

1. News Summary (3 page)

2018년 7월 23일

News	
WTI comment	트럼프발 달러 약세에 상승...WTI 1.4%↑
Headline	[주간가격] 에틸렌, WoW \$10/mt 하락해 CFR SEA \$1,270/mt로 마감
News 1.	[주간가격] MEG, WoW \$3/mt 상승해 CFR China \$901/mt로 마감
News 2.	[주간가격] BD, WoW \$30/mt 상승해 FOB Korea \$1,680/mt로 마감
News 3.	[주간가격] SBR, WoW \$10/mt 상승해 CFR SEA \$1,760/mt로 마감
News 4.	[주간가격] PX, WoW \$11/mt 상승해 FOB Korea \$997/mt로 마감

Conclusion	
	다운스트림이 역마진인데다가 증동 물량도 유입되며 하방 열릴 전망
	에틸렌 가격 약세 전망으로 다운스트림인 MEG도 강세는 힘들 전망
	FOB Korea 강세 속 다른 아시아권 가격은 매도 압력으로 약세 전망됨
	무역전쟁은 자동차 관세로 이어질 개연성이 높아 일시적 섀티 약화 가능
	산유국의 증산기조와 하반기 역대 PX 설비 증설로 가격 하방 열릴 전망

2. Prices Summary (4~7 page)

Daily	Unit	Price	1D	1W	1M	3M	12M
Refinery			%	%	%	%	%
WTI	\$/bbl	70.5	1.4	(0.8)	6.4	3.0	53.9
Dubai	\$/bbl	71.5	1.6	(0.2)	(1.6)	1.6	48.5
Gasoline	\$/bbl	82.0	1.9	1.3	0.7	(0.0)	28.6
Diesel	\$/bbl	84.3	1.7	1.1	(2.5)	(1.4)	36.1
Complex margin	\$/bbl	7.1	0.4	1.0	0.8	0.3	(1.8)
1M lagging	\$/bbl	6.6	0.4	3.6	4.7	(7.7)	(4.9)
Petrochemical			%	%	%	%	%
Naphtha	\$/t	648	2.3	0.1	2.2	4.2	48.8
Butadiene	\$/t	1,680	1.8	1.8	2.4	26.3	74.1
HDPE	\$/t	1,320	0.0	(1.5)	(2.6)	(1.9)	22.2
MEG	\$/t	901	0.2	0.3	2.4	(11.4)	5.8
PX	\$/t	997	1.0	1.1	6.3	4.7	26.6
SM	\$/t	1,359	0.7	(1.5)	1.5	4.7	17.8
Commodity			%	%	%	%	%
Natural Gas	\$/mmbtu	2.76	(0.4)	0.2	(6.4)	(2.3)	(5.0)
Natural rubber	\$/t	1,320	0.8	2.3	(0.8)	(4.3)	(14.3)
Cotton	C/lbs	87.7	(0.6)	(1.3)	2.7	2.7	26.9

*참고: 정제마진의 변동률은 %가 아닌 \$/bbl임

Weekly	Update	Unit	Price	1W	1M	3M	12M
Petrochemical				%	%	%	%
Ethylene	07/16	\$/t	1,290	0.0	2.4	1.2	44.5
Propylene	07/16	\$/t	970	0.5	(4.4)	(0.8)	28.5
Benzene	07/16	\$/t	830	1.2	(0.3)	(0.3)	13.3
Toluene	07/16	\$/t	795	0.0	(2.5)	7.4	26.2
Xylene	07/16	\$/t	823	0.9	(0.6)	8.2	33.7
PP	07/16	\$/t	1,253	(0.8)	(3.1)	0.4	19.6
PVC	07/16	\$/t	935	0.0	0.3	(2.6)	5.6
ABS	07/16	\$/t	1,930	(1.5)	(6.3)	(3.0)	7.2
SBR	07/16	\$/t	1,750	(1.1)	(7.9)	7.4	20.7
SM	07/16	\$/t	1,403	2.6	(6.0)	2.7	16.6
BPA	07/16	\$/t	1,798	3.6	0.6	(6.1)	17.5
Caustic	07/16	\$/t	410	(13.7)	(23.9)	(34.5)	(10.4)
2-EH	07/16	\$/t	1,090	(0.9)	(2.7)	(5.6)	16.9
Caprolactam	07/16	\$/t	2,145	0.2	(0.2)	(3.4)	33.2
Solar				%	%	%	%
Polysilicon	07/18	\$/kg	11.0	(1.0)	(7.2)	(28.5)	(20.4)
Module	07/18	\$/W	0.26	(1.5)	(7.2)	(14.0)	(21.1)

3. Global Peers Summary (8~9 page)

	Unit	Price	1D	1W	1M	3M	12M
E&P			%	%	%	%	%
ExxonMobil	USD	81.4	(0.7)	(2.3)	1.2	3.0	0.7
Shell	EUR	2,656	(0.2)	0.4	4.6	6.3	26.8
Petrochina	CNY	7.36	1.7	(3.2)	(0.8)	(3.7)	(9.2)
Gazprom	RUB	136.5	(0.8)	(7.1)	(0.3)	(5.5)	13.2
Petrobras	BRL	19.3	4.8	6.5	19.0	(13.7)	47.3
Refinery							
Phillips66	USD	110.4	(0.5)	(1.3)	(3.7)	(0.6)	34.0
Valero	USD	106.2	(0.7)	(1.1)	(8.2)	(2.2)	57.3
JX	JPY	802.9	1.3	4.7	8.5	12.6	61.5
Neste Oil	EUR	67.2	(0.3)	0.3	2.6	22.9	77.9

	Unit	Price	1D	1W	1M	3M	12M
Petrochemical			%	%	%	%	%
BASF	EUR	82.6	(1.2)	0.9	(3.3)	(4.5)	1.1
DowDuPont	USD	65.8	(0.5)	(0.8)	(0.1)	(0.3)	(0.9)
SABIC	SAR	129.6	0.0	2.2	3.0	5.6	29.7
Formosa Pla.	TWD	107.5	0.0	(2.3)	0.0	0.9	17.2
Shin-Etsu	JPY	10,550	0.0	1.3	6.3	(1.1)	2.4
Renewable							
Wacker	EUR	116.8	(1.7)	1.6	1.5	(23.6)	14.2
First Solar	USD	53.48	(0.7)	(1.1)	3.5	(29.2)	15.6
GCL-Poly	HKD	0.66	0.0	(2.9)	(9.6)	(32.7)	(29.0)
Tesla Motors	USD	313.6	(2.1)	(1.7)	(13.4)	8.0	(5.0)

4. Coverage Summary

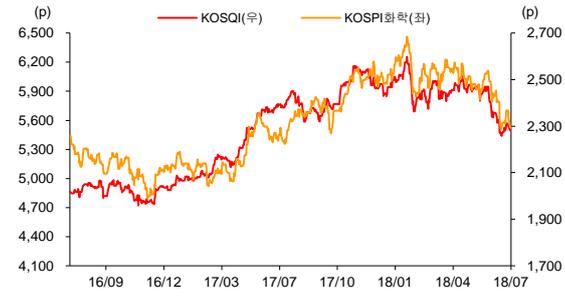
	07/20	1D	1W	1M	3M	6M	12M
KOSPI	2,289	0.3	(0.9)	(3.2)	(7.6)	(9.0)	(5.8)
KOSPI확화	5,520	(0.3)	(3.2)	(6.2)	(10.1)	(10.4)	(1.3)
LG화학	332,500	(1.0)	(0.7)	(5.9)	(10.7)	(20.3)	4.4
롯데케미칼	336,000	(0.6)	(2.3)	(4.8)	(17.8)	(12.2)	(5.9)
한화케미칼	20,300	1.5	(3.1)	(10.2)	(31.2)	(39.0)	(38.3)
금호석유화학	114,000	1.8	0.0	9.1	20.3	14.0	56.6
KCC	316,000	0.5	(2.2)	(3.4)	(15.7)	(20.5)	(26.6)
OCI	95,600	1.3	(2.7)	(10.2)	(40.8)	(42.1)	9.3
SKC	42,550	1.4	(2.6)	(3.5)	13.8	(2.9)	11.0
SK이노베이션	193,500	(0.5)	0.8	(5.4)	(2.8)	0.5	15.5
S-Oil	113,500	(2.6)	3.7	3.2	(3.0)	2.7	9.7
GS	51,400	(0.8)	(0.8)	(6.4)	(15.3)	(19.2)	(28.8)
SK가스	85,600	(2.1)	(4.4)	(7.8)	(10.8)	(11.6)	(23.2)
포스코대우	19,900	0.0	(3.9)	(5.5)	(15.9)	(0.5)	(16.0)
LG상사	21,900	(1.4)	(3.9)	(11.2)	(19.2)	(24.5)	(28.0)
한국전력	31,150	1.0	(0.2)	(6.0)	(13.0)	(12.6)	(27.3)
한국가스공사	58,000	0.9	(5.4)	(8.2)	16.0	22.4	17.8

