9	4.8	4.0	7.2	19.6	6.6	8,960	14.5	13.3	1.8	1.7	6.5	6.2	
Lanxess	EUR	65.5	2.3	2.1	4.6	(2.1)	1.1	41.5	5.1	7,154	16.9	14.8	2.3	2.1	7.5	8.2	
Sumitomo Chemical	JPY	690	0.0	3.8	6.2	16.0	5.3	50.3	24.1	10,308	10.6	10.0	1.3	1.2	7.6	7.3	
Mitsubishi Chemical	JPY	1,063	0.0	3.6	12.8	22.6	22.5	79.5	40.2	14,450	9.6	9.5	1.3	1.2	6.4	6.3	
Shin-Etsu Chemical	JPY	9,982	0.0	2.0	3.8	0.5	3.3	41.7	10.1	38,925	20.0	17.9	1.9	1.7	8.6	7.5	
Asahi Kasei	JPY	1,376	0.0	4.2	9.8	20.0	26.0	72.4	34.9	17,411	15.8	15.1	1.5	1.4	7.7	7.4	
JSR	JPY	2,123	0.0	0.5	4.1	16.1	8.9	40.8	15.2	4,332	16.1	15.3	1.2	1.2	8.4	7.8	
Nitto Denko	JPY	9,398	0.0	(1.0)	(2.6)	5.4	6.8	41.7	4.8	14,737	18.5	17.0	2.2	2.0	8.2	7.7	
SABIC	SAR	101.5	(0.2)	1.6	3.5	0.1	4.6	22.2	11.0	81,207	15.2	14.7	1.8	1.8	7.7	7.5	
Yansab	SAR	60.0	4.1	5.4	9.0	8.1	6.4	36.7	10.1	8,992	15.3	14.5	2.5	2.4	9.5	9.0	
Formosa Plastics	TWD	96.0	0.6	0.1	3.4	7.1	5.1	26.5	7.6	20,266	14.5	15.0	1.9	1.8	18.9	19.5	
Formosa Fiber	TWD	95.2	1.6	(0.4)	3.7	5.9	1.1	18.3	(1.1)	18,505	12.8	13.2	1.7	1.7	10.2	10.6	
Nan Ya Plastics	TWD	76.7	1.3	1.6	2.4	6.5	7.3	29.1	7.7	20,173	15.5	16.2	1.8	1.7	16.4	16.0	
Sinopec Shanghai	CNY	6.36	0.8	(0.2)	(5.8)	(2.0)	(1.7)	6.9	(1.2)	9,201	12.0	11.5	2.4	2.1	6.7	6.7	
Sinopec Yizheng(Fiber)	CNY	3.20	0.0	0.0	0.0	(9.3)	(16.4)	(18.2)	(22.0)	6,227	#N/A	N/A	47.1	6.9	7.2	38.3	17.8
Reliance	INR	846	0.4	3.4	7.3	21.8	30.0	57.2	56.2	85,704	17.2	14.2	2.0	1.7	12.3	9.9	
Industries Qatar	QAR	87.3	(0.8)	(0.2)	(6.3)	(11.8)	(22.4)	(17.6)	(25.7)	14,288	14.1	12.3	1.5	1.5	49.7	45.3	
PTT Chemical	THB	78.0	0.0	2.0	5.8	11.8	9.5	33.3	23.8	10,552	10.6	10.8	1.4	1.3	5.6	5.5	
Petronas	MYR	7.4	0.3	(1.6)	2.4	1.9	(1.1)	11.5	5.3	14,040	16.1	16.1	2.0	1.9	8.8	8.7	
LG화학	KRW	395,000	(1.5)	0.8	13.2	42.1	41.3	66.3	51.3	24,697	15.3	14.8	1.9	1.8	6.7	6.3	
롯데케미칼	KRW	388,500	0.3	(6.7)	(1.1)	16.5	3.5	41.0	5.3	11,794	6.0	6.0	1.2	1.0	4.0	3.6	
한화케미칼	KRW	38,000	1.7	2.6	7.6	31.5	52.6	62.0	53.8	5,547	6.4	6.7	1.0	0.9	7.9	7.4	
금호석유	KRW	77,300	0.3	(4.7)	(0.1)	2.7	0.3	19.7	(5.7)	2,086	14.7	12.9	1.4	1.3	9.9	8.7	
SKC	KRW	43,400	5.2	8.9	15.7	28.6	41.6	64.4	31.5	1,443	12.0	10.4	1.1	1.0	9.7	8.1	
