

## Better outlook for the olefins chain

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- **Prefer olefins chain producers to aromatics**
- **PE spread may soften slightly but is still more promising than PX**
- **PTTGC is the top BUY for the sector on better earnings outlook**

**2013 product price recap: favorable year for olefins.** The average price for ethylene and PE products increased 8-13% YoY, most notably for LDPE, which was driven by a tight demand/supply balance. The average HDPE price reached a new high in 2013 of US\$1,478/t (+8% YoY), boosted by higher ethylene price, which also reached a new high of US\$1,352/t. Product spread of ethylene and its derivatives also improved 11-38% YoY. The worst performer was PX, with a price fall of 1.4% YoY, though product spread was able to stay unchanged YoY.

**PE product spread to weaken marginally in 2014F but still strong.** We see a better outlook for the olefins chain than the aromatics chain in 2014F, considering the demand/supply balance of the products. This will support PE product spread in 2014F, although it is likely to edge down slightly YoY from the abnormal high in 2013, especially for LDPE. According to CMAI, additional demand for PE will continue to outpace additional supply. The threat from new capacity in the US due to competitive feedstock cost from shale gas will not come until 2016F when the big chunk of new capacity commences operations.

**PX to struggle from new supply.** By end-2013, PX price had fallen 17% from the year's peak of US\$1,721/t in 1Q13. The decline was gradual toward the end of the year, as market concerns about new PX supply was absorbed and new capacity was delayed from mid-2013 to late 2013-early 2014. The demand/supply balance forecast for 2014-18 by CMAI still suggests a worrisome outlook for PX, especially in 2014F when new PX supply of 5mtpa will enter the market, more than double the additional demand of less than 2mtpa. This could depress PX-naphtha spread to US\$500/t in 2014F from US\$570/t in 2013.

**Better integrated PET/PTA spread is in sight.** A lower PX price would be good news for integrated PET/PTA spread, which performed poorly in 2013F due to weak PTA spread (-8% YoY). Nonetheless, the magnitude of benefit from lower PX price remains in doubt since PET buyers will be able to negotiate for a lower PET price in the presence of lower feedstock cost given the abundant PET and PTA supply in the market.

**4Q13F: earnings recovery to continue despite low season.** Despite the fact that 4Q13 is low season, we expect better earnings in the petrochemical sector QoQ, led by PTTGC, supplied by operating earnings recovery provided by higher petrochemical plant utilization and crack spread of middle distillate products ahead of winter. IVL's earnings performance should also have shifted into higher gear in 4Q13 from higher sales volume from full operations of the MEG plant in the US and commercial startup of its new polyester plant in Indonesia (CP-4). Looking into 2014F, both companies are expected to deliver strong earnings growth YoY, on both spread and volume.

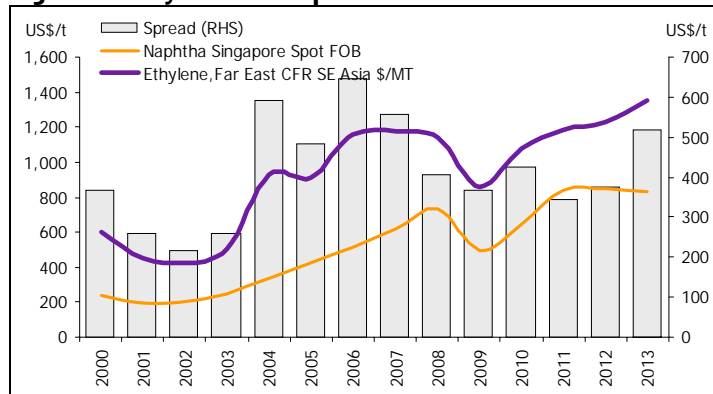
**Petrochemical stocks could perform well in early 1Q14.** We believe seasonal factors will remain in play for the sector ahead of Chinese New Year in late January 2014. This is likely to boost product spread of the olefins chain as well as share price in the period. We still prefer PTTGC in the sector, given its strong earnings recovery in 2014F after facing three unfortunate incidents in 2013. This is supported by its "excellence" programs that are targeted to raise EBITDA by US\$289mn in 2014F from the expected US\$177mn in 2013. We reaffirm our mid-2014 TP of Bt92/share.