투자의견	TP	%	P/E	P/B
			* 추정치는 12M fwd 기준임	
			* 모든 coverage 업체의 실적은 연결기준임	
매수	400,000	20.3	13.14	1.48
매수	400,000	19.0	10.43	0.95
매수	30,000	47.8	9.12	0.50
매수	150,000	31.6	10.63	1.47
매수	400,000	26.6	27.40	0.49
매수	140,000	46.4	7.27	0.69
매수	50,000	17.5	11.60	1.01
매수	230,000	18.9	11.38	0.97
매수	140,000	23.3	12.96	1.90
매수	80,000	55.6	4.76	0.58
매수	130,000	51.9	8.09	0.58
매수	25,000	25.6	10.44	0.78
매수	38,000	73.5	8.11	0.62
매수	45,000	44.5	7.54	0.25
매수	75,000	29.3	9.00	0.75

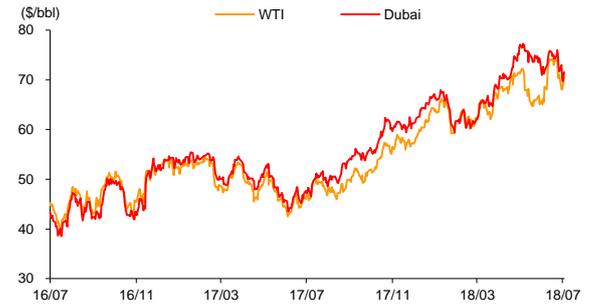
• 작성사(손지우)는 본 조사분석자료에 게재된 내용들이 본인의 의견을 정확하게 반영하고 있으며, 외부의 부당한 압력이나 간섭없이 신의성실하게 작성되었음을 확인합니다.
 • 본 보고서에 언급된 종목의 경우 당사 조사분석담당자는 본인의 담당종목을 보유하고 있지 않습니다.
 • 본 보고서는 기관투자자 또는 제 3자에게 사전 제공된 사실이 없습니다.
 • 당사는 본 보고서의 발간시점에 해당종목을 1% 이상 보유하고 있지 않습니다.

Key Chart

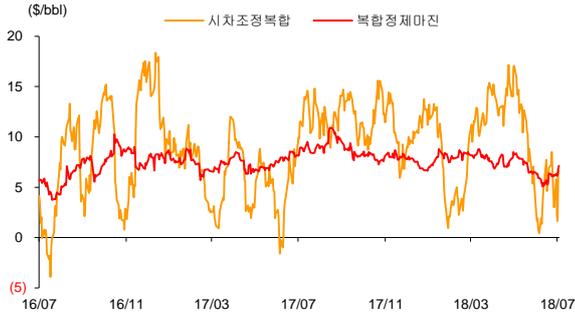
KOSPI/KOSPI화학



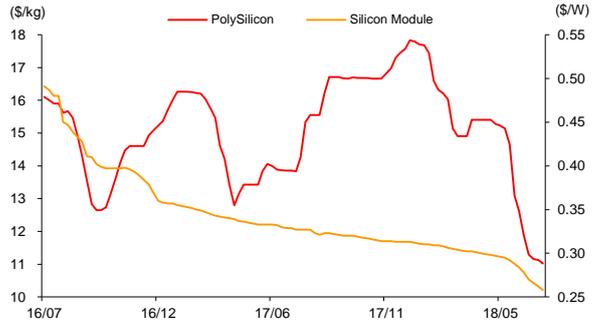
WTI/Dubai



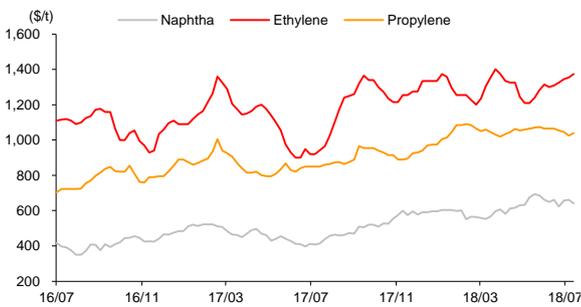
Complex & 1M lagging margin



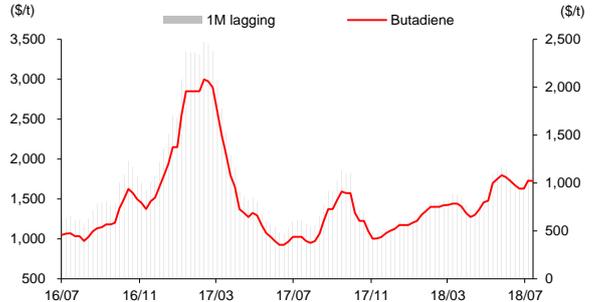
Polysilicon & Module prices



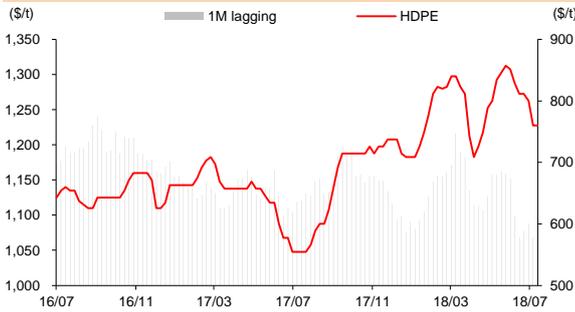
Naphtha/Ethylene/Propylene prices



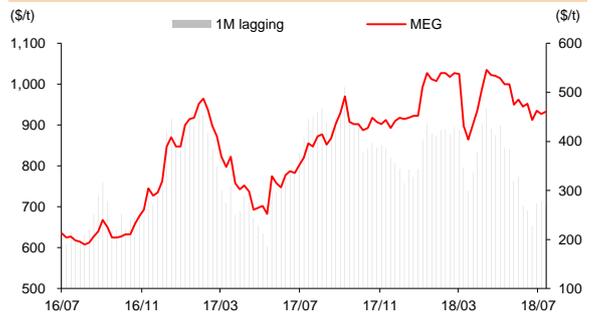
Butadiene price & 1M lagging naphtha spread



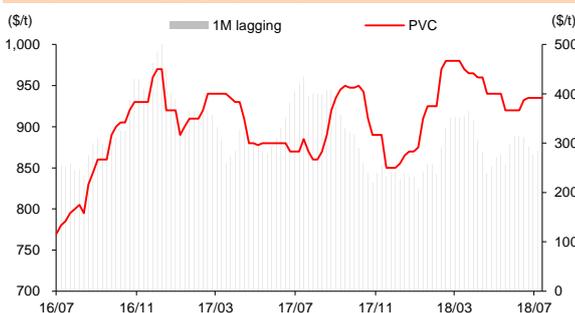
HDPE price & 1M lagging naphtha spread



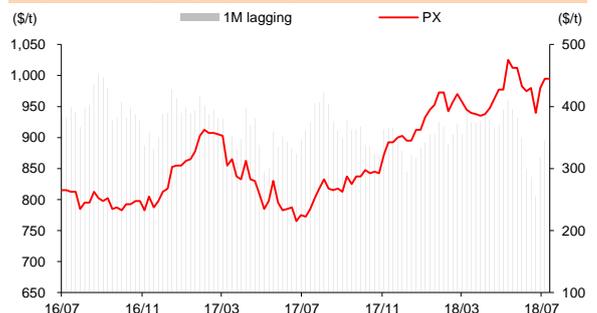
MEG price & 1M lagging naphtha spread



PVC price & 1M lagging naphtha spread



PX price & 1M lagging naphtha spread



자료: Bloomberg, Cischem, Petronet, Platts, Pvinfosights, SK증권
참고: 상기 데이터는 일괄적으로 과거 2년치 적용