국도화학	KRW	52,900	2.5	5.6	(3.5)	(1.1)	10.2	(6.7)	(3.6)	272	8.6	9.3	0.7	0.6	5.0	5.1	
효성	KRW	7,100	0.7	6.8	5.8	19.3	(15.4)	40.0	4.4	4,759	9.0	7.7	1.3	1.2	7.3	6.5	
Average			0.8	1.7	4.3	9.2	8.6	33.4	13.9								
Refinery																	
Valero	USD	72.2	1.5	3.4	11.5	9.7	4.8	27.3	5.7	31,888	16.4	13.0	1.6	1.7	6.8	6.0	
Conoco Phillips	USD	47.1	1.2	4.8	9.2	1.2	3.1	18.1	(6.1)	57,306	205.6	38.4	1.9	1.9	9.6	7.0	
Formosa Petrochemical	TWD	106.5	0.5	0.5	4.4	0.5	0.0	18.7	(4.9)	33,644	16.2	18.8	3.2	3.2	9.6	11.2	
Andeavor	USD	103.2	0.7	0.9	11.1	11.6	20.9	25.8	18.0	16,184	17.8	14.0	1.5	1.6	9.0	7.1	
Marathon Petroleum	USD	53.6	1.2	(0.3)	6.9	(0.4)	5.5	22.8	6.4	27,125	18.7	15.8	2.2	2.3	8.5	7.6	
Devon Energy	USD	34.0	1.0	6.8	11.7	7.0	(16.2)	(17.1)	(25.6)	17,852	19.7	16.6	2.5	2.2	8.6	7.7	
Hollyfrontier	USD	32.9	1.5	0.6	18.9	25.2	16.3	30.1	0.4	5,831	22.0	15.3	1.2	1.2	8.7	6.8	
Phillips 66	USD	88.3	0.7	3.7	8.3	9.1	10.5	11.7	2.2	45,172	20.4	15.4	2.0	2.0	10.1	8.5	
Murphy Oil	USD	25.8	1.5	10.1	7.4	1.8	(5.2)	(1.4)	(17.1)	4,456	#N/A	N/A	277.6	1.0	1.0	4.7	4.5
JX Holdings	JPY	548.5	0.0	2.0	2.8	12.3	1.1	39.6	10.9	16,963	8.6	8.1	0.8	0.8	8.0	7.6	
Idemitsu	JPY	2,848.0	0.0	2.6	10.2	(11.3)	(25.8)	47.0	(8.3)	5,346	6.5	6.4	0.8	0.7	8.2	7.9	
Nesteoil	EUR	36.2	0.6	(0.1)	4.5	1.9	4.4	(0.3)	(0.9)	0	13.8	13.8	2.2	2.0	7.9	8.3	
Ashland	USD	64.7	1.1	1.8	6.2	(2.5)	6.4	10.5	21.1	4,040	16.6	19.9	1.1	1.1	8.7	9.6	
Fuchs Petrolub	EUR	49.0	0.8	0.3	3.8	(3.6)	11.9	22.8	22.8	7,597	25.1	23.8	5.0	4.5	14.6	13.8	
SK이노베이션	KRW	191,000	1.1	0.0	12.0	20.1	16.1	26.1	30.4	15,642	7.9	7.7	1.0	0.9	4.7	4.2	
S-Oil	KRW	119,000	2.1	(4.0)	4.8	24.1	22.9	59.7	40.5	11,866	12.6	9.6	2.1	1.9	9.7	7.1	
GS	KRW	66,000	(1.6)	(2.5)	(2.9)	(1.2)	17.2	28.2	22.0	5,432	6.2	5.9	0.8	0.7	7.2	6.8	
Average			0.8	1.8	7.7	6.2	5.5	21.7	6.9								

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	09/18	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	0.0	1.1	4.5	(4.1)	(2.3)	(4.7)	(11.3)	339,350	23.4	20.7	1.9	1.9	9.8	9.5
BP	GBP	451	0.6	0.4	2.5	(3.4)	(2.6)	7.2	(11.5)	120,068	21.6	16.6	1.3	1.3	6.1	5.6
Shell	EUR	2,113	0.5	(1.5)	(0.1)	(0.1)	(0.5)	17.5	(5.8)	238,309	16.8	15.0	1.2	1.2	6.5	6.0