### Valuation summary

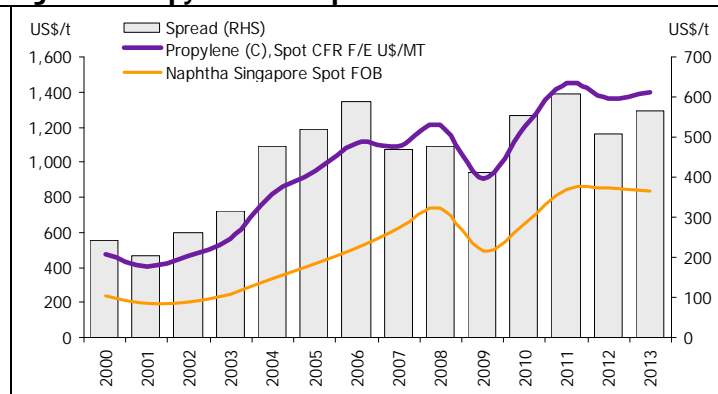
	Rating	Price (Bt/Sh)	Target (Bt/Sh)	ETR (%)	P/E (x)			EPS growth (%)			P/BV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
					12A	13F	14F	12A	13F	14F	12A	13F	14F	12A	13F	14F	12A	13F	14F	12A	13F	14F
IVL	Neutral	19.60	27.0	39.3	64.5	48.9	20.8	(85.8)	32.0	135.0	1.68	1.63	1.54	2.5	3.4	7.6	1.8	1.0	1.5	11.2	7.7	5.8
PTTGC	Buy	77.25	92.0	24.3	11.1	10.8	8.7	(1.4)	2.7	23.2	1.57	1.45	1.33	14.1	13.1	14.8	4.4	4.3	5.2	7.5	7.3	5.5
<b>Average</b>					<b>37.8</b>	<b>29.8</b>	<b>14.8</b>	<b>(43.6)</b>	<b>17.3</b>	<b>79.1</b>	<b>1.62</b>	<b>1.54</b>	<b>1.43</b>	<b>8.3</b>	<b>8.2</b>	<b>11.2</b>	<b>3.1</b>	<b>2.6</b>	<b>3.4</b>	<b>9.4</b>	<b>7.5</b>	<b>5.7</b>

Source: SCBS Investment Research

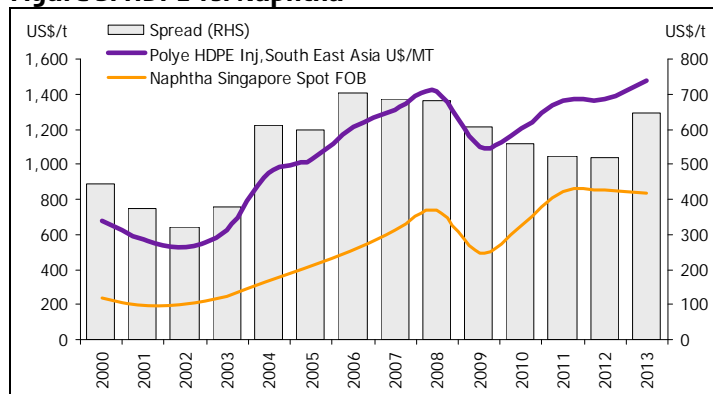
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**Figure 1: Ethylene vs. Naphtha**

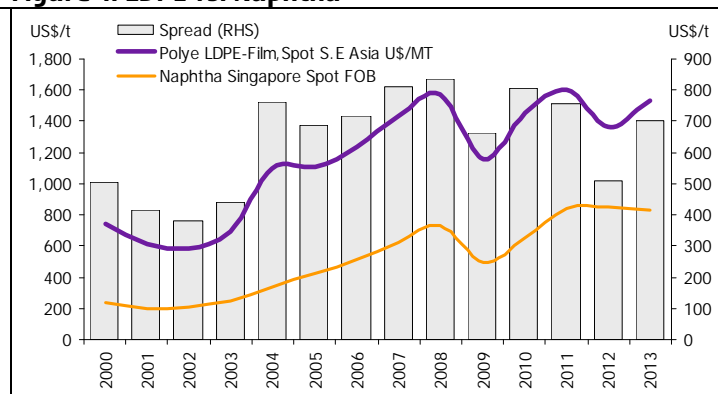
Source: Datastream, SCBS Investment Research

**Figure 2: Propylene vs. Naphtha**

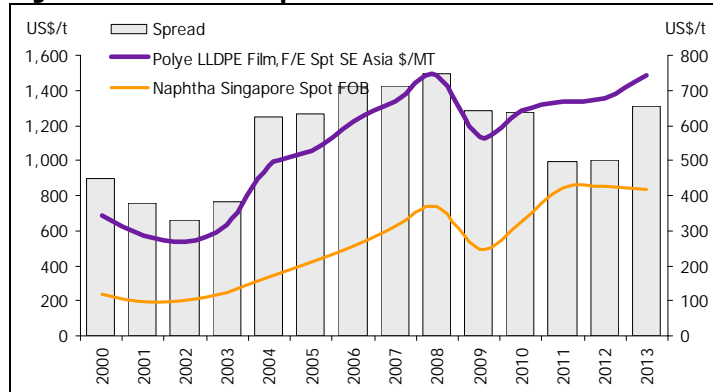
Source: Datastream, SCBS Investment Research