News Comment

Headline	(출처: Platts)
제목 [주간가격] 에틸렌, WoW \$10/mt 하락해 CFR SEA \$1,270/mt로 마감	
결론 다운스트림이 역마진인데다가 중동 물량도 유입되며 하방 열릴 전망	
세부	
1) 달러 대비 위안화의 약세와 PE 시장으로부터의 수요 약세로 가격 하락	
2) 다운스트림인 CFR FEA PE 가격은 \$1,320/mt 수준을 보였음	
3) 일본의 Mitsui Chemicals는 8월 중순 오사카 크래커 재가동할 예정임	
4) Maruzen과 Keiyo Ethylene은 기계 문제로 2~3개월간 NCC 가동률 낮춤	
5) 다운스트림이 역마진인데다가 중동 물량도 유입되며 하방 열릴 전망	

Issue 1	(출처: Platts)
제목 [주간가격] MEG, WoW \$3/mt 상승해 CFR China \$901/mt로 마감	
결론 에틸렌 가격 약세 전망으로 다운스트림인 MEG도 강세는 힘들 전망	
세부	
1) 동중국항 MEG 재고는 WoW 5,000mt 증가한 700,000mt를 기록했음	
2) 관계자, "아직 통상의 재고 수준인 800,000톤보다 낮은 수준"	
3) 한편, 폴리에스터 재고가 낮아 MEG에 대한 수요를 끌어 올림	
4) 관계자, "폴리에스터 공장들은 가동률을 94%까지 끌어 올림"	
5) 에틸렌 가격 약세 전망으로 다운스트림인 MEG도 강세는 힘들 전망	

Issue 3	(출처: Platts)
제목 [주간가격] SBR, WoW \$10/mt 상승해 CFR SEA \$1,760/mt로 마감	
결론 무역전쟁은 자동차 관세로 이어질 개연성이 높아 일시적 센터 악화 가능	
세부	
1) 중국 내수 가격 상승에도 불구하고 수입 가격과의 갭은 크게 유지됨	
2) 내수 가격 상승은 위안화 방향과 관계 있으며 현재 가격 상승 기대감 큼	
3) 인도에서는 몬순 기후 진입에 따라 다운스트림이 섣달운해 수요 부진	
4) 업스트림인 SM은 중국이 반덤핑 관세를 부과함에 따라 상승하는 모습	
5) 무역전쟁은 자동차 관세로 이어질 개연성이 높아 일시적 센터 악화 가능	

Issue 5	(출처: Platts)
제목 [주간가격] PTA, WoW \$3/mt 상승해 CFR China \$845/mt로 마감	
결론 산유국 증산으로 유가 하방이 열린만큼 PTA 가격도 하락 압력 커질 것	
세부	
1) 관계자, "중국 수요 증가, PTA 재고 감소, PX 가격 상승으로 강세 시현"	
2) 중국 PTA 재고는 85만톤 수준이며 전년 동기에는 120만톤 수준이었음	
3) 따라서 중국 내 가격은 Yuan 150/mt 상승해 Yuan 6,100/mt까지 오름	
4) PX 가격은 WoW \$11/mt 상승해 CFR Taiwan/China \$1,016/mt 기록	
5) 산유국 증산으로 유가 하방이 열린만큼 PTA 가격도 하락 압력 커질 것	

WTI Comment	(출처: 이코노믹리뷰)
제목 트럼프발 달러 약세에 상승...WTI 1.4% ↑	
상승 트럼프 대통령은 전날에 이어 연준의 긴축에 불편한 심기를 드러냄	
요인 사우디가 내달 원유 수출량을 감소시키겠다고 밝힘	
하락	
요인	

Issue 2	(출처: Platts)
제목 [주간가격] BD, WoW \$30/mt 상승해 FOB Korea \$1,680/mt로 마감	
결론 FOB Korea 강세 속 다른 아시아권 가격은 매도 압력으로 약세 전망됨	
세부	
1) 대한민국 바이어들은 정기보수를 앞두고 8월 말~9월 초 카고 수요 늘림	
2) 하지만 다른 시장에서는 합성고무 역마진으로 수요가 부진했음	
3) 싱가포르 합성고무 메이커는 8월 부타디엔 재고 1만톤을 매도함	
4) 중국 합성고무 메이커들도 총 6천톤 가량의 부타디엔 재고 매도 시도중	
5) FOB Korea 강세 속 다른 아시아권 가격은 매도 압력으로 약세 전망됨	

Issue 4	(출처: Platts)
제목 [주간가격] PX, WoW \$11/mt 상승해 FOB Korea \$997/mt로 마감	
결론 산유국의 증산기조와 하반기 역대 PX 설비 증설로 가격 하방 열릴 전망	
세부	
1) CFR Taiwan/China PX와 CFR Japan 납사 스프레드가 \$376.54/mt 수준	
2) PTT는 8월말 1만톤을 8월 ACP와 8월 Platts 가격 평균보다 \$2/mt 할인	
3) 이는 9월 수급이 타이트함을 감안하면 지난 tender보다 \$4~6/mt 높음	
4) 한화토탈은 9월에 126만톤/년 규모 대산 PX 공장 설비 정기보수 예정	
5) 산유국의 증산기조와 하반기 역대 PX 설비 증설로 가격 하방 열릴 전망	

Issue 6	(출처: PVinsights)
제목 [주간가격] 태양광 제품, 수요가 안정화된 일부 제품만 가격 유지	
결론 지속되는 수요 약세로 전반적인 태양광 제품 가격의 하락세 보일 것	
세부	
1) 폴리실리콘은 중국 수요 약세 지속과 공급 과잉 우려로 하락함	
2) Multi-wafer 수요 회복으로 Multi-crystalline wafer 가격은 이번주 안정화	
3) Multi-crystalline cell 가격도 수요가 안정화되며 이번주 가격도 유지됨	
4) 패널은 공급 과잉과 수요 부진 우려로 이번주 신저가를 기록함	
5) 지속되는 수요 약세로 전반적인 태양광 제품 가격의 하락세 보일 것	