Chevron	USD	115	0.5	2.4	8.2	6.3	7.0	17.7	(2.1)	218,285	28.6	24.1	1.5	1.5	8.2	7.4
Total	EUR	45	0.0	1.3	5.4	0.3	(5.1)	10.7	(7.7)	134,201	13.4	12.4	1.2	1.2	6.3	5.6
Sinopec	CNY	6	0.2	(0.8)	0.2	0.0	6.7	22.0	9.6	105,852	13.9	12.9	1.0	0.9	4.4	4.3
Petrochina	CNY	8	0.3	(1.0)	0.6	4.6	0.8	9.9	0.6	210,596	55.2	34.0	1.2	1.2	6.7	6.5
CNOOC	CNY	11	0.7	0.7	1.1	(0.2)	(12.1)	(5.2)	(11.7)	54,549	12.7	11.1	0.9	0.9	3.8	3.6
Gazprom	RUB	123	0.2	1.4	5.8	5.8	(4.8)	(10.1)	(20.6)	50,044	4.4	3.9	0.2	0.2	3.8	3.4
Rosneft	RUB	318	(0.5)	1.2	6.0	3.8	1.1	(11.9)	(21.1)	58,054	9.8	7.0	0.8	0.8	5.1	4.3
Anadarko	USD	44	0.5	6.7	3.8	(7.0)	(30.8)	(23.9)	(37.2)	24,521	#N/A	#N/A	1.7	1.7	6.9	6.1
Petrobras	BRL	15	0.0	0.3	10.6	22.5	14.3	14.3	1.1	64,354	11.4	8.8	0.6	0.6	5.5	5.0
Lukoil	USD	3,033	1.8	4.2	7.2	12.9	(3.1)	0.1	(12.1)	44,561	6.2	5.7	0.7	0.6	N/A	N/A
Kinder	USD	19	0.2	(0.3)	4.5	1.0	(8.9)	(9.7)	(6.4)	47,497	29.9	27.5	1.2	1.2	11.6	11.1
Statoil	NOK	153	(0.1)	2.9	5.7	6.3	2.2	22.1	(3.6)	64,014	16.9	18.2	1.7	1.6	3.5	3.4
BHP	AUD	26	0.1	(1.9)	3.5	14.3	5.8	30.8	4.9	105,077	17.5	18.3	1.9	1.8	6.5	6.6
PTT E&P	THB	90	1.4	1.4	6.5	2.6	0.0	14.3	(6.5)	10,796	13.3	12.6	0.9	0.8	3.2	3.0
Petronas gas	MYR	18	(1.3)	1.3	(2.4)	(3.0)	(7.3)	(16.3)	(13.9)	8,665	20.5	19.2	2.9	2.8	11.7	10.8
Chesapeake	USD	4	1.3	11.6	2.3	(20.6)	(23.4)	(44.9)	(42.3)	3,679	5.9	5.4	#N/A	#N/A	20.8	7.3
Noble Energy	USD	26	0.2	4.2	10.3	(11.6)	(22.9)	(22.8)	(31.5)	12,694	#N/A	#N/A	1.3	1.4	9.4	7.1
Average		0	0.3	1.8	4.3	1.5	(4.3)	0.9	(11.5)							
PV																
WACKER	EUR	112.7	0.6	0.4	8.2	23.3	13.0	49.8	14.0	7,011	30.7	23.2	1.9	1.8	7.0	6.6
GCL-Poly	HKD	1.0	0.0	14.6	8.5	39.7	(4.7)	(8.9)	9.7	2,426	7.6	7.4	0.7	0.6	6.4	5.9
SunPower	USD	8.5	0.7	1.1	(8.5)	11.6	21.1	12.2	27.8	1,179	#N/A	#N/A	1.7	1.7	42.8	13.8
Canadian Solar	USD	16.8	(2.7)	0.9	1.0	31.3	22.3	41.8	37.9	974	10.6	6.9	1.0	0.9	9.6	8.5
JA Solar	USD	8.1	3.2	2.0	30.9	28.4	60.9	41.8	71.0	387	16.4	17.6	1.9	1.9	4.1	3.3
Yingli	USD	2.6	8.3	16.4	4.8	31.7	39.4	(28.4)	0.8	48	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
First Solar	USD	48.5	(3.8)	2.9	1.0	35.5	52.5	39.4	51.3	5,068	21.7	38.6	0.9	0.9	8.1	9.1
한화큐셀	USD	7.6	(0.8)	0.5	3.5	20.3	3.8	(32.2)	(7.0)	632	84.3	43.4	#N/A	#N/A	7.5	7.5