**Figure 3: HDPE vs. Naphtha**

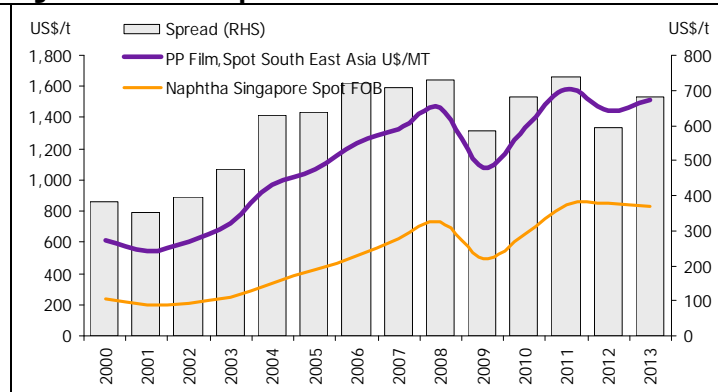
Source: Datastream, SCBS Investment Research

**Figure 4: LDPE vs. Naphtha**

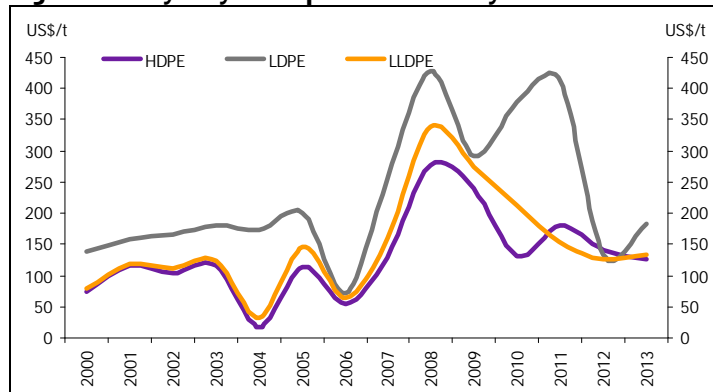
Source: Datastream, SCBS Investment Research

**Figure 5: LLDPE vs. Naphtha**

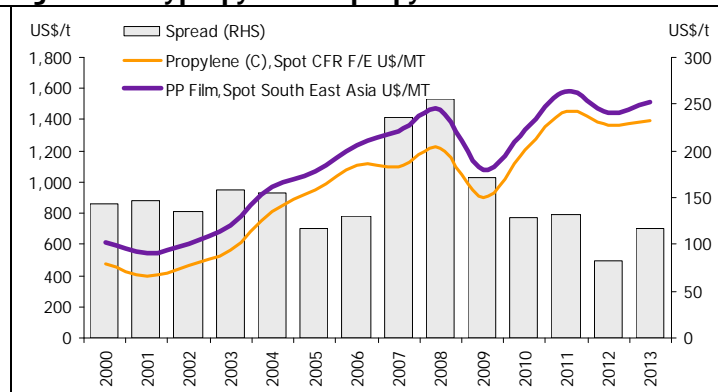
Source: Datastream, SCBS Investment Research

**Figure 6: PP vs. Naphtha**

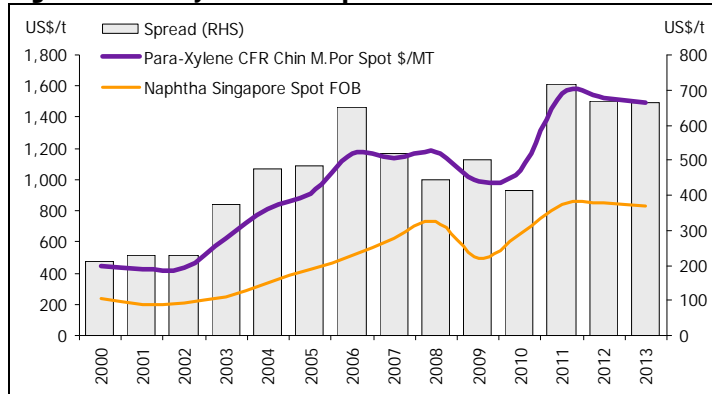
Source: Datastream, SCBS Investment Research