Commodity Price Data

Daily Price		Today	1D	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.	
F/X	USD/EUR	0.853	0.859	0.856	0.864	0.814	0.818	0.860	0.833	0.904	0.887	0.830	
	Change, %		(0.7)	(0.3)	(1.3)	4.8	4.2	(0.8)	2.4	(5.6)	(3.8)	2.8	
	USD/JPY	111.4	112.5	112.4	110.4	107.7	110.8	111.9	112.6	108.8	112.1	109.0	
	Change, %		(0.9)	(0.9)	1.0	3.5	0.6	(0.4)	(1.1)	2.4	(0.7)	2.2	
F/X	USD/KRW	1,133.8	1,133.2	1,123.4	1,105.2	1,067.2	1,065.9	1,125.8	1,066.7	1,160.5	1,130.9	1,081.0	
	Change, %		0.0	0.9	2.6	6.2	6.4	0.7	6.3	(2.3)	0.2	4.9	
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	Agriculture	Corn	355.3	351.3	330.3	354.3	376.5	352.5	391.0	350.8	358.5	359.4	371.5
Change, %			1.1	7.6	0.3	(5.6)	0.8	(9.1)	1.3	(0.9)	(1.1)	(4.4)	
Soybean		849.8	846.0	814.0	889.5	1,028.8	977.3	1,013.3	951.8	987.5	975.9	983.9	
Change, %			0.4	4.4	(4.5)	(17.4)	(13.0)	(16.1)	(10.7)	(13.9)	(12.9)	(13.6)	
Wheat		516.0	504.3	481.5	488.3	463.3	422.8	505.8	427.0	436.4	436.0	478.3	
Change, %			2.3	7.2	5.7	11.4	22.1	2.0	20.8	18.2	18.3	7.9	
Rice		11.9	11.9	11.8	12.7	13.0	12.2	12.0	11.7	10.3	11.1	12.2	
Change, %			0.5	1.0	(5.7)	(8.2)	(2.3)	(0.6)	2.1	15.3	7.9	(2.2)	
Oats		233.3	232.0	258.0	238.8	232.5	258.0	295.8	241.0	196.3	252.3	245.9	
Change, %			0.5	(9.6)	(2.3)	0.3	(9.6)	(21.1)	(3.2)	18.8	(7.5)	(5.1)	
MYR/mt		Palm Oil	2,180.0	2,180.0	2,140.0	2,261.0	2,410.0	2,435.0	2,621.0	2,444.0	2,653.8	2,787.3	2,405.0
		Change, %		0.0	1.9	(3.6)	(9.5)	(10.5)	(16.8)	(10.8)	(17.9)	(21.8)	(9.4)
		Cocoa	2,322.0	2,292.0	2,517.0	2,568.0	2,749.0	1,931.0	1,956.0	1,892.0	2,854.0	2,005.2	2,396.5
		Change, %		1.3	(7.7)	(9.6)	(15.5)	20.2	18.7	22.7	(18.6)	15.8	(3.1)
	Cotton	87.7	88.3	88.9	83.2	85.5	83.4	69.6	78.6	65.6	73.5	83.9	
	Change, %		(0.6)	(1.3)	5.4	2.7	5.2	26.2	11.6	33.8	19.3	4.5	
	Sugar	11.1	11.0	11.0	11.9	11.6	13.3	14.4	15.2	18.2	15.8	12.5	
	Change, %		1.4	1.5	(6.5)	(4.5)	(16.1)	(22.8)	(26.6)	(38.7)	(29.7)	(11.3)	
	Coffee	110.7	105.3	107.1	113.7	115.8	121.3	135.0	126.2	136.1	133.0	118.0	
	Change, %		5.1	3.4	(2.6)	(4.4)	(8.7)	(18.0)	(12.3)	(18.7)	(16.8)	(6.2)	
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Energy	WTI	70.5	69.5	71.0	66.2	68.4	63.4	46.8	60.4	43.4	51.0	66.1	
	Change, %		1.4	(0.8)	6.4	3.0	11.2	50.6	16.6	62.4	38.2	6.6	
	Brent	73.1	72.6	75.3	74.7	74.1	68.6	49.3	66.9	45.1	54.9	71.6	
	Change, %		0.7	(3.0)	(2.2)	(1.3)	6.5	48.2	9.3	62.1	33.2	2.1	
	Natural Gas	2.8	2.8	2.8	3.0	2.7	3.2	3.0	3.0	2.6	3.0	2.8	
	Change, %		(0.4)	0.2	(7.0)	0.7	(13.4)	(9.4)	(6.6)	8.0	(8.8)	(2.8)	
	Ethanol	1.4	1.4	1.4	1.4	1.5	1.3	1.5	1.3	1.5	1.5	1.4	
	Change, %		0.6	2.0	1.9	(4.7)	7.3	(7.1)	8.3	(5.7)	(4.5)	(0.5)	
	RBOB Gasoline	206.9	204.4	210.7	202.4	209.6	186.4	160.6	179.9	140.0	162.9	199.9	
	Change, %		1.2	(1.8)	2.2	(1.3)	11.0	28.8	15.0	47.8	27.0	3.5	
Coal	117.7	119.3	117.7	114.5	93.5	106.8	86.7	100.8	65.5	88.2	104.8		
Change, %		(1.3)	0.0	2.8	25.9	10.3	35.8	16.8	79.8	33.4	12.3		
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Metal	Gold	1,232.0	1,222.9	1,241.5	1,267.8	1,335.6	1,331.9	1,244.5	1,302.6	1,248.5	1,258.6	1,310.1	
	Change, %		0.7	(0.8)	(2.8)	(7.8)	(7.5)	(1.0)	(5.4)	(1.3)	(2.1)	(6.0)	
	Silver	15.5	15.3	15.8	16.3	17.1	17.1	16.3	16.9	17.1	17.1	16.6	
	Change, %		1.3	(1.8)	(4.7)	(9.3)	(9.3)	(5.0)	(8.4)	(9.3)	(9.1)	(6.3)	
	Copper	6,147.5	6,065.0	6,237.0	6,773.0	6,992.0	7,041.0	5,958.5	7,247.0	4,872.0	6,199.4	6,871.6	
	Change, %		1.4	(1.4)	(9.2)	(12.1)	(12.7)	3.2	(15.2)	26.2	(0.8)	(10.5)	
	Nickel	926.3	923.3	953.4	1,014.6	980.9	807.8	610.4	809.1	646.4	680.2	918.1	
	Change, %		0.3	(2.8)	(8.7)	(5.6)	14.7	51.8	14.5	43.3	36.2	0.9	
	Zinc	2,575.0	2,545.5	2,578.0	2,995.0	3,232.5	3,416.5	2,727.0	3,319.0	2,097.5	2,888.5	3,179.9	
	Change, %		1.2	(0.1)	(14.0)	(20.3)	(24.6)	(5.6)	(22.4)	22.8	(10.9)	(19.0)	
	Lead	2,127.0	2,108.8	2,184.3	2,401.5	2,365.8	2,591.8	2,196.5	2,482.8	1,868.3	2,315.7	2,429.2	
	Change, %		0.9	(2.6)	(11.4)	(10.1)	(17.9)	(3.2)	(14.3)	13.8	(8.1)	(12.4)	
	Aluminum	13,975.0	14,015.0	13,950.0	14,125.0	14,950.0	14,645.0	14,380.0	15,020.0	12,373.5	14,556.6	14,337.0	
	Change, %		(0.3)	0.2	(1.1)	(6.5)	(4.6)	(2.8)	(7.0)	12.9	(4.0)	(2.5)	
	Cobalt	69,750.0	69,750.0	70,250.0	80,250.0	91,250.0	79,369.5	58,600.0	75,205.0	25,480.1	55,906.9	83,310.0	
	Change, %		0.0	(0.7)	(13.1)	(23.6)	(12.1)	19.0	(7.3)	173.7	24.8	(16.3)	
	HR Coil	919.0	912.0	917.0	902.0	870.0	675.0	617.0	662.0	519.3	620.1	826.1	
	Change, %		0.8	0.2	1.9	5.6	36.1	48.9	38.8	77.0	48.2	11.2	
Scrap	395.0	393.0	395.0	400.0	382.0	389.0	352.0	367.0	275.7	344.7	389.5		
Change, %		0.5	0.0	(1.3)	3.4	1.5	12.2	7.6	43.3	14.6	1.4		

자료: Bloomberg

참고) NYMEX, ICE, LME 중 대표지수를 사용

Refining Price Data

Daily Price		07/20	1D	1W	1M	3M	6M	12M	YTD	2015avg.	2016avg.	2017acc.
Crude Oil	WTI	70.5	69.5	71.0	66.2	68.4	63.4	45.8	53.7	43.4	50.9	66.1
	Change, %		1.4	(0.8)	6.4	3.0	11.2	53.9	31.2	62.5	38.4	6.6
	Dubai	71.5	70.4	71.7	72.7	70.4	66.0	48.2	53.8	41.3	53.1	68.6
	Change, %		1.6	(0.2)	(1.6)	1.6	8.4	48.5	32.9	73.1	34.7	4.2
Crude Oil Product	Gasoline(휘발유)	82.0	80.5	81.0	81.5	82.0	78.7	63.8	69.8	56.3	68.0	81.2
	Change, %		1.9	1.3	0.7	(0.0)	4.3	28.6	17.5	45.8	20.6	1.0
	Kerosene(등유)	85.9	84.8	85.3	86.4	86.7	80.1	60.7	66.4	52.9	65.2	84.1
	Change, %		1.3	0.8	(0.6)	(0.9)	7.3	41.5	29.3	62.5	31.7	2.2
	Diesel(경유)	84.3	82.9	83.4	86.5	85.5	79.9	62.0	65.5	52.1	65.6	83.1
	Change, %		1.7	1.1	(2.5)	(1.4)	5.6	36.1	28.7	61.8	28.5	1.5
	Bunker-C	70.1	68.4	69.1	68.7	62.5	58.7	46.5	52.1	35.5	49.7	62.8
	Change, %		2.4	1.3	1.9	12.0	19.3	50.8	34.6	97.2	41.1	11.6
	Naphtha	70.8	69.2	70.5	69.2	67.8	66.2	47.0	53.5	42.6	53.7	67.7
	Change, %		2.3	0.4	2.3	4.4	7.0	50.7	32.4	66.1	31.7	4.6
Dubai Spread	Gasoline(휘발유)	10.5	10.1	9.3	8.8	11.6	12.7	15.6	16.0	14.9	14.9	12.6
	Change		0.4	1.2	1.7	(1.1)	(2.2)	(5.1)	(5.5)	(4.4)	(4.4)	(2.0)
	Kerosene(등유)	14.4	14.4	13.6	13.8	16.2	14.1	12.6	12.6	11.6	12.1	15.5
	Change		0.0	0.8	0.6	(1.8)	0.3	1.8	1.8	2.8	2.3	(1.1)
	Diesel(경유)	12.8	12.5	11.7	13.8	15.1	13.9	13.8	11.7	10.8	12.5	14.4
	Change		0.3	1.1	(1.0)	(2.3)	(1.1)	(1.0)	1.1	2.0	0.3	(1.6)
	Bunker-C	(1.5)	(2.0)	(2.5)	(3.9)	(7.9)	(7.2)	(1.7)	(1.8)	(5.8)	(3.4)	(5.8)
	Change		0.5	1.1	2.5	6.4	5.8	0.3	0.3	4.3	2.0	4.4
	Naphtha	(0.8)	(1.3)	(1.2)	(3.5)	(2.6)	0.2	(1.2)	(0.4)	1.3	0.6	(1.0)
	Change		0.5	0.4	2.7	1.9	(1.0)	0.5	(0.4)	(2.0)	(1.4)	0.2
Refining Margin	Simple(단순)	3.3	2.9	2.3	2.0	1.1	1.3	4.4	3.8	1.9	3.2	2.1
	Change		0.4	1.0	1.3	2.2	2.0	(1.1)	(0.5)	1.4	0.1	1.2
	Complex(복합)	7.1	6.8	6.1	6.3	6.8	7.0	9.0	8.3	7.0	8.0	7.4
	Change		0.4	1.0	0.8	0.3	0.1	(1.8)	(1.1)	0.2	(0.8)	(0.3)
Complex(lagging)	6.6	6.2	3.0	1.9	14.3	11.8	11.5	18.0	8.5	8.9	9.3	
Change		0.4	3.6	4.7	(7.7)	(5.2)	(4.9)	(11.4)	(1.9)	(2.3)	(2.7)	