OCI	KRW	109,000	0.5	5.3	17.5	20.4	28.8	35.4	38.5	2,302	17.0	22.5	0.8	0.8	8.3	7.7
웅진에너지	KRW	9,170	(0.5)	(0.5)	11.3	45.6	85.3	29.2	93.7	202	N/A	0.8	0.8	8.3	7.7	9.0
신성솔라에너지	KRW	2,150	(1.4)	5.1	0.7	10.8	12.6	(2.9)	(2.7)	329	N/A	0.8	8.3	7.7	9.0	7.7
Average			0.4	4.4	7.2	27.1	30.4	16.1	30.4							
Gas Company																
Towngas China	HKD	5.3	1.0	1.3	2.7	8.9	13.8	24.0	29.2	1,867	12.3	11.2	1.0	0.9	11.5	10.7
Kulun	HKD	7.5	0.1	(0.4)	0.5	15.1	6.4	28.4	28.4	7,694	11.6	10.7	1.3	1.2	5.9	5.7
Beijing Enterprise	HKD	43.3	1.2	1.5	8.0	15.0	0.7	8.3	18.0	6,983	8.3	7.7	0.9	0.8	15.4	14.4
ENN Energy	HKD	52.2	1.6	(3.2)	0.6	25.8	17.3	34.2	63.6	7,224	13.7	12.2	2.7	2.2	8.7	7.8
China Resources Gas	HKD	26.7	1.3	(1.5)	(8.7)	11.3	(5.2)	0.4	22.2	7,583	15.2	13.5	2.9	2.5	9.1	8.2
China Gas Holdings	HKD	21.6	3.1	2.9	13.4	67.4	71.4	79.4	105.3	13,730	19.4	16.5	4.3	3.6	15.4	13.3
Shenzen Gas	HKD	14.7	2.6	1.1	4.0	9.5	27.1	15.5	30.3	3,812	12.1	11.5	1.4	1.3	9.3	8.7
Shann Xi	CNY	8.6	0.4	(1.3)	(0.3)	(2.6)	(9.4)	(15.7)	(10.5)	1,453	18.1	16.3	1.7	1.6	#N/A	#N/A
Suntien	HKD	1.9	(1.6)	3.8	6.2	32.2	25.2	68.8	89.0	898	7.2	6.2	0.7	0.6	9.8	8.4
China Oil & Gas	HKD	0.5	0.0	(7.0)	3.9	(1.9)	(13.1)	(5.4)	(13.1)	395	9.1	7.9	0.9	0.8	6.2	5.6
Average			1.0	(0.3)	3.0	18.1	13.4	23.8	36.2							
EV																
LG화학	KRW	395,000	(1.5)	0.8	13.2	42.1	41.3	66.3	51.3	24,697	14.5	14.2	1.9	1.7	6.9	6.6
삼성SDI	KRW	220,500	2.8	8.9	24.9	49.5	62.1	125.2	102.3	13,430	22.6	14.6	1.4	1.3	26.4	16.3
Panasonic	JPY	1611.5	0.0	8.8	10.3	8.5	28.3	58.8	35.5	35,675	20.9	16.1	2.2	2.0	6.8	5.9
GS Yuasa	JPY	574.0	0.0	5.7	8.5	14.1	7.7	38.0	18.1	2,142	17.3	15.9	1.4	1.3	7.7	7.1
NEC	JPY	296.0	0.0	2.4	0.0	3.9	3.5	15.2	(4.5)	6,958	18.3	16.6	0.9	0.9	7.0	6.2
BYD Auto	CNY	57.9	8.5	11.7	19.3	13.5	17.1	3.4	16.6	23,219	30.8	22.2	2.9	2.6	14.0	11.3
Tesla Motors	USD	385.0	1.4	5.9	10.8	3.7	47.2	87.4	80.2	64,252	#N/A	#N/A	12.8	11.2	81.0	28.3
Kandi Technologies	USD	5.3	14.0	34.2	45.2	35.9	37.7	(5.9)	8.2	255	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			3.1	9.8	16.5	21.4	30.6	48.6	38.5							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임