**Figure 7: Polyethylene spread over ethylene**

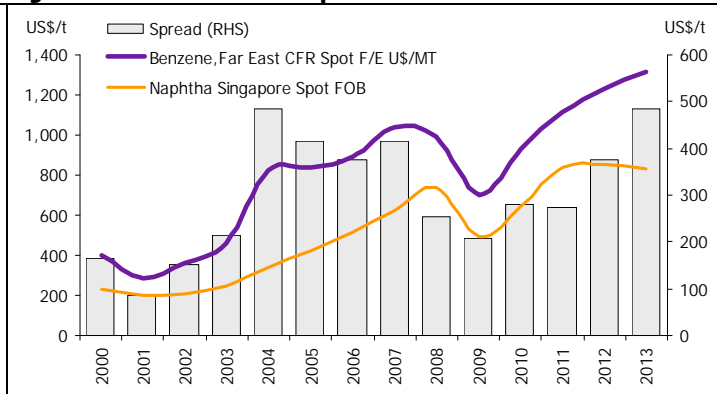
Source: Datastream, SCBS Investment Research

**Figure 8: Polypropylene vs. propylene**

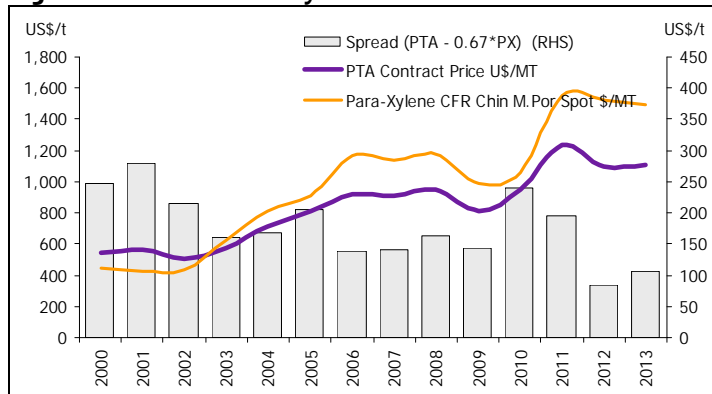
Source: Datastream, SCBS Investment Research

**Figure 9: Paraxylene vs. Naphtha**

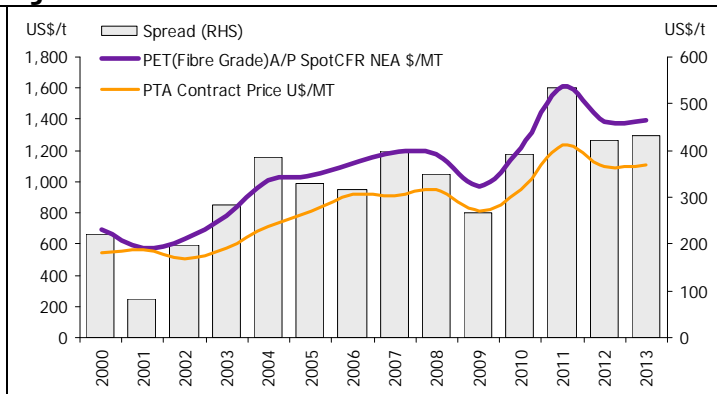
Source: Datastream, SCBS Investment Research

**Figure 10: Benzene vs. Naphtha**

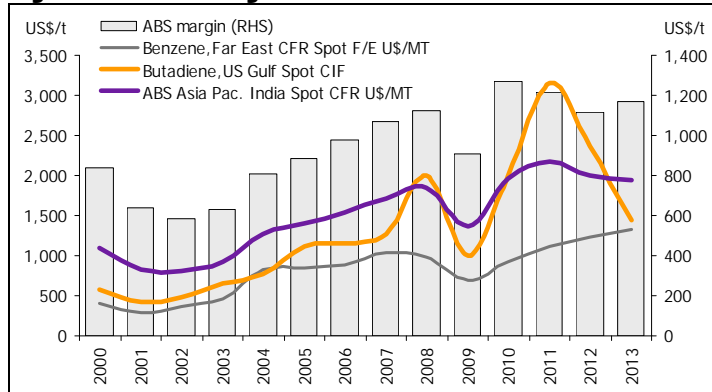
Source: Datastream, SCBS Investment Research

**Figure 11: PTA vs. Paraxylene**

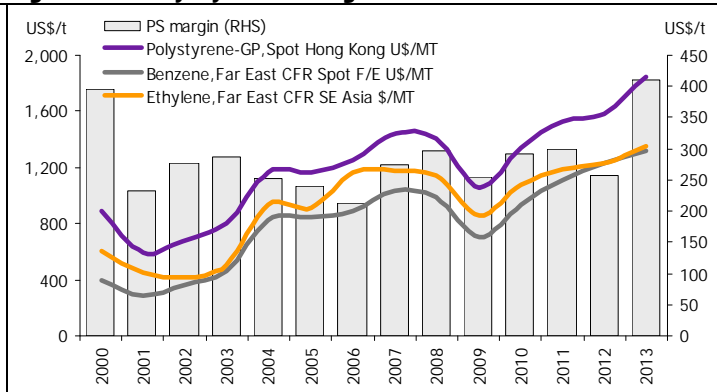
Source: Datastream, SCBS Investment Research