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			07/20	07/19	07/18	07/17	07/16	07/13	07/12	07/11	07/10	07/09	
Spot Price	Naphtha	CFR Japan	647.9	633.4	626.8	631.5	651.4	647.3	655.3	669.9	680.4	671.3	
	Ethylene	CFR SE Asia	1,270.0	1,270.0	1,270.0	1,280.0	1,280.0	1,280.0	1,280.0	1,270.0	1,270.0	1,270.0	
	Propylene	FOB Korea	1,060.0	1,060.0	1,050.0	1,050.0	1,050.0	1,035.0	1,035.0	1,035.0	1,040.0	1,040.0	
	Butadiene	FOB Korea	1,680.0	1,650.0	1,650.0	1,650.0	1,650.0	1,650.0	1,650.0	1,650.0	1,610.0	1,610.0	
	HDPE	CFR FE Asia	1,320.0	1,320.0	1,320.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	1,340.0	
	LDPE	CFR FE Asia	1,150.0	1,150.0	1,150.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	1,170.0	
	LLDPE	CFR FE Asia	1,115.0	1,115.0	1,115.0	1,115.0	1,110.0	1,110.0	1,110.0	1,115.0	1,115.0	1,120.0	
	MEG	CFR China	901.0	899.0	893.0	895.0	905.0	898.0	898.0	898.0	900.0	891.0	894.0
	PP	CFR FE Asia	1,205.0	1,220.0	1,220.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0	1,230.0	1,235.0
	PX	CFR China	997.0	986.7	973.7	974.3	985.3	986.0	989.0	989.0	991.0	995.3	989.0
	PTA	CFR China	845.0	844.0	844.0	844.0	844.0	842.0	848.0	848.0	852.0	852.0	852.0
	Benzene	FOB Korea	839.0	828.0	823.0	825.3	833.7	831.3	831.0	831.0	834.7	834.7	831.7
	Toluene	FOB Korea	748.0	746.0	741.0	740.0	752.0	752.0	747.0	747.0	747.0	752.0	751.0
	Xylene	FOB Korea	842.0	825.0	813.0	808.0	823.0	816.0	814.0	823.0	831.0	831.0	831.0
	SM	FOB Korea	1,359.0	1,350.0	1,339.5	1,331.5	1,346.5	1,379.0	1,374.0	1,364.0	1,353.0	1,337.0	

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	Naphtha	CFR Japan	642.5	662.0	661.5	613.0	568.0	414.0	484.5	399.5	493.5	616.5
	<i>Change, %</i>			(2.9)	(2.9)	4.8	13.1	55.2	32.6	60.8	30.2	4.2
	Ethylene	CFR SE Asia	1,290.0	1,290.0	1,260.0	1,275.0	1,250.0	892.5	990.0	1,040.9	1,090.9	1,237.5
	<i>Change, %</i>			0.0	2.4	1.2	3.2	44.5	30.3	23.9	18.2	4.2
	Propylene	CFR SE Asia	970.0	965.0	1,015.0	977.5	980.0	755.0	815.0	705.7	823.6	1,053.8
	<i>Change, %</i>			0.5	(4.4)	(0.8)	(1.0)	28.5	19.0	37.5	17.8	(8.0)
	Butadiene	CFR SE Asia	1,675.0	1,680.0	1,625.0	1,250.0	1,390.0	975.0	2,100.0	1,116.8	1,481.1	1,441.4
	<i>Change, %</i>			(0.3)	3.1	34.0	20.5	71.8	(20.2)	50.0	13.1	16.2
	Benzene	CFR SE Asia	830.0	820.0	832.5	832.5	867.5	732.5	822.5	646.7	838.8	868.0
	<i>Change, %</i>			1.2	(0.3)	(0.3)	(4.3)	13.3	0.9	28.3	(1.1)	(4.4)
	Toluene	CFR SE Asia	795.0	795.0	815.0	740.0	720.0	630.0	690.0	630.5	689.5	768.0
	<i>Change, %</i>			0.0	(2.5)	7.4	10.4	26.2	15.2	26.1	15.3	3.5
	Xylene	CFR SE Asia	822.5	815.0	827.5	760.0	762.5	615.0	675.0	627.7	668.8	782.1
	<i>Change, %</i>			0.9	(0.6)	8.2	7.9	33.7	21.9	31.0	23.0	5.2

Spread			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Ethylene	-Naphtha		647.5	628.0	598.5	662.0	682.0	478.5	505.5	641.4	597.4	621.0
	<i>Change, %</i>			3.1	8.2	(2.2)	(5.1)	35.3	28.1	1.0	8.4	4.3
Propylene	-Naphtha		327.5	303.0	353.5	364.5	412.0	341.0	330.5	306.2	330.1	437.4
	<i>Change, %</i>			8.1	(7.4)	(10.2)	(20.5)	(4.0)	(0.9)	7.0	(0.8)	(25.1)
Butadiene	-Naphtha		1,032.5	1,018.0	963.5	637.0	822.0	561.0	1,615.5	717.3	987.6	824.9
	<i>Change, %</i>			1.4	7.2	62.1	25.6	84.0	(36.1)	43.9	4.5	25.2
Benzene	-Naphtha		187.5	158.0	171.0	219.5	299.5	318.5	338.0	247.2	345.3	251.6
	<i>Change, %</i>			18.7	9.6	(14.6)	(37.4)	(41.1)	(44.5)	(24.1)	(45.7)	(25.5)
Toluene	-Naphtha		152.5	133.0	153.5	127.0	152.0	216.0	205.5	231.0	196.0	151.6
	<i>Change, %</i>			14.7	(0.7)	20.1	0.3	(29.4)	(25.8)	(34.0)	(22.2)	0.6
Xylene	-Naphtha		180.0	153.0	166.0	147.0	194.5	201.0	190.5	228.2	175.3	165.6
	<i>Change, %</i>			17.6	8.4	22.4	(7.5)	(10.4)	(5.5)	(21.1)	2.7	8.7