**Figure 12: PET vs. PTA**

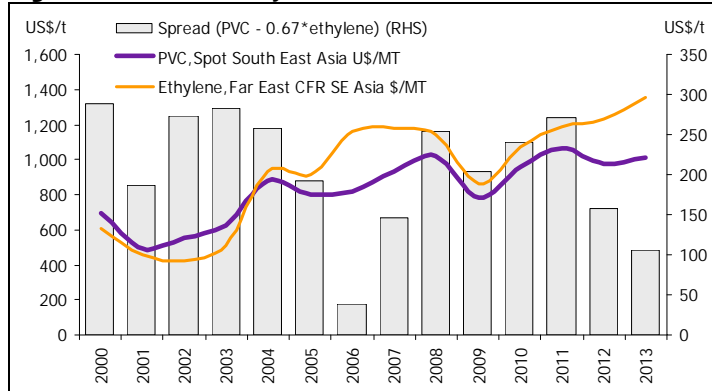
Source: Datastream, SCBS Investment Research

**Figure 13: ABS margin**

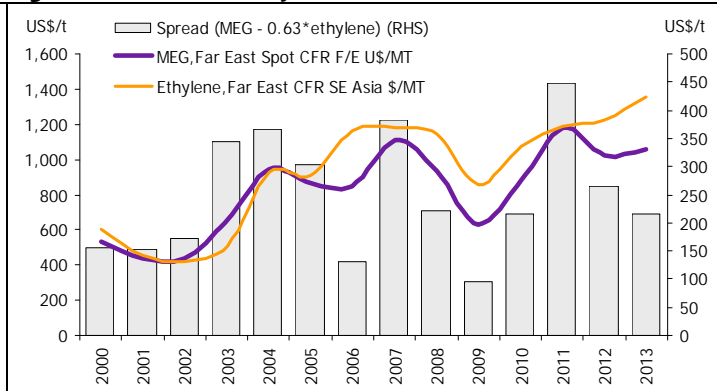
Source: Datastream, SCBS Investment Research

**Figure 14: Polystyrene margin**

Source: Datastream, SCBS Investment Research

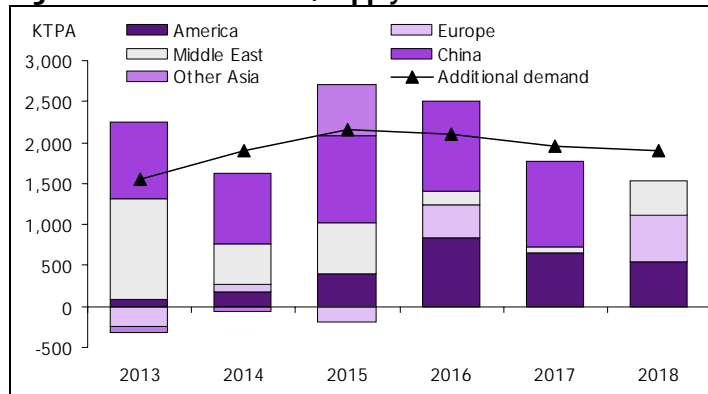
**Figure 15: PVC vs. ethylene**

Source: Datastream, SCBS Investment Research

**Figure 16: MEG vs. ethylene**

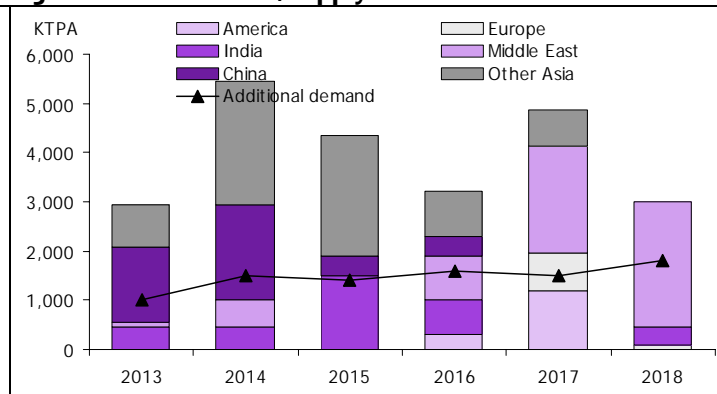
Source: Datastream, SCBS Investment Research

Figure 17: HDPE demand/supply balance



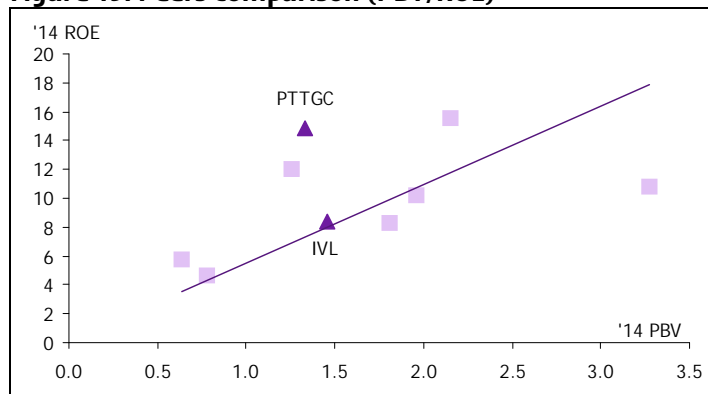
Source: CMAI (October 2013), PTTGC, SCBS Investment Research

Figure 18: PX demand/supply balance



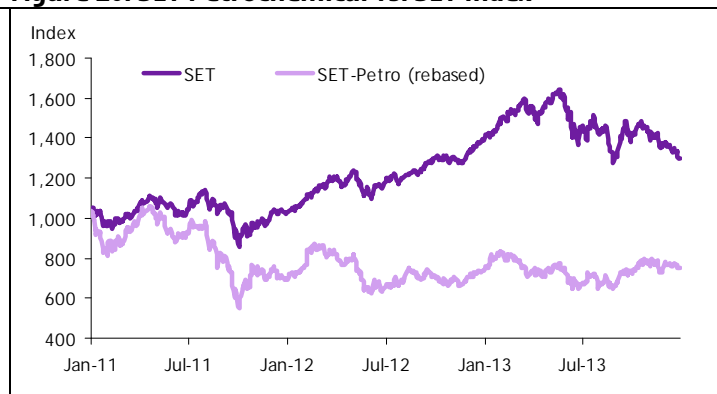
Source: CMAI (October 2013), PTTGC, SCBS Investment Research

Figure 19: Peers comparison (PBV/ROE)



Source: Bloomberg Finance LP, SCBS Investment Research

Figure 20: SET Petrochemical vs. SET Index



Source: Bloomberg Finance LP, SCBS Investment Research

Figure 21: Regional peers

Company	P/E (x)			EPS Growth (%)			P/BV (x)			ROE (%)			Div. Yield (%)			EV/EBITDA (x)		
	13F	14F	15F	13F	14F	15F	13F	14F	15F	13F	14F	15F	13F	14F	15F	13F	14F	15F
Reliance Industries Ltd	12.3	11.0	9.4	2.1	11.2	17.3	1.4	1.3	1.2	11.7	12.0	12.8	1.1	1.2	1.4	9.2	8.1	6.8
Petronas Chemicals Group Bhd	14.6	14.3	n.m.	5.0	1.6	n.m.	2.3	2.1	n.a	16.2	15.5	n.m.	3.4	3.5	n.a	8.0	7.8	n.a
Formosa Plastics Corp	23.9	19.7	16.8	44.6	21.3	17.5	2.1	2.0	1.9	8.8	10.2	11.4	2.4	3.3	3.9	26.2	21.3	17.9
Formosa Chemicals & Fibre Corp	19.6	19.5	18.4	249.5	0.6	5.8	1.9	1.8	1.8	8.4	8.3	8.7	2.5	3.2	4.0	20.3	20.0	19.2
Nan Ya Plastics Corp	22.4	21.0	18.2	469.9	6.5	15.8	2.0	2.1	n.a	8.0	n.m.	n.m.	2.4	3.2	3.7	19.6	18.1	17.6
Formosa Petrochemical Corp	31.6	27.8	24.2	786.2	13.4	15.2	3.4	3.3	3.2	11.3	10.8	11.3	2.1	3.0	3.4	18.8	18.9	18.1
Far Eastern New Century Corp	21.3	18.5	15.8	(6.0)	15.2	16.6	1.5	n.a	n.a	5.9	n.m.	n.m.	3.5	3.7	4.7	128.6	132.8	n.a
Indorama Ventures PCL	27.6	15.6	12.3	(26.0)	76.9	27.3	1.5	1.4	1.3	5.3	8.4	11.5	1.1	1.8	2.7	12.5	10.1	9.0
IRPC PCL	54.0	20.1	11.4	214.0	168.4	75.8	0.8	0.8	0.7	1.9	4.7	7.1	1.9	2.5	3.3	14.1	10.2	7.8
PTT Global Chemical PCL	10.3	9.2	9.0	(0.5)	12.2	1.5	1.4	1.3	1.2	14.4	14.9	14.0	4.3	4.8	4.9	7.4	6.8	6.7
Vinythai PCL	32.9	12.4	11.9	(78.2)	166.1	4.2	0.7	0.6	n.a	2.7	5.8	4.4	2.5	5.4	3.9	15.8	10.4	9.6
Average	24.6	17.2	14.7	151.0	44.9	19.7	1.7	1.7	1.6	8.6	10.1	10.2	2.5	3.2	3.6	25.5	24.0	12.5