자료 : Cischem, Platts, Bloomberg, SK증권

참고 : Spread는 Polymer와 Naphtha의 가격차이임

Weekly Price			Last Week	1W	1M	3M	6M	12M	YTD	2016avg.	2017avg.	2018acc.
Spot Price	HDPE	CFR SE Asia	1,227.5	1,227.5	1,272.5	1,197.5	1,282.5	1,047.5	1,142.5	1,134.6	1,142.5	1,257.1
	Change, %			0.0	(3.5)	2.5	(4.3)	17.2	7.4	8.2	7.4	(2.4)
	MEG	CFR SE Asia	932.5	927.5	952.5	1,035.0	865.0	855.0	847.5	660.8	850.6	977.2
	Change, %			0.5	(2.1)	(9.9)	7.8	9.1	10.0	41.1	9.6	(4.6)
	PVC	CFR SE Asia	935.0	935.0	932.5	960.0	970.0	885.0	920.0	823.4	899.9	942.2
	Change, %			0.0	0.3	(2.6)	(3.6)	5.6	1.6	13.6	3.9	(0.8)
	PP	CFR SE Asia	1,252.5	1,262.5	1,292.5	1,247.5	1,297.5	1,047.5	1,032.5	978.4	1,099.6	1,261.4
	Change, %			(0.8)	(3.1)	0.4	(3.5)	19.6	21.3	28.0	13.9	(0.7)
	2-EH	CFR Korea	1,090.0	1,100.0	1,120.0	1,155.0	1,130.0	932.5	865.0	772.4	970.0	1,117.1
	Change, %			(0.9)	(2.7)	(5.6)	(3.5)	16.9	26.0	41.1	12.4	(2.4)
	ABS	CFR SE Asia	1,930.0	1,960.0	2,060.0	1,990.0	2,020.0	1,800.0	1,635.0	1,347.1	1,844.7	2,027.1
	Change, %			(1.5)	(6.3)	(3.0)	(4.5)	7.2	18.0	43.3	4.6	(4.8)
	SBR	CFR SE Asia	1,750.0	1,770.0	1,900.0	1,630.0	1,750.0	1,450.0	2,000.0	1,483.0	1,980.5	1,753.6
	Change, %			(1.1)	(7.9)	7.4	0.0	20.7	(12.5)	18.0	(11.6)	(0.2)
	SM	CFR SE Asia	1,402.5	1,367.5	1,492.5	1,365.0	1,337.5	1,202.5	1,205.0	1,064.6	1,253.8	1,400.5
	Change, %			2.6	(6.0)	2.7	4.9	16.6	16.4	31.7	11.9	0.1
	Caustic	FOB NEA	410.0	475.0	539.0	626.0	601.0	457.5	422.5	316.6	491.2	568.4
	Change, %			(13.7)	(23.9)	(34.5)	(31.8)	(10.4)	(3.0)	29.5	(16.5)	(27.9)
	PX	CFR SE Asia	995.0	995.0	980.0	947.5	940.0	785.0	855.0	790.4	844.4	966.4
	Change, %			0.0	1.5	5.0	5.9	26.8	16.4	25.9	17.8	3.0
PO	CFR China	1,797.5	1,735.0	1,787.5	1,915.0	1,875.0	1,530.0	1,562.5	1,396.8	1,601.2	1,874.7	
Change, %			3.6	0.6	(6.1)	(4.1)	17.5	15.0	28.7	12.3	(4.1)	
Caprolactam	CFR SE Asia	2,145.0	2,140.0	2,150.0	2,220.0	2,180.0	1,610.0	1,850.0	1,344.9	1,936.4	2,121.1	
Change, %			0.2	(0.2)	(3.4)	(1.6)	33.2	15.9	59.5	10.8	1.1	
PTA	CFR SE Asia	855.0	865.0	857.5	792.5	790.0	665.0	642.5	613.7	667.8	806.1	
Change, %			(1.2)	(0.3)	7.9	8.2	28.6	33.1	39.3	28.0	6.1	
Spread	HDPE		585.0	565.5	611.0	584.5	714.5	633.5	658.0	735.1	649.0	640.6
	Change, %			3.4	(4.3)	0.1	(18.1)	(7.7)	(11.1)	(20.4)	(9.9)	(8.7)
	MEG		290.0	265.5	291.0	422.0	297.0	441.0	363.0	261.3	357.1	360.8
	Change, %			9.2	(0.3)	(31.3)	(2.4)	(34.2)	(20.1)	11.0	(18.8)	(19.6)
	PVC		292.5	273.0	271.0	347.0	402.0	471.0	435.5	423.9	406.4	325.8
	Change, %			7.1	7.9	(15.7)	(27.2)	(37.9)	(32.8)	(31.0)	(28.0)	(10.2)
	PP		610.0	600.5	631.0	634.5	729.5	633.5	548.0	578.9	606.1	644.9
	Change, %			1.6	(3.3)	(3.9)	(16.4)	(3.7)	11.3	5.4	0.6	(5.4)
	2-EH		447.5	438.0	458.5	542.0	562.0	518.5	380.5	372.9	476.5	500.7
	Change, %			2.2	(2.4)	(17.4)	(20.4)	(13.7)	17.6	20.0	(6.1)	(10.6)
	ABS		1,287.5	1,298.0	1,398.5	1,377.0	1,452.0	1,386.0	1,150.5	947.6	1,351.2	1,410.7
	Change, %			(0.8)	(7.9)	(6.5)	(11.3)	(7.1)	11.9	35.9	(4.7)	(8.7)
	SBR	BD spread	75.0	90.0	275.0	380.0	360.0	475.0	(100.0)	366.2	499.4	312.1
	Change, %			(16.7)	(72.7)	(80.3)	(79.2)	(84.2)	(175.0)	(79.5)	(85.0)	(76.0)
	SM		760.0	705.5	831.0	752.0	769.5	788.5	720.5	665.1	760.3	784.1
	Change, %			7.7	(8.5)	1.1	(1.2)	(3.6)	5.5	14.3	(0.0)	(3.1)
	Caustic											
	Change, %											
	PX		352.5	333.0	318.5	334.5	372.0	371.0	370.5	390.9	351.0	349.9
	Change, %			5.9	10.7	5.4	(5.2)	(5.0)	(4.9)	(9.8)	0.4	0.7
PO	propylene spread	827.5	770.0	772.5	937.5	895.0	775.0	747.5	691.1	777.6	820.9	
Change, %			7.5	7.1	(11.7)	(7.5)	6.8	10.7	19.7	6.4	0.8	
Caprolactam	benzene spread	1,315.0	1,320.0	1,317.5	1,387.5	1,312.5	877.5	1,027.5	698.2	1,097.6	1,253.0	
Change, %			(0.4)	(0.2)	(5.2)	0.2	49.9	28.0	88.3	19.8	4.9	
PTA	px spread	158.5	168.5	171.5	129.3	132.0	115.5	44.0	60.4	76.7	129.6	
Change, %			(5.9)	(7.6)	22.6	20.1	37.2	260.2	162.3	106.7	22.3	