Source: Bloomberg Finance LP, SCBS Investment Research

Figure 22: Petrochemical price update

	Current 27-Dec-13	52-week High/Low	-1W	-1M	-3M	-6M	-12M	4Q13 QTD	3Q13	QoQ%	YTD	Chg.	%YoY	2013F projection
<b>Price</b>														
Naphtha Singapore Spot FOB	897	962/744	0.8%	3%	10%	17%	4%	855	827	3%	833	-25	-3%	833
Ethylene, Far East CFR SE Asia \$/MT	1,425	1,520/1,215	0.0%	1%	0%	10%	11%	1,427	1,321	8%	1,352	99	8%	1,353
Propylene (C), Spot CFR F/E US\$/MT	1,498	1,503/1,280	0.0%	2%	3%	5%	15%	1,472	1,430	3%	1,398	37	3%	1,398
Polye HDPE Inj, South East Asia US\$/MT	1,535	1,540/1,390	0.0%	0%	2%	6%	10%	1,530	1,476	4%	1,478	93	7%	1,483
Polye LDPE-Film, Spot S.E Asia US\$/MT	1,680	1,680/1,370	0.0%	2%	1%	15%	23%	1,664	1,569	6%	1,534	160	12%	1,543
Polye LLDPE Film, F/E Spot SE Asia \$/MT	1,570	1,570/1,410	0.0%	2%	3%	8%	13%	1,546	1,489	4%	1,487	115	8%	1,493
PP Film, Spot South East Asia US\$/MT	1,555	1,580/1,440	0.0%	2%	1%	4%	5%	1,539	1,513	2%	1,515	57	4%	1,512
<b>Related stocks</b>														
PTTGC (Neutral)   IRPC (-)   SCC (Neutral)   TPIPL (Neutral)														
Para-Xylene CFR Chin M. Por Spot \$/MT	1,432	1,721/1,406	0.0%	1%	-4%	0%	-11%	1,432	1,486	-4%	1,498	-46	-3%	1,499
Benzene, Far East CFR Spot F/E US\$/MT	1,353	1,505/1,218	0.0%	2%	3%	11%	-8%	1,298	1,275	2%	1,318	59	5%	1,313
<b>Related stocks</b>														
PTTGC (-)   TOP (Neutral)   ESSO (Neutral)														
MEG, Far East Spot CFR F/E US\$/MT	1,035	1,209/944	0.0%	2%	-3%	10%	-9%	1,043	1,067	-2%	1,054	7	1%	1,054
PTA CFR South East Asia	995	1,200/990	0.0%	1%	-6%	-7%	-13%	1,008	1,082	-7%	1,076	-38	-3%	1,094
PET(Fibre Grade)A/P Spot CFR NEA \$/MT	1,300	1,540/1,290	0.0%	1%	-7%	-3%	-12%	1,330	1,385	-4%	1,396	-7	-1%	n.a.
<b>Related stocks</b>														
PTTGC (Neutral)   IVL (+)														
ABS Asia Pac. India Spot CFR US\$/MT	1,895	2,060/1,870	0.0%	1%	-3%	-2%	-5%	1,904	1,923	-1%	1,949	-56	-3%	n.a.
Polystyrene-GP, Spot Hong Kong US\$/MT	1,800	1,915/1,765	0.0%	2%	-6%	-1%	-1%	1,817	1,892	-4%	1,845	216	13%	n.a.
<b>Related stocks</b>														
IRPC (Neutral)														
PVC, Spot South East Asia US\$/MT	1,010	1,083/950	0.0%	1%	-2%	0%	2%	1,003	1,020	-2%	1,013	23	2%	1,023
<b>Related stocks</b>														
VNT (Neutral)   TPC (Neutral)														
<b>Product spread</b>														
Ethylene - naphtha	528	650/424	-1.3%	-4%	-12%	-1%	26%	572	494	16%	520	124	31%	520
Propylene - naphtha	600	658/438	-1.1%	-1%	-5%	-8%	39%	617	603	2%	565	62	12%	565
HDPE - naphtha	638	713/531	-1.1%	-4%	-8%	-6%	22%	675	649	4%	645	118	22%	650
LDPE - naphtha	783	851/511	-0.9%	0%	-7%	13%	57%	809	741	9%	702	185	36%	710
LDPE - Ethylene	255	323/25	0.0%	9%	6%	59%	219%	237	248	-4%	182	61	51%	190
LLDPE - naphtha	673	730/528	-1.0%	-1%	-5%	-2%	29%	691	662	4%	654	140	27%	660
PP - naphtha	658	736/598	-1.0%	-1%	-10%	-9%	8%	684	686	0%	682	82	14%	679
PX - naphtha	534	828/534	-1.3%	-3%	-21%	-20%	-29%	577	659	-12%	665	-21	-3%	666
BZ - naphtha	455	646/396	-1.5%	1%	-8%	1%	-25%	443	448	-1%	485	84	21%	480
MEG - Ethylene	152	388/129	0.0%	7%	-17%	10%	-55%	158	248	-37%	216	-54	-20%	215
PTA - PX	65	155/62	0.0%	-4%	-29%	-54%	-35%	77	116	-34%	102	-8	-8%	90
PET spread	162	273/128	0.0%	0%	-20%	-10%	-13%	179	168	7%	188	20	12%	n.a.
Integrated PET/PTA spread	226	391/211	0.0%	-1%	-23%	-29%	-20%	256	284	-10%	291	12	4%	n.a.
ABS spread	1,124	1,272/1,040	0.0%	0%	-8%	-8%	0%	1,169	1,237	-5%	1,167	43	4%	n.a.
PS spread	318	565/277	0.0%	0%	-31%	-34%	16%	378	502	-25%	411	141	52%	n.a.
PVC - ethylene	298	398/258	0.0%	2%	-8%	-17%	-14%	289	360	-20%	336	-27	-7%	347