자료 : Ciscchem, Platts, SK증권

참고 : Spread는 Naphtha spread로 일괄적용

Global peers

	Currency	07/20	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
Petrochemical																
DowDuPont	USD	65.8	(0.5)	(0.8)	(0.1)	(0.3)	(13.4)	(0.9)	(7.6)	168,245	17.7	14.9	1.8	1.7	10.2	9.2
Eastman	USD	100.0	(0.7)	0.5	(2.9)	(6.8)	1.9	16.7	7.9	13,550	11.6	10.7	2.5	2.2	8.7	8.1
BASF	EUR	82.6	(1.2)	0.9	(3.3)	(4.5)	(15.5)	1.1	(10.0)	101,214	14.6	13.6	2.4	2.2	7.8	7.4
Akzo Nobel	EUR	78.2	1.0	5.7	4.7	(0.5)	4.5	0.5	7.0	22,073	17.0	15.8	3.0	2.8	9.3	8.8
Arkema	EUR	103.5	(1.1)	1.4	2.1	(7.0)	(3.6)	3.6	1.9	9,270	13.2	12.2	1.7	1.6	6.3	6.0
Lanxess	EUR	67.8	(1.5)	0.3	(4.2)	7.8	(8.1)	0.6	2.3	7,282	15.5	13.1	2.1	1.9	9.3	8.2
Sumitomo Chemical	JPY	623	(1.3)	1.1	2.0	(2.5)	(27.7)	(8.1)	(23.1)	11,911	10.1	10.5	1.3	1.2	7.4	8.0
Mitsubishi Chemical	JPY	955	(0.8)	2.5	4.2	(9.6)	(21.0)	(4.9)	(22.8)	16,544	9.2	8.7	1.3	1.2	6.3	6.1
Shin-Etsu Chemical	JPY	10,550	0.0	1.3	6.3	(1.1)	(15.3)	2.4	(7.9)	43,948	18.5	16.6	1.9	1.8	8.1	7.4
Asahi Kasei	JPY	1,467	0.2	2.8	4.1	(2.6)	(1.1)	12.8	0.9	18,109	14.4	13.6	1.5	1.4	7.4	7.0
JSR	JPY	1,928	(1.1)	(0.7)	3.5	(17.4)	(14.5)	(0.8)	(13.1)	4,455	14.5	13.4	1.2	1.1	7.7	7.2
Nitto Denko	JPY	7,945	(1.7)	(0.7)	(5.6)	(5.4)	(20.9)	(19.9)	(20.6)	15,450	15.7	14.6	2.1	1.9	7.3	7.0
SABIC	SAR	129.6	0.0	2.2	3.0	5.6	21.8	29.7	27.8	80,773	14.2	13.7	1.7	1.7	7.3	7.1
Yansab	SAR	76.8	0.0	2.1	5.5	4.0	19.0	41.5	30.2	8,861	13.7	13.9	2.2	1.9	9.0	8.9
Formosa Plastics	TWD	107.5	0.0	(2.3)	0.0	0.9	7.0	17.2	8.9	21,114	14.4	13.9	1.8	1.8	18.9	19.2
Formosa Fiber	TWD	113.0	0.0	(2.2)	(1.3)	3.7	5.1	23.1	9.7	20,511	13.7	13.4	1.7	1.7	11.6	11.5
Nan Ya Plastics	TWD	84.0	0.1	(1.2)	(0.5)	1.2	3.6	12.0	7.8	20,648	14.8	15.3	1.7	1.7	16.2	16.4
Sinopec Shanghai	CNY	5.24	0.8	(6.1)	(9.5)	(10.1)	(23.2)	(20.8)	(17.2)	9,462	12.0	12.6	2.2	2.0	6.8	7.3
Sinopec Yizheng(Fibe	CNY	1.89	1.6	1.1	2.2	(5.5)	(35.5)	(39.8)	(29.2)	5,394	50.4	66.3	5.3	5.0	13.9	10.3
Reliance	INR	1,129	2.2	2.6	10.7	21.6	21.2	47.6	24.1	93,404	14.4	12.9	1.7	1.5	9.4	8.7
Industries Qatar	QAR	118.6	0.0	4.4	13.0	5.4	7.8	18.6	22.3	16,144	14.5	13.9	1.6	1.5	46.4	27.2
PTT Chemical	THB	79.3	2.9	3.9	(5.4)	(23.1)	(15.7)	13.2	(6.8)	11,766	10.7	10.4	1.4	1.3	5.5	5.4
Petronas	MYR	8.7	(0.7)	1.4	4.2	3.1	7.9	25.8	13.5	15,624	16.1	15.5	2.0	1.9	9.2	8.9
LG화학	KRW	332,500	(1.0)	(0.7)	(5.9)	(10.7)	(21.5)	2.0	(17.9)	27,313	13.8	12.8	1.8	1.6	6.5	6.1
롯데케미칼	KRW	336,000	(0.6)	(2.3)	(4.8)	(17.8)	(13.3)	(7.2)	(8.7)	11,632	5.5	5.2	0.9	0.8	3.6	3.3
한화케미칼	KRW	20,300	1.5	(3.1)	(10.2)	(31.2)	(39.9)	(39.9)	(35.8)	5,050	5.7	5.5	0.8	0.7	6.7	6.5
금호석유	KRW	114,000	1.8	0.0	9.1	20.3	7.0	52.4	14.6	2,969	14.1	11.9	1.6	1.5	9.3	8.4
SKC	KRW	42,550	1.4	(2.6)	(3.5)	13.8	(3.6)	13.3	(9.5)	1,643	9.9	8.7	1.1	1.0	8.8	7.9
국도화학	KRW	54,400	(1.8)	(5.2)	(15.1)	(8.3)	(15.0)	(1.1)	(13.8)	359	#N/A	N/A	#N/A	N/A	#N/A	N/A
효성	KRW	6,110	(4.8)	(3.3)	(13.3)	(30.5)	(30.7)	(0.8)	(19.4)	4,595	8.2	7.3	1.1	1.0	7.2	6.8
Average			(0.2)	0.1	(0.4)	(3.6)	(7.8)	6.3	(2.8)							
Refinery																
Valero	USD	106.2	(0.7)	(1.1)	(8.2)	(2.2)	9.2	57.3	15.6	40,608	14.1	13.4	2.0	2.0	6.9	6.9
Conoco Phillips	USD	70.0	0.5	(2.8)	3.8	6.4	17.2	61.9	27.5	66,136	34.0	25.9	2.2	2.2	7.2	6.7
Formosa Petrochemical	TWD	120.5	0.4	(0.4)	(0.4)	0.8	(0.4)	14.8	4.3	37,040	18.2	18.7	3.2	3.2	11.7	12.1
Andeavor	USD	136.9	(0.4)	1.1	(0.1)	16.2	15.7	40.4	19.8	17,904	12.9	11.4	1.8	1.7	7.3	7.1
Marathon Petroleum	USD	72.5	(0.5)	1.1	(1.8)	(9.1)	0.9	30.9	9.9	32,812	15.0	12.8	2.6	2.7	7.7	7.5
Devon Energy	USD	44.1	0.0	(1.3)	3.6	24.7	3.0	38.0	6.6	22,192	17.5	14.0	2.7	2.3	8.4	7.4
Hollyfrontier	USD	71.0	(1.1)	3.4	(4.8)	21.9	39.4	157.3	38.7	9,094	16.8	15.2	1.8	1.8	8.0	8.0
Phillips 66	USD	110.4	(0.5)	(1.3)	(3.7)	(0.6)	4.5	34.0	9.1	51,561	15.6	14.5	2.3	2.2	9.0	8.8
Murphy Oil	USD	31.7	(1.4)	(4.1)	(9.8)	4.2	(7.7)	22.5	1.9	5,548	162.4	113.2	1.2	1.1	4.9	4.5
JX Holdings	JPY	802.9	1.3	4.7	8.5	12.6	3.9	61.5	10.4	22,130	8.8	8.0	0.9	0.9	7.0	6.6
Idemitsu	JPY	4,955.0	0.1	5.0	41.6	21.6	13.9	85.3	9.5	8,360	7.9	7.5	1.0	0.9	6.8	6.8
Nesteoil	EUR	67.2	(0.3)	0.3	2.6	22.9	15.2	77.9	26.0	16,473	16.7	16.7	2.9	2.7	10.2	10.3
Ashland	USD	81.0	(0.3)	(0.2)	3.5	16.3	9.0	21.6	13.8	4,550	21.6	18.7	1.3	1.3	10.2	9.6
Fuchs Petrolub	EUR	43.7	(0.2)	1.6	1.1	(0.6)	(2.7)	(12.1)	(1.2)	7,127	22.1	20.9	4.1	3.7	13.0	12.3
SK이노베이션	KRW	193,500	(0.5)	0.8	(5.4)	(2.8)	(0.5)	12.5	(5.4)	17,975	7.9	7.7	0.9	0.9	4.9	4.8
S-Oil	KRW	113,500	(2.6)	3.7	3.2	(3.0)	0.4	5.1	(3.0)	12,400	9.3	8.1	1.8	1.6	7.6	6.6
GS	KRW	51,400	(0.8)	(0.8)	(6.4)	(15.3)	(20.4)	(30.0)	(17.4)	5,467	6.0	5.5	0.7	0.6	6.9	6.3
Average			(0.4)	0.6	1.6	6.7	5.9	39.9	9.8							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임