Source: Datastream, SCBS Investment Research

Note: Impact to related stocks is based on WoW performance

Figure 23: Selected product price/spread of listed companies

Company	Key products	% of total Product price/spread	4Q13 QTD	3Q13	QoQ%	YTD	12MMA	2013F projection	Momentum
PTTGC	Ethylene/Propylene		21%						
	Ethylene, Far East CFR SE Asia \$/MT		1,427	1,321	8%	1,352	1,352	1,353	↗
	Propylene (C), Spot CFR F/E US\$/MT		1,472	1,430	3%	1,398	1,398	1,398	↗
	HDPE		19%						
	Polye HDPE Inj, South East Asia US\$/MT		1,530	1,476	4%	1,478	1,478	1,483	↗
	LDPE		7%						
	Polye LLDPE Film, F/E Spt SE Asia \$/MT		1,546	1,489	4%	1,487	1,487	1,493	↗
	LDPE		4%						
IRPC	Polye LDPE-Film, Spot S.E Asia US\$/MT		1,664	1,569	6%	1,534	1,534	1,543	↗
	MEG		6%						
	MEG, Far East Spot CFR F/E US\$/MT		1,043	1,067	-2%	1,054	1,054	1,054	→
	PX		28%						
	PX - naphtha		577	659	-12%	665	665	666	↘
	BZ		15%						
	BZ - naphtha		443	448	-1%	485	485	480	→
	PS		12%						
SCC	Ethylene/Propylene		15%						
	Ethylene - naphtha		572	494	16%	520	520	520	↘
	Propylene - naphtha		617	603	2%	565	565	565	↘
	HDPE		12%						
	HDPE - naphtha		675	649	4%	645	645	650	↘
	PP		28%						
	PP - naphtha		684	686	0%	682	682	679	↘
	ABS		7%						
TPIPL	7% ABS spread		1,169	1,237	-5%	1,167	1,167	n.a.	↘
	BTX		23%						
	BZ - naphtha		443	448	-1%	485	485	480	→
	PS		12%						
	PS spread		378	502	-25%	411	411	n.a.	→
	HDPE		40%						
	HDPE - naphtha		675	649	4%	645	645	650	↘
	LDPE		3%						
IVL	3% LDPE - naphtha		809	741	9%	702	702	710	→
	LLDPE		3%						
	LLDPE - naphtha		691	662	4%	654	654	660	↘
	PP		25%						
	PP - naphtha		684	686	0%	682	682	679	↘
	PVC		28%						
	PVC - Ethylene/EDC		521	603	-14%	589	487	n.a.	→
	LDPE		60%						
TOP	60% LDPE - Ethylene		237	248	-4%	182	182	190	↗
	PX		60%						
	PX - naphtha		577	659	-12%	665	665	666	↘
	BZ		21%						
	BZ - naphtha		443	448	-1%	485	485	480	→
	PTA		25%						
	PTA - PX		77	116	-34%	102	102	90	↘
	PET/Polyester		179	168	7%	188	188	n.a.	→
VNT	MEG - NA		8%						
	PVC		63%						
	PVC - ethylene		289	360	-20%	336	336	347	→
	TPC		100%						
	PVC - Ethylene/EDC		521	603	-14%	589	487	n.a.	→

Source: Datastream, SCBS Investment Research

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