* 국내업체의 multiple은 Dataguidepro 기준임

Global peers

	Currency	07/20	1D	1W	1M	3M	6M	12M	YTD	MKT CAP (mil USD)	PER		PBR		EV/EBITDA	
											18E	19E	18E	19E	18E	19E
E&P/Shale																
Exxon Mobil	USD	81	(0.7)	(2.3)	1.2	3.0	(6.6)	0.7	(2.7)	344,634	16.3	15.0	1.8	1.7	7.5	7.0
BP	GBP	567	(0.5)	(0.6)	0.5	9.5	11.3	26.0	8.5	148,715	13.5	12.5	1.4	1.4	5.2	5.0
Shell	EUR	2,656	(0.2)	0.4	4.6	6.3	5.5	26.8	7.1	294,051	12.3	11.0	1.4	1.4	5.7	5.5
Chevron	USD	122	0.5	(1.4)	(2.4)	(0.0)	(6.9)	16.9	(2.3)	233,653	15.1	14.4	1.5	1.5	6.3	6.0
Total	EUR	53	(0.5)	(1.4)	2.6	3.9	11.2	21.4	14.2	164,190	11.7	10.8	1.3	1.2	5.4	5.1
Sinopec	CNY	6	2.2	0.8	(0.2)	(6.4)	(9.2)	3.2	4.2	113,368	10.2	9.7	1.0	1.0	3.8	3.8
Petrochina	CNY	7	1.7	(3.2)	(0.8)	(3.7)	(18.2)	(9.2)	(9.0)	191,066	23.4	19.8	1.1	1.1	5.3	5.2
CNOOC	CNY	9	1.3	(1.0)	(1.1)	(19.5)	(26.0)	(17.1)	(13.4)	70,187	8.8	8.7	1.2	1.1	3.8	3.7
Gazprom	RUB	136	(0.8)	(7.1)	(0.3)	(5.5)	(8.5)	13.2	4.6	50,798	3.0	3.0	0.2	0.2	2.5	2.5
Rosneft	RUB	393	(1.8)	(3.4)	0.8	16.0	19.9	23.7	34.9	65,531	7.4	6.4	0.9	0.8	4.5	4.3
Anadarko	USD	71	(0.2)	(4.9)	1.2	6.7	21.9	61.8	32.3	36,546	23.4	18.9	3.9	3.4	6.8	5.9
Petrobras	BRL	19	4.8	6.5	19.0	(13.7)	5.6	47.3	19.8	70,783	7.3	6.4	0.8	0.7	4.4	4.2
Lukoil	USD	4,300	(0.8)	(0.4)	4.1	7.9	12.4	48.5	29.0	57,583	5.5	5.7	0.8	0.7	N/A	N/A
Kinder	USD	18	(1.7)	(1.2)	1.1	7.4	(6.9)	(14.0)	(2.1)	47,497	21.5	18.0	1.1	1.2	10.6	10.4
Equinor ASA	NOK	213	(0.6)	(2.5)	(0.4)	7.1	17.0	50.1	21.5	86,743	13.6	12.5	1.9	1.8	3.3	3.2
BHP	AUD	33	(2.1)	(1.3)	1.0	6.6	7.2	31.8	11.3	123,036	14.4	16.1	2.1	2.0	5.9	6.2
PTT E&P	THB	134	1.9	(1.5)	3.5	(2.2)	16.1	58.0	33.5	15,891	12.9	12.2	1.3	1.3	4.0	3.7
Petronas gas	MYR	18	(0.3)	0.9	6.6	(1.3)	0.9	(1.7)	5.0	8,938	19.3	19.1	2.8	2.7	10.6	10.4
Chesapeake	USD	5	(2.6)	(12.3)	(6.8)	51.7	15.2	(6.0)	14.9	4,149	5.4	5.8	303.3	5.2	6.2	5.9
Noble Energy	USD	35	(0.2)	(3.7)	(3.1)	2.7	9.4	20.7	19.0	16,800	29.6	21.6	1.5	1.5	7.7	6.4
Average		0	(0.0)	(2.0)	1.6	3.8	3.6	20.1	11.5							
PV																
WACKER	EUR	116.8	(1.7)	1.6	1.5	(23.6)	(32.4)	14.2	(28.0)	7,132	17.0	15.3	1.8	1.7	5.9	5.7
GCL-Poly	HKD	0.7	0.0	(2.9)	(9.6)	(32.7)	(52.5)	(29.0)	(52.9)	1,544	5.9	5.2	0.4	0.4	6.3	5.8
SunPower	USD	7.4	(2.4)	(5.9)	(8.4)	(23.8)	(14.7)	(33.1)	(12.5)	1,040	#N/A	#N/A	#N/A	#N/A	20.1	11.7
Canadian Solar	USD	12.8	(2.2)	(2.4)	4.0	(19.6)	(19.1)	(24.9)	(24.2)	749	8.5	8.6	0.7	0.7	7.8	8.4
JA Solar	USD	7.5	0.0	0.3	8.9	8.4	0.3	14.0	0.4	356	#N/A	#N/A	#N/A	#N/A	4.9	7.1
Yingli	USD	0.5	7.1	9.8	(71.5)	(75.7)	(76.3)	(81.9)	(73.4)	8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
First Solar	USD	53.5	(0.7)	(1.1)	3.5	(29.2)	(23.6)	15.6	(20.8)	5,603	31.3	17.3	1.0	1.0	9.5	5.2
한화큐셀	USD	5.7	0.5	2.0	(5.9)	(21.2)	(21.9)	(36.9)	(18.2)	478	10.3	21.3	#N/A	#N/A	7.8	8.0
OCI	KRW	95,600	1.3	(2.7)	(10.2)	(40.8)	(42.6)	9.5	(29.7)	2,020	0.0	9.6	0.0	0.6	0.0	4.4
웅진에너지	KRW	3,150	0.2	(10.9)	(36.7)	(48.4)	(67.7)	(63.1)	(61.7)	83	N/A	0.0	0.6	0.0	4.4	0.0
신성솔라에너지	KRW	1,320	0.4	(2.9)	(16.7)	(20.5)	(41.6)	(40.0)	(31.1)	202	N/A	0.6	0.0	4.4	0.0	2.3
Average			0.2	(1.4)	(12.8)	(29.7)	(35.7)	(23.2)	(32.0)							
Gas Company																
Towngas China	HKD	7.8	1.2	(1.4)	9.0	13.2	28.3	40.1	24.0	2,789	15.3	13.6	1.3	1.2	12.8	11.6
Kulun	HKD	6.6	(0.8)	(3.9)	(4.6)	3.9	(13.5)	(14.4)	(18.8)	6,798	9.6	8.3	1.1	1.0	5.6	5.1
Beijing Enterprise	HKD	38.7	2.4	2.1	(4.6)	(2.5)	(18.6)	(5.8)	(16.7)	6,214	6.8	6.1	0.7	0.6	11.9	11.3
ENN Energy	HKD	88.0	2.1	7.3	17.0	26.4	65.2	70.1	57.8	12,159	19.9	16.7	4.0	3.4	11.5	10.0
China Resources Gas	HKD	36.7	0.4	4.7	23.8	29.5	52.1	24.0	29.3	10,384	19.1	17.1	3.3	2.8	10.4	9.4
China Gas Holdings	HKD	34.9	2.8	2.6	11.7	22.7	57.2	90.1	61.6	22,090	22.5	18.9	5.2	4.4	16.8	14.2
Shenzen Gas	HKD	14.8	1.6	(2.5)	(8.7)	(12.8)	(4.4)	8.8	(0.4)	3,982	9.0	7.8	1.2	1.1	5.7	5.0
Shann Xi	CNY	7.5	3.4	4.3	11.8	4.0	(6.9)	(11.8)	(11.1)	1,231	17.2	15.1	1.4	1.3	#N/A	#N/A
Suntien	HKD	2.4	2.1	6.7	3.0	3.9	17.6	39.5	15.9	1,136	6.4	5.6	0.8	0.7	8.5	7.3
China Oil & Gas	HKD	0.6	1.6	3.3	0.0	6.9	(22.5)	12.7	(27.1)	461	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			1.7	2.3	5.8	9.5	15.4	25.3	11.4							
EV																
LG화학	KRW	332,500	(1.0)	(0.7)	(5.9)	(10.7)	(21.5)	2.0	(17.9)	20,799	12.6	11.4	1.4	1.3	5.9	5.3
삼성SDI	KRW	232,000	(1.3)	(2.1)	1.3	24.7	13.7	30.7	13.4	14,137	21.7	15.7	1.3	1.2	14.9	11.6
Panasonic	JPY	1443.0	(0.5)	1.1	(5.4)	(8.8)	(14.9)	(4.2)	(12.5)	31,693	13.1	11.6	1.8	1.6	4.8	4.4
GS Yuasa	JPY	502.0	(0.6)	0.8	0.6	(14.2)	(14.8)	(2.3)	(10.5)	1,859	15.1	14.0	1.1	1.1	7.0	6.4
NEC	JPY	3040.0	(1.0)	3.4	(2.4)	3.6	(2.1)	2.4	0.0	7,090	23.1	13.0	0.9	0.8	7.2	5.5
BYD Auto	CNY	42.9	1.8	(6.6)	(5.5)	(17.9)	(32.1)	(14.3)	(34.0)	16,613	25.4	19.2	2.0	1.8	11.9	10.2
Tesla Motors	USD	313.6	(2.1)	(1.7)	(13.4)	8.0	(10.4)	(5.0)	0.7	53,244	#N/A	#N/A	134.2	10.5	9.7	61.1
Kandi Technologies	USD	4.2	0.6	0.0	(13.3)	(15.5)	(37.4)	1.8	(37.9)	216	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Average			(0.5)	(0.7)	(5.5)	(3.8)	(14.9)	1.4	(12.3)							

* Bloomberg 기준 / valuation multiple 또한 Bloomberg consensus 기